



The Paradigms of Teaching English across Cultures: EFL Teachers' Perspectives

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Abstract

The present study aimed at qualitatively probing into EFL teachers' perspectives on the paradigms of teaching English across cultures (TEAC). Five EFL teachers were purposively involved as the participants. The data were garnered from in-depth interview. This study revealed a variety of perspectives addressing TEAC paradigms. All EFL teachers showed their supporting perspectives on TEAC paradigms. They accepted the natures of English as the world lingua franca, mutual intelligibility and comprehensibility in English communication, intercultural communicative competence as the framework of English communication, supporting students to be intercultural English users, and bilingual as well as intercultural English users as EFL learning models. Their perspectives on TEAC paradigms likely indicated that they would hold these paradigms while teaching English in the classrooms. Further studies are expected to delve into the practices of TEAC so that the data could be of great references for other Indonesian EFL teachers to apply TEAC in the classrooms.

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1. Introduction

In line with the emergence of the 21th century, English language is not seen as the language only owned by the native speakers. The users of English have pervaded in all over the world as depicted by Kachru's (1990) model of world Englishes. His model portrays English users that fall into inner, outer, and expanding circles. The phenomenon with respect to non-native English users who outnumber those of native ones eventually makes a convincing case for the socio-functional essence of English as the world lingua franca (Baker, 2016; Deniz, Özkan, & Bayyurt, 2016; Fang, 2017; Ishikawa, 2016; Kirkpatrick, 2018; Liu, 2019; Matsuura, Rilling, Chiba, Kim, & Rini, 2016;

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Mauranen, 2018; Rahatlou, Fazilatfar, & Allami, 2018; Rahimi & Ruzrokh, 2016; Sherman, 2018; Si, 2018; Sung, 2015, 2017a, 2017b; Wright & Zheng, 2018), whereby the role of English has been a language contact among the native as well as non-native users. In addition, Rauschert and Byram (2017) propound that the users of English originally come from various cultures. When English as a language contact is used by multicultural users, an intercultural dimension in the use of English is naturally created (Byram & Wenger, 2018).

Given the issues pertinent to multiculturalism and interculturalism, the phenomena of language use amid Indonesian people are associated with the aforesaid issues. In the aspect of multiculturalism, Indonesian people are multicultural *in situ* in light of their origins which are derived from various and diverse cultures (Idris, 2020; Morganna, Sumardi, & Tarjana, 2018a, 2018b, 2020; Sukyadi, 2015). In addition, in the aspect of interculturalism as the communicative dimension of language use, the nuance of multicultural nature owned by Indonesian people has an impact on the way they use languages (both Indonesian for national communication and English for international communication), wherein they will use the two languages cross-culturally (Hamied, 2012). For instance, at the national level, when someone from Bengkulu meets one from Java, the two persons will use Indonesian language based on their own language varieties affected by the respective cultures prevailing in their own common and dominant social communities. The one from Bengkulu will use a certain dialect signifying the influence of a vernacular used in Bengkulu, and that from Java does the same by virtue of Javanese vernacular influence. Other than language varieties, the pragmatic as well as sociolinguistic conventions, worldviews, thoughts, perceptions, and other culture-related components which they share during the on-going communication will also be diverse. The encounter of diverse cultures here is what most linguists call interculturalism in communication.

Subsequently, at the international level, when English mediates the on-going interactions, the same condition even in a more sensitized nuance of interculturalism as the abovementioned example will take place since the cultural differences among the English users are more noticeably various. Thus, the encounter of English use alongside a variety of dialects and a wide range of distinct pragmatic as well as sociolinguistic conventions, thoughts, perceptions, worldviews, and other cultural values will more vividly portray the presence of interculturalism or an intercultural dimension. It makes a convincing case that the use of English internationally always takes place within an intercultural dimension.

For Indonesian people, or let us say students in the realm of education, the English education with which they will be engaged and dealt should conform to their multicultural nature and the interculturalism of English use. This condition calls for Indonesian EFL teachers' agreement on the paradigms of teaching English across

cultures (hereafter as TEAC). Many prior studies have addressed the issue of TEAC, and some substantial TEAC paradigms could be absorbed from their discussions.

TEAC views English as the world lingua franca (WLF) because it is the representation of English used by people from a variety of cultural origins all over the world (Kirkpatrick, 2018; Liu & Fang, 2017; Mauranen, 2018; Sung, 2017a). Grounded in this paradigm, EFL teachers are demanded to design English materials that drive students to face cultural diversities so that students are engaged in communication within the dimension of English as WLF (Si, 2018) with its cultural differences (Xerri, 2016). In addition, the need of English education should go beyond the essences of native-speakerism (Baker, 2016). To do so, an externally pedagogical empowerment developed to help EFL teachers improve their competences of English as WLF is also needed so that the essence of English as WLF is well-embedded in their teaching paradigm (Rahatlou et al., 2018).

Because TEAC views English as WLF, the norm of linguistic competence refers to mutual intelligibility and comprehensibility (Kirkpatrick, 2018; Sherman, 2018; Wright & Zheng, 2018). The present pluralistic contexts of English communication justify the importance of intelligibility and comprehensibility maintenance while communicating using English across cultures (Matsuura et al., 2016; Rahimi & Ruzrokh, 2016). Thus, EFL teachers need to train students in order to be able to maintain their intelligible and comprehensible English use. Besides, TEAC also adheres to intercultural communicative competence which ideally frames English communication (Byram & Wenger, 2018; Galante, 2015; Kusumaningputri & Widodo, 2018; López-Rocha, 2016; Rauschert & Byram, 2017; Tolosa, Biebricher, East, & Howard, 2018; Tran & Duong, 2018). A study conducted by Badrkoohi (2018) revealed that English learning that engages students into the process of developing intercultural communicative competence can improve students' learning motivation. Subsequently, TEAC encourages students to be intercultural English users (Kirkpatrick, 2018), and bilingual and intercultural English users are the proper models of EFL learning (Kirkpatrick, 2018).

The foregoing highlight can be summarized that at least TEAC is grounded in five paradigms to be held in EFL classrooms. They extend to viewing English as WLF, prioritizing mutual intelligibility and comprehensibility in English communication, making intercultural communicative competence the norm of English communication, encouraging students to be intercultural English users, and making bilingual and intercultural English users the proper models of EFL learning. These five paradigms are required to be understood by Indonesian EFL teachers given that Indonesian students are multicultural, and English education calls for the application of TEAC in Indonesia. TEAC cannot instantly be applied before Indonesian EFL teachers embed TEAC paradigms in their pedagogical perspectives. Thus, the present study is designed to explore Indonesian EFL teachers' perspectives on the paradigms of TEAC.

2. Method

2.1. Design

This study qualitatively explored Indonesian EFL teachers' perspectives on the paradigms of TEAC. The rationale beyond the selection of this qualitative method was because this study would like to probe into the depth alongside the width of the expected data and to present appropriate detailed interpretations as well as discussion of the data. The findings revealed in this study could not be wholly generalized as some numerical data commonly do in a quantitative study. Nonetheless, this study made an effort to present the findings which were probably quite generalizable at some point if further studies would like to conform to the detailed procedures or criteria applied in this study.

2.2. Participants

The present study involved five experienced Indonesian EFL teachers who had been teaching English for more than 7 years. They aged between 30 and 40 years old. Two of them taught English in Bengkulu, and the rest three teachers taught English in central Java. They were incorporated as the participants purposively. Before officially incorporating them in this study, a couple of criteria were assigned to select them. Those criteria fell into: 1) they were adequately experienced in teaching English as a foreign language. 2) The students they taught came from various cultures. 3) They had sufficient understanding of TEAC. 4) They were interested in implementing TEAC based on their own understanding and pedagogical proficiency. In turn, 5) they were willing to voluntarily join this study as the participants.

2.3. The Technique of Collecting Data

The data were solicited from in-depth interview. The interview took place from March to May 2019. EFL teachers from Bengkulu were interviewed in a face-to-face mode, and those from central java were interviewed using Whatsapp video call. The discourse of interview was oriented towards five TEAC pedagogical paradigms: viewing English as WLF, prioritizing mutual intelligibility and comprehensibility in English communication, making intercultural communicative competence the norm of English communication, encouraging students to be intercultural English users, and making bilingual and intercultural English users the proper models of EFL learning. All information gained from interview was recorded and further transcribed. Pursuing the data was carried out by re-interviewing the participants in order to reach the data credibility.

2.4. The Technique of Data Analysis

This study made use of Miles, Huberman, and Saldana's (2014) interactive model to analyze the data. Grounded in this model, this study executed four steps consisting of data collection, data condensation, data display, and verifying conclusion. As informed in the foregoing, the data were collected from in-depth interview. The raw data recorded were further transcribed and condensed by coding them as well as managing them resting upon the valuable themes that emerged. Pertinent to data display, the data were presented in the form of some presentations of the selected transcripts followed by the proper related interpretations as well as discussions. The last, the conclusion representing the summary of the overall data was drawn.

3. Findings

The data associated with EFL teachers' perspectives on TEAC paradigms were garnered from in-depth interview conducted from March to May 2019. The following presentation displays a number of transcripts of interview deliberately selected to represent the overall participants of this study. Some related interpretations and discussions that follow the transcripts are also provided.

3.1. *EFL Teachers' Perspectives on English as the World Lingua Franca*

The first TEAC paradigm negotiated to the participants was English as the world lingua franca (WLF). The following transcript of interview with participant 1 is properly selected to represent others.

The shift of English language status as the world lingua franca is very logical, and in fact what occurs today is as such. I agree with this condition because English users incorporate all people, or in other words, we can say that the users entail all the world citizens. Then, in fact, we indeed use English based on the way we think respectively. We need to hold this view when we teach English (Participant 1).

Participant 1 viewed the status of English as the world lingua franca based on a real present situation where English was socially used not only by its native speakers but also by all non-native English users in the world. As an English teacher, she made this view one of her language paradigm. Another perspective addressed the conceptualization appertaining to the social function of English which belonged to the world citizens. Mostly any chance of international communication either with native or non-native English users was mediated by English language. In addition, participant 5 shared her perspective as follows:

It is because if we look at the existing fact, English language plays a role as a primary medium of international communication. It is automatic that English does not merely belong to certain countries, but it has naturally been used by the majority of the world countries (Participant 5).

Participant 5 in the above transcripts drew on the facts that the tool of international communication was English, and such condition inferred that English was the world people's language. Those reasons made a convincing case for the social function of English as the language that did not merely belong to its native speakers. The other perspective on English as the world lingua franca was shared by participant 4 as follows:

Viewing the fact that English language has increasingly developed. Thus, we will not view English as the language belonging to American or British people merely. The happening situation indicates that the English language users are so much pervasive, and by nature the cultures of the users will automatically give impact on the way English language is used. It means that we need to be flexible to see this status shift (Participant 4).

Participant 4 viewed that the extensive use of English had been successfully grown so that by nature English was used by all people with their own cultural framework.

The above selected transcripts could be categorized into three meaningful points representing EFL teachers' perspectives on WLF. First, the teachers accepted the fact that English users encompass all the world citizens. Second, the English social function belongs to the world citizens. Third, pervasiveness of English users occurs naturally. Their perspectives indicated that they hold WLF as a TEAC paradigm.

3.2. EFL Teachers' Perspectives on Mutual Intelligibility and Comprehensibility in English Communication

As regards this paradigm, participant 1 shared her perspective on intelligibility and comprehensibility as follows:

I personally ever experienced things related to intelligibility and comprehensibility. That was when I met a friend who was not Indonesian but also not English native speaker. When using English, none of us had a native-like competence since we had different cultures and none of our cultures were similar to English native speakers'. Thus, the meaning negotiation that we dealt with during communication referred to intelligibility and comprehensibility as the standard to make a proper communicative connection. We did not focus on whether the English pronunciation, grammar, or vocabularies that we used were correct or not based on the standard of native English, but we focused on whether our ideas were appropriately conveyed and could be respectively understood or not. So, while teaching English, we should ideally always remember that intelligibility and comprehensibility are the most important to be preserved (Participant 1).

Participant 1 in the above transcript indicated that in a real English use, when used by non-native English users, never would the users have a precise native-like competence. The users' culture, one brought since the users were born as their blueprint of life, would

be the framework of their English use. Thus, the meaning negotiation that would be undertaken referred more to the horizon of intelligible and comprehensible messages. That was why the participant 1 relied on intelligibility and comprehensibility as the convenient yardstick to make a good interactive connection while communicating using English. In turn, participant 2 added:

Yes, because in using a language which is not our own language or in other words a foreign language, we will never be able to imitate the native speakers' competence. Like linguistic competence, for example, we will exactly produce utterances from that foreign language with the dialect output on the basis of our own mother language. Even though, let us say, there is someone who manages to imitate the foreign language pronunciation similar to its native speakers', other elements such as vocabularies and grammar are usually produced based on the ideational construction made of his mother language which is transferred to that foreign language output. Therefore, the most ideal conception is to refer to intelligibility and comprehensibility as the yardstick of linguistic competence (Participant 2).

Participant 2 explained that the case with respect to linguistic competence while using a foreign language (English) would always be determined by the users' cultures. She exemplified it with the presence of mother language influence towards people's (non-native English users) use of English language. Their mother languages referred to a part of their own cultures since those languages played a role as a kind of blueprint of living besides other types of cultures they had. Thus, when they used English, the product of linguistic competence such as dialect (entailing their particular varieties of English pronunciation, vocabularies, and grammar) would be highly determined by the characteristic of their mother language linguistic competence. Participant 2 even believed that although there was someone that seemed to capably use English like native speakers, it was limited on his efficacy to pronounce English in a proximate way. However, the other component like the ideational construction of his English use would be underlain by his mother language, in other words, his culture. Subsequently, participant 3 also accounted for her perspective as follows:

For me, I personally see that the most ideal point in communication is meaning conveyance. It means that if we deliver something, and the interlocutor can understand what we share, it's been enough. Concerning linguistic competence in English use, we can see that people from each country in the world also have their own accents. Thus, I think, it is not a must to have a linguistic competence which precisely resembles the Standard English, but it's ideal to refer to intelligibility and comprehensibility (Participant 3).

Participant 3 explained that the fundamental principle of English communication was meaning conveyance. The adequacy of meaning conveyance extended to how far the given meanings could be accepted and understood by the interlocutors. If the yardstick of

English communication was subjected to English native speakers' linguistic competence, it would be impossible to do by non-native English users since they had a variety of English accents as highly influenced by their own mother languages and cultures. This made a case for shaping the adequacy of English communication into the meaning conveyance whose linguistic competence was represented by to what extent the English utterances reached the sense of intelligibility and comprehensibility.

The above selected transcripts could be classified into three meaningful points representing EFL teachers' perspectives on mutual intelligibility and comprehensibility in English communication. First, the teachers understood that preserving mutual intelligibility and comprehensibility could connect non-native dialectical English in an appropriate way during communication. Second, they perceived that it is impossible to totally imitate native English linguistic competence. Third, they opined that understandable messages or meanings are the key to communication..

3.3. EFL Teachers' Perspectives on Making Intercultural Communicative Competence the Norm of English Communication

With respect to making intercultural communicative competence the norm of English communication, Participant 1 came up with her perspective as follows:

It is because in fact the English language users consist of people from diverse cultures so that in communication we need to consider where our interlocutors come from, what their cultures are like, and so on. Thus, I like ICC as English communicative framework (Participant 1).

Participant 1 accounted for the importance of intercultural communicative competence (ICC) because the cultures or origins had by the interlocutors in English communication as led by ICC principle were the need and necessity to successfully make a proper connection in English communication. ICC in fact facilitated non-native English users for that sort of need. Participant 3 added:

CC formulated on the basis of English native speakers' cultures is too specific. In reality, we Indonesian people more often meet and communicate using English with people who are not English native speakers. We even seldom encounter English native speakers. Then, those non-native English speakers that we meet absolutely come from different cultures. By that, why should we rely on the framework of CC that is entirely native-speakerism while mostly the people who communicate using English with us are non-native ones? And they use their own cultures as the framework of their English use. In my opinion, ICC that is purposefully designed for cross-cultural communication is conveniently ideal to be the English communicative framework (Participant 3).

Participant 3 in the above transcript criticized communicative competence (CC) principle because this principle was merely oriented to English use framed by native English cultures. In the meantime, as found in the existing fact that occurred in Indonesia, Indonesian people more often met and communicated with non-native English users rather than native ones. It meant that predominant English communication that took place around Indonesian people is the communication with non-native English users along with their cultural varieties as the communicative framework. Thus, to reach a successful English communication, ICC principle with its otherness sensitivity played a pivotal role to facilitate Indonesian people to be good English users. Subsequently, participant 5 also came up with her perspective as follows:

CC is fundamentally framed to lead us to communicate like English native speakers, doesn't it? For me, it's better to rely on ICC since in reality not all people use English on the basis of English native speakers' culture as conceptualized in the CC framework. Furthermore, in my opinion, culture refers to the nature which is brought and developed since the owner was born. It does not make sense for me if someone has to leave aside his own cultural framework that has been embedded since he was born, and then he has to replace that culture with English native speakers' culture as conceptualized in CC when he is using English (Participant 5).

Participant 5 initiated her conception with rejecting the sense of communicative competence (CC) theory that was developed based on native English communication alongside native English cultures. She preferred to support intercultural communicative competence (ICC) theory since it met the nature that non-native English users' cultures would always lay beyond their particularity of English use. She also had a conception that one's culture had been a big part of his life since he was born. Thus, it was not reasonable if one's culture should constantly be changed into native English culture when he was learning or using English. The same notion was also shared by participant 3 as shown in the following interview transcript.

From CC perspective, English communication is subjected to native-speakerism. Furthermore, ICC comes up with improving the nature of English communication and makes all people with their typical multiculturalism can use English and communicate properly. I agree with ICC even if it is applied in English learning classrooms. Another important thing offered by ICC is that we have to really understand our own cultures before discerning others' cultures. I really take my stance on it (Participant 3).

As explained by participant 3, the principle of intercultural communicative competence (ICC) helped facilitate multicultural people to manage to communicate using English appropriately. Another merit offered by ICC was that it helped people deeply understand their own cultures before comprehending others' so that a proper communicative

connection was well-established while using English. ICC enhanced critical cultural understanding in this sense.

The above selected transcripts could be categorized into four meaningful points representing EFL teachers' perspectives on making intercultural communicative competence the norm of English communication. First, the teachers viewed that ICC leads English users to consider otherness while being engaged in communication. Second, they saw that ICC fits the likelihood of English communication in Indonesian context that is more to non-native sense with a cross-cultural dimension. Third, they viewed that ICC conforms to the fact that one's culture as a blueprint cannot be replaced by others. Fourth, they understood that ICC enhances critical cultural awareness.

3.4. EFL Teachers' Perspectives on Encouraging Students to be Intercultural English Users

In association with encouraging students to be intercultural English users, Participant 1 shared her perspective as follows:

In my opinion, ideally learning English also needs to run together with learning cultures, those of ours, English native speakers, and other non-native English users out of Indonesian people. Why? Because we cannot always expect that we will always use English with the native speakers. It is so much possible that we'll deal with a condition where we use English to communicate with a number of non-native English people. The same thing will also be dealt with our students in the future. Becoming intercultural English users plays a pivotal role (Participant 1).

Participant 1 brought a context that it was highly possible that English communication took place among non-native English users and occurred in a cross-cultural dimension. Thus, if referred back to the process of English learning, it was needed to learn both English language itself and the users' cultures. In addition to this, it was also considered necessary for English learning to be projected to facilitate learners to be intercultural English users. In addition, participant 3 added:

It is because I often find out while watching TV that a number of people use English using their own dialects. It seems that the case like this has been going on naturally. Russian people use English with Russian dialects, Japanese people do the same, and Indonesian people do that too. Besides dialect, the way they think and communicate has also been constructed from their own cultures. The facts as such underline the need that students are really necessary to be intercultural English users, and they should not merely be programmed to capably use English like native speakers. The students should be capable of using English to both native and non-native English speakers (Participant 3).

Participant 3 explained that a wide range of English users had their own dialects while using English. In addition to dialectal varieties, the ideational construction had by those people were also diverse depending on their own cultures as the blueprint of living that they had to socialize and negotiate meanings while they were communicating. Both dialects and ideational construction of non-native English users had entirely differed from those of native English users. Thus, to deal with such natural situation, it was necessary to be intercultural English users so that cross-cultural English use can be successfully dealt with in a proper way. Furthermore, the following transcript of interview with participant 4 addresses a similar issue.

Well, we have been dealing with a globalized era, right? It's only by surfing on the internet; the access of cross-cultural communication with people from other countries is very easy. Such condition basically requires an understanding that people's cultures are various. Then, we have to also manage to tolerate the differences. Therefore, if we really want to apply an EFL learning that is based on the natural needs and the existing facts, the logical target of EFL learning is to be intercultural English users. It is even not meaningful if we master a native-like English competence, but we finally tend to be struck for stereotype conflict because of our yardstick, as we have been staying in the concept that cannot easily accept different pronunciation produced by our non-native English interlocutors that are not on the basis of native English standard. In fact, though it is not natively standardized, we have been able to catch the representative words meant beyond the pronunciation differences (Participant 4).

Participant 4 supported if the output of EFL learning went to facilitate students to be intercultural English users because the present situation associated with English use tended more to be cross-cultural communication such as what commonly took place on the internet or social media. She agreed with encouraging students to be intercultural English users so that they could avoid stereotype conflict and maintain successful English communication.

The above selected transcripts could be classified into three meaningful points representing EFL teachers' perspectives on encouraging students to be intercultural English users. First, they viewed that this TEAC paradigm aligns with the nature of English use entailing communication with either native or non-native users. Second, they thought that this TEAC paradigm conforms to the fact that ones' culture typifies their typical English variety. Third, they viewed that this TEAC paradigm conforms to the nature of cross-cultural English use.

3.5. EFL Teachers' Perspectives on Making Bilingual and Intercultural English Users the Proper Models of EFL Learning

As regards making bilingual and intercultural English users the proper models of EFL learning, Participant 2 shared her perspective as follows:

In my opinion, one of the appropriate ways in order that the learners can be intercultural English users, besides teaching them with ICC as the communicative framework, the learners are also needed to be exposed with the models with the characteristics: they are not English native speakers, but they can use English well and master intercultural communicative competence (Participant 2).

Participant 2 in the above transcript made a case for the importance of modeling English learning with non-native intercultural English users because this way could support learners to be intercultural English users besides teaching them with intercultural communicative competence (ICC) as the communicative framework. Such point is also espoused by participant 4 as depicted in the following interview transcript.

It is because if the model is English native speakers, the modeling process tends to only be based on the audios or videos whose themes are limited so that those sources cannot be made creative by the teachers. On the other hand, if the model of EFL learning is non-native English users who master proper English and ICC, that kind of model will be easier to be found around our environment. The English teachers themselves can even be the appropriate models of EFL learning (Participant 4).

Participant 4 in the above transcript even emphasized that the appropriate model of EFL learning that met the students' context could even be the English teacher her/himself. She indicated that non-native intercultural English users as the model were likely easy to be found rather than native ones.

The above selected transcripts could be categorized into two meaningful points representing EFL teachers' perspectives on making bilingual and intercultural users the model of EFL learning. First, they viewed that this TEAC paradigm promotes the mastery of ICC. Second, they viewed that bilingual and intercultural English users can be accessed easily.

4. Discussion

As revealed in the findings of this study, all EFL teachers show their supporting perspectives on TEAC paradigms. They accept the natures of English as the world lingua franca, mutual intelligibility and comprehensibility in English communication, intercultural communicative competence as the framework of English communication, supporting students to be intercultural English users, and bilingual as well as intercultural English users as EFL learning models. Their perspectives on TEAC paradigms likely show that they will hold these paradigms while teaching English in the classroom.

The findings of the present study align with the studies undertaken by Sung (2015, 2017b) who explored non-native English users' perception of English as a lingua franca and their global identities, Fuse, Navichkova, and Alloggio (2018) who revealed non-native bilingual English users' positive perception on intelligibility preservation, Estaji and Rahimi (2018) who revealed EFL teachers' positive perception of intercultural communicative competence, and Kirkpatrick (2018) who promoted that EFL learning should encourage students to be intercultural English users, and bilingual and intercultural English users are the ideal EFL learning models.

However, many prior studies argued that mere EFL teachers' paradigmatic stance *vis-a-vis* TEAC could not highly guarantee that the teachers would consistently hold TEAC paradigms in the classrooms. The studies conducted by Deniz, Özkan, and Bayyurt (2016); and Brunsmeier (2017) have demonstrated that albeit EFL educators cognitively view cross-cultural English teaching in a positive way, their teaching practice is not consistently correlated with their perspectives. To deal with such condition, the provision of intercultural training programs are recommended for the sake of helping teachers hold the consistency of their perspectives on TEAC paradigms (Deniz et al., 2016; Oranje & Smith, 2017; Rahatlou et al., 2018; Tolosa et al., 2018). In addition, reflecting on Puntaney's (2016) study, developing intercultural-based curriculum will pave the way for the success of TEAC.

Positively oriented perspectives on TEAC paradigms shared by Indonesian EFL teachers manifest that they are sufficiently ready to hold TEAC paradigms while teaching English in the classrooms. This study invites Indonesian government to help develop Intercultural English curriculum and provide EFL teachers with intercultural English teaching training for the sake of backing up EFL teachers to fulfill Indonesian multicultural students' needs in learning English.

5. Conclusions

This study has found out that all EFL teachers show their supporting perspectives on TEAC paradigms. With respect to English as the world lingua franca, the EFL teachers accepted the fact that English users encompass all the world citizens; the English social function belongs to the world citizens; and the pervasiveness of English users occurs naturally. Concerning mutual intelligibility and comprehensibility in English communication, the EFL teachers understood that preserving mutual intelligibility and comprehensibility could connect non-native dialectical English in an appropriate way during communication; they perceived that it is impossible to totally imitate native English linguistic competence; and they opined that understandable messages or meanings are the key to communication. Associated with intercultural communicative competence, the EFL teachers viewed that ICC leads English users to consider otherness while being engaged in communication; they saw that ICC fits the likelihood of English

communication in Indonesian context that is more to non-native sense with a cross-cultural dimension; they viewed that ICC conforms to the fact that one's culture as a blueprint cannot be replaced by others; and they understood that ICC enhances critical cultural awareness. Pertinent to encouraging students to be intercultural English users, the EFL teachers viewed that this TEAC paradigm aligns with the nature of English use entailing communication with either native or non-native users; they thought that this TEAC paradigm conforms to the fact that ones' culture typifies their typical English variety; and they viewed that this TEAC paradigm conforms to the nature of cross-cultural English use. The last, with regard to making bilingual and intercultural English users the model of EFL learning, the EFL teachers viewed that this TEAC paradigm promotes the mastery of ICC; and they viewed that bilingual and intercultural English users are easily accessed models.

The present study is limited on EFL teachers' paradigmatic views *vis-a-vis* teaching English across cultures. Further studies are expected to delve into the practice of teaching English across cultures so that the data could be of great references for other Indonesian EFL teachers to apply TEAC in the classrooms.

References

- Badrkoohi, A. (2018). The relationship between demotivation and intercultural communicative competence. *Cogent Education*, 5(1), 1–14. <https://doi.org/10.1080/2331186X.2018.1531741>
- Baker, W. (2016). English as an academic lingua franca and intercultural awareness: student mobility in the transcultural university. *Language and Intercultural Communication*, 16(3), 437–451. <https://doi.org/10.1080/14708477.2016.1168053>
- Brunsmeier, S. (2017). Primary teachers' knowledge when initiating intercultural communicative competence. *TESOL Quarterly*, 51(1), 143–155. <https://doi.org/10.1002/tesq.327>
- Byram, M., & Wenger, M. (2018). Making a difference: Language teaching for intercultural and international dialogue. *Foreign Language Annals*, (December 2017), 1–12. <https://doi.org/10.1111/flan.12319>
- Deniz, E., Özkan, Y., & Bayyurt, Y. (2016). English as a lingua franca: Reflections on ELF-related issues by pre-service English language teachers in Turkey. *The Reading Matrix*, 16(2), 144–161.
- Estaji, M., & Rahimi, A. (2018). Exploring Teachers' Perception of Intercultural Communicative Competence and their Practices for Teaching Culture in EFL Classrooms. *International Journal of Society, Culture & Language*, 6(2), 1–18.
- Fang, F. G. (2017). World Englishes or English as a Lingua Franca: Where does English in China stand? *English Today*, 33(1), 19–24. <https://doi.org/10.1017/S0266078415000668>
- Fuse, A., Navichkova, Y., & Alloggio, K. (2018). Perception of intelligibility and qualities of non-native accented speakers. *Journal of Communication Disorders*, 37–51. <https://doi.org/10.1016/j.jcomdis.2017.12.006>

- Galante, A. (2015). Intercultural communicative competence in English language teaching: Towards validation of student identity. *Brazilian English Language Journal*, 6(1), 29–39. <https://doi.org/10.15448/2178-3640.2015.1.20188>
- Hamied, F. A. (2012). English in Multicultural and Multilingual Indonesian Education. *Multilingual Education*, 1(English as an International Language in Asia: Implications for Language Education), 63–78. https://doi.org/10.1007/978-94-007-4578-0_5
- Idris, M. M. (2020). Assessing intercultural competence (IC) of state junior high school English teachers in Yogyakarta. *Indonesian Journal of Applied Linguistics*, 9(3), 628–636. <https://doi.org/10.17509/ijal.v9i3.23213>
- Ishikawa, T. (2016). World Englishes and English as a Lingua Franca: Conceptualising the legitimacy of Asian people's English. *Asian Englishes*, 1–12. <https://doi.org/10.1080/13488678.2016.1171672>
- Kachru, B. B. (1990). World Englishes and applied linguistics. *World Englishes*, 9(1), 3–20.
- Kirkpatrick, A. (2018). The development of English as a lingua franca in ASEAN. In J. Jenkins, W. Baker, & M. Dewey (Eds.), *The Routledge Handbook of English as a Lingua Franca* (pp. 138–150). New York: Routledge.
- Kusumaningputri, R., & Widodo, H. P. (2018). Promoting Indonesian university students' critical intercultural awareness in tertiary EAL classrooms: The use of digital photograph-mediated intercultural tasks. *System*, 72, 49–61. <https://doi.org/10.1016/j.system.2017.10.003>
- Liu, J., & Fang, F. (Gabriel). (2017). Perceptions, awareness and perceived effects of home culture on intercultural communication: Perspectives of university students in China. *System*, 67, 25–37. <https://doi.org/10.1016/j.system.2017.04.003>
- Liu, K. L. (2019). Student perspectives on language and culture Teaching in EFL: Implications for intercultural approach. *Journal of Studies in Education*, 9(2), 1–20.
- López-Rocha, S. (2016). Intercultural communicative competence: creating awareness and promoting skills in the language classroom. In C. Gorla, O. Speicher, & S. Stollhans (Eds.), *Innovative language teaching and learning at university: enhancing participation and collaboration* (pp. 105–111).
- Matsuura, H., Rilling, S., Chiba, R., Kim, E. J., & Rini, N. (2016). Intelligibility and comprehensibility in English as a lingua franca: nativized English in Japanese. *Asian Englishes*, 1–20. <https://doi.org/10.1080/13488678.2016.1234359>
- Mauranen, A. (2018). Conceptualising ELF. In J. Jenkins, W. Baker, & D. Martin (Eds.), *The Routledge Handbook of English as a Lingua Franca* (pp. 7–24). New York: Routledge.
- Miles, M. B., Huberman, A. M., & Saldana, J. (2014). *Qualitative data analysis: A methods sourcebook*. Thousand Oaks, California 91320: SAGE Publications, Inc.
- Morganna, R., Sumardi, S., & Tarjana, S. S. (2018a). Teaching Culture: The Prevailing Stance of Indonesian EFL Teachers. *International Journal of Multicultural and Multireligious Understanding*, 5(4), 317–330. <https://doi.org/http://dx.doi.org/10.18415/ijmmu.v5i4.169>
- Morganna, R., Sumardi, & Tarjana, S. S. (2018b). Immersion vs. construction: The portrayals of culture in Indonesian EFL learning paradigm. *Journal of Language and Linguistic Studies*, 14(2), 283–304. Retrieved from <https://www.jlls.org/index.php/jlls/article/view/969/385>

- Morganna, R., Sumardi, & Tarjana, S. S. (2020). Tertiary English students' attitudes towards intercultural language learning. *Indonesian Journal of Applied Linguistics*, 9(3), 657–665. <https://doi.org/10.17509/ijal.v9i3.23216>
- Oranje, J., & Smith, L. F. (2017). Language teacher cognitions and intercultural language teaching: The New Zealand perspective. *Language Teaching Research*, 1–20. <https://doi.org/10.1177/1362168817691319>
- Punteney, K. (2016). Deliberations on the development of an intercultural competence curriculum. *Intercultural Education*, 1–14. <https://doi.org/10.1080/14675986.2016.1145457>
- Rahatlou, M. B., Fazilatfar, A. M., & Allami, H. (2018). English as a lingua franca in Iran: An attitudinal investigation into the in-service teachers. *Cogent Education*, 5(1), 1–19. <https://doi.org/10.1080/2331186X.2018.1499215>
- Rahimi, M., & Ruzrokh, S. (2016). The impact of teaching Lingua Franca Core on English as a foreign language learners' intelligibility and attitudes towards English pronunciation. *Asian Englishes*, (1–16). <https://doi.org/10.1080/13488678.2016.1173466>
- Rauschert, P., & Byram, M. (2017). Service learning and intercultural citizenship in foreign-language education. *Cambridge Journal of Education*, (July), 1–17. <https://doi.org/10.1080/0305764X.2017.1337722>
- Sherman, T. (2018). ELF and the EU/wider Europe. In J. Jenkins, W. Baker, & M. Dewey (Eds.), *The Routledge Handbook of English as a Lingua Franca* (pp. 115–125). New York: Routledge.
- Si, J. (2018). English as a native language, World Englishes and English as a lingua franca-informed materials: acceptance, perceptions and attitudes of Chinese English learners. *Asian Englishes*, 1–17. <https://doi.org/10.1080/13488678.2018.1544700>
- Sukyadi, D. (2015). The teaching of English at secondary schools in Indonesia. *Secondary School English Education in Asia: From Policy to Practice*, 123–147.
- Sung, C. C. M. (2015). ESL university students' perceptions of their global identities in English as a lingua franca communication: A case study at an international university in Hong Kong. *The Asia-Pacific Education Researcher*, 1–10. <https://doi.org/10.1007/s40299-015-0263-0>
- Sung, C. C. M. (2017a). Exploring language identities in English as a lingua franca communication: experiences of bilingual university students in Hong Kong. *International Journal of Bilingual Education and Bilingualism*, 0(0), 1–14. <https://doi.org/10.1080/13670050.2017.1347138>
- Sung, C. C. M. (2017b). Investigating perceptions of English as a lingua franca in Hong Kong: The case of university students. *English Today*, 1–7. <https://doi.org/10.1017/S0266078417000293>
- Tolosa, C., Biebricher, C., East, M., & Howard, J. (2018). Intercultural language teaching as a catalyst for teacher inquiry. *Teaching and Teacher Education*, 70, 227–235. <https://doi.org/10.1016/j.tate.2017.11.027>
- Tran, T. Q., & Duong, T. M. (2018). The effectiveness of the intercultural language communicative teaching model for EFL learners. *Asian-Pacific Journal of Second and Foreign Language Education*, 3(6), 1–17. <https://doi.org/10.1186/s40862-018-0048-0>
- Wright, S., & Zheng, L. (2018). Language as system and language as dialogic creativity: The difficulties of teaching English as a lingua franca in the classroom. In J. Jenkins, W. Baker, & M. Dewey (Eds.), *The Routledge Handbook of English as a Lingua Franca*

(pp. 506–517). New York: Routledge.

Xerri, D. (2016). Teaching and learning English in a multicultural classroom: strategies and opportunities. *Journal for Multicultural Education*, 10(1), 19–32. <https://doi.org/10.1108/JME-04-2015-0012>

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The Paradigms of Teaching English across Cultures: EFL Teachers' Perspectives

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Abstract

The present study aimed at qualitatively probing into EFL teachers' perspectives on the paradigms of teaching English across cultures (TEAC). Five EFL teachers were purposively involved as the participants. The data were garnered from in-depth interview. This study revealed a variety of perspectives addressing TEAC paradigms. All EFL teachers showed their supporting perspectives on TEAC paradigms. They accepted the natures of English as the world lingua franca, mutual intelligibility and comprehensibility in English communication, intercultural communicative competence as the framework of English communication, supporting students to be intercultural English users, and bilingual as well as intercultural English users as EFL learning models. Their perspectives on TEAC paradigms likely indicated that they would hold these paradigms while teaching English in the classrooms. Further studies are expected to delve into the practices of TEAC so that the data could be of great references for other Indonesian EFL teachers to apply TEAC in the classrooms.

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Keywords: English, culture, teaching English across cultures

1. Introduction

In line with the emergence of the 21th century, English language is not seen as the language only owned by the native speakers. The users of English have pervaded in all over the world as depicted by Kachru's (1990) model of world Englishes. His model portrays English users that fall into inner, outer, and expanding circles. The phenomenon with respect to non-native English users who outnumber those of native ones eventually makes a convincing case for the socio-functional essence of English as the world lingua franca (Baker, 2016; Deniz, Özkan, & Bayyurt, 2016; Fang, 2017; Ishikawa, 2016; Kirkpatrick, 2018; Liu, 2019; Matsuura, Rilling, Chiba, Kim, & Rini, 2016; Mauranten, 2018; Rahatlou, Fazilatfar, & Allami, 2018; Rahimi & Ruzrokh, 2016; Sherman, 2018; Si, 2018; Sung, 2015,

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2017a, 2017b; Wright & Zheng, 2018), whereby the role of English has been a language contact among the native as well as non-native users. In addition, Rauschert and Byram (2017) propound that the users of English originally come from various cultures. When English as a language contact is used by multicultural users, an intercultural dimension in the use of English is naturally created (Byram & Wenger, 2018).

Given the issues pertinent to multiculturalism and interculturalism, the phenomena of language use amid Indonesian people are associated with the aforesaid issues. In the aspect of multiculturalism, Indonesian people are multicultural *in situ* in light of their origins which are derived from various and diverse cultures (Idris, 2020; Morganna, Sumardi, & Tarjana, 2018a, 2018b, 2020; Sukyadi, 2015). In addition, in the aspect of interculturalism as the communicative dimension of language use, the nuance of multicultural nature owned by Indonesian people has an impact on the way they use languages (both Indonesian for national communication and English for international communication), wherein they will use the two languages cross-culturally (Hamied, 2012). For instance, at the national level, when someone from Bengkulu meets one from Java, the two persons will use Indonesian language based on their own language varieties affected by the respective cultures prevailing in their own common and dominant social communities. The one from Bengkulu will use a certain dialect signifying the influences of a vernacular used in Bengkulu, and that from Java will do the same by virtue of Javanese vernacular influences. Other than language varieties, the pragmatic as well as sociolinguistic conventions, worldviews, thoughts, perceptions, and other culture-related components which they share during the on-going communication will also be diverse. The encounter of diverse cultures here is what most linguists call interculturalism in communication.

Subsequently, at the international level, when English mediates the on-going interactions, the same condition even in a more sensitized nuance of interculturalism as the abovementioned example will take place since the cultural differences among the English users are more noticeably various. Thus, the encounter of English use alongside a variety of dialects and a wide range of distinct pragmatic as well as sociolinguistic conventions, thoughts, perceptions, worldviews, and other cultural values will more vividly portray the presence of interculturalism or an intercultural dimension. It makes a convincing case that the use of English internationally always takes place within an intercultural dimension.

For Indonesian people, or let us say students in the realm of education, the English education with which they will be engaged and dealt should conform to their multicultural nature and the interculturalism of English use. This condition calls for Indonesian EFL teachers' agreement on the paradigms of teaching English across cultures (hereafter as TEAC). Many prior studies have addressed the issue of TEAC, and some substantial TEAC paradigms could be absorbed from their discussions.

TEAC views English as the world lingua franca (WLF) because it is the representation of English used by people from a variety of cultural origins all over the world (Kirkpatrick, 2018; Liu & Fang, 2017; Mauranen, 2018; Sung, 2017a). Grounded in this paradigm, EFL teachers are demanded to design English materials that drive students to face cultural diversities so that students are engaged in communication within the dimension of English as WLF (Si, 2018) with its cultural differences (Xerri, 2016). In addition, the need of English education should go beyond the essences of native-speakerism (Baker, 2016). To do so, an externally pedagogical empowerment developed to help EFL teachers improve their competences of English as WLF is also needed so that the essence of English as WLF is well-embedded in their teaching paradigm (Rahatlou et al., 2018).

Because TEAC views English as WLF, the norm of linguistic competence refers to mutual intelligibility and comprehensibility (Kirkpatrick, 2018; Sherman, 2018; Wright & Zheng, 2018). The present pluralistic contexts of English communication justify the importance of intelligibility and comprehensibility maintenance while communicating using English across cultures (Matsuura et al., 2016; Rahimi & Ruzrokh, 2016). Thus, EFL teachers need to train students in order to be able to maintain their intelligible and comprehensible English use. Besides, TEAC also adheres to intercultural communicative competence which ideally frames English communication (Byram & Wenger, 2018; Galante, 2015; Kusumaningputri & Widodo, 2018; López-Rocha, 2016; Rauschert & Byram, 2017; Tolosa, Biebricher, East, & Howard, 2018; Tran & Duong, 2018). A study conducted by Badrkoohi (2018) revealed that English learning that engages students into the process of developing intercultural communicative competence can improve students' learning motivation. Subsequently, TEAC encourages students to be intercultural English users (Kirkpatrick, 2018), and bilingual and intercultural English users are the proper models of EFL learning (Kirkpatrick, 2018).

The foregoing highlight can be summarized that at least TEAC is grounded in five paradigms to be held in EFL classrooms. They extend to viewing English as WLF, prioritizing mutual intelligibility and comprehensibility in English communication, making intercultural communicative competence the norm of English communication, encouraging students to be intercultural English users, and making bilingual and intercultural English users the proper models of EFL learning. These five paradigms are required to be understood by Indonesian EFL teachers given that Indonesian students are multicultural, and English education calls for the application of TEAC in Indonesia. TEAC cannot instantly be applied before Indonesian EFL teachers embed TEAC paradigms in their pedagogical perspectives. Thus, the present study is designed to explore Indonesian EFL teachers' perspectives on the paradigms of TEAC.

2. Method

2.1. Design

This study qualitatively explored Indonesian EFL teachers' perspectives on the paradigms of TEAC. The rationale beyond the selection of this qualitative method was because this study would like to probe into the depth alongside the width of the expected data and to present appropriate detailed interpretations as well as discussion of the data. The findings revealed in this study could not be wholly generalized as some numerical data commonly do in a quantitative study. Nonetheless, this study made an effort to present the findings which were probably quite generalizable at some point if further studies would like to conform to the detailed procedures or criteria applied in this study.

2.2. Participants

The present study involved five experienced Indonesian EFL teachers who had been teaching English for more than 7 years. They aged between 30 and 40 years old. Two of them taught English in Bengkulu, and the rest three teachers taught English in central Java. They were incorporated as the participants purposively. Before officially incorporating them in this study, a couple of criteria were assigned to select them. Those criteria fell into: 1) they were adequately experienced in teaching English as a foreign language. 2) The students they taught came from various cultures. 3) They had sufficient understanding of TEAC. 4) They were interested in implementing TEAC based on their own understanding and pedagogical proficiency. In turn, 5) they were willing to voluntarily join this study as the participants.

2.3. The Technique of Collecting Data

The data were solicited from in-depth interview. The interview took place from March to May 2019. EFL teachers from Bengkulu were interviewed in a face-to-face mode, and those from central java were interviewed using Whatsapp video call. The discourse of interview was oriented towards five TEAC pedagogical paradigms: viewing English as WLF, prioritizing mutual intelligibility and comprehensibility in English communication, making intercultural communicative competence the norm of English communication, encouraging students to be intercultural English users, and making bilingual and intercultural English users the proper models of EFL learning. All information gained from interview was recorded and further transcribed. Pursuing the data was carried out by re-interviewing the participants in order to reach the data credibility.

2.4. The Technique of Data Analysis

This study made use of Miles, Huberman, and Saldana's (2014) interactive model to analyze the data. Grounded in this model, this study executed four steps consisting of data collection, data condensation, data display, and verifying conclusion. As informed in the foregoing, the data were collected from in-depth interview. The raw data recorded were

further transcribed and condensed by coding them as well as managing them resting upon the valuable themes that emerged. Pertinent to data display, the data were presented in the form of some presentations of the selected transcripts followed by the proper related interpretations as well as discussions. The last, the conclusion representing the summary of the overall data was drawn.

3. Findings

The data associated with EFL teachers' perspectives on TEAC paradigms were garnered from in-depth interview conducted from March to May 2019. The following presentation displays a number of transcripts of interview deliberately selected to represent the overall participants of this study. Some related interpretations and discussions that follow the transcripts are also provided.

3.1. *EFL Teachers' Perspectives on English as the World Lingua Franca*

The first TEAC paradigm negotiated to the participants was English as the world lingua franca (WLF). The following transcript of interview with participant 1 is properly selected to represent others.

The shift of English language status as the world lingua franca is very logical, and in fact what occurs today is as such. I agree with this condition because English users incorporate all people, or in other words, we can say that the users entail all of the world citizens. Then, in fact, we indeed use English based on the way we think respectively. We need to hold this view when we teach English (Participant 1).

Participant 1 viewed the status of English as the world lingua franca based on a real present situation where English was socially used not only by its native speakers but also by all non-native English users in the world. As an English teacher, she made this view one of her language paradigms. Another perspective addressed the conceptualization appertaining to the social function of English which belonged to the world citizens. Mostly any chance of international communication either with native or non-native English users was mediated by English language. In addition, participant 5 shared her perspective as follows:

It is because if we look at the existing fact, English language plays a role as a primary medium of international communication. It is automatic that English does not merely belong to certain countries, but it has naturally been used in the majority of countries in the world (Participant 5).

Participant 5 in the above transcripts drew on the facts that the tool of international communication was English, and such condition inferred that English was the world people's language. Those reasons made a convincing case for the social function of English

as the language that did not merely belong to its native speakers. The other perspective on English as the world lingua franca was shared by participant 4 as follows:

Viewing the fact that English language has increasingly developed. Thus, we will not view English as the language belonging to American or British people merely. The happening situation indicates that the English language users are so much pervasive, and by nature the cultures of the users will automatically give impact on the way English language is used. It means that we need to be flexible to see this status shift (Participant 4).

Participant 4 viewed that the extensive use of English had been successfully grown so that by nature English was used by all people with their own cultural framework.

The above selected transcripts could be categorized into three meaningful points representing EFL teachers' perspectives on WLF. First, the teachers accepted the fact that English users encompass all of the world citizens. Second, the English social function belongs to the world citizens. Third, pervasiveness of English users occurs naturally. Their perspectives indicated that they hold WLF as a TEAC paradigm.

3.2. EFL Teachers' Perspectives on Mutual Intelligibility and Comprehensibility in English Communication

As regards this paradigm, participant 1 shared her perspective on intelligibility and comprehensibility as follows:

I personally ever experienced things related to intelligibility and comprehensibility. That was when I met a friend who was not Indonesian but also not English native speaker. When using English, none of us had a native-like competence since we had different cultures and none of our cultures were similar to English native speakers'. Thus, the meaning negotiation that we dealt with during communication referred to intelligibility and comprehensibility as the standard to make a proper communicative connection. We did not focus on whether the English pronunciation, grammar, or vocabularies that we used were correct or not based on the standard of native English, but we focused on whether our ideas were appropriately conveyed and could be respectively understood or not. So, while teaching English, we should ideally always remember that intelligibility and comprehensibility are the most important to be preserved (Participant 1).

Participant 1 in the above transcript indicated that in a real English use, when used by non-native English users, never would the users have a precise native-like competence. The users' culture, one brought since the users were born as their blueprint of life, would be the framework of their English use. Thus, the meaning negotiation that would be undertaken referred more to the horizon of intelligible and comprehensible messages. That was why the participant 1 relied on intelligibility and comprehensibility as the convenient

yardstick to make a good interactive connection while communicating using English. In turn, participant 2 added:

Yes, because in using a language which is not our own language or in other words a foreign language, we will never be able to imitate the native speakers' competence. Like linguistic competence, for example, we will exactly produce utterances from that foreign language with the dialect output on the basis of our own mother language. Even though, let us say, there is someone who manages to imitate the foreign language pronunciation similar to its native speakers', other elements such as vocabularies and grammar are usually produced based on the ideational construction made of his mother language which is transferred to that foreign language output. Therefore, the most ideal conception is to refer to intelligibility and comprehensibility as the yardstick of linguistic competence (Participant 2).

Participant 2 explained that the case with respect to linguistic competence while using a foreign language (English) would always be determined by the users' cultures. She exemplified it with the presence of mother language influence towards people's (non-native English users) use of English language. Their mother languages referred to a part of their own cultures since those languages played a role as a kind of blueprint of living besides other types of cultures they had. Thus, when they used English, the product of linguistic competence such as dialect (entailing their particular varieties of English pronunciation, vocabularies, and grammar) would be highly determined by the characteristic of their mother language linguistic competence. Participant 2 even believed that although there was someone that seemed to capably use English like native speakers, it was limited on his efficacy to pronounce English in a proximate way. However, the other component like the ideational construction of his English use would be underlain by his mother language, in other words, his culture. Subsequently, participant 3 also accounted for her perspective as follows:

For me, I personally see that the most ideal point in communication is meaning conveyance. It means that if we deliver something, and the interlocutor can understand what we share, it's been enough. Concerning linguistic competence in English use, we can see that people from each country in the world also have their own accents. Thus, I think, it is not a must to have a linguistic competence which precisely resembles the Standard English, but it's ideal to refer to intelligibility and comprehensibility (Participant 3).

Participant 3 explained that the fundamental principle of English communication was meaning conveyance. The adequacy of meaning conveyance extended to how far the given meanings could be accepted and understood by the interlocutors. If the yardstick of English communication was subjected to English native speakers' linguistic competence, it would be impossible to do by non-native English users since they had a variety of English accents as highly influenced by their own mother languages and cultures. This made a case for

shaping the adequacy of English communication into the meaning conveyance whose linguistic competence was represented by to what extent the English utterances reached the sense of intelligibility and comprehensibility.

The above selected transcripts could be classified into three meaningful points representing EFL teachers' perspectives on mutual intelligibility and comprehensibility in English communication. First, the teachers understood that preserving mutual indelibility and comprehensibility could connect non-native dialectical English in an appropriate way during communication. Second, they perceived that it is impossible to totally imitate native English linguistic competence. Third, they opined that understandable messages or meanings are the key to communication..

3.3. EFL Teachers' Perspectives on Making Intercultural Communicative Competence the Norm of English Communication

With respect to making intercultural communicative competence the norm of English communication, Participant 1 came up with her perspective as follows:

It is because in fact the English language users consist of people from diverse cultures so that in communication we need to consider where our interlocutors come from, what their cultures are like, and so on. Thus, I like ICC as English communicative framework (Participant 1).

Participant 1 accounted for the importance of intercultural communicative competence (ICC) because the cultures or origins had by the interlocutors in English communication as led by ICC principle were the need and necessity to successfully make a proper connection in English communication. ICC in fact facilitated non-native English users for that sort of need. Participant 3 added:

CC formulated on the basis of English native speakers' cultures is too specific. In reality, we Indonesian people more often meet and communicate using English with people who are not English native speakers. We even seldom encounter English native speakers. Then, those non-native English speakers that we meet absolutely come from different cultures. By that, why should we rely on the framework of CC that is entirely native-speakerism while mostly the people who communicate using English with us are non-native ones? And they use their own cultures as the framework of their English use. In my opinion, ICC that is purposefully designed for cross-cultural communication is conveniently ideal to be the English communicative framework (Participant 3).

Participant 3 in the above transcript criticized communicative competence (CC) principle because this principle was merely oriented to English use framed by native English cultures. In the meantime, as found in the existing fact that occurred in Indonesia, Indonesian people more often met and communicated with non-native English users rather

than native ones. It meant that predominant English communication that took place around Indonesian people is the communication with non-native English users along with their cultural varieties as the communicative framework. Thus, to reach a successful English communication, ICC principle with its otherness sensitivity played a pivotal role to facilitate Indonesian people to be good English users. Subsequently, participant 5 also came up with her perspective as follows:

CC is fundamentally framed to lead us to communicate like English native speakers, doesn't it? For me, it's better to rely on ICC since in reality not all people use English on the basis of English native speakers' culture as conceptualized in the CC framework. Furthermore, in my opinion, culture refers to the nature which is brought and developed since the owner was born. It does not make sense for me if someone has to leave aside his own cultural framework that has been embedded since he was born, and then he has to replace that culture with English native speakers' culture as conceptualized in CC when he is using English (Participant 5).

Participant 5 initiated her conception with rejecting the sense of communicative competence (CC) theory that was developed based on native English communication alongside native English cultures. She preferred to support intercultural communicative competence (ICC) theory since it met the nature that non-native English users' cultures would always lay beyond their particularity of English use. She also had a conception that one's culture had been a big part of his life since he was born. Thus, it was not reasonable if one's culture should constantly be changed into native English culture when he was learning or using English. The same notion was also shared by participant 3 as shown in the following interview transcript.

From CC perspective, English communication is subjected to native-speakerism. Furthermore, ICC comes up with improving the nature of English communication and makes all people with their typical multiculturalism can use English and communicate properly. I agree with ICC even if it is applied in English learning classrooms. Another important thing offered by ICC is that we have to really understand our own cultures before discerning others' cultures. I really take my stance on it (Participant 3).

As explained by participant 3, the principle of intercultural communicative competence (ICC) helped facilitate multicultural people to manage to communicate using English appropriately. Another merit offered by ICC was that it helped people deeply understand their own cultures before comprehending others' so that a proper communicative connection was well-established while using English. ICC enhanced critical cultural understanding in this sense.

The above selected transcripts could be categorized into four meaningful points representing EFL teachers' perspectives on making intercultural communicative competence the norm of English communication. First, the teachers viewed that ICC leads

English users to consider otherness while being engaged in communication. Second, they saw that ICC fits the likelihood of English communication in Indonesian context that is more to non-native sense with a cross-cultural dimension. Third, they viewed that ICC conforms to the fact that one's culture as a blueprint cannot be replaced by others. Fourth, they understood that ICC enhances critical cultural awareness.

3.4. EFL Teachers' Perspectives on Encouraging Students to be Intercultural English Users

In association with encouraging students to be intercultural English users, Participant 1 shared her perspective as follows:

In my opinion, ideally learning English also needs to run together with learning cultures, those of ours, English native speakers, and other non-native English users out of Indonesian people. Why? Because we cannot always expect that we will always use English with the native speakers. It is so much possible that we'll deal with a condition where we use English to communicate with a number of non-native English people. The same thing will also be dealt with our students in the future. Becoming intercultural English users plays a pivotal role (Participant 1).

Participant 1 brought a context that it was highly possible that English communication took place among non-native English users and occurred in a cross-cultural dimension. Thus, if referred back to the process of English learning, it was needed to learn both English language itself and the users' cultures. In addition to this, it was also considered necessary for English learning to be projected to facilitate learners to be intercultural English users. In addition, participant 3 added:

It is because I often find out while watching TV that a number of people use English using their own dialects. It seems that the case like this has been going on naturally. Russian people use English with Russian dialects, Japanese people do the same, and Indonesian people do that too. Besides dialect, the way they think and communicate has also been constructed from their own cultures. The facts as such underline the need that students are really necessary to be intercultural English users, and they should not merely be programmed to capably use English like native speakers. The students should be capable of using English to both native and non-native English speakers (Participant 3).

Participant 3 explained that a wide range of English users had their own dialects while using English. In addition to dialectical varieties, the ideational construction had by those people were also diverse depending on their own cultures as the blueprint of living that they had to socialize and negotiate meanings while they were communicating. Both dialects and ideational construction of non-native English users had entirely differed from those of native English users. Thus, to deal with such natural situation, it was necessary to be intercultural English users so that cross-cultural English use can be successfully

dealt with in a proper way. Furthermore, the following transcript of interview with participant 4 addresses a similar issue.

Well, we have been dealing with a globalized era, right? It's only by surfing on the internet; the access of cross-cultural communication with people from other countries is very easy. Such condition basically requires an understanding that people's cultures are various. Then, we have to also manage to tolerate the differences. Therefore, if we really want to apply an EFL learning that is based on the natural needs and the existing facts, the logical target of EFL learning is to be intercultural English users. It is even not meaningful if we master a native-like English competence, but we finally tend to be struck for stereotype conflict because of our yardstick, as we have been staying in the concept that cannot easily accept different pronunciation produced by our non-native English interlocutors that are not on the basis of native English standard. In fact, though it is not natively standardized, we have been able to catch the representative words meant beyond the pronunciation differences (Participant 4).

Participant 4 supported if the output of EFL learning went to facilitate students to be intercultural English users because the present situation associated with English use tended more to be cross-cultural communication such as what commonly took place on the internet or social media. She agreed with encouraging students to be intercultural English users so that they could avoid stereotype conflict and maintain successful English communication.

The above selected transcripts could be classified into three meaningful points representing EFL teachers' perspectives on encouraging students to be intercultural English users. First, they viewed that this TEAC paradigm aligns with the nature of English use entailing communication with either native or non-native users. Second, they thought that this TEAC paradigm conforms to the fact that ones' culture typifies their typical English variety. Third, they viewed that this TEAC paradigm conforms to the nature of cross-cultural English use.

3.5. EFL Teachers' Perspectives on Making Bilingual and Intercultural English Users the Proper Models of EFL Learning

As regards making bilingual and intercultural English users the proper models of EFL learning, Participant 2 shared her perspective as follows:

In my opinion, one of the appropriate ways in order that the learners can be intercultural English users, besides teaching them with ICC as the communicative framework, the learners are also needed to be exposed with the models with the characteristics: they are not English native speakers, but they can use English well and master intercultural communicative competence (Participant 2).

Participant 2 in the above transcript made a case for the importance of modeling English learning with non-native intercultural English users because this way could support learners to be intercultural English users besides teaching them with intercultural communicative competence (ICC) as the communicative framework. Such point is also espoused by participant 4 as depicted in the following interview transcript.

It is because if the models are English native speakers, the modeling process tends to only be based on the audios or videos whose themes are limited so that those sources cannot be made creative by the teachers. On the other hand, if the models of EFL learning are non-native English users who master proper English and ICC, the models as such will be easier to be found around our environment. The English teachers themselves can even be the appropriate models of EFL learning (Participant 4).

Participant 4 in the above transcript even emphasized that the appropriate models of EFL learning that met the students' context could even be the English teachers themselves. She indicated that non-native intercultural English users as the models were likely easy to be found rather than native ones.

The above selected transcripts could be categorized into two meaningful points representing EFL teachers' perspectives on making bilingual and intercultural users the models of EFL learning. First, they viewed that this TEAC paradigm promotes the mastery of ICC. Second, they viewed that bilingual and intercultural English users can be accessed easily.

4. Discussion

As revealed in the findings of this study, all EFL teachers show their supporting perspectives on TEAC paradigms. They accept the natures of English as the world lingua franca, mutual intelligibility and comprehensibility in English communication, intercultural communicative competence as the framework of English communication, supporting students to be intercultural English users, and bilingual as well as intercultural English users as EFL learning models. Their perspectives on TEAC paradigms likely show that they will hold these paradigms while teaching English in the classroom.

The findings of the present study align with the studies undertaken by Sung (2015, 2017b) who explored non-native English users' perception of English as a lingua franca and their global identities, Fuse, Navichkova, and Alloggio (2018) who revealed non-native bilingual English users' positive perception on intelligibility preservation, Estaji and Rahimi (2018) who revealed EFL teachers' positive perception of intercultural communicative competence, and Kirkpatrick (2018) who promoted that EFL learning

should encourage students to be intercultural English users, and bilingual and intercultural English users are the ideal EFL learning models.

However, many prior studies argued that mere EFL teachers' paradigmatic stance *vis-a-vis* TEAC could not highly guarantee that the teachers would consistently hold TEAC paradigms in the classrooms. The studies conducted by Deniz, Özkan, and Bayyurt (2016); and Brunsmeier (2017) have demonstrated that albeit EFL educators cognitively view cross-cultural English teaching in a positive way, their teaching practices are not consistently correlated with their perspectives. To deal with such condition, the provision of intercultural training programs are recommended for the sake of helping teachers hold the consistency of their perspectives on TEAC paradigms (Deniz et al., 2016; Oranje & Smith, 2017; Rahatlou et al., 2018; Tolosa et al., 2018). In addition, reflecting on Puntaney's (2016) study, developing intercultural-based curriculum will pave the way for the success of TEAC.

Positively oriented perspectives on TEAC paradigms shared by Indonesian EFL teachers manifest that they are sufficiently ready to hold TEAC paradigms while teaching English in the classrooms. This study invites Indonesian government to help develop Intercultural English curriculum and provide EFL teachers with intercultural English teaching training for the sake of backing up EFL teachers to fulfill Indonesian multicultural students' needs in learning English.

5. Conclusions

This study has found out that all EFL teachers show their supporting perspectives on TEAC paradigms. With respect to English as the world lingua franca, the EFL teachers accepted the fact that English users encompass all of the world citizens; the English social function belongs to the world citizens; and the pervasiveness of English users occurs naturally. Concerning mutual intelligibility and comprehensibility in English communication, the EFL teachers understood that preserving mutual intelligibility and comprehensibility could connect non-native dialectical English in an appropriate way during communication; they perceived that it is impossible to totally imitate native English linguistic competence; and they opined that understandable messages or meanings are the key to communication. Associated with intercultural communicative competence, the EFL teachers viewed that ICC leads English users to consider otherness while being engaged in communication; they saw that ICC fits the likelihood of English communication in Indonesian context that is more to non-native sense with a cross-cultural dimension; they viewed that ICC conforms to the fact that one's culture as a blueprint cannot be replaced by others'; and they understood that ICC enhances critical cultural awareness. Pertinent to encouraging students to be intercultural English users, the EFL teachers viewed that this TEAC paradigm aligns with the nature of English use entailing communication with either native or non-native users; they thought that this TEAC paradigm conforms to the

fact that ones' culture typifies their typical English variety; and they viewed that this TEAC paradigm conforms to the nature of cross-cultural English use. The last, with regard to making bilingual and intercultural English users the models of EFL learning, the EFL teachers viewed that this TEAC paradigm promotes the mastery of ICC; and they viewed that bilingual and intercultural English users are easily accessed models.

The present study is limited on EFL teachers' paradigmatic views *vis-a-vis* teaching English across cultures. Further studies are expected to delve into the practices of teaching English across cultures so that the data could be of great references for other Indonesian EFL teachers to apply TEAC in the classrooms.

References

- Badrkoohi, A. (2018). The relationship between demotivation and intercultural communicative competence. *Cogent Education*, 5(1), 1–14. <https://doi.org/10.1080/2331186X.2018.1531741>
- Baker, W. (2016). English as an academic lingua franca and intercultural awareness: student mobility in the transcultural university. *Language and Intercultural Communication*, 16(3), 437–451. <https://doi.org/10.1080/14708477.2016.1168053>
- Brunsmeier, S. (2017). Primary teachers' knowledge when initiating intercultural communicative competence. *TESOL Quarterly*, 51(1), 143–155. <https://doi.org/10.1002/tesq.327>
- Byram, M., & Wenger, M. (2018). Making a difference: Language teaching for intercultural and international dialogue. *Foreign Language Annals*, (December 2017), 1–12. <https://doi.org/10.1111/flan.12319>
- Deniz, E., Özkan, Y., & Bayyurt, Y. (2016). English as a lingua franca: Reflections on ELF-related issues by pre-service English language teachers in Turkey. *The Reading Matrix*, 16(2), 144–161.
- Estaji, M., & Rahimi, A. (2018). Exploring Teachers' Perception of Intercultural Communicative Competence and their Practices for Teaching Culture in EFL Classrooms. *International Journal of Society, Culture & Language*, 6(2), 1–18.
- Fang, F. G. (2017). World Englishes or English as a Lingua Franca: Where does English in China stand? *English Today*, 33(1), 19–24. <https://doi.org/10.1017/S0266078415000668>
- Fuse, A., Navichkova, Y., & Alloggio, K. (2018). Perception of intelligibility and qualities of non-native accented speakers. *Journal of Communication Disorders*, 37–51. <https://doi.org/10.1016/j.jcomdis.2017.12.006>
- Galante, A. (2015). Intercultural communicative competence in English language teaching: Towards validation of student identity. *Brazilian English Language Journal*, 6(1), 29–39. <https://doi.org/10.15448/2178-3640.2015.1.20188>
- Hamied, F. A. (2012). English in Multicultural and Multilingual Indonesian Education. *Multilingual Education*, 1(English as an International Language in Asia: Implications for Language Education), 63–78. https://doi.org/10.1007/978-94-007-4578-0_5
- Idris, M. M. (2020). Assessing intercultural competence (IC) of state junior high school English teachers in Yogyakarta. *Indonesian Journal of Applied Linguistics*, 9(3), 628–636. <https://doi.org/10.17509/ijal.v9i3.23213>

- Ishikawa, T. (2016). World Englishes and English as a Lingua Franca: Conceptualising the legitimacy of Asian people's English. *Asian Englishes*, 1–12. <https://doi.org/10.1080/13488678.2016.1171672>
- Kachru, B. B. (1990). World Englishes and applied linguistics. *World Englishes*, 9(1), 3–20.
- Kirkpatrick, A. (2018). The development of English as a lingua franca in ASEAN. In J. Jenkins, W. Baker, & M. Dewey (Eds.), *The Routledge Handbook of English as a Lingua Franca* (pp. 138–150). New York: Routledge.
- Kusumaningputri, R., & Widodo, H. P. (2018). Promoting Indonesian university students' critical intercultural awareness in tertiary EAL classrooms: The use of digital photograph-mediated intercultural tasks. *System*, 72, 49–61. <https://doi.org/10.1016/j.system.2017.10.003>
- Liu, J., & Fang, F. (Gabriel). (2017). Perceptions, awareness and perceived effects of home culture on intercultural communication: Perspectives of university students in China. *System*, 67, 25–37. <https://doi.org/10.1016/j.system.2017.04.003>
- Liu, K. L. (2019). Student perspectives on language and culture Teaching in EFL: Implications for intercultural approach. *Journal of Studies in Education*, 9(2), 1–20.
- López-Rocha, S. (2016). Intercultural communicative competence: creating awareness and promoting skills in the language classroom. In C. Gorla, O. Speicher, & S. Stollhans (Eds.), *Innovative language teaching and learning at university: enhancing participation and collaboration* (pp. 105–111).
- Matsuura, H., Rilling, S., Chiba, R., Kim, E. J., & Rini, N. (2016). Intelligibility and comprehensibility in English as a lingua franca: nativized English in Japanese. *Asian Englishes*, 1–20. <https://doi.org/10.1080/13488678.2016.1234359>
- Mauranen, A. (2018). Conceptualising ELF. In J. Jenkins, W. Baker, & D. Martin (Eds.), *The Routledge Handbook of English as a Lingua Franca* (pp. 7–24). New York: Routledge.
- Miles, M. B., Huberman, A. M., & Saldana, J. (2014). *Qualitative data analysis: A methods sourcebook*. Thousand Oaks, California 91320: SAGE Publications, Inc.
- Morganna, R., Sumardi, S., & Tarjana, S. S. (2018a). Teaching Culture: The Prevailing Stance of Indonesian EFL Teachers. *International Journal of Multicultural and Multireligious Understanding*, 5(4), 317–330. <https://doi.org/http://dx.doi.org/10.18415/ijmmu.v5i4.169>
- Morganna, R., Sumardi, & Tarjana, S. S. (2018b). Immersion vs. construction: The portrayals of culture in Indonesian EFL learning paradigm. *Journal of Language and Linguistic Studies*, 14(2), 283–304. Retrieved from <https://www.jlls.org/index.php/jlls/article/view/969/385>
- Morganna, R., Sumardi, & Tarjana, S. S. (2020). Tertiary English students' attitudes towards intercultural language learning. *Indonesian Journal of Applied Linguistics*, 9(3), 657–665. <https://doi.org/10.17509/ijal.v9i3.23216>
- Oranje, J., & Smith, L. F. (2017). Language teacher cognitions and intercultural language teaching: The New Zealand perspective. *Language Teaching Research*, 1–20. <https://doi.org/10.1177/1362168817691319>
- Punteney, K. (2016). Deliberations on the development of an intercultural competence curriculum. *Intercultural Education*, 1–14. <https://doi.org/10.1080/14675986.2016.1145457>
- Rahatlou, M. B., Fazilatfar, A. M., & Allami, H. (2018). English as a lingua franca in Iran:

- An attitudinal investigation into the in-service teachers. *Cogent Education*, 5(1), 1–19. <https://doi.org/10.1080/2331186X.2018.1499215>
- Rahimi, M., & Ruzrokh, S. (2016). The impact of teaching Lingua Franca Core on English as a foreign language learners' intelligibility and attitudes towards English pronunciation. *Asian Englishes*, (1–16). <https://doi.org/10.1080/13488678.2016.1173466>
- Rauschert, P., & Byram, M. (2017). Service learning and intercultural citizenship in foreign-language education. *Cambridge Journal of Education*, (July), 1–17. <https://doi.org/10.1080/0305764X.2017.1337722>
- Sherman, T. (2018). ELF and the EU/wider Europe. In J. Jenkins, W. Baker, & M. Dewey (Eds.), *The Routledge Handbook of English as a Lingua Franca* (pp. 115–125). New York: Routledge.
- Si, J. (2018). English as a native language, World Englishes and English as a lingua franca-informed materials: acceptance, perceptions and attitudes of Chinese English learners. *Asian Englishes*, 1–17. <https://doi.org/10.1080/13488678.2018.1544700>
- Sukyadi, D. (2015). The teaching of English at secondary schools in Indonesia. *Secondary School English Education in Asia: From Policy to Practice*, 123–147.
- Sung, C. C. M. (2015). ESL university students' perceptions of their global identities in English as a lingua franca communication: A case study at an international university in Hong Kong. *The Asia-Pacific Education Researcher*, 1–10. <https://doi.org/10.1007/s40299-015-0263-0>
- Sung, C. C. M. (2017a). Exploring language identities in English as a lingua franca communication: experiences of bilingual university students in Hong Kong. *International Journal of Bilingual Education and Bilingualism*, 0(0), 1–14. <https://doi.org/10.1080/13670050.2017.1347138>
- Sung, C. C. M. (2017b). Investigating perceptions of English as a lingua franca in Hong Kong: The case of university students. *English Today*, 1–7. <https://doi.org/10.1017/S0266078417000293>
- Tolosa, C., Biebricher, C., East, M., & Howard, J. (2018). Intercultural language teaching as a catalyst for teacher inquiry. *Teaching and Teacher Education*, 70, 227–235. <https://doi.org/10.1016/j.tate.2017.11.027>
- Tran, T. Q., & Duong, T. M. (2018). The effectiveness of the intercultural language communicative teaching model for EFL learners. *Asian-Pacific Journal of Second and Foreign Language Education*, 3(6), 1–17. <https://doi.org/10.1186/s40862-018-0048-0>
- Wright, S., & Zheng, L. (2018). Language as system and language as dialogic creativity: The difficulties of teaching English as a lingua franca in the classroom. In J. Jenkins, W. Baker, & M. Dewey (Eds.), *The Routledge Handbook of English as a Lingua Franca* (pp. 506–517). New York: Routledge.
- Xerri, D. (2016). Teaching and learning English in a multicultural classroom: strategies and opportunities. *Journal for Multicultural Education*, 10(1), 19–32. <https://doi.org/10.1108/JME-04-2015-0012>

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Personality traits as indicators of the development of intercultural communication competence

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Abstract

This paper draws on a PhD thesis that investigates the relationship between personality traits and Intercultural Communication Competence (ICC). This research explores if specific personality traits of international students can enhance the success/failure of ICC development and in how far can specific personality traits influence the ability of international students to communicate effectively in an intercultural context. It presents a case study on 95 international undergraduates studying in Saudi Arabia. Based on the Five-Factor Model (FFM) of Personality, Assessment of Intercultural Competence (AIC) to measure participants' ICC and the International Personality Item Pool IPIP-NEO-120 to identify their personality traits of Neuroticism, Extraversion, Openness to Experience, Conscientiousness and Agreeableness, were administered to explore the relationship between personality traits and ICC. It found that Openness and Conscientiousness had a positive correlation with ICC with while Neuroticism negatively correlated with ICC. It also found no correlation between Extroversion and Agreeableness and the development of ICC.

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Keywords: Intercultural Communication Competence; Personality Traits; Five-Factor Model; Saudi Arabia

1. Introduction

In the age of globalization, Intercultural Communication Competence (ICC) development is a necessity (Emert, 2008, p. 41; Moodian, 2008, p. 3; Xiaochi, 2012, p. 62), due to changes in societies, which include new global business, increasing migration and all forms of new technology. Undoubtedly, ICC is also an essential feature of human development, as it develops multicultural vision, enriches worldviews, facilitates successful communication and business, boosts the bond of humanity and promotes an

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international perspective. In the context of international students' mobility, Schmid (as cited in Xiaochi, 2012, p. 64) characterizes ICC as "the fundamental acceptance of people who are different to oneself outside one's own culture/the ability to interact with them in a genuinely constructive manner which is free of negative attitude (e.g. prejudice, defensiveness apathy, aggression etc. / the ability to create a synthesis, something which is neither 'mine' nor 'yours'".

It is commonly argued in the existing body of literature that personality traits play the central role in a person's ability to interact with others, behave in a certain way and deal with new situations when entering new cultures (van Driel & Gabrenya, 2012, p. 874). For example, Geeraert and Demoulin (2013, p. 1245) find that a person's host country knowledge, psychological adjustment and homesickness were among the most important factors that impact his/her adaptability to a new cultural environment. These findings are in keeping with Bardi and Guerra (2011, p. 917) who also find that the extent to which social actors are aware of the host country's culture, customs and traditions predict their ability to adapt. In addition, it is hypothesised that personality traits are among elements that may be involved in dealing with cultural differences and affect a decision-making process (Liles, 2016, n.p.). Consequently, it could be theorised that understanding the relationship between personality traits and ICC development will give valuable clues about the ways to "create a composite personality profile" (McCrae, 2001, 832) and reinforce the formation of ICC in international students. Thus, this study attempts to explore the potential impact of personality traits on the development of international students' ICC in the Kingdom of Saudi Arabia.

1.1. Research problem

Prior research has mainly focused on measuring ICC and on assessing the impact of studying abroad on the development of this competence (Deardorff, 2006, p. 245; Salisbury, 2011, p. 10; Stemler et al., 2014, p. 26). Although some researchers (van der Zee & van Oudenhoven, 2013, p. 929; Leung et al., 2014, p. 489) have addressed the issue of psychological factors and have identified traits which help students effectively engage in intercultural communication, the issue of personality traits is significantly under researched. Thus, the present study intends to fill the gap in the area of ICC and expand the existing research.

In addition, the literature identifies significant gaps in the research on ICC in Saudi Arabia. The choice of the Saudi context is justified by two factors specified by Karolak and Guta (2014): 1) the growth of intercultural communication in Saudi Arabia due to the country's shift towards a knowledge-based economy; 2) the increase in the number of scholarship programmes that attract international students. Despite these factors, there is a shortage of research and scant empirical evidence on the development of ICC within the Saudi context. More specifically, the reviewed literature provides evidence on the

international students' ICC in some countries of the Arab world. But, to the best of my knowledge, there is no research found on assessing international students' ICC in Saudi Arabia. Hence, it is important to fill this gap and carry out studies to explore the impact of personality traits on ICC of international students who come to Saudi Arabia to learn its language and culture. Given that each intercultural setting has unique characteristics and nuances and that the majority of ICC models and personality traits have not been properly tested, a theory-practice gap emerges.

1.2. Literature review

After you have introduced 'the problem and have developed the background material, explain ICC concepts can be traced back to Dell Hyme's notion of "Communicative Competence" developed in 1966 (Rajagopalan, 2008, p. 404) which is defined as "a social judgment about how well a person interacts with others" (Lusting & Koester, 2010, p. 65). Communicative Competence itself was a reaction to Chomsky's "Linguistic Competence" (Rajagopalan, 2008, p. 404), which "includes the knowledge of vocabulary, grammar, semantics, and phonology" (Littlewood, 2008, p. 503). Despite the lack of academic agreement on a constitutive definition of ICC, scholars tend to argue that ICC leads to "effective and appropriate behavior and communication in intercultural situations" (Deardorff, 2011, p. 66). In this sense, Fantini (2006, p. 9) defines ICC as "a complex of abilities needed to perform effectively and appropriately when interacting with others who are linguistically and culturally different from oneself", and Bennett (2011, p. 3) stresses that ICC is formalized through a mix of cognitive, behavioural and affective skills.

Stier (2006, p. 6) differentiates between "content-competencies" and "processual competencies" in ICC. Content-competencies are defined as "the knowing that-aspects of both the 'other' and 'home' culture" including "knowledge of history, language, non-verbal behaviour, world-views, 'do's and don'ts', values, norms, habits, customs, taboos, symbols, behavioural patterns, traditions, sex roles" (ibid.). This kind of static knowledge does not guarantee the successful intercultural interaction (ibid.). While processual competencies, "knowing that-aspects", are related to acquiring the knowledge of "cultural peculiarities, situational conditions and actors" (ibid.). This study focuses on processual competencies, dynamic knowledge, since their development involves both a) intrapersonal competencies, the cognitive and emotional skills, and b) interpersonal competencies, the interactive skills (ibid.).

Deardroff (2009, p. 266) argues that the acceptance and openness to similarities as well as differences among cultures is key for ICC, not only the awareness of these differences and mere contact with a foreign culture (Deardroff, 2009, p. 266; Pusch, 2009, p. 70). In addition, the interaction with the new environment is the force that stands behind such modification (Spitzberg & Changnon, 2009, p. 7). Emert (2008, p. 221) adds

that there are other factors that play an essential role in ICC development such as one's tendency, motivation and ability to engage in this experience. However, the precise nature of intercultural gains remains ambiguous as long as the mechanism of such development is under-researched.

In order to examine the link between ICC and personality traits in greater depth, a set of key traits (e.g. psychological adjustment, homesickness, motivation, and conscientiousness) has been identified. For example, it is found that academic and social self-efficacy should also be mentioned as important beliefs in the domain of education (Constantine et al., 2004, p. 237). These beliefs should be added to the list of key traits since they impact one's confidence to approach or avoid academic challenges as well as to make contact with other individuals (Ward et al., 2001, p. 247; Popescu et al., 2014, p. 150). Nevertheless, the list is not limited by these personality traits.

In particular, to explore the influence of psychological factors on the adjustment process of international students to a new culture, Baier (2005, p. 49) identifies that international students with a higher level of self-confidence and self-efficacy were more likely to leave their home country and come to the US. Nevertheless, the researcher fails to identify any significant difference in the statistical analysis results on levels of personality variables such as self-efficacy and self-confidence and cultural adjustment between international students from western and non-western backgrounds (ibid.) as cultural heritage must be acknowledged when analysing the adaptation process of international students.

The topic of international students' adjustment to a new cultural environment has attracted close interest from scholars and researchers (Shieh, 2014, p. 61; van der Zee & van Oudenhoven, 2013, p. 930; Wilson et al., 2013, p. 908; Milstein, 2005, p. 226). For example, Winkelman (1994, p. 121) found that culture shock was associated with the feelings of confusion, loss and impotence a person experiences when he/she losses accustomed cultural cues as well as social rules. Moreover, this chapter reviews the three causes of this phenomenon; "1) the loss of familiar cues, 2) the breakdown of interpersonal communication, and 3) an identity crisis" according to Milstein (2005, p. 219). International students who come to a new culture experience both psychological and physical reactions, which involve emotional, interpersonal, social and cognitive components with impacts results from changes in their socio-cultural relations (Winkelman, 1994, p. 121).

1.3. Overview of the literature on the Saudi context

According to Hofstede's (Hofstede, 2011, p.11) cultural framework, Saudi Arabia has a collectivist culture in which the ties among individuals are extremely strong, family values are imposed on children from early childhood, and people provide support not only to their families, but also to members of their society (Alsubaie et al., 2015, p.24; Havril,

2015, p.562). Hofstede's 'power distance' dimension shows a particularly high score (95 percent) (Davis, 2014, p.3; Khan et al., 2016, p.51), which signifies that members of Saudi society maintain a hierarchal order which creates social and gender inequality and minimises individualism (Alsubaie et al., 2015, p.24). Another high scored dimension – 'uncertainty avoidance' – means that Saudi culture heavily relies on rules and may be resistant towards innovations and new ways of thinking, to ensure the survival of cultural values and traditions (Alsubaie et al., 2015, p.24).

The Arabic language has some peculiarities which pose certain difficulties for international students (Gutierrez et al., 2009, p. 20). More specifically, its characteristic feature is diglossia, or the simultaneous use of two language varieties (higher and lower) in one speech community (Palmer, 2013, p. 59; Suchan, 2014, p. 3). The higher variety is Modern Standard Arabic (MSA), which is widely employed for writing or for communication in academic circles. International students learning the Arabic language outside the Arab world are taught MSA (Ryding, 1995, p.226; Gutierrez et al., 2009, p.20). The lower variety is Spoken Colloquial Arabic (SCA), which people use for everyday communication. Despite the fact that the emphasis in many educational programmes has long been put on developing students' skills in MSA, Palmer (2013, p.59) asserts that many international students choose the programmes which provide them with an opportunity to learn both varieties. With regard to SCA, this variety allows international students to engage in informal communication with Arabs and penetrate deep into their culture (Palmer, 2013, p.62). However, in view of the fact that SCA is viewed as an 'ungrammatical' variety, "students who wish to learn spoken varieties of Arabic are often left to their own devices" (Palmer, 2013, p.64). Hence, it is claimed that international students who learn the Arabic language outside the Arab world fail to communicate with Arab nationals when they come to an Arab country (Gutierrez et al., 2009, p.20).

The importance of ICC for those who study and work in Saudi Arabia is difficult to overstate. The research carried out by Karolak and Guta (2014, p.45) clearly demonstrates that the faculty in one of the largest private universities – Prince Mohammad Bin Fahd University (PMU) – consists of people from 27 countries. In view of the existing multi-ethnicity, educators and students need ICC to understand each other. An ethnographic study of Luring (2011, p.231), provides evidence that intercultural communication between Danish expatriates and Saudi employees was viewed as a process that hindered decision making within a company. In light of this, some employees are excluded from participation in intercultural communication. As this was a Saudi subsidiary of a Danish corporation, Saudi employees are exposed to exclusion. However, as Luring (2011, p.231) reveals, the failure to engage in intercultural communication is attributed to the reluctance of culturally diverse employees to pay attention to each other's needs and intentions.

1.4. Theoretical framework

Five-Factor Model (FFM) of Personality is especially useful for addressing research questions and for generating insights into the role of personality traits in shaping international students' ICC. The trait approach draws parallels between personality traits and individual's skills and behaviour and, more importantly, predicts the formation of specific skills and competencies, referring to personality traits (Kline, 2013, p. 4; Cooper, 2015, p. 90). FFM is found to be crucial for recognising valid predictors of personality and for making generalisations (Costa & McCrae, 2009, p. 307; Barrick & Mount, 2012, p. 227), and it has previously been used very successfully for higher education analysis (Block, 2010, p. 8). The framework is based on the dimensions of Neuroticism (Emotional Stability), Extraversion, Openness to Experience, Conscientiousness and Agreeableness (Rothmann & Coetzer, 2003, p. 69). John and Srivastava (1999, p. 113) summarise a Big Five Trait taxonomy, presented in table (1) below:

2. Method

To assess the relationship between the two phenomena, namely the personality traits and ICC of international students in Saudi Arabia, I used a mixed method approach, which “opens the door to multiple methods, different worldviews, and different assumptions, as well as to different forms of data collection and analysis” (Creswell, 2014, p. 11). I incorporated both quantitative and qualitative approaches as it helps to “develop rich insights into various phenomena of interest that cannot be fully understood using only a quantitative or a qualitative method” (Venkatesh et al., 2013, p. 21). Furthermore, drawing on both quantitative and qualitative methods allows to strengthen the advantages of both approaches and minimise their limitations. In the current research, quantitative and qualitative approaches are employed sequentially to gain complete explanations; qualitative data are used to gain additional insights into the results obtained in the quantitative phase. Another reason for choosing this approach is that divergent or convergent results may be produced from combining qualitative and quantitative methods; this enhances the understanding of the phenomena being studied. Thus, the absence of one method may leave the research questions partially or totally unanswered (Hashemi & Babaii, 2013, p. 829). Therefore, I consider the mixed-methods approach as a useful strategy that best provides in-depth answers to the research questions.

2.1. Data collection tools

The quantitative instruments, AIC and IPIP-NEO-120, were administered to each participant to explore the relationship between personality traits and ICC. I then used the qualitative data gathered from semi-structured interviews to investigate which personality traits help students to cope with intercultural situations. The participants were international learners of Arabic; thus, the two quantitative tools were translated into Arabic. In order to reduce potential challenges arising from translating data collection tools for research[†], I utilised “back-translation” in both phases of the current study, which requires at least two translators (Hilton & Skrutkowski, 2002, p. 2). The two translators who interpreted the tools used in this study are professional translators holding degrees in translation from English to Arabic and Arabic to English.

In terms of measuring the participants’ ICC, I used AIC which was designed in the ‘Your Objectives, Guidelines and Assessment’ (YOGA) format as part of a research project conducted by the Federation of the Experiment in International Living (Fantini and Tirmizi, 2006, p. 6). Since this research project intends to generate insights into the

[†] As Hilton and Skrutkowski (2002, p. 1) noted, ‘translating questionnaires for cross-cultural research is fraught with methodological pitfalls related to colloquial phrases, jargon, idiomatic expressions, word clarity, and word meanings’.

role of personality traits shaping international students' ICC, the AIC is employed because personal characteristics, which are related to this study, such as flexibility and open-mindedness, are listed as components of ICC (Fantini, 2009, p. 198).

I chose to utilise the IPIP-NEO-120 as a means of data collection on five personality traits of Neuroticism, Extraversion, Openness, Agreeableness and Conscientiousness. The IPIP-NEO-120 consists of 120 negative and positive statements, 24 items for each trait (Maples et al., 2014, p. 1072). I used this self-reporting tool because the study aims to identify the specific personality traits of international students and the relevance of these traits to their ICC by exploring the participants' actual behaviours. Based on the Big Five personality theory (Othman et al., 2014, p. 116), the IPIP-NEO was introduced in 1996 as a reaction to the restrictions such as the fees to use commercial personality inventories like the Revised NEO Personality Inventory (NEO-PI-R) (Goldberg et al., 2006, p. 86; Maples et al., 2014, p. 1070).

The current study's data was analysed through SPSS statistics version 20. Prior to actual analysis, the data was screened for the missing values, and study variables were tested for accuracy and normality. Following data screening, reliability analysis for the two instruments was done. Multiple linear regression was used to explain the correlation between the dependent variable; ICC, and independent variables; personality traits.

2.2. Data collection site

This research was conducted at Umm Al Qura University, in Holy Makkah that provides a uniquely multicultural campus, compared to other universities in the Kingdom of Saudi Arabia, and broadening the multicultural nature of the student body continues to be a goal for the university. International students benefit from inclusion in the community and classes, allowing them to interact with Saudi nationals and promoting intercultural understanding. A growing body of research has found that a mixture of international and local students plays a vital role in developing students' ICC (Gurin et al., 2004, p. 30; Vande Berg et al., 2009, p. 25; Stemler et al., 2014, p. 45).

Umm Al Qura University provides support for international students, which reduces the obstacles that they may face during their study-abroad experience (About UQU, 2017). Cultural mentors have been put forward as facilitators of students' ICC development (Vande Berg et al., 2009, p. 25; Spenader & Retka, 2015, p. 22). Given these characteristics, the researcher has chosen Umm Al Qura University, because it has achieved a diversity that facilitates intercultural interactions among staff and students, thereby helping students enhance their ICC (Medina-López-Portillo, 2004, p. 196; Gutel, 2008, p. 173; Stemler et al., 2014, p. 41; Engberg & Jourian, 2015, p. 3).

2.3. Participants

The researcher recruited bachelor degree students from the Institute of Arabic Language for Non-Native Speakers at Umm Al Qura University. The Institute is dedicated to serving as a global destination for those aspiring to learn the Arabic language using advanced technologies. All 444 enrolled students receive a free education, free housing with rich social amenities, a monthly living allowance, a free annual round-trip ticket home, free textbooks and free medical services (Overview, 2017). A total of 120 male and female international students had been given information sheets and invited to take part in the quantitative phase after signing the consent forms. One-hundred and eight students returned the surveys (87 male students and 21 female students). The completed surveys were 95 of which 79 male and 16 female students. This gender imbalance can be attributed to the low number of female students at the institution who represent 20.7%. The majority of participants (N=43) were between 24 to 26 years of age representing 45.3%, followed by 20 to 23 years old (N=26) with 27.4%, then (N=17) 17.9% of them are 20 years old or younger and finally (N=9) 9.4% were older than 26.

3. Findings

The results of the study reveal the correlations between ICC and personality traits. The discussion of the results is interlaced with reference to academic theory in order to better understand the implications and significance of these findings to provide meaning and insight to be attached to these findings as simply reporting on these findings is not enough. These findings will also be used in the development of the qualitative research instrument, namely the interview questions. Any themes that emerge through the quantitative inquiry will be expounded and elaborated during the interviews.

This test relates to the correlation between ICC and personality traits. The findings indicated that Openness was positively associated with ICC with ($t= 6.684$, $p.value= .000$) as seen in the following table (2).

Table (2): Coefficients between ICC and Personality Traits

		Coefficients ^a				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	128.949	7.048		18.296	.000
	Neuroticism	-2.029	.383	-.244	-5.301	.000

Extroversion	-.528	.374	-.071	-1.411	.159
Openness	2.682	.401	.335	6.684	.000
Agreeableness	.225	.319	.043	.706	.481
Conscientiousness	.598	.309	.119	1.935	.050

a. Dependent Variable: ICC

b. $F = 18.816$, $p < .000$, adj $R^2 = .171$

It would thus appear that the more openness a person is, the more likely they are to possess ICC. In addition to this, Conscientiousness again is found to have a positive correlation with ICC with ($t = 1.935$, $p\text{-value} = .050$) as presented in table (2). Whereas Neuroticism emerged as being the trait had a strong negative correlation with ICC ($t = -5.301$, $p\text{-value} = .000$). Extraversion also had no correlation with ICC ($t = -1.411$, $p\text{-value} = .159$). This may come as a surprise given that this trait is associated with individuals who are sociable, energetic and talkative (Hayes & Joseph, 2003, p. 726). That said however, as highlighted within the first part of the findings where it emerged that extraverts tended to ‘take charge’ and become excited relatively easily. Additionally, this study found that Agreeableness was not related to ICC development ($t = .706$, $p\text{-value} = .481$).

In keeping with the above findings, Wilson et al.’s (2013, p. 900) study in which the relationship between personality and sociocultural adaptation was examined and analysed using FFM, and through a meta-analysis of secondary sources, found that three out of the five dimensions of personality, namely Agreeableness, Extraversion and Conscientiousness were positively correlated with peoples’ ability to adapt and integrate into new cultural environments. It is prudent to note that, unlike others (Propat 2009, p. 332), Wilson et al. (2013, p. 900) included contextual factors such as length of residency abroad, previous cultural experiences, cultural knowledge and perceived discrimination. These were dubbed ‘situational factors’ and were contrasted with the personality measures as part of the study (Wilson 2013, p. 906). This is mirrored by the empirical findings of Blume et al. (2010, p. 1065) and Kappe and van der Flier (2010, p. 142), who akin to the present study, suggest that Conscientiousness, Extraversion and Agreeableness are relevant in the development of ICC especially in attributes such as cultural awareness, increased training ability and being able to have successful and meaningful relationships with people from different cultures; the present study has found the two relevant personality traits of Conscientiousness and Openness as being key in the development of ICC.

4. Conclusions

In addition to the issues emerging around extraversion and the extent to which the study suggests that this may not be as important for ICC, these issues will be explored further. Participants who identify as extraverted will subsequently be asked to outline their key strengths. The findings suggested that conscientiousness and openness had a greater correlation with ICC; self-identified extraverts will then be asked how they deal with cultural diversity and the behaviours of others around them. They will also be asked of their listening skills as well as values; conscientious individuals tend to have values systems which are more human centric, thus they are likely to spend time cultivating. The present study finds that extraverts, despite being regarded as having a high social aptitude in the literature, did not score highly on ICC. interviewees will thus be asked about their communication styles and the extent to which they adapt these depending on their surroundings.

References

- ABOUT UQU, 2017. [online]. Umm Al Qura University 2016. [11 April, 2017]. Available from: <https://uqu.edu.sa/en/main/AboutUs>
- ALSUBAIE, H., VALENZUELA, F.R., and Adapa, S., 2015. 'The advent of Western-style shopping centers and changes in Saudi women's purchasing behavior'. In: E.G. Hatem and R. Eid (Eds.), *Emerging research on Islamic marketing and tourism in the global economy*, Hershey: IGI Global.
- BAIER, S.T., 2005. *International Students: Culture Shock and Adaptation to the US Culture*. Master's Theses and Doctoral Dissertations.
- BARDI, A. and GUERRA, V.M., 2011. Cultural values predict coping using culture as an individual difference variable in multicultural samples. *Journal of Cross-Cultural Psychology*, 42(6), pp. 908-927.
- BARRICK, M.R. and MOUNT, M.K., 2012. Nature and Use of Personality in Selection. In: N. SCHMITT, ed, *The Oxford handbook of personnel assessment and selection*. New York: Oxford University Press, pp. 225-251.
- BENNETT, J., 2011. Developing intercultural competence for international education faculty and staff Association of international education administrators conference workshop, San Francisco, CA, pp. 20-23.
- BLOCK, J., 2010. The five-factor framing of personality and beyond: Some ruminations. *Psychological Inquiry*, 21(1), pp. 2-25.
- BYRAM, M., GRIBKOVA, B. and STARKEY, H., 2002. *Developing the intercultural dimension in language teaching. A practical introduction for teachers*. Strasbourg: Council of Europe, pp. 1-41.

- CONSTANTINE, M.G., OKAZAKI, S. and UTSEY, S.O., 2004. Self-concealment, social self-efficacy, acculturative stress, and depression in African, Asian, and Latin American international college students. *American Journal of Orthopsychiatry*, 74(3), pp. 230-241.
- COOPER, C., 2015. Individual differences and personality. Abington: Routledge.
- COSTA, P.T. and MCCRAE, R.R., 1992. Four ways five factors are basic. *Personality and Individual Differences*, 13(6), pp. 653-665.
- CRESWELL, J.W., 2014. Research design: qualitative, quantitative, and mixed method approaches. 4th ed. edn. Thousand Oaks: Thousand Oaks: SAGE Pub.
- DAVIS, E., 2014. Saudi women international students in the United States: A qualitative examination of cultural adjustment. ProQuest Dissertations Publishing.
- DEARDORFF, D.K., 2006. Identification and Assessment of Intercultural Competence as a Student Outcome of Internationalization. *Journal of Studies in International Education*, 10(3), pp. 241-266.
- DEARDORFF, D.K., 2009. The SAGE handbook of intercultural competence. Los Angeles: SAGE.
- DEARDORFF, D.K., 2011. Assessing intercultural competence. *New Directions for Institutional Research*, 2011(149), pp. 65-79.
- EMERT, H.A., 2008. Developing intercultural competence through teaching abroad with Fulbright: Personal experience and professional impact. ProQuest.
- ENGBERG, M.E. and JOURIAN, T.J., 2015. Intercultural wonderment and study abroad. *Frontiers: the Interdisciplinary Journal of Study Abroad*, 25, pp. 1-19.
- FANTINI, A., 2006. Exploring and assessing intercultural competence. Brattleboro: Federation EIL.
- FANTINI, A.E., 2009. Developing Intercultural Competencies: An Educational Imperative for the 21st Century. *言語文化研究*, 28(2), pp. 193-213.
- FANTINI, A. and TIRMIZI, A., 2006. Exploring and assessing intercultural competence. World Learning Publications. Paper 1.
- GEERAERT, N. and DEMOULIN, S., 2013. Acculturative stress or resilience? A longitudinal multilevel analysis of sojourners' stress and self-esteem. *Journal of Cross-Cultural Psychology*, pp. 0022022113478656.
- GOLDBERG, L.R., JOHNSON, J.A., EBER, H.W., HOGAN, R., ASHTON, M.C., CLONINGER, C.R. and GOUGH, H.G., 2006. The international personality item pool and the future of public-domain personality measures. *Journal of Research in Personality*, 40(1), pp. 84-96.
- GURVEN, M., VON RUEDEN, C., MASSENKOFF, M., KAPLAN, H. and LERO VIE, M., 2013. How Universal Is the Big Five? Testing the Five-Factor Model of Personality Variation Among Forager–Farmers in the Bolivian Amazon. *Journal of personality and social psychology*, 104(2), pp. 354-370.
- GUTEL, H., 2008. The Home Stay: A Gendered Perspective. *Frontiers: The Interdisciplinary Journal of Study Abroad*, 15, pp. 173-188.
- GUTIERREZ, R., HAWTHORNE, A., KIRK, M., and Powers, C., 2009. Expanding U.S. study abroad in the Arab world: Challenges and opportunities, Meeting America's Global Education Challenge, 4, pp. 1-40.
- HARRISON, N. and PEACOCK, N., 2010. Cultural distance, mindfulness and passive xenophobia: using Integrated Threat Theory to explore home higher education students' perspectives on 'internationalisation at home'. *British Educational Research Journal*, 36(6), pp. 877-902.

- HASHEMI, M.R. and BABAI, E., 2013. Mixed methods research: Toward new research designs in applied linguistics. *Modern Language Journal*, 97(4), pp. 828-852.
- HAVRIL, A.K., 2015. Improving Intercultural Competence of Female University Students in EFL within Saudi Arabia. *Procedia - Social and Behavioral Sciences*, 192, pp. 554-566.
- HILTON, A. and SKRUTKOWSKI, M., 2002. Translating instruments into other languages: development and testing processes. *Cancer nursing*, 25(1), pp. 1-7.
- Hofstede, G., 2011. 'Dimensiolising cultures: The Hofstede model in context', *Online Readings in Psychology and Culture*, 2 (1), pp. 1-26.
- JOHNSON, J.A., 2014. Measuring thirty facets of the Five Factor Model with a 120- item public domain inventory: Development of the IPIP- NEO- 120. *Journal of Research in Personality*, 51, pp. 78-89.
- KAROLAK, M., and GUTA, H., 2014. Intercultural communication in the context of Saudi Arab tertiary education. In: R. Raddawi, ed, *Intercultural communication with Arabs: Studies in educational, professional and societal contexts*. New York: Springer, pp.41-56.
- KHAN, M., RO, H., GREGOEY, A., and Hara, T., 2016. 'Gender dynamics from an Arab perspective: Intercultural service encounters', *Cornell Hospitality Quarterly*, 57(1), pp. 51-65.
- KLIN, P., 1993. *Personality: the psychometric view*. London: Routledge.
- LAURING, J., 2011. Intercultural Organizational Communication: The Social Organizing of Interaction in International Encounters. *Journal of Business Communication*, 48(3), pp. 231-255.
- LEUNG, K., ANG, S., and TAN, M., 2014. Intercultural competence. *Annual Review of Organisational Psychology and Organisational Behaviour*, 1, pp. 489-519.
- LIEVENS, F., CHASTEEN, C.S., DAY, E.A. and CHRISTIANSEN, N.D., 2006. Large-scale investigation of the role of trait activation theory for understanding assessment center convergent and discriminant validity. *Journal of Applied Psychology*, 91(2), pp. 247.
- LILES and MELISSA, 2016. *How to Integrate Intercultural Learning into Your Classroom*.
- LITTLEWOOD, W., ed, 2008. *Second Language Learning*. Blackwell Publishing.
- MAPLES, J.L., GUAN, L., CARTER, N.T. and MILLER, J.D., 2014. A Test of the International Personality Item Pool Representation of the Revised NEO Personality Inventory and Development of a 120- Item IPIP- Based Measure of the Five- Factor Model. *Psychological assessment*, 26(4), pp. 1070-1084.
- MCCRAE, R.R. and SUTIN, A.R., 2007. New Frontiers for the Five-Factor Model: A Preview of the Literature. *Social and Personality Psychology Compass*, 1(1), pp. 423-440.
- MCCRAE, R.R., YAMAGATA, S., JANG, K.L., RIEMANN, R., ANDO, J., ONO, Y., ANGLEITNER, A. and SPINATH, F.M., 2008. Substance and artifact in the higher-order factors of the Big Five. *Journal of personality and social psychology*, 95(2), pp. 442.
- MCCRAE, R.R., 2001. Trait Psychology and Culture: Exploring Intercultural Comparisons. *Journal of personality*, 69(6), pp. 819-846.
- MILSTEIN, T., 2005. Transformation abroad: Sojourning and the perceived enhancement of self-efficacy. *International Journal of Intercultural Relations*, 29(2), pp. 217-238.
- MOODIAN, M.A., ed, 2008. *JOURNEYS THROUGH THE ECOLOGICAL NICHE*. Contemporary leadership and intercultural competence: Exploring the cross-cultural dynamics within organisations edn. Thousand Oaks: Sage.

- OTHMAN, A.K., HAMZAH, M.I. and HASHIM, N., 2014. Conceptualizing the Islamic Personality Model. *Procedia-Social and Behavioral Sciences*, 130, pp. 114-119.
- PALMER, J., 2013. 'Intercultural competence and language variety on study abroad programs: L2 learners of Arabic', *Frontiers: The Interdisciplinary Journal of Study Abroad*, 22, pp. 58-83.
- POPESCU, A., BORCA, C. and BAESU, V., 2014. A STUDY ON MULTICULTURAL PERSONALITY. *Cross-Cultural Management Journal*, XVI(1), pp. 147-156.
- PUSCH, M.D., ed, 2009. The interculturally competent global leader. *The Sage handbook of intercultural competence* edn.
- RAJAGOPALAN, K., ed, 2008. 16 *The Philosophy of Applied Linguistics*. John Wiley & Sons.
- ROTHMANN, S. and COETZER, E.P., 2003. The big five personality dimensions and job performance. *SA Journal of Industrial Psychology*, 29(1), pp. 68-74.
- RYDING, K., 1995. Discourse competence in TAFL: Skill levels and choice of language variety in the Arabic classroom. In: M. AL-BATAL, edn, *The teaching of Arabic as a foreign language: Issues and directions*. Provo: American Association of Teachers of Arabic.
- SHIEH, C., 2014. Effects of culture shock and cross-cultural adaptation on learning satisfaction of mainland china students studying in Taiwan. *Revista internacional de sociología*, 72(2), pp. 57-67.
- SPENADER, A.J. and RETKA, P., 2015. The Role of Pedagogical Variables in Intercultural Development: A Study of Faculty Led Programs. *Frontiers: The Interdisciplinary Journal of Study Abroad*, 25, pp. 20-36.
- SPITZBERG, B.H., & CHANGNON, G., 2009. Conceptualizing intercultural competence. In D. K. Deardorff, edn., *The SAGE handbook of intercultural competence*, pp. 2–52. Thousand Oaks, CA: Sage.
- STEMLER, S.E., IMADA, T. and SORKIN, C., 2014. Development and validation of the Wesleyan Intercultural Competence Scale (WICS): A tool for measuring the impact of study abroad experiences. *Frontiers: The Interdisciplinary Journal of Study Abroad*, XXIV, pp. 25-47.
- STIER, J., 2006. Internationalisation, intercultural communication and intercultural competence. *Journal of intercultural communication*, 11(1), pp. 1-12.
- SUCHAN, J., 2014. Toward an understanding of Arabic persuasion: A Western perspective, *International Journal of Business Communication*, 51(3), pp. 1-25.
- VAN DER ZEE, K. and VAN OUDENHOVEN, J.P., 2013. Culture shock or challenge? The role of personality as a determinant of intercultural competence. *Journal of Cross-Cultural Psychology*, 44(6), pp. 928-940.
- VAN DRIEL, M. and GABRENYA, W.K., 2012. Organizational cross-cultural competence: Approaches to measurement. *Journal of cross-cultural psychology*, pp. 1-26.
- VANDE BERG, M., CONNOR-LINTON, J. and PAIGE, R.M., 2009. The Georgetown consortium project: Interventions for student learning abroad. *Frontiers: The interdisciplinary journal of study abroad*, 18, pp. 1-75.
- VENKATESH, V., BROWN, S. and BALA, H., 2013. Bridging the Qualitative-Quantitative Divide: Guidelines for Conducting Mixed Methods Research in Information Systems. *MIS Quarterly*, 37(1), pp. 21-54.
- WARD, C., BOCHNER, S. and FURNHAM, A., 2001. *The psychology of culture shock*. Hove: Routledge.

- WILSON, J., WARD, C. and FISCHER, R., 2013. Beyond Culture Learning Theory What Can Personality Tell Us About Cultural Competence? *Journal of cross-cultural psychology*, 44(6), pp. 900-927.
- WINKELMAN, M., 1994. Cultural shock and adaptation. *Journal of Counseling and Development*, 73(2), pp. 121-126.
- XIAOCHI, Z., 2012. Discussion on International Internship and Intercultural Competence from a Perspective of Higher Educational Internationalization-A Case Study of the Program Work and Travel USA. *Cross-Cultural Communication*, 8(5), pp. 62-66

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Cluster Supervision in Improving Primary Education Curriculum: In the Case of Addis Ababa

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Abstract

A mixed research design is employed to assess the roles of cluster supervision in improving primary education curriculum. To conduct the study survey design was employed by taking sample wereda, cluster centers, teachers and principals randomly and interview was conducted to support the quantitative data findings. Hence, the main findings emerged from this study were: benefits teachers gained from cluster supervisors practice was insignificant; cluster supervisors and principals are ineffective in creating favorable situations for teachers to get in-service education; school visits by cluster supervisors and principals were irregular. Finally its recommended to arrange short-term refresher training and discussion forums; participate in decision-making process related to curriculum at all stages and the cluster supervisors should coordinate different groups of implementation and improvement of the curriculum, Moreover, the regional education offices, the zone education department or the school .should give orientation about the role and responsibilities of the cluster supervisors and allocates budget for school cluster supervision.

Key Words: Primary school, Cluster Supervision, Curriculum Improvement

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1. Introduction

1.1. Introduce the problem

At present, it becomes clear that curriculum decisions are collaborative work. All stallholders, which would be affected by the results of the curriculum, should actively participate in its decisions. Particularly supervisors which are assigned in the different geographical locations of schools are the central persons in this decision since they observe how teachers: implementing the curriculum because they are information bridges between the school and the educational bureau. For about ten years, the field of instructional and cluster supervision has been suffering from unfriendly and unstable relations between teachers and supervisors.

Supervisors play a vital role in the success of an organization (Certo, 2006). The research conducted on the practice of primary school cluster supervisors at the national level indicated that primary school cluster supervisors are providing less support and

development for teachers (Gashaw, 2008). Likewise, MOE, (2002) mentioned that in the previous years, the woreda or district educational officers assigned to supervise school were not able to solve make any significant improvement in school outcomes. Sometimes they will not go to school they do nothing except collecting information from the hands of school principals. Because of this, teachers did not get any assistance from supervisors to the improvement of their instructional problems and these give teachers a feeling of disappointment, ignored, deep and bitter, among cluster supervisors with their dormant behavior. Their ability to make a significant contribution to curriculum improvement, ability based on experience and special training is disregarded; and, what is even more galling, their suggestions regarding curriculum improvement, suggestions based on an intimate knowledge of the classroom situation and utterly ignored.

Besides, (De Grauwe, 2001) mentioned that the current motto for promoting the quality of education further rationalized the researcher to focus in the area under discussion, However, studies conducted in the area indicated that, supervisors are not able to play an expected role because of many problems which are needed to be investigated and addressed. For that reason, the study aimed to examine the extent of supervisors in executing their role to improve the curriculum by involving teachers and principals and to identify the challenges of cluster supervision in Addis Ababa. In doing so, the researcher has raised the following basic research questions:

1. To what extent principals, teachers, and cluster supervisors involved in curriculum improvement?
2. To what level cluster supervisors support and facilitate teachers to improve their instructional process.
3. What are the factors that hinder or foster primary school supervisors' in the involvement of curriculum improvement

2. Method

Since the study was a mixed design that integrates both quantitative and qualitative design was to study the problem. This was because it can provide sufficient information concerning the roles and challenges of prima, school cluster supervisors. Also, it helps draw valid generalization and conclusions (Yalew, 2004 E.C:23). This approach has also been recommended by scholars in the field for such kinds of catch (Koul, 1996, Best and Kahn, 1999) because a mixed study enables the study to obtain a wide range of data from a variety of participants and in-depth understanding of the phenomena.

2.1. Participant (subject) characteristics

Since the study investigated the task of cluster supervision in working with teachers and principals to improve the existed curriculum, the study had to take, public primary school teachers, principals, and cluster supervisors were the main participants of the study.

2.2. Sampling procedures

Therefore, based on the targeted participants for the study, 24 public primary schools were taken randomly out of 64 schools in Addis Ababa city. Following that a lottery had to be done to get sample teachers, principals from sample schools to give equal chance for each school, so 130 teachers, 30 principals were taken and concerning cluster supervisors, all available cluster supervisors who are in duty took as the participants of the study.

2.3. Measures and covariates

After the study located the sample participants, questionnaires, semi-structured interviews, and observation were used as a primary data instrument and school document analysis was also used as a secondary data source to achieve the objective of the study. The questionnaire was designed to measure to investigate supervisors' contributions in supporting teachers' instruction delivery, classroom management, curriculum implementation, and improvement, and also advocate principals' leadership capability in managing the school to achieve the school goals. Then, the interview was conducted with teachers, principals and regional educational officers to find out the root cause for supervisors weak performance in doing their responsibilities, following that the checklist was used to get information about cluster supervisors' resource availability in implementing his/her responsibilities and finally sample school documents were analyzed to find out the cluster supervisor visit of teachers classroom, meeting minutes with teachers and principals to triangulate the data.

2.4. Research design

The study adopts an embedded mixed research design, so the study conducts both quantitative and qualitative research design simultaneously by conducting the survey, interview, and observation at the same time. Because this design will able the study to triangulate the findings from each instrument or design and get comprehensive findings.

3. Results and Discussion

3.1. Role of Cluster Supervision

No	Items	Respondents					
		Teachers n(126)		Principals n(26)		Cluster Supervisors n(8)	
		No	%	No	%	No	%
1	Cluster supervisors do regular meetings						
	A. Yes	11	9.2	19	73.1	6	75
	B. No	109	90.8	7	26.9	2	25
	Total	120	100	26	100	8	100
2	If 'Yes' the purpose of the meeting is to discuss on	-	-	3	15.8	1	16.7

A. Facilitating Implementation	-	-	3	15.8-	1	16.7
B. Facilitating Instructional Improvement	-	-	-	-	1	16.7
C. Both	1	9.1	16-	84.2	4	66.7
D. Other issues	10	90.9	-	--	-	-
Total	11	100	19	100	6	100

. One of the major characteristics of a school committee is to conduct regular meetings to decisions on matters of mutual interest or to forward recommendations to the organization that is interested to do so (Callaghan et al., 1989 as cited by Haileselassie 1999). Thus, cluster supervisors are expected to make regular meetings to discuss the issues related to the implementation and improvement of the curriculum.

The finding reveals that the majority of the cluster supervisors and the school principals responded that the cluster supervisors conduct regular meetings. On the contrary, the teachers replied that the supervisors did not hold successive meetings. Most of them reported that they used to discuss issues such as the setting of exam periods, arranging exam schedules, checking the implementation of promotion policies and so on. However, the cluster supervisor did not focus on how to facilitate and coordinate curriculum implementation and improvement, which is assumed to be the main duties of the supervisors. This indicates that the cluster supervisors leave aside its duties and focused on administrative affairs because from the analysis the cluster supervisors are not focusing on pedagogic issues

3.2. Respondents View on Professional Preparation of Cluster supervisors

No	Items	Responses	Respondents		
			Teachers n(120)	Principals n(26)	Cluster Supervisors n(8)
1	Qualified enough to give the required service.	Σ	281	72	47
		X	3.08	3.13	3.13
		S.D	0.95	0.814	1.767
2.	Are well experienced	Σ	248	52	36
		X	2.72	2.26	2.4
		S.D	1.238	0.81	0.828
3.	Have taken induction training	Σ	238	50	24
		X	2.61	2.17	1.6
		S.D	1.103	0.984	0.883
4.	In service, induction has been arranged for supervisors	Σ	251	61	31
		X	2.75	2.65	2.06
		S.D	1.128	0.884	0.883
5	Support instruments (manual and guides)	Σ	237	51	33
		X	2.6	2.21	2.2

		S.D	1.153	0.795	0.941
6	Experience sharing sessions have been arranged for cluster supervisors	Σ	255	56	22
		X	2.8	2.43	1.46
		S.D	1.185	0.992	0.516

Scale= High(>3.0) Medium(3.0) Low(<3.0)

Σ = Sum, X =Mean, S.D=Standard Deviation, As can see teachers, principals, and cluster supervisors respectively qualified enough to give the required service. Similarly, indicated that cluster supervisors were as can be seen in the background information of the respondents, all (4) of the cluster supervisors had a first degree, About this, Certo (2006) indicated that supervisors occupy the are working position in and recent different ways; most of them were promoted from the department the graduates also come to the position due to the specialized knowledge in the area.

The respondents were asked whether cluster supervisors were wen experienced or not the respondents mentioned that cluster supervisors were not well experienced. Similarly, as can be seen in the background information of the respondents, cluster supervisors were relatively less experienced than both teachers and school principals. Concerning this, it is indicated dot, in education, academic qualification and experience are given more emphasis and many countries use a successful performance as teachers and headteacher (De Grauw, 200)). Carron and De Grauwe (1997) indicated that both teachers and school principals appreciate the classroom experience of supervisors. As De Grauwe (200)) indicated, only a few supervisors occupy the position with the same grade as principals and when supervisors are less experienced than school principals, principals do not consider supervisors as the superiors. However, Certo (2006) indicated that neither promotion through experience nor hiring a qualified supervisor is a guarantee to know how to supervise.

Regarding the induction training, the informants during the interview indicated that cluster supervisors were recruited among teachers and school heads informal way and - just told to go" to primary schools to do their job without any induction training. From this one can conclude that cluster supervisors had not taken any induction training. About this, many authors in the Field indicated the importance of training: Carron and De Grauwe(1997) and UNESCO (2007) indicated that induction training help supervisors prepare themselves for their role. Giordano (2008) pointed out the importance of matching the employee with the demands of the job and to give training when necessary for all cluster and resource center staff. Similarly, Bray (1987) indicated the importance of training both newly appointed and experienced individuals. Likewise, supervisors should have technical, conceptual and human skills and to get these skills supervisors should get ', more training. Even though the training is indicated important UNESCO (2007) indicated that only a few developing countries provide induction millings and where they exist. They are short-term courses and not necessarily related to supervision. Similarly, it is indicated that cluster coordinators more often doing their work without having any professional preparation for it. Likewise, MOE (2010) pointed out that, many not receive induction training and the demand remained high.

The instrument indicated that in-service training was not arranged for cluster supervisors. However, it is indicated that in-service training is important for supervisors. It helps supervisors keep abreast of the new curriculum, teaching methodologies and school management (UNESCO, 2007). Carron and De Grauwe (1997) noted that advisors, supervisor, and inspectors need training, however, do not receive it. Similarly, Giordano (2008) noted the lack of adequate training of cluster coordinators as a problem.

The finding showed the cluster supervisors had to lack these instruments. Similar to this, De Grauwe (2001; 2001) indicated that manuals and guidelines are inadequate for supervisors and when available, not more than circulars and administrative forms. As a result, supervisors lack important information. Carron and De Grauwe (1997) and (UNESCO, 2007) indicated that support instruments such as manuals and guidelines are important for supervisors. They prepare themselves for school visits using these instruments.

However, during the interview, the cluster supervisors informed that even though they repeatedly asked the WEO to arrange experience sharing, there is no any experience sharing. However, facilitating the experience sharing at Woreda, and regional level was written in the primary school's cluster organization document (AAREB, 2005).

Most of the participants who were interviewed during the study indicated that both cluster supervisors and regional curriculum officer, almost all cluster supervisors are good enough for their job, most of them are having Masters in Educational Planning and Management or having well experience in teaching staff, but induction training did not exist; in-service pieces of training were inadequate and not related to the profession of supervision; cluster supervisors were less experienced than most of the teachers and school principals, and support instruments were inadequate. However, they indicated that the academic qualification was not the problem as cluster supervisors had the first degree. From the information available, it seems that professional preparation and support instruments were inadequate for cluster supervisors to give the required service.

3.3. Roles of Cluster supervisors in Improving Curriculum

No	Items	Respondents					
		Teachers n(126)		Principals n(26)		Cluster Supervisors n(8)	
		No	%	No	%	No	%
1	Principal create favorable condition for teachers and cluster supervisors to improve the curriculum						
	A. Yes	36	30	22	84.6	5	62.5

	B. No	84	70	4	15.4	3	37.5
	Total	120	100	26	100	8	100
2	The principal made efforts in getting recourses support for curriculum implementation						
	A. Yes	56	46.7	23	88.5	6	75
	B. No	64	53.3	3	11.5	2	25
	Total	120	100	26	100	8	100

Principals play a key in the betterment of the curriculum. As Dull(1981) and Cox (1983) mentioned principals should make the school situation favorable enough for teachers and school curriculum committees to promote the efforts of these groups for solving problems related to curriculum. The great majority of the principals and the cluster supervisors reported that the principals create facilitative conditions for teachers and cluster supervisors to improve the prima, education curriculum. On the contrary, a few of them responded that they did not do so. On the other hand, almost all of the teachers respond that as principals never create a condition for them and supervisors to improve the curriculum.

School principals have the responsibility to provide directions and guidance and assure that teachers have the necessary instructional materials to carry so their duties (Fullan and Stiegelbaur, 1991). One of the duties of the school principals is to facilitate the implementation of the curriculum with the help of appropriate resource supports. Thus, to implement the curriculum with the necessary materials, the principals should make efforts in getting the different resource supports that are needed for implementation.

3.4. Regional Educational Curriculum Officer effort in the decision-making process related to curriculum

No	Items	Respondents					
		Teachers n(126)		Principals n(26)		Cluster Supervisors n(8)	
		No	%	No	%	No	%
1.	Regional curriculum officers create suitable conditions that make teachers and supervisors participate in the decision-making process to curriculum						
	A. Yes	53	44.2	9	34.6	6	75
	B. No	67	55.8	17	65.4	2	25
	Total	120	100	26	100	8	100

2.	If ‘ Yes’ when teachers participate in the decision-making process						
	A. Curriculum Improvement	15	28.3	3	33.3	3	50
	B. Curriculum Implementation	16	30.2	4	44.4	1	16.7
	C. Curriculum Evaluation	10	18.9	-	-	-	-
	D. All stages of the curriculum process	5	9.4	22.2	2	2	33.3
	E. Others	7	13.2	-	-	-	-

The results regarding whether the school principals tried to create conditions that make teachers participate in the decision-making process on matters that are related to curriculum or not reveal that most of the respondents said that they used to create such conditions. But a few of the respondents of teachers reported that they did not make such efforts for curriculum implementation.

The respondents were also requested in item two of the same table when did teachers and cluster supervisors used to participate in decision-making process matters related to the curriculum if at all regional education curriculum officers create conditions 75% of cluster supervisors agree that's the regional curriculum bureau participate teachers and cluster supervisors in curriculum decision making in the other hand most of the respondents of teachers and principals disagree, the results reveal that AAREB creates suitable situations for teachers and cluster supervisors to participate during the implementation stages of the curriculum process and improvement stage mostly. The responses are similar to the responses to the efforts of the school curriculum committee in creating conditions suitable for teachers to participate in the decision-making process indicated in this study.

Teachers and cluster supervisors should be participated in the decision-making process right from the beginning or development stage not only at the implementation stage. Because the participation of teachers and cluster supervisors at the beginning stage increases the degree of relevance, and acceptability among parents and students and facilitates implementation easily. During the interview most cluster supervisors believed and proofed that get a lot of help from the Regional educational curriculum officers about the curriculum design process, also they give them different curriculum concerned training so that at the end of the day they implement what they have got from the number of training to their respective schools. But regional curriculum officers revealed that even though we have a lot of training and syllables for primary school principals and cluster supervisors when the officers went to each school for a visit everything they train the schools' leaders are not implemented it's just put into the shelf for the fulfillment,

regarding the response of the officers this happened because of different reasons the majors are extremely low work motivation and high turnover.

3.5. The Availability of Resources

No	Facilities	Availability				Status
		Yes		No		
		No	%	No	%	
1	Office	2	25	6	75	Old
2	Office Furniture	1	12.5	7	87.5	Old
3	Computer	2	25	6	75	Old and shared
4	Printer	-	-	6	75	There is no
5	Stationery materials	1	12.5	7	87.5	Not sufficient
6	Filling Cabinet	2	25	6	75	Old
7	Telephone	-	-	8	100	There is no

As observed and presented on the finding, none of the cluster supervisors had a printer, secretary-typist, and telephone. Even though the cluster supervisors had no printer and secretary-typist, the cluster supervisors are expected to write a report of their activities in the cluster schools every 15 days, as indicated in the primary school's organization guideline (AAREB,2005). It is also indicated that cluster supervisors are expected to provide a report for WEO either in written form or using telephone regularly and whenever required (AAREB, 2011). However, Carron and De Gmuwe (2001) indicated that asking supervisors working without a secretary-typist, and photocopy machine to prepare and distribute report makes little sense.

As can be seen from the above table, the majority of the cluster supervisors had no computer, stationery materials and filling cabinets respectively. Similar to this, De Grauwe (2001) indicated that in the offices of many supervisors relatively cheap items as filing cabinets are not found. During the interview, most of the participants informed that the resources were inadequate. They indicated that cluster supervisors were working without typist, computer and printer.

Even in most cases, they lacked stationery materials like paper and pen. The difficulties were discussed by one of the cluster supervisors as follows:

I am requested to write a weekly report. But I paper, let alone typist and computer and printer. I school to give me a pen and paper. As a result, beggar and the schools consider my job as useless. do not have a pen and have to purchase or beg I consider myself a beggar and the schools consider my job as useless. If they degrade my job, could they accept my support?

3.6. Procurement of instructional materials

No	Item	Respondents					
		Teachers(n=120)		Principals(n=26)		Cluster Supervisors(n=8)	
		No	%	No	%	No	%
1.	Supervisors check the availability of adequate materials in each school for curriculum implementation.						
	A. Yes	17	14.2	15	57.7	6	75
	B. No	103	85.8	11	42.3	2	25
	Total	120	100	26	100	8	100

Principals are the prominent key players in cluster supervisors' implementation and improvement activity by coordinating the school community members and by creating conditions suitable for curriculum activity at the school level. One of the roles expected of supervisors is to see the even distribution or procurement of instructional materials that contribute to the effective implementation of the curriculum. Most of the teachers indicated that supervisors did not check the procurement of instructional materials to the school. On the contrary Only (57.7%) and (75 %) of principals and cluster supervisors respectively responded that supervisors took in checking procurement.

Almost (42.3%) percent of the principals pointed out that the supervisor did not control the procurement of such materials, however; about 25% of the cluster supervisors were against the fanner response

Therefore, as can be seen from the above table a great number of teachers believed that supervisors did not check the available instructional materials in schools or not. Thus, these materials may be enough ground to say that supervisors do not control the Procurement of instructional materials.

3.7. Respondents view on benefits teachers gained from cluster supervisory practice

No	Items	Response	Respondents		
1	Regular visit schools under their charge		Teachers n(120)	Principales n(26)	Cluster Supervisors n(8)
		Σ	272	63	44
		X	2.98	2.73	2.93
		S.D	1.215	0.915	1.279
		Σ	355	93	49

2	Collecting statistical data on the number of students, teachers, sections, etc.	X	3.9	4.04	3.26
		S.D	0.989	1.065	1.032
3	Inspecting the implementation of the government educational policy and regulation	Σ	313	81	56
		X	3.43	3.52	3.73
		S.D	1.045	0.895	0.961
4	Inspecting the status of the school building, furniture, equipment, toilet, sports field, teachers staff, library, etc.	Σ	279	71	55
		X	3.06	3.08	3.66
		S.D	1.289	0.949	0.816
5	Creating competition between cluster schools by coordinating the academic competition.	Σ	305	89	65
		X	3.35	3.86	4.33
		S.D	1.289	0.949	0.816
6	Supporting school-community and clubs.	Σ	274	82	58
		X	3.01	3.56	3.86
		S.D	1.167	0.967	0.833
7	Writing comments on the school log book during the school visit.	Σ	310	89	67
		X	3.4	3.86	4.46
		S.D	1.095	0.967	0.516
8	Arranging induction training for new teachers.	Σ	422	56	23
		X	2.68	3.04	3.08
		S.D	1.26	1.19	1.60
9	Spreading new teaching methodologies among cluster schools.	Σ	429	57	22
		X	2.74	3.21	2.85
		S.D	1.22	1.14	1.34
10	Observing teachers in the class for instructional improvement.	Σ	255	66	47
		X	2.8	2.86	3.13
		S.D	1.309	1.217	1.355

Scale= High(>3.0) medium (3.0) Low(<3.0)

Σ=Sum, X= Mean, S.D= Standard Deviation

mean scores respectively indicated school visits by cluster supervisors were not regular. Similarly, during the interview, the participants informed that school visits by cluster supervisors were not regular, especially in schools. However, cluster supervisors indicated a practical problem like workload and lack of time for the irregularity of school visits. School visits are the main instruments to perform supervision activities(De Grauwe,2001). Carron et al. (1998) also indicated that the number of school visits and the number of times each school visited are made clear. In line with this, AAREB (2005) indicated that cluster supervisors are expected to visit schools in a cluster at least twice a month. Perm (1997) indicated that, even after the establishment of the school cluster system, school visits remained low. Similarly, it is indicated that School visits in many countries are insufficient because of many practical problems such as lack of budget (De Grauwe and Carron, (1997: De Gmuwe, 2001).

Teachers, principals, and cluster supervisors indicated that cluster supervisors were collecting statistical data from schools in the cluster. During the interview, almost all

participants informed that cluster supervisors collect statistical data on the number of students, teachers, sections, etc, and report this for WEO. Even some of the informants indicated that the collection of statistical data was the only function of cluster supervisors. On top of that, teachers, principals, and cluster supervisors pointed out that, cluster supervisors were inspecting the proper implementation of government policies, rules and regulations. regarding this, it is indicated that supervisors at all levels are expected to monitor and inspect whether or not the schools are functioning based on the prescribed policy, rules and regulations (MoE, 1995; 2002; 2008).

The respondents were asked whether the cluster supervisors were inspecting the state of the school's buildings, furniture, equipment, toilet, fence, sports field. From the finding, cluster supervisors were inspecting the state of the school's buildings, furniture, equipment's toilet, fence, sports field. To this, UNESCO (2007) indicated that, in developing countries supervision of material inputs gets priority over human inputs because of the deteriorated school infrastructure. However, MOE(2010) indicated that supervisors are responsible to inspect the general school environment such as the school's fence and school buildings used for fibril, stores, toilets, etc. cluster supervisors were not creating any competition by coordinating these activities. From this, it is possible to conclude that, cluster supervisors were not creating competition among schools in the cluster. To this, it is indicated that the competitions are created by using examination and sports in the cluster schools are important: cluster examinations, initiate students to work hard and evaluate their performance; and sports promote unity and widen the pupil's horizon (Bray. 1987). Similarly, not facilitating the cluster competition within and outside the cluster is indicated as the low responsibility of cluster supervisors (AARE, 2005).

In the last item, the researcher observed the logbooks in the schools and assured that cluster supervisors have written comments in the school's logbook, identifying the performed and not performed activities in a carbon copy and preserve one copy for themselves. From this, it is possible to conclude that cluster supervisors were writing comments on the school's logbook during school visits. With this, UNESCO (2007) indicated that the main comments of supervisors written in the school's logbooks are important for schools and less time consuming compared with the full-fledged report. Regarding arranging induction training for beginner teachers or not. Respondents mentioned that; instructional supervisors do not arrange induction training for beginner teachers.

Furthermore, from the interview with the Regional curriculum officers, it was founded that supervisors were not arranging induction training for instructional improvement for beginner teachers. The reason mentioned for this was a lack of knowledge and skills on how to arrange induction training. Taking this reality in mind, (MoE, 1995) indicated that, supervisors are expected to provide induction training for beginner teachers. Also benefits teachers gained from cluster supervisory practice were insufficient. Cluster supervisors also indicated that they were supporting teachers. However, they indicated that the support was not as expected. But they externalized by indicating the practical problems that were affecting their practice. Therefore, based on the data gathered through the interview, it is possible to conclude that the benefits teachers gained from the cluster supervisory practice were insufficient. From the above table, the respondents asked whether the instructional supervisors spread new teaching methodologies among teachers and schools or not. Accordingly, teachers, principals and cluster supervisors with new

teaching methodologies among teachers and schools as expected. It was not highly spread indicated that cluster supervisors were not conducting class observation for instructional improvement of teachers as expected. On the other hand, cluster supervisors indicated their effectiveness. However, as Carron and De Grauwe (2007) indicated, class observation allows the identification of efficient curriculum implementation ways. Also, MoE (1995) noted that class Observation helps planning for improvement curriculum by identifying strengths and weaknesses.

Again during the interview, the educational curriculum officers mentioned that they have a schedule of visiting each primary schools twice a year so that they can check how far each schools implementing the curriculum and to gather some information from teachers, principals, and supervisors about the problem they are facing in implementing the current curriculum. but as they labeled the cluster supervisors are so busy for nothing even they can't check the lesson plan of the teachers, this is found when the officers visit different teachers in different schools during the teaching-learning process, what's in the weekly lesson plan and what he/she is teaching the students is different. The only thing that most supervisors, especially in the Arada Sub-city arc, doing is just filling different checklists even without observation since there is nobody following what they are doing and what kind of help they are providing for their corresponding schools, but on the contrary, there are very few cluster supervisors who are working day and night to help this child.

3.8. Factors that affect the roles of cluster supervisors

No	Items	Respondents					
		Teachers n(120)		Principals n(26)		Cluster supervisors n(8)	
		No	%	No	%	No	%
1	Which factors affect the role of the curriculum improvement committee in the school						
	A. Lack of cluster supervisors understanding the curriculum	74	61.7	13	50	3	37.5
	B. Lack of teachers cooperation	6	5	9	34.6	3	37.5
	C. Lack of budget	12	10	-	-	-	-
	D. Lack of time	11	9.2	-	-	-	-
	E. Workload	12	10	2	7.7	1	12.5
	F. Others	5	4.2	2	7.7	1	12.5
	Total	120	100	26	100	8	100

Half (50%) of the principals, 37.5% of cluster supervisors and 61.7% of the teachers indicated that the lack of cluster supervisors understanding about curriculum as major factors that impede the works of cluster supervisors. (34.6%) of the principals and 37.5% of the cluster supervisor. claimed that lack of teachers corporation as the other factor that affects 4 works of the cluster supervisors M curriculum improvement. also a few of 12.5% cluster supervisors. 10% of teachers and 7.7 % of principals suggested that the workload impedes the cluster supervisors' work.

Moreover, cluster supervisors, principals, and teachers indicated that the major problems that have affected the supervisor's role of cluster supervisors curriculum implementation atmosphere improvement effort are: lack of initiatives among teachers to implement and improve the curriculum; The absence of teachers' participation during the curriculum development process; Teachers' lack of courage to improve the curriculum; Shortage of material resources for implementation and improvement; Lack of understanding about the functions and responsibilities of the committee clearly by the committee members'

During the interview which is conducted between the cluster supervisor and regional educational curriculum officers mentioned some of the challenges which affect the citifies of them since most of the problems are mentioned on the questioners here are some of the unique problems mentioned be two supervisors which are most of the cluster supervisors are good enough, the job or the task that they were supposed to do but most of are so less motivated to their job they have thinking of "why would I suffer. rather I can sit in my office and fill the checklists which show that am doing my job.

Therefore, almost all of the informants who participated in the interview express that having a big workload is the major problem of school-based supervision. One of the interviewees said:

"Since most of the cluster supervisors were having a teaching load more than periods a week, it is impossible to provide instructional supervision service to teachers. Besides, due to the big workload of teachers the school Jive,' to assign a very small number of supervisors that are not adequate to provide supervisory service to all teachers."

Therefore, based on the response of the majority, it is possible to conclude that having a big workload and lack of budget diminishes the school-based supervisors' capacity of supervision.

As most cluster supervisors and curriculum officers mentioned in the time of interview its better the concerned body must give them attention whether the supervisors are achieving their roles, whether they get what they want like different pieces of training resources. They need high follow up otherwise sitting the office for this year and filling the checklists so that they can pretend they are achieving their role well. On the other hand, almost all cluster supervisors found in this sub-city mentioned during, interview, the upper bodies are giving them a lot of burdens which is not related to educational issues which are related to political issues, therefore as their response, most of their working time is taken by this kind of works.

4. Conclusions

The quantitative data collected by using questionnaire was analyzed and interpreted by using mean scores. The percentage was also used during the analysis of the background information of the respondents and the availability of observed materials and facilities. The qualitative data collected through the interview was analyzed qualitatively by narration in line with quantitative data.

To this end, seven basic research questions were raised regarding, benefits teachers gained from duster supervisory, practice; professional preparations of cluster supervisors: and the working conditions of cluster supervisors. The study also tried to answer the following basic research questions based on the result of the analysis the study made the following conclusions.

1. The first research question was how the regional educational bureau or WEO in assigning or recruiting cluster supervisors. And to answer this question quantitatively(questioner) was used to find that cluster supervisors were relatively less experienced than most teachers and school principals, but they are highly qualified.
2. The second research question was to find out the actual functions of primary school cluster supervisors. Then the question was answered by using both mixed(qualitatively and quantitatively), it was found that cluster supervisors were inspecting the proper implementation of prescribed policy, rules and regulations; collecting statistical data; inspecting the general environments of the school such as buildings, equipment, and fence; coordinating cluster competition; supporting various.
3. The third basic question was how far the principals, teachers, supervisors, students, parents, and the community as a whole participate in curriculum improvement. To answer this question quantitatively questioner was used. It was found that most of the students, parents, and cluster supervisors never suggest content for improvement for anybody and they did not cooperate with teachers in curriculum implementation.
4. The fourth research question was what instructional benefits do teachers are gaining from primary school cluster supervisory practice. To answer this question quantitatively questioner was conducted and it was found that cluster supervisors were supporting teachers as expected. They were not: arranging induction training; conducting class observation; supporting the use of appropriate instructional materials; solving various instructional problems, coordinating experience sharing; spreading new teaching methodologies; facilitating professional growth through training, workshops, and seminars; and supporting the preparation of action researches, supportive materials, and textbook evaluations.
5. The fifth research question was what are the current roles of cluster supervisors and teachers in curriculum improvement. To answer this question both qualitative and quantitative (questioner and interview) was conducted, it was found that the cluster supervisors and principals facilitate conditions for teachers to participate in the decision-making process related to curriculum only at implementation and improvement stage slightly and also supervisors conduct classroom visits mostly two times a year while teachers are teaching, and made conferences with teachers after their visits, however, the purpose of the classroom visit was for teachers curriculum implementation.
6. The six basic questions were how the curriculum is being developed in the Ethiopia context. To answer this question qualitatively interview was conducted. it was found

that in Ethiopia context curriculum is being developed by college professors and subject matter experts.

The last issue was what are the factors that inhibit or promote the degree of primary school supervisors' activity and in the involvement of curriculum improvement. To answer this question both qualitative and quantitative (questioner and interview) were conducted. The major factors that affected the role of the cluster supervisors are lack of cluster supervisors understanding about the curriculum of, lack of budget, and workload. In addition to the above problems the following are also some other factors. Lack of initiatives among teachers to implement and improve the curriculum, Shortage of material resource for implementation and improvement of the curriculum, Cluster supervisors lack understanding about the function and responsibilities of the supervisory, Lack of initiation among the cluster supervisor, wasting their working time tasks which are not related to their roles but mandatory to do it.

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References

- Bray. M (1987).School Clusters in the Third World: Making Them Work [Electronic version]: UNESCO/UNICEF Cooperative program
- Brown, et al (1982) Curriculum and Instruction: An Introduction to Methods of Teaching. London: McMillan publishers Ltd.
- Barrel, Tom (1988) Curriculum Design and Development a procedure Manual for Nurse Education. New York: Prentice Hall International Ltd.
- Carron, G, De Gratuve, A. and Govinda, R. (1998). Supervision and Support Services in Asia:A Comparative Analysis Paris: UNESCO/International Institute for Educational Planning.
- Certo.S.C(2006).Supervision: concepts and skill building (5thed), McGraw-Hill/ Irwin, United States.
- Dawson.C (2002). Practical Research Method. Magdalena Road, Oxford OX4 IRE. United Kingdom.
- De Grauwe.A. (2001).School supervision in four African countries: Volume I: Challenges and Reforms. Paris: UNESCO/International Institute for Educational Planning.
- Gashsw Debassu. (2008). Supervisory Practice of Cluster Primary School Supervisors in Promoting Teachers Professional Competences in West Gojjam Administration Zone: Unpublished Masters of Arts" Thesis, at AAU.
- General Education Quality Improvement Package(GEQIP).2008.MoE,Addis Ababa.
- Giordano. E.A(2008). School clusters and Teacher Resource Center. Paris: ESCOLInternational Institute for Educational Planning.

- R. and Tapan S. ((999). Quality Education through School Based Supervision and Support: The case a GSS primary schools in Bangladesh. Paris: UNESCO/International Institute tbr Educational Planning.
- Haileselassie Woldeegerima. (2004). Educational supervision. Department of Educational Planning and Management College of Education. Addis Ababa University.
- IIEP/UNESCO (2007). Reforming school supervision for quality improvement: Roles and functions of supervisors. (Module 2). Paris: UNESCO
- Koul. L.(1984). Methodology of on Educational Research. Vikas Publishing, India Morey/ Zewdie. (2000). Curriculum Implementation and Evaluation. (A Course Material). Addis Ababa University Printing Press . A.A. Evaluation.
- Merga Feyisa (2007). Approaches to educational supervision: Unpublished training Manuscript. OREB, Finfine,
- Ministry of Education, 'Education Sector Development Program III (ESDP-III) 2005/2000-20)0/2011 ((998 EFY--2002 EF9): Program Action Plan (PAN'. Federal Democratic Republic of Ethiopia, Addis Ababa, 2005 (Unpublished).
- Ministry of Education, 'General Education) Quality Improvement Program (GEQIP) 2008/09- 20)2/13 (2001-2005 E.C.) Program Document', Federal Democratic Republic of Ethiopia, Addis Ababa, Ethiopia, 2007 (Unpublished)
- MOE. (2010) Education Sector Development Program IV (ESDP IV): Program Action Plan, Federal Ministry of Education, Addis Ababa
- Prat. D (1980) . Curriculum Design and Development. Harcourt Brace Jovanovich Publishers. New York • United States of America.
- Robert and Peter. ((989). The effectiveness of instructional supervision. Finland.
- Sullivan, S. &Glanz, J. (2000). Supervision that improves teaching: Strategies and techniques. Thousand Oaks, CA: Corwin Press Inc.
- Surya Govinda and Tapan, (1999). The definitions of supervision in different profession. McGraw-Hill Companies Inc.
- TGE(Transitional Government of Ethiopia),(1994) Education and Training Policy. Ethiopia, Addis Ababa.

Acronyms and Abbreviations

AAREB- Addis Ababa Regional Education Bureau

ESDP - Education Sector Development Program

ETP- Education and Training Policy

IIEP- International Institute for Educational Planning

MoE- Ministry of Education

NGO- Non-Governmental Organization

REB- Regional Education Bureau

SD- Standard Deviation

SPSS- Statistical Package for Social Science

UNESCO- United Nations Educational Scientific and Cultural Organization

WED- Woreda Education Office

ZED- Zonal Education Desk

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Pre-Service Language Teachers' Autonomous Language Learning with Web 2.0 Tools and Mobile Applications

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Abstract

Although the key role of utilizing Information and Communication Technology (ICT) tools in foreign language learning and language teacher education is well-established in the literature, understanding the extent to which the student teachers of English are aware of and proficient in using ICT tools remains a key consideration. Therefore, this study was set out to investigate what Web 2.0 tools and mobile applications (henceforth apps) are used by student teachers in their personal and educational life. Consequently, this study explored, a) the familiarity of student teachers with available Web 2.0 tools and mobile apps, b) the frequency of the use of these tools, and c) the aims of using these tools. The participants were 388 student teachers from two state universities in Turkey. The data were collected through a questionnaire with closed and open-ended questions. Descriptive statistics were used for the analysis of the questionnaire data and content analysis for the qualitative data. The findings revealed that most of the participants exhibited low degrees of familiarity and use towards the Web 2.0 tools and mobile apps. Results indicated that the most commonly used tools are the ones that contribute to listening and watching native and non-native English speakers. Moreover, student teachers do not know or use some technological tools such as corpus tools and virtual worlds, whose effects are well-established in the literature. One major implication of the results is that language teacher education programs should offer more courses on educational technology to student teachers of English.

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Keywords: Information and Communication Technologies; student teachers; Web 2.0 tools; Mobile Applications

1. Introduction

In the current age, also branded as Information Age, technology has penetrated into every sphere of our lives via a myriad of Information and Communication Technology (ICT)

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tools. It is now an established fact that with the arrival of ICT tools into everyday life, everyday life practices have drastically changed in many domains, including business, service, industry and education. Of these domains, the domain of education seems to be the most prone one to likely changes since the inclusion of ICT tools in educational settings has challenged and converted the traditional roles of teachers and learners. Additionally, new perspectives and approaches emerged with respect to the teaching and learning process in any given field of education. As put by Warner (2004), education is a domain in which the use of technology has been commonplace. It is probably for this reason that ‘Technology in Education’ has become the buzzword in every educational atmosphere around the world. Within the domain of education, the ICT tools are now a central part of language teaching and it appears that such tools are used by teachers and learners for a plethora of purposes, ranging from enhancing language skills to developing reflective and critical thinking (Ban & Summers, 2010; Kavaliauskiene & Anusienė, 2009; Özel, 2013).

Obvious from the extant literature on ICT tools is that these tools may be merged into language teaching in several ways. One simple way to integrate technology into language classes is to use Web 2.0 tools (Başal & Aytan, 2014). However, the use of Web 2.0 tools in the language teaching and learning process is not constrained to the classroom walls. To borrow from Aşıksoy’s (2018) own words, “Web 2.0 offers virtual platforms that enables people to learn new things outside the classroom” and “[i]n these environments, individuals are able to learn and express their ideas in accordance to their own pace and wishes” (p. 241).

Research-wise, the scholarly interest in Web 2.0 tools has mostly centred around a few issues, e.g. language learners’ use of these tools and how effective such tools are in learners’ linguistic mastery (e.g. Chartrand, 2012; İnce & Akdemir, 2013; Wang & Vasquez, 2012), learners’ attitudes, perceptions and familiarity with regards to Web 2.0 tools (Aşıksoy, 2018) and learners’ capability of self-directed learning through these tools (e.g. Shishkovskaya & Sokolova, 2015). Researchers have also demonstrated invested interest in language teachers’ and university instructors’ use of Web 2.0 tools in and out of teaching environments (e.g. Balbay & Erkan, 2018; Huang, Chao, & Lin, 2008; Shahrokni & Sadeqjoala, 2015). Nevertheless, albeit the large volume of research into language learners’ and teachers’ engagement with Web 2.0 tools, relatively little is known as to the pre-service English language teachers’ Web 2.0 practices and awareness, particularly in the Turkish context (e.g. Aşıksoy, 2018).

Another way of integrating technology into language classes is through using smart mobile devices, which have become a constituting element of the field known as mobile-assisted language learning (MALL). Smart devices, such as smartphones, mobile phones, iPods, tablet PCs and hand-held computers, are reckoned to liberate users from spatial- and temporal as well as time-related constraints in their endeavour to reach information and knowledge (Burston, 2011; Gourova, Asenova & Dulev, 2013). Considerably soon, these

devices have received considerable attention from language teachers as facilitating tools in their practices, especially along with the creation and design of applications (apps) specifically tailored for language teaching and learning (Deng & Trainin, 2015). As most apps are freely available and can be easily used in smart devices, they have been an attention-grabbing topic of research for over a decade. A great deal of research across the world, including Turkey, has dealt with smartphones' as well as particular apps' impact on language learners' vocabulary growth and teachers' vocabulary teaching practices (e.g. Başal et al., 2016; Ebadi & Bashiri, 2018), learners' listening comprehension (e.g. Laghari, Kazi, & Nizamani, 2017), phonetics (Haggag, 2018) and overall language proficiency, encompassing four major skill areas and sub-skill sets (Hossain, 2018; Mindog, 2016). As with the case of Web 2.0 tools, researchers have often been concerned with learners' or teachers' use of smart devices and applications, yet without heeding much to the pre-service English language teachers' use, awareness and perspectives as regards such mobile and multimedia tools in relation to their potential in boosting effective language teaching. It also appeared that previous studies on the use of ICT tools in the teaching of English either focused on Web 2.0 tools or smart devices and applications, but not a combination of both as core elements of ICT.

Among the ELT stakeholders, it is rather crucial to examine pre-service teachers' awareness, familiarity and experiences with Web 2.0 tools in Turkey for three particular reasons. First, they hold a double identity, carrying the status of a university student on one hand, and being a teacher candidate on the other hand. Second, compared to the experienced teachers already in the profession, the pre-service teachers may be more engaged with Web 2.0 tools and smart mobile devices, thereby having a higher level of readiness and willingness to make use of such tools upon becoming in-service teachers. Third, it should be noted that most learners come to classes "with pre-established positive relationship to these technologies" and "[t]hey [already] own and view MySpace and Facebook accounts, write and read blogs, create and view videos on YouTube, and record and listen to podcasts" (Langer de Ramirez, 2010, p. 4). That is, these learners now represent digital natives and, as such, their teachers have no right to be digital immigrants once it comes to teaching this new generation of learners (Şahin Kızıl, 2017a). Also, it should be noted that, people are surrounded by technology in every sphere of their lives. Therefore, technology can be considered as a 'jungle' that covers everywhere and the users of technological tools are like the adventurers in this jungle. As a result, they cannot go under it, they cannot go over it, but they have to go through it, which means they have to use technology to survive. The effective use of technology requires users to be willing to use and open to new technological developments as well as bearing the necessary knowledge and skills. Such an open-mindedness and willingness among language teachers to utilise ICT tools in their teaching practices is of particular importance at present given that the Ministry of National Education (MoNE) lays greater stress on students' 'digital literacy' in the primary and lower secondary English language teaching program when

framing the key competency areas (MoNE, 2017a) and intentionally spares a separate section (two pages long) for the use of technology and blended learning in English classes in the high school English language teaching program (see, MoNE, 2017b, pp. 15-17). Recently, MoNE (2018) has published its 2023 Educational Vision program, which consists of a set of goals to be achieved by 2023. With regards to English language teaching, one of the goals is about the implementation of ICT tools in teaching English. More precisely, the goal is set as follows: “The teaching of English will be supported by online and mobile technologies” (MoNE, 2018, p. 69; our translation). This kind of support can merely be possible through the effective use of a human agency, that is, if teachers are aware of these technologies and are capable of using them commendably when needed and in accordance with instructional needs and purposes. As Warschauer and Meskill (2000) noted long time ago, “the key to successful use of technology in language teaching lies not in hardware or software but in “humanware”; therefore, it all boils down to “our human capacity as teachers to plan, design and implement effective educational activity” (p. 307).

Against the backdrop of lack of research on pre-service English language teachers’ Web 2.0 awareness and experiences and the considerable importance attached to ICT tools in the policy documents of MoNE (2017a, 2017b, 2018), it becomes relatively important to investigate pre-service English teachers’ familiarity with and use of the key ICT tools in the Turkish context. Additionally, the related literature obviously shows that creating a more suitable autonomous environment for students requires teachers’ readiness for their own technology use. Nonetheless, the current language teacher education program does not offer courses to train pre-service English language teachers in the use of Web 2.0 tools and smart devices in language teaching. Bearing in mind the research gap in the literature and the heightened importance of ICT tools in the Turkish educational context, the following research questions were formulated:

1. How familiar are the student teachers of English with emerging Web 2.0 technologies and mobile applications?
2. How frequently do student teachers of English use emerging Web 2.0 technologies and mobile applications?
3. For what purposes do they use these tools and applications?

1.1. Web 2.0 tools and language teaching and learning

There are several definitions of Web 2.0 tools in the literature and these definitions often overlap in some respects and diverge on other respects. What is often agreed is that Web 2.0 tools are products of a new generation of the Internet and the successor of Web 1.0 technologies that are claimed to “represent a more binary or Cartesian view of knowledge and learning (Ban & Summers, 2010, pp. 4-5). That is, Web 1.0 tools were characterized by a one-way interaction in which the users’ role did not go beyond reading the content knowledge presented in textual and visual modes on web pages. In other words, users were

the sole consumers of information and knowledge. However, Web 2.0 is “[a] term describing the trend in the use of World Wide Web technology and web design that aims to enhance creativity, information sharing, and, most notably collaboration among users” (Hofmann & Miner, 2009, p. 176). It is clear from the definition that Web 2.0 differs from Web 1.0 in terms of its “communicative uses of the underlying Web platform” where, besides reading, users can also write and store content, collaborate with other users and bring in their own creativity into their practices on the web (Warschauer & Grimes, 2007, p. 2). To be precise, the role of users in Web 2.0 technologies has shifted from passive recipients of knowledge to active constructors of it (Huffman, 2017).

Currently, there are manifold Web 2.0 tools that can be utilized for educational purposes, and the field of language teaching is not an exception in this sense. As documented earlier by scholars, the most widely used tools include YouTube, social networking tools, blog technology, video sharing, social photo tools, podcasts, voice threads, wikis, social bookmarking, Google docs, and Slideshare (Aşıksoy, 2018; Huang et al., 2008; Langer de Ramirez, 2010; Şahin Kızıl, 2017a). McGee and Diaz (2007) transformed these tools into a five-component model of Web 2.0 tools depending on the function of each tool. Below is the classification of the Web 2.0 tools in accordance with the functions they fulfil in use:

Table 1. Categorization of Web 2.0 tools according to their functions with sample tools

Web 2.0 Classification	Web 2.0 tools	Specific technology examples
Communicate	Blogs (text, audio and video)	blogger
	Instant messaging tools (text, audio and video-based)	Skype, Google Talk
Collaborate	WikiS	Pb wiki
	Virtual communities of practice	NING
Documentative	Blogs	Blogger
	Electronic portfolios	NING
Generative	Immersive gaming environments	World of Warcraft
	Virtual worlds	Second life
	Virtual communities of practice	NING
Interactive	Social networking	Facebook, Instagram
	Virtual communities of practice	NING
	Virtual worlds	Second life

The inclusion of Web 2.0 tools in the teaching practices also serves the purposes of the post-method pedagogy in which not only learners but also teachers need to be active, autonomous, and collaborative (Kumaravadivelu, 2006). Furthermore, these tools might support the contemporary methods and approaches to language teaching (Richards & Rodgers, 2014). For instance, teachers may draw on Web 2.0 technologies while addressing aspects of Communicative Language Teaching, Task-based Language Teaching, and Whole Language Learning. As maintained by Richards and Rodgers (2014), “[t]echnology can play an important role in facilitating self-directed learning on the part of learners, allowing

them to personalize their learning further; it can also increase motivation” (p. 329). Web 2.0 tools have the makings of catering for learners’ different learning styles and intelligence types, too. Above all, a highly undervalued benefit of Web 2.0 tools by teachers is that they empower teachers to add a fun element into language classes, making the language-learning process much more entertaining compared to traditional teaching methods largely relying on textbooks and teacher-fronted lessons (Langer de Ramirez, 2010; Thompson, 2007).

In recent years, the literature on Web 2.0 tools in the field of English language teaching has abounded in research studies across the international research context and the Turkish one. For instance, researchers abundantly carried out studies with language learners in order to disclose whether particular Web 2.0 tools used by them were useful in their mastery of certain skills. Researchers often reached overlapping results that indicated the utility of blogs and Wiki’s use in learners’ improved writing skills, strategy use and autonomous learning (Kessler, 2009; Pinkman, 2005; Thorne & Payne, 2005; Wang & Vasques, 2012). Similar results emerged as to listening, speaking and reading skills which were improved through YouTube, Skype, Blogs, Google Docs, Online-Offline videos, and Podcasting, to name but a few (Chartrand, 2012; Huang et al., 2008; Shishkovskaya & Sokolova, 2015). Of these tools, particular attention seems to be given to YouTube due to its potential to increase learners’ awareness about other Englishes and different accents, paving the way for learners to have a high level of listening comprehension (Duffy, 2009; Watkins & Wilkins, 2011). Other than Web 2.0 tools’ impact on linguistic development, some studies have shown results related to affective factors, identifying favourable attitudes and increased motivation among learners towards the use of Web 2.0 tools in language classes (Crook et al., 2008; Goodwin-Jones, 2005; Shishkovskaya & Sokolova, 2015). However, some research studies show that despite their being perceived as fruitful in language classes, Web 2.0 tools are reported to be seldom used by language learners and teachers and the level of familiarity with these tools has appeared to be relatively low (Bush, 2008; Garrett, 2009; Shahrokni & Sadeqjoola, 2015; Selevičienė & Burkšaitienė, 2016).

As for the Turkish context, the findings were more or less parallel. Take, for example, the case of language learners who were found to have improved their overall writing ability through Wikis and blogs, speaking, reading and listening via several Web 2.0 tools (e.g. Kavandı, 2012; Şahin Kızıl, 2015; Özel, 2013). Positive attitudes were observed among language learners, pre-service language teachers, and language instructors at tertiary level towards the use of such tools in language classes (e.g. Aşıksoy, 2018; Balbay & Erkan, 2018; Cephe & Balçıkanlı, 2012; Şahin Kızıl, 2015; Özel & Arıkan, 2015). Nevertheless, these researchers noted that both language learners and teachers, as well as instructors, were not regular users of Web 2.0 tools, especially the newer ones allowing for content creation, and their adoption of such tools for teaching purposes remained at a very poor level (Şahin Kızıl, 2017b; Özel & Arıkan, 2015). One explanation for why learners and

teachers are not using these tools in a satisfactory manner may be “that Web 2.0 is such a new concept [that] many language teachers and learners may still not be aware of this revolutionary progress in designing language curriculum” (Huang et al., 2008, p.1). Another possibility is the dearth of appropriate equipment and training for language teachers.

1.2. Mobile smart devices and apps in language teaching and learning

Mobile assisted or based learning has become popular worldwide following the technological advances in the production of portable and hand-held computerized smart devices. The emergence of handheld mobile applications (e.g. iPad, smartphones, and tablets) has resulted in changes in curricula, teaching pedagogy and assessment. These devices offer diverse benefits for language teachers and learners that overlap with those of Web 2.0 tools. As argued by researchers, mobile smart devices allow room for effective student interaction, content creation, learner autonomy, individual and collaborative learning as well as student-centred teaching (Liu, Navarrete, & Maradiegue, 2014; Pilar, Jorge, & Cristina, 2013; Thomas & O’Bannon, 2015). The influences of mobile technologies on educational environments have been intensively examined by researchers who have reached the conclusion that these technologies help learners take control of their own learning at their own pace, easily access information, engage in collaborative learning, and get immediate feedback on their performance (e.g. Gerger, 2014; Murphy, 2011).

Aside from smart mobile devices, the field of mobile-assisted language learning benefits from mobile software, such as applications, gadgets, and programs. Out of this mobile software, applications have been very ubiquitous among users compared to others since numerous apps exist freely available in the market for users who can enjoy those apps in their tablets, Ipads, and smartphones by touching the screen with one or more fingers. Apps tailored for language teaching purposes are often created to cater for particular language areas or skill(s) (Stockwell, 2010). Currently, there are a large number of apps that can be used in the language teaching and learning process. The oft-used language apps by smart device owners include Busuu, Voxy, Quizlet, Duolingo, MyWordBook, Skype, Facetime, among many others (Rosell-Aguliar, 2014). The importance of using such apps is put in the words of Rosell-Aguliar, 2014) as follows:

Digital language learning has of course been popular for years but the features of a smartphone are fuelling a shift away from the traditional listen and reply CDs of old. Responsive touch screens, enhanced text entry, high-quality image, audio and video recording, editing, and

sharing, voice recognition, storage, connectivity, and GPS all bring together the multi-sensory experience that makes for effective language acquisition (para. 4).

A recent review of the CALL-focused journals indexed in the Social Sciences Citation Index (SSCI) revealed that Web 2.0 tools and apps are used to develop writing, vocabulary, speaking, reading, autonomy, pronunciation, listening, and grammar (Kartal, 2020). From the literature, it has emerged that a popular area of study has been vocabulary development via vocabulary exercises carried out by programs, apps or SMS messages, often outside the class hours (Suwantaratip & Orawiwatnakul, 2015; Thornton & Houser, 2005). Another area of study is speaking, more particularly phonetics. Experimental studies have demonstrated that learners using a special application (i.e. Liulishu) when learning English phonetics outdid those who learned phonetics in traditional ways (Xiao & Luo, 2015). Similarly, significant progress has been reported as to language learners' pronunciation as a consequence of consolidating pronunciation learning and phonemic awareness with an interactive pronunciation app (Bott, 2005; Agusalim et al., 2014). Overall, other studies into language learners' smartphone and app use have found that most students take advantage of these tools when learning English and felt a significant process in their general language skills compared to the traditional ways of studying English along with course books and hardcopy dictionaries (Barrs, 2011; Muhammed, 2014; Rahimi & Miri, 2014). However, the results were not always favourable about the use of these apps. For instance, in a project on a language-learning app, Busuu, not many students seemed happy with the artificial communication they experienced as they hoped to have real-time interaction with actual speakers (Kétyi, 2013).

Turning back to the Turkish context, in comparison to the international context, relatively few numbers of studies on the use of smartphones and apps exist in the literature. One of the rare studies in the Turkish context is that of Yaman, Şenel and Akman-Yeşilel, (2015) who investigated pre-service language teachers' use of smartphones for purposes of language learning. The researchers noted that students use smartphones in their attempts for linguistic progress, and as with the previous studies, it appears that students find smartphones rather utilitarian in respect of sharpening their vocabulary knowledge and looking up for words and their meaning in dictionaries. However, students were reported to rarely use their smartphones for inner-voice recording purposes. Drawing on the results, the researchers believe that smartphones can be more efficiently utilised by students for autonomous language learning, only "if they are made aware of its benefits in detail, including which applications to choose" and then it is with this awareness that "they

can integrate this ‘magic’ tool into their learning process in a far more motivated and conscious way” (p. 8).

2. Method

This study explores, describes and analyses the use of Web tools and mobile apps by student teachers of English. The study is based upon a survey design, which is used to search a wide range of issues and populations with the aim of exploring or describing any generalized features (Cohen, Manion, & Morrison, 2010).

2.1. The context and the participants

In Turkey, the teacher education programs including the English Language Teacher Education (ELTE) are regulated by the Turkish Council of Higher Education (CoHE). ELTE programs are designed by CoHE and include campus-based courses and the practicum. Student teachers enrolled in these programs mainly take courses on skills and knowledge, methodology, history, and educational sciences. There is only one course on educational technology offered in the second year of the program.

Student teachers from two ELTE programs, located in the central Anatolia, were asked to participate in the research voluntarily and they were selected in line with convenience sampling procedures. There were 278 females (71.65%) and 110 males (28.35%) participants. Both universities are located in the central Anatolia and can be considered as large-scale universities. Table 2 shows the demographic information about the participants.

Table 2. Demographic information of participants

		%	N
University	Necmettin Erbakan	58.76	228
	Mehmet Akif Ersoy	41.24	160
	1 st year	33.76	131
Year of study	2 nd year	26.29	102
	3 rd year	17.27	67
	4 th year	22.68	88
	Total	100	388

Table 2 shows that there were 228 student teachers from one university and 160 student teachers from the other university. In addition, 131 of the participants were the first year, 102 of them were the second year, 67 of them were the third year and 88 of them were the fourth-year students.

2.2. Data collection and analysis

The main tool for the collection of data was a questionnaire, which consists of four sections, 102 close-ended and four open-ended questions. The first two sections (the familiarity and the use of Web 2.0 tools) were designed based on Son's (2011) categorization of online tools, which was used by some other researchers (e.g., Shahrokni & Sadeqjoola, 2015). The questionnaire was adapted with some adjustments after reviewing the previous studies (Başal & Aytan, 2014; Usluel, Mazman & Arıkan 2009; Kennedy et al., 2007; Kennedy, Judd, Churchward, Gray, & Krause, 2008; Şahin Kızıl, 2017a; Margaryan, Littlejohn, & Vojt, 2011; Mindog, 2016) and the revised questionnaire for the Web 2.0 tools part included 27 categories, such as learning/content management systems (LMS/CMS), virtual worlds, social networking sites, blogs and wikis, and concordances. The Web 2.0 tools were asked under categories because there are too many tools to be included in a survey. Moreover, this study included Web 2.0 tools and mobile apps whose positive contributions were discussed in the above-mentioned studies. As Levy and Kennedy (2005) assert, "widespread acceptance and use of new communication technologies does not necessarily point to effectiveness or value in the educational context" (p. 76).

The other two sections, which explored the familiarity with and the use of mobile applications were adapted from the previous studies (Gangaiamaran & Pasupathi, 2017). Student teachers were also asked open-ended questions to determine the purposes of using Web 2.0 tools and mobile apps they use and are willing to use in the future. For the validity of the survey questions, two experts assessed the clarity of each of the items. The participants were informed about the voluntary-basis of the study and privacy and confidentiality issues in advance.

Descriptive statistics (i.e., mean, standard deviation, and frequency) were used to quantify the obtained data from the questionnaire regarding the results of the four foci of the instrument, namely familiarity with Web 2.0 tools, the use of these tools, familiarity with mobile apps, and the use of mobile application tools. The data from the open-ended questions were analysed via descriptive content analysis and word cloud visualizations.

3. Results

The findings of the questionnaire are reported with regard to the sections it subsumes. Although the detailed tables regarding the familiarity and frequency of use are provided in the appendices, this part shows the percentages. For the familiarity, Extremely Familiar, Very Familiar, and Moderately Familiar are added and the total percentages are

given. For the frequency of use, the percentages of *sometimes*, *often*, and *very frequently* were added and the new percentage is given in the figures below.

3.1. Quantitative findings

3.1.1. Student teachers' familiarity with the Web 2.0 tools

The results of the descriptive analysis conducted in order to determine the familiarity of the student teachers with Web 2.0 tools in language learning are shown in Figure 1, which presents the percentage analysis of the participants' responses to the items. The detailed analysis, including frequency, mean scores and standard deviations, is given in Appendix A.

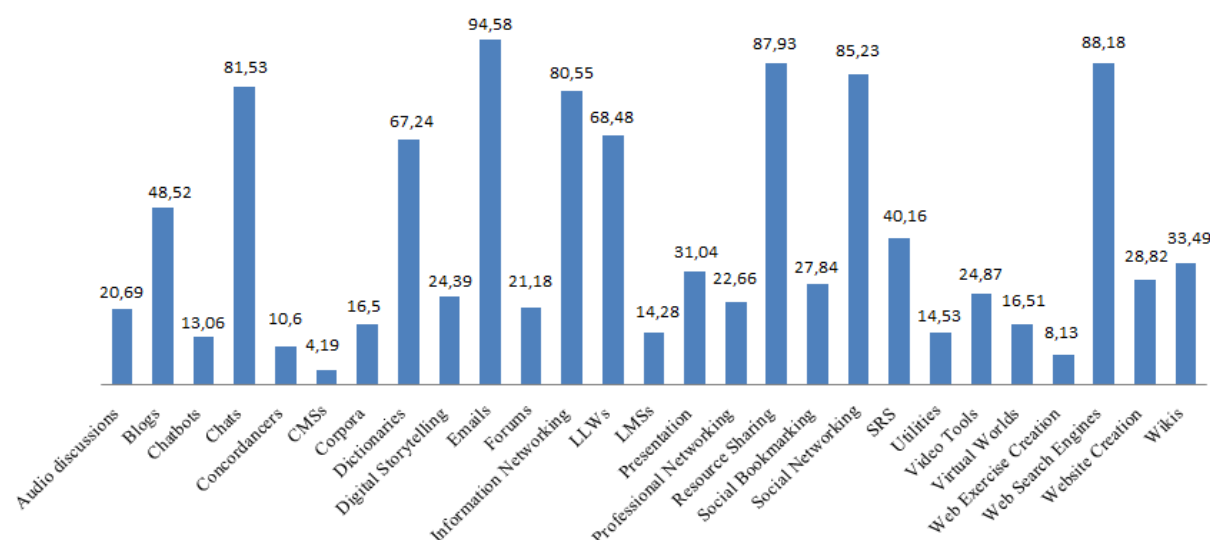


Figure 1. Teachers' familiarity with Web 2.0 tools

The figure shows that student teachers are quite familiar with tools such as chats, e-mails, resource sharing, and web search engines. The participants had low levels of familiarity with such technologies as CMSs, Web exercise Creation, LMSs, Concordances, and corpora. We can derive from this result that most participants are familiar with Web 2.0 tools that allow for interaction and communication. As for the tools which enable users to generate and document ideas and information as well as a query about words, phrases and chunks, student teachers' familiarity with them was considerably low.

3.1.2. Student teachers' familiarity with the Web 2.0 tools

In order to provide an answer for the second research question, the percentages, frequencies, mean scores and standard deviations related to student teachers use of Web 2.0 tools are provided in Figure 2 and Appendix B.

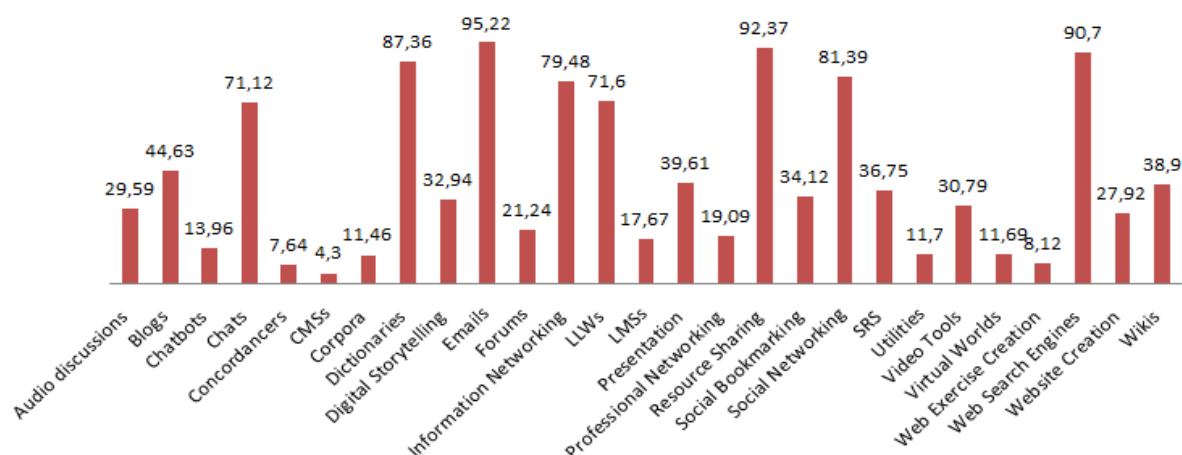


Figure 2. Frequency of using Web 2.0 tools

It is seen from the figure that the most commonly used tools are e-mails, resource sharing, and web search engines. The least frequently used tools are CMSs, Web Exercise Creation, concordancers, utilities, and chatbots. When the familiarity and the frequency of use are compared, it can be seen that there is a correlation between the familiarity and the use of online tools. Put differently, more familiarity results in more frequency in use.

3.1.3. Student teachers' familiarity with mobile apps

The second part of the first research question seeks an answer to student teachers' familiarity with mobile apps. Figure 3 below displays the familiarity with mobile apps by the participants.

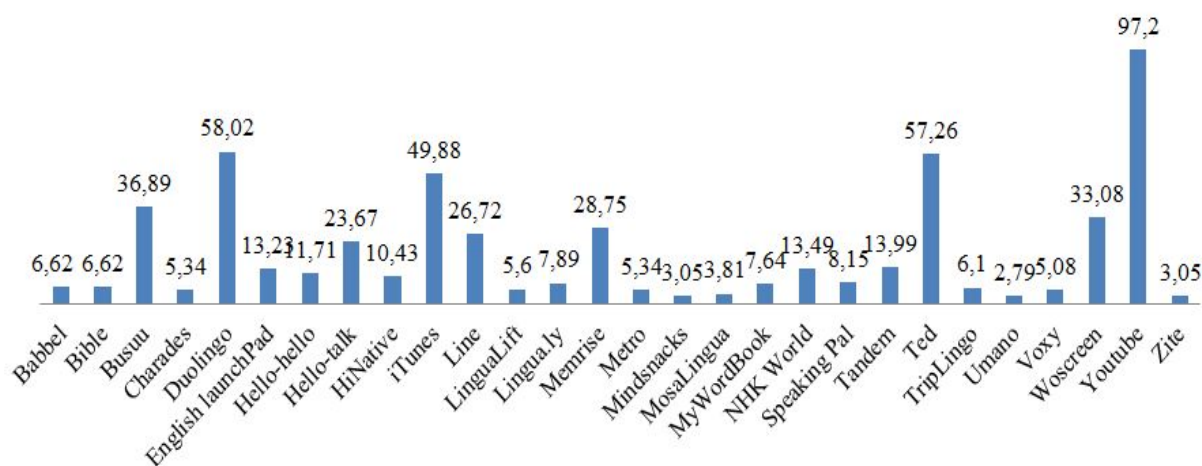


Figure 3. Student teachers' familiarity with mobile apps

The figure shows that the apps that received the highest percentages were *Youtube*, *Duolingo*, *TED*, and *i-tunes*. The common feature of these apps is that they allow exposure

to authentic language by native English speakers as well as non-native English speakers. On the other hand, student teachers are not familiar with *Umano*, *Zite*, *Mindsnacks*, *Mosalingua*, *Charades*, and *Metro*. Since the market offers hundreds of such apps, it may not be possible for users to be aware of any available app. However, it is important to enquire about how and why users become familiar with particular apps while others remain unfamiliar to them. This is a pressing matter, which we will thoroughly address while analysing the qualitative data.

3.1.4. The Frequency use of mobile apps

The frequency of using mobile apps is illustrated in Figure 4. The detailed table can be seen in Appendix D.

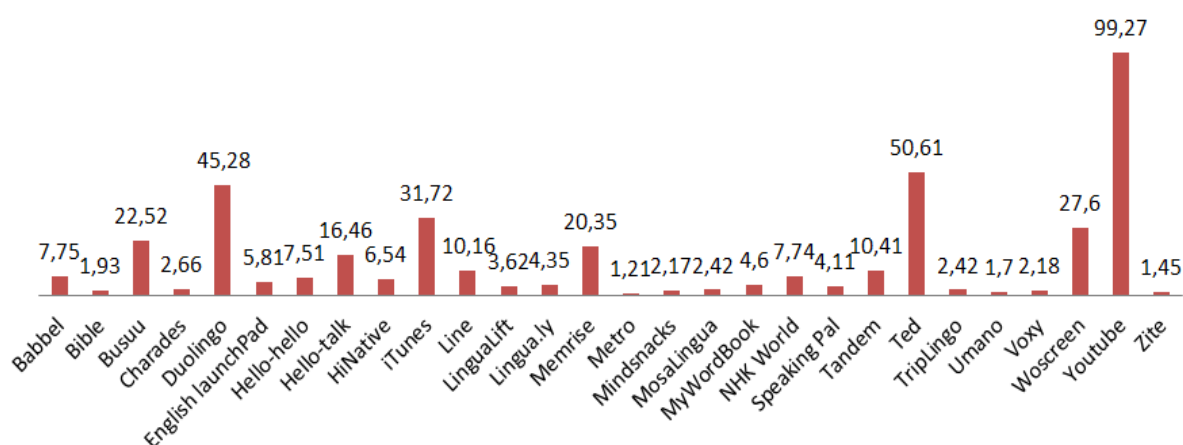


Figure 4. Frequency of using mobile apps

As is seen in Figure 4, mobile apps offering audio, video and interactive platforms are the most popular tools for autonomous language learning among student teachers of English. Therefore, Youtube, TED, and Duolingo were the most frequently used ones. It has been determined that Zite, Umano, Metro, and Bible were the least preferred apps by the participants.

3.2. Qualitative findings

3.2.1. The role of Web 2.0 tools and mobile applications in developing students' language skills

Our qualitative analyses are grounded in the answers given by the participants to the four open-ended questions at the end of the questionnaire. The analysis of the first open-ended question, i.e. *Do you believe you owe a lot to technology while improving your language skills and for which purposes do you use these tools?*, shows that the overwhelming majority deem that the technology-enhanced tools have contributed to their

language development in different capacities. Likewise, a great number of participants agreed on the effectiveness and usefulness of these tools in respect to improving major language skills. They mostly referred to vocabulary, listening, speaking, pronunciation, accent and writing respectively when specifying the skills they have improved through technological tools and apps. The extracts below nicely illustrate the common views among participants as to the role of technological tools in their current level of English proficiency.

S4: Actually, I have learnt a lot of words from dictionary applications and I have improved my listening skills thanks to YouTube.

S30: I believe in owing a lot to technology to improve my language skills. My tools are ted, voscreen, speaky, busuu, duolingo, wordpit, tureng dictionary, oxford English English dictionary. To improve my speaking tools are busuu duolingo ted voscreen speaky. To improve my vocabulary tools are wordpit, Tureng dictionary, Oxford English English dictionary.net

S66: I learned everything I know about English through technology (mostly through video games, movies or TV series which are part of technology but their main aim is entertainment, but they are useful and should be considered when talking about technology.)

S139: Some TV shows and films are both entertaining and facilitator to improve English skills like listening or vocabulary. As Turkish people, we cannot expose English language in daily life and technology give us opportunities to reach English language easily.

S234: My English teachers were not perfect about foreign language that I was being taught thus, thanks to technology and some of my teachers' advice I've managed to be able to speak English.

S304: I believe that. For example you cannot know how to pronounce about words you can improve your spelling by listening correct pronounce.

There were also a small group of participants who believed that technological tools have not played a key part in developing their language skills. These participants cited various reasons, which mostly revolved around such issues as *unwillingness to use Web 2.0 tools and applications*, *lack of awareness about Web.0 tools and mobile apps*, and *appreciating the role of traditional methods in their language skills*. Albeit not considering the technological tools helpful for developing their English in the past, some participants were

seen to believe in the necessity of using such tools and apps in order to improve their language skills. Some participants' accounts regarding this matter are as follows:

S83: I don't have enough information about them but I guess they are decent for vocabulary skills.

S164: No I don't think so I have enough knowledge to improve my language skills. I don't even know what these terms mean anyway. I improve my skills in high school with solving test problems and watching some TV series.

S219: No, I'm not into these kind of web tools improving my language but I was used to use applications like Memrise, Woscreen and now I'm using audiobooks and I'm also trying to translate some texts that I found on the internet.

S349: I don't owe anything to technology. Because Everything I've learned is through books. But I believe that I have to use it, especially for speaking and listening.

3.2.2. Channels of learning about technology tools and mobile apps

The second open-ended question was concerned with how the participants acquainted themselves with the tools and apps they have been using to improve their language skills. In response to this question, a large number of participants referred to their friends, university teachers, and their own search on the Internet, mostly using Google Search and YouTube. Additionally, some students reported that they became aware of such tools and apps via advertisements on the websites they visited, blog posts, as well as some apps they have been already using, e.g. Busuu, Duolingo and Kahoot. Below are some of the remarks made by participants, elucidating how they got familiar with Web 2.0 tools and mobile apps:

S69: I learnt from internet and my friends. I searched new titles about language development. I used Duolingo and Bussuu. I met new friends and spoke them.

S194: Sometimes my lecturers advised me to use some programs or internet pages. Mostly I explore new ones and find them.

S248: I learned these tools from my friends or by means of my expectations.

S311: I learn them on the comments on some certain websites or forums. I learnt some of them from my friends.

S367: From my friends or sometime from the advertisement.

To amply illustrate the most frequently used channels in search of finding Web 2.0 tools and mobile apps, the following word cloud visualization was generated in which the most frequently used means and agencies were coloured differently and in different shades of

services (e.g. Instagram, WhatsUp). The oft-mentioned tools and apps by the participants are illustrated below in Figure 6.

Figure 6. Web 2.0 tools and mobile apps frequently used by the participants

These results lend further support to the questionnaire results which demonstrated that student teachers primarily use Web 2.0 tools to check the meaning and pronunciation of unknown words and that they prefer to use most commonly known social networking tools for interaction and entertainment, and several apps for knowledge acquisition and language exposure

3.2.4. Tools and mobile apps to be used upon becoming a language teacher

The final open-ended question was about the tools pre-service language teachers were willing to use in their teaching practices. A great number of participants noted that they would largely use entertaining tools and game-based apps. There were also many participants who would opt for social networking websites and apps in their teaching practices due to their belief that such tools and apps will not only help students learn English more effectively but also enable them to learn English with fun and interactively. It seems that pre-service language teachers seem to be keen to address the affective aspects of the language learning process by means of Web 2.0 tools and mobile apps, as well. Additionally, some participants kept in mind the characteristics of the target group (e.g. young learners or adults) they prefer to teach when they become in-service teachers and accordingly articulated some particular tools and apps which they consider to be better suited to the needs of the target groups. In this respect, the following extracts clearly exemplify pre-service teachers' future aspirations concerning the use of Web 2.0 tools and apps in their teaching practices.

S21: I would use the ones that are funny and also teaches us something. I'm especially interested in 'Ted' because there are so many topics that we can be interested in and while we're listening we can improve ourselves.

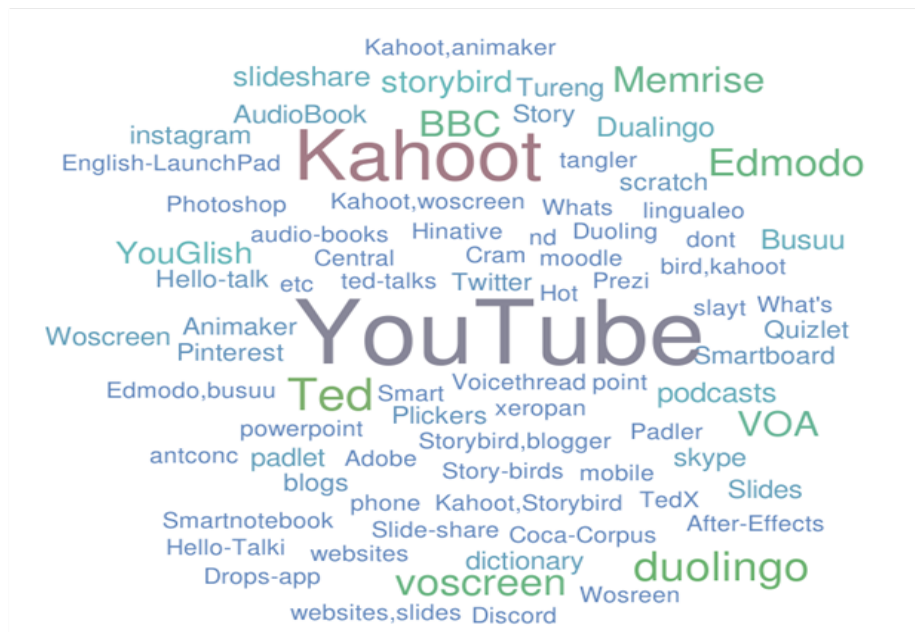
S144: I think I will continue to use some kind of dictionaries like Tureng, oxford and etc. Besides them I will use Youghlish which is so useful for me and I will use some Microsoft apps like PowerPoint, word, excel in order to prepare a presentation.

S167: For example I can use Kahoot in the future. Because we used when I was in the high school. It is a funny and informative application. And I believe when one mobile application or mobile tool is funny, it is more useful for the students. I prefer to learn English eagerly.

S278: It's important for the tool or application being easy and funny to use it. I already tried Memrise, Babbel, Duolingo, English Central, Kahoot, what'sapp, voscreen, etc.

They especially work for the young learners, I love these apps. I guess I will continue with them in the future, too.

Apart from the aforesaid ones, there has been a wide range of tools and apps mentioned in their accounts. Since space does not allow us to describe all of them in the form of quotes here, we brought together the most cited ones in participants' responses in the form of a word cloud visualization. The word cloud below delineates participants' preferences of Web 2.0 tools and mobile apps for future use.



Figure

7. Web 2.0 tools and mobile apps participants desire to use in the future

This figure shows that student teachers are planning to use Youtube, Kahoot, TED talk, VOA, duolingo, voscreen, Edmodo, BBC Learning English, MEMrise, and Youghish.

4. Discussion and Conclusion

One of the major findings of this current study is that the popular apps among the student teachers are those that allow listening and watching could be attributed to the motivation of the participants to reach authentic materials. Moreover, searching for information or social networks are the frequently used tools. The least used tools are the self-publishing tools such as blogs. The underuse of self-publishing tools among EFL learners could be linked to the conclusion by Zeng (2015) that “Web 2.0 technologies have not transformed them into more socially interactive learners of English” (p. 130). Previous research on ICT tools use among pre-service (Arıkan, 2008; Cephe & Balçıklı, 2012;

Kartal & Arikan, 2011; Külekçi, 2009) or in-service teachers (Arkın, 2003; Horzum, 2010; Saklavcı, 2010; Solmaz & Bekleyen, 2011; Şahin Kızıl, 2011), and instructor (Özel & Arıkan, 2015) were conducted with relatively small samples. Two studies (Aşıksoy, 2018; Kızıl, 2017) were conducted with more than 200 participants. While Aşıksoy (2018) explored only Web 2.0 tools, Şahin Kızıl (2017a) worked with general EFL students. The common findings of all these studies shed light on the fact that as of now, Turkish learners of English do not satisfactorily use the emerging technological tools. This conclusion is also in line with the findings of Bush (2008) and Garrett (2009).

When the Web 2.0 tools and mobile apps are considered separately, the findings of the current study are supported by those of Shahrokni and Sadeqjoola (2015) regarding the use of online tools. As for the mobile apps, Yaman, Şenel and Yeşilel (2015) reached similar results. The frequency differences between the familiarity and the use of the tools provide strong evidence that familiarity of the learners with the emerging technologies does not guarantee the use of the tools and apps in language learning, which is also supported by Arkın's findings (2003). Similarly, Zeng (2015) notes that "such usage patterns are due to lack of access to or knowledge about emerging online technologies" (p. 129).

The previous literature provides some evidence that apps can be effective tools for autonomous learners (Mindog, 2016). Some necessary adjustments can be made when the needs and aims of the learners show differences. Student teachers who do not have autonomy in their learning might face problems while integrating ICT tools in their teaching. Fostering autonomy of the learners should be an indispensable part of contemporary language teaching (Tschirhart & Rigler, 2009) because there is a strong positive correlation between autonomy and effective language learning (Benson, 2001; Chan, 2016). Language teachers of future are expected to create collaborative, interactive and motivating learning-teaching environment with well-designed and integrated sets of learning activities and tasks. The findings on the channels of learning about technology tools and mobile apps showed that student teachers heard about the tool mainly from peers and teachers (courses). Therefore, the teachers might be more effective with some additional courses on educational technology in language learning teaching.

The online tools and apps analysed in this study are favored ICT tools that bear a lot of potential to support language learning as they can be accessed easily and can be reached via smartphones that many students already possess. Despite the growing body of literature emphasizing the advantages of using Web 2.0 tools with language learners, this study, in line with Bennett et al., (2012), suggests that considerable efforts should be undertaken by student teachers of English in helping students perceive the value of Web 2.0 tools in language learning and acquire necessary academic skills. Additionally, as argued earlier, pre-service language teachers need urgent training in using Web 2.0 tools and apps. In this sense, one step that should be taken might be to offer an elective course on educational technology tailored for language learning and teaching in the language

teacher education program. The results of a recent research (Kartal, 2019) showed that some research studies on the effectiveness of technological tools do not support their methodology with theoretical underpinnings. It is reasonable to claim that choosing the proper tool may turn into a challenging process. Therefore, users should be careful “before being led down the golden path of technology” (Golonka et al. 2014, p. 93).

The results of the present study provide insightful data on the familiarity with the Web 2.0 tools and mobile apps as well as the frequency of using these tools. However, there are some other aspects that could possibly be covered by further research. As student teachers’ perceptions were not explored in this study, further research may focus on student teachers’ perceptions of the use of ICT tools in language teacher education programs. Future research can also explore the interrelation among the opportunity, desire and personal preference to use online tools and mobile apps. As the use of Web 2.0 tools and mobile apps can address the needs of student teachers with different learning styles (Prashnig, 2006), further research could usefully investigate the relationship between learning styles and ICT tools.

Note: An earlier version of this paper was delivered as an oral presentation at ICRAL (Third International Conference on Research in Applied Linguistics) at Selçuk University, on October 24-26, 2019.

References

- Agusalim, I. D., Assidiqi, M. H., Kom, A., & Muhammad, A. F. (2014). Developing mobile application of interactive English pronunciation training to improve EFL students’ pronunciation skill. *Journal of Education and Practice*, 5(33), 135-140.
- Arikan A. (2008). Prospective English language teachers’ foreign Language skills and the Internet. *Proceedings of E-Activity and Leading Technologies (IASK) – International Association for the Scientific Knowledge*. Madrid, Spain.
- Arkın, E. (2003). *Teachers’ attitudes towards computer technology use in vocabulary instruction* (Unpublished MA Dissertation). Bilkent University, Ankara.
- Aşıksoy, G. (2018). ELT Students’ attitudes and awareness towards the use of Web 2.0 technologies for language learning. *Journal of Language and Linguistic Studies*, 14(2), 240-251.
- Balbay, S., & Erkan, G. (2018). Perceptions of instructors on using Web 2.0 tools in academic English courses. *International Journal of Curriculum and Instruction*, 10(2), 45-60.
- Ban, R., & Summers, R. (2010). Using Web 2.0 tools for English as a foreign language teacher reflective practice. *MexTesol Journal*, 34(2), 1-9.
- Barrs, K. (2011). Mobility in learning: the feasibility of encouraging language learning on smartphones. *Studies in Self-Access Learning Journal*, 2(3), 228-233.
- Başal, A., Yılmaz, S., Tanrıverdi, A., & Sarı, L. (2016). Effectiveness of mobile applications in vocabulary teaching. *Contemporary Educational Technology*, 7(1), 47-59. Retrieved February 11, 2019 from <http://dx.doi.org/10.1016/j.system.2004.12.008>

- Başal, A., & Aytan, T. (2014). Using Web 2.0 tools in English language teaching. *International Conference ICT for Language Learning*. 7th Edition Pixel. Italy. Retrieved from: <http://conference.pixel-online.net/ICT4LL/files/ict4ll/ed0007/FP/1314-ICL807-FP ICT4LL7.pdf>
- Bennett, S., Bishop, A., Dalgarno, B., Waycott, J., & Kennedy, G. (2012). Implementing Web 2.0 technologies in higher education: A collective case study. *Computers & Education*, 59, 524–534
- Benson, P. (2001). *Teaching and researching autonomy in language learning*. London: Longman.
- Bott, A. (2005). Computer-aided self-access pronunciation materials designed to teach stress in American English. (*Unpublished MA dissertation*). Brigham: Brigham Young University.
- Burston, J. (2011). Realizing the potential of mobile phone technology for language learning. *IALLT Journal of Language Learning Technologies*, 41(2), 56-71. Retrieved February 5, 2018 from <https://ialltjournal.org/index.php/ialltjournal/article/download/115/106>
- Bush, M. D. (2008). Computer-assisted language learning: From vision to reality? *CALICO Journal*, 25(3), 443-470.
- Cephe P. T., & Balçıklanlı, C. (2012). Web 2.0 tools in language learning: What do student teachers think?. *International Journal on New Trends in Education and Their Implications (IJONTE)*, 3(1), 1-12.
- Chan, H. W. (2016). Popular culture, English out-of-class activities, and learner autonomy among highly proficient secondary students in Hong Kong. *Universal Journal of Educational Research*, 4(8), 1918-1923.
- Chartrand, R. (2012). Social networking for language learners: Creating meaningful output with Web 2.0 tools. *Knowledge Management & E-Learning: An International Journal (KM&EL)*, 4(1), 97-101.
- Cohen, L., Manion, L. & Morrison, K. (2010). *Research methods in education*. London: Routledge.
- Crook, C., Cummings, J., Fisher, T., Graber, R., Harrison, C., Lewin, C., et al. (2008). *Web 2.0 technologies for learning: The current landscape – Opportunities, challenges and tensions* (research reports). Coventry: British Educational Communications and Technology Agency (BECTA).
- Deng, Q., & Trainin, G. (2015). Learning vocabulary with Apps: From theory to practice. The Nebraska Educator: A Student-led Journal. Paper 29. Retrieved February 10, 2019 from <http://digitalcommons.unl.edu/nebeducator/29>
- Duffy, P., (2009). Engaging the YouTube Google-Eyed generation: Strategies for using Web 2.0 in teaching and learning. *Electronic Journal of e-Learning*, 2(6), 119-129.
- Ebadi, S., & Bashiri, S. (2018). Investigating EFL learners' perspectives on vocabulary learning experiences through smartphone applications. *Teaching English with Technology*, 18(3), 126-151.
- Gangaiamaran, R., & Pasupathi, M. (2017). Review on use of mobile apps for language learning. *International Journal of Applied Engineering Research*, 12(21), 973– 4562.
- Garrett, N. (2009). Computer-assisted language learning trends and issues revisited: Integrating innovation. *The Modern Language Journal*, 93, 719-740.
- Gerger, K. (2014). 1:1 tablet technology implementation in the Manhattan Beach Unified School District: A case study. Long Beach: California State University
- Goodwin-Jones, R. (2005). Emerging technologies: Skype and podcasting: Disruptive technologies for language learning. *Language Learning and Technology*, 9(3), 9–12.

- Gourova, E., Asenova, A., Dulev, P. (2013). Integrated platform for mobile learning, In D. Sampson, P. Isaias, J. M. Spector., & D. Ifenthaler (eds.), *Ubiquitous and Mobile Learning in the Digital Age* (pp. 67-92). New York: Springer Science+Business Media.
- Haggag, H. M. (2018). Teaching phonetics using a mobile-based application in an EFL context. *European Scientific Journal, ESJ*, 14(14), 189-204.
- Hofmann, J., & Miner, N. (2009). *Tailored learning*. Designing the blend that fits. Alexandria, Va.: ASTD Press.
- Horzum, M. B. (2010). Investigating teachers' Web 2.0 tools awareness, frequency and purposes of Usage in Terms of Different Variables. *International Journal of Human Sciences*, 7/1, 604-634.
- Hossain, M. (2018). Exploiting smartphones and apps for language learning: A case study with the EFL learners in a Bangladeshi university. *Review of Public Administration and Management*, 6(1), 1-5.
- Huang, C.-K., Chao, Y.-C. & Lin, C.-Y. (2008). Web 2.0 in and out of the language classroom. Proceedings of the 2008 World CALL: Using technologies for language learning. Foukoka: Japan.
- Huffman, K. (2017). Web 2.0: Beyond the concept practical ways to implement RSS, podcasts, and Wikis. *Education Libraries*, 29(1), 12-19.
- Ince, M., & Akdemir, Ö. (2013). The investigations of using web 2.0 technologies on English writing skills of students with different learning styles. *Eurasian Journal of Educational Research*, 53, 93-106.
- Kartal, G. (2019). What's up with WhatsApp? A critical analysis of mobile instant messaging research in language learning. *International Journal of Contemporary Educational Research*, 6(2), 352-365. <https://doi.org/10.33200/ijcer.599138>
- Kartal, G. (2020). An analysis of using technology in language learning in three flagship journals. *Mehmet Akif Ersoy Üniversitesi Eğitim Fakültesi Dergisi*, 53, 515-532. <https://doi.org/10.21764/maeuefd.645551>
- Kartal, E., & Arikan, A. (2011). Future foreign language teachers and the online tools they use to learn about foreign languages, literatures and cultures. *A paper presented at International eLearning Conference*, 119-124. Impact Muang Thong Thani, Thailand.
- Kavaliauskienė, G., & Anusienė, L. (2009). English for specific purposes: Podcasts for listening skills. *Coactivity/Santalka*, 17(2) 28-37. <https://doi.org/10.3846/1822-430X.2009.17.2.28-37>
- Kavandı, E (2012). *The effects of using blogs on the development of foreign language writing proficiency*. (Unpublished Phd Thesis). Gazi University, Ankara.
- Kennedy, G., Dalgarno, B., Krause, K., Bishop, A., Chang, R., and Churchwood, A. (2007). The net generation are not big users of Web 2. 0 technologies: Preliminary findings, Annual Conference of the Australasian Society for Computers in Learning in Tertiary Education (Ed: R. Atkinson, C. McBeath, S. Soong, and C. Cheers), Singapore, Nanyang Technology University.
- Kennedy, G., Judd, T., Churchward, A., Gray, K., & Krause, K. L. (2008). First year students' experiences with technology: Are they really digital natives?. *Australasian Journal of Educational Technology*, 24(1), 108–122.
- Kessler, G. (2009). Student-initiated attention to form in wiki-based collaborative writing. *Language Learning & Technology*, 13(1), 79–95.
- Kétyi, A. (2013). Using smart phones in language learning - A pilot study to turn CALL into MALL. In L. Bradley & S. Thouësny (eds). *20 Years of EUROCALL: Learning from the Past, Looking to*

- the Future*. Proceedings of the 2013 EUROCALL Conference, Évora, Portugal. Dublin/Voillans: Research-publishing.net.
- Külekçi, G. (2009). Assessing the Attitudes of Pre-Service English Teachers towards the Use of the Internet. *Journal of Kırşehir Education Faculty*, 10(3), 153-160.
- Kumaravadivelu, B. (2006). Understanding language teaching: From method to postmethod. London: Lawrence Erlbaum Associates.
- Laghari, Z. P., Kazi, H., & Nizamani, M. A. (2017). Mobile learning application development for improvement of English listening comprehension. *International Journal of Advanced Computer Science and Applications*, 8(8), 229-237.
- Langer de Ramirez, L. (2010). *Empower English language learners with tools from the web*. Thousand Oaks: Corwin Press.
- Levy, M., & Kennedy, C. (2005). Learning Italian via mobile SMS. In A. Kukulska-Hulme & J. Traxler (Eds.), *Mobile learning: A handbook for educators and trainers* (pp. 76–83). London, UK: Taylor and Francis.
- Liu, M. Navarrete, C. C., Maradiegue, E. & Wivagg, J. (2014). Mobile learning and English language learners: A case study of using iPod touch as a teaching and learning tool. *Journal of Interactive Learning Research*, 25(3), 373-403.
- Margaryan, A., Littlejohn, A., & Vojt, G. (2011). Are digital natives a myth or reality? University students' use of digital technologies. *Computers & Education*, 56(2), 429–440.
- McGee, P. & Diaz, V. (2007). Wikis and podcasts and blogs! Oh my! What is a faculty member to do?. *EDUCAUSE Review*, 42(5), 1-11.
- Mindog, E. (2016). Apps and EFL: A case study on the use of smartphone apps to learn English by four Japanese university students. *The JALTCALL Journal*, 12(1), 3-22.
- MoNE. (2017a). T.C. Millî Eğitim Bakanlığı Talim ve Terbiye Kurulu Başkanlığı [Republic of Turkey, Ministry of National Education]. İngilizce Dersi Öğretim Programı (İlkokul ve Ortaokul, 3, 4, 5, 6, 7 ve 8. sınıflar) [English language curriculum] (Primary and lower secondary for Grades 2-8). Ankara: T.C. Millî Eğitim Bakanlığı.
- MoNE. (2017b). T.C. Millî Eğitim Bakanlığı Talim ve Terbiye Kurulu Başkanlığı [Republic of Turkey, Ministry of National Education]. İngilizce Dersi Öğretim Programı (Ortaöğretim, 9, 10, 11, 12. sınıflar) [English language curriculum] (High School for Grades 2-8). Ankara: T.C. Millî Eğitim Bakanlığı.
- MoNE. (2018). T.C. Millî Eğitim Bakanlığı Talim ve Terbiye Kurulu Başkanlığı [Republic of Turkey, Ministry of National Education]. 2023 Eğitim Vizyonu [Turkey's 2023 Education Vision]. Ankara: T.C. Millî Eğitim Bakanlığı.
- Muhammed, A. A. (2014). The impact of mobiles on language learning on the part of English Foreign Language (EFL) university students. *Procedia - Social and Behavioral Sciences*, 136, 104-108. doi: 10.1016/j.sbspro.2014.05.297
- Murphy, G. D. (2011). Post-PC devices: a summary of early iPad technology adoption in tertiary environments. *E-journal of Business Education & Scholarship of Teaching*, 5(1), 18-32
- Özel, A. (2013). *The use of the Internet and Web 2.0 tools among EFL instructors*. Akdeniz University. (Unpublished Master Thesis). Akdeniz University: Antalya.
- Özel, A. G., & Arikan, A. (2015). The use of the internet and web 2.0 tools among EFL instructors. *Mediterranean Journal of Humanities*, 5, 313-325.
- Pilar, R. A., Jorge, A., & Cristina, C. (2013). The use of current mobile learning applications in EFL. *Procedia-Social and Behavioral Sciences*, 103, 1189-1196.

- Pinkman, K. (2005). Using blogs in the foreign language classroom: Encouraging learner independence. *The JALT CALL Journal*, 1(1), 12–24.
- Prashnig, B. (2006). *Learning styles and personalised teaching*. London: Continuum International Publishing.
- Rahimi, M. & Miri, S. S. (2014). The impact of mobile dictionary use on language learning. *Procedia - Social and Behavioral Sciences*, 98, 1469-1474. <https://doi.org/10.1016/j.sbspro.2014.03.567>
- Richards, J., & Rodgers, T. (2014). *Approaches and methods in language teaching* (3rd ed.). Cambridge: Cambridge University Press.
- Rosell-Aguilar, F. (2014). *How smartphone apps are revolutionising language learning*. Retrieved from <https://theconversation.com/how-smartphone-apps-are-revolutionising-language-learning-25165>
- Şahin Kızıl, A. (2011). EFL Teachers attitudes towards information and communication technologies (ICT). *5th International Computer & Instructional Technologies Symposium*. Firat University, Erzuurm.
- Şahin Kızıl, A. (2015). Investigating the impact of wikis on writing performance of EFL students. Öz, H. (Ed.). *Language and Communication Research around the Globe: Exploring Untested Ideas* (pp.103-126). New York: Untested Ideas Research Center.
- Şahin Kızıl, A. (2017a). Exploring EFL learners' use of web 2.0 tools: Preliminary findings. *Pamukkale University Journal of Social Sciences Institute*, 27, 28-40. <https://doi.org/10.5505/pausbed.2017.71602>
- Şahin Kızıl, A. (2017b). EFL learners in the digital age: An investigation into personal and educational digital engagement. *RELC Journal*, 48(3), 373-388.
- Saklavcı, A. (2010). *The use of the internet among EFL teachers at high schools in Eskişehir* (Unpublished Master's Thesis). Anadolu University, Eskişehir.
- Selevičienė, E., & Burksaitienė, N. (2016). University students' attitudes towards the usage of Web 2.0 tools for learning ESP. A preliminary investigation. *Societal Studies*, 7(2), 270-291.
- Shahrokni, S. A., & Sadeqjoola, L. (2015). Iranian EFL teachers' perception, familiarity and use of Web 2.0 tools in TEFL. *Teaching English with Technology*, 15(3), 31-46.
- Shishkovskaya, J. V., & Sokolova, E. Y. (2015). Integration of Web 2.0 technologies into the process of students' self-directed English learning. *Mediterranean Journal of Social Sciences*, 6(2), 541-545.
- Solmaz O., & Bekleyen N. (2011). The use of the Internet by high school EFL teachers for professional purposes. *Dicle Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*. Retrieved from http://e-dusbed.com/Makaleler/213372437_ID43%20s.17-28.pdf
- Son, J. (2011, June). Online tools for language teaching. *TESL-EJ*, 15(1). Retrieved from <http://www.tesl-ej.org/wordpress/issues/volume15/ej57/ej57int/>
- Stockwell, G. (2010). Using mobile phones for vocabulary activities: examining the effect of the platform. *Language learning & technology*, 14 (2), 95-110
- Suwanaratip, O. & Orawiwantakul, W. (2015). Using mobile assisted exercises to support students' vocabulary skill development. *Turkish Online Journal of Educational Technology*, 14(1), 163-171
- Thomas, K. & O'Bannon, B. (2015). Mobile phones in the classroom: Preservice teachers answer the call. *Computers and Education Journal*, 85, 110-122.
- Thompson, J. (2007). Is education 1.0 ready for Web 2.0 students? *Innovate: Journal of Online Education*, 3(4), 1-6.

- Thorne, S., & Payne, J. (2005). Evolutionary trajectories, Internet mediated expression, and language education. *CALICO*, 22(3), 371–397.
- Thornton, P. & Houser, C. (2005). Using mobile phones in English education in Japan. *Journal of Computer Assisted Learning*, 21(3), 217-228. <https://doi.org/10.1111/j.1365-2729.2005.00129.x>
- Tschirhart, C., & Rigler, E. (2009). LondonMet e-packs: a pragmatic approach to learner/teacher autonomy. *Language Learning Journal*, 37(1), 71–83.
- Wang, S., & Vasquez, C. (2012). Web 2.0 and second language learning: What does the research tell us? *CALICO Journal*, 29(3), 412-430.
- Warner, C. N. (2004). It's just a game, right?: Types of play in foreign language CMC. *Language Learning & Technology*, 8(2), 69–7.
- Warschauer, M., & Grimes, D. (2007). Audience, authorship, and artefact: the emergent semiotics of Web 2.0. *Annual Review of Applied Linguistics*, 27, 1–23.
- Warschauer, M., & Meskill, C. (2000). Technology and second language learning. In J. Rosenthal (Ed.), *Handbook of undergraduate second language education* (pp. 303-318). Mahwah, New Jersey: Lawrence Erlbaum.
- Watkins, J., & Wilkins, M. (2011). Using YouTube in the EFL classroom. *Language Education in Asia*, 2(1), 113-119.
- Xiao, J. & Luo, Y. (2015). Application of mobile learning system in phonetics teaching. *International conference on social science*, Atlantis Press, China.
- Yaman, İ., Şenel, M., & Yeşilel, D. B. A. (2015). Exploring the extent to which ELT students utilise smartphones for language learning purposes. *South African Journal of Education*, 35(4), 1-9.
- Zeng, S. (2015). *English Learning with Web 2.0: An investigation into Chinese undergraduates' technology (non)-use and perspectives*. (Unpublished Doctoral Dissertation), London: UCL Institute of Education.
- Usluel, Y. K., Mazman, S. G., & Arıkan, A. (2009). Prospective teachers' awareness of collaborative web 2.0 tools. *The IADIS International Conference WWW/Internet 2009*.

Appendix A. Student teachers' familiarity with the Web 2.0 tools

How often do you use the following Technologies?	Extremely Familiar (1) %	Very Familiar (2) %	Moderately Familiar (3) %	Slightly Familiar (4) %	Not familiar at all (5) %	Mean	SD
Audio discussions (e.g. Audacity, Voxopop, Audio Editor, VoiceThread, Audioboo, KVR audio, etc.)	0.74	4.43	15.52	26.60	52.71	4.26	0.93
Blogs (e.g. Blogger, Wordpress, Edublogs, etc.)	8.13	14.04	26.35	29.80	21.67	3.43	1.20
Chatbots (e.g. Verbot, Cleverbot, Jabberwacky, etc.)	1.48	2.96	8.62	18.97	67.98	4.49	0.88
Chats (e.g. Livemocha, Yahoo! Messenger, Skype, etc.)	28.57	32.27	20.69	11.82	6.67	2.36	1.20
Concordancers (e.g. VLC Web Concordancer, Wordsmith, AntConc, etc.)	0.99	2.22	7.39	16.26	73.15	4.58	0.80
Content Management Systems (e.g. Drupal, Joomla, Xoops, etc.)	0.00	1.48	2.71	8.87	86.95	4.81	0.54
Corpora (COCA corpus, BNC)	1.97	5.91	8.62	13.55	69.95	4.44	1.00
Dictionaries (e.g. Dictionary.com, OneLook.com, Forvo, etc.)	21.18	21.18	24.88	20.94	11.82	2.81	1.31
Digital Storytelling (ZimmerTwins, Story Bird, Someries, PicLists, Slidestory, Picturebookmaker, etc.)	1.97	7.64	14.78	23.65	51.97	4.16	1.06
Emails (e.g. Yahoo! Mail, Gmail, Hotmail, etc.)	59.85	27.34	7.39	3.94	1.48	1.60	0.90
Forums (e.g. MyBB, phpBB, Tangler, etc.)	4.43	4.43	12.32	20.69	58.13	4.24	1.11
Information Networking (e.g. Twitter, Evernote, Friendfeed, etc.)	28.82	24.14	27.59	11.58	7.88	2.46	1.24
Language Learning Websites (BBC, VOA)	20.20	24.88	23.40	15.27	16.26	2.83	1.35
Learning Management Systems (MOODLE, Blackboard, Desire2learn, etc.)	1.72	2.46	10.10	17.49	68.23	4.48	0.90
Presentation (e.g. 280 Slides, Animoto, SlideRocket, etc.)	6.90	8.87	15.27	19.70	49.26	3.96	1.27
Professional Networking (e.g. LinkedIn, Viadeo, XING, etc.)	2.71	6.40	13.55	22.66	54.68	4.20	1.07
Resource Sharing (e.g. Google Docs, Youtube, MyPodcast, etc.)	42.61	28.08	17.24	6.65	5.42	2.04	1.16
Social Bookmarking (e.g. Delicious, Diigo, Google bookmarks, etc.)	4.68	7.64	15.52	25.62	46.55	4.02	1.16
Social Networking (e.g. Facebook, Google +, MySpace, etc.)	35.96	30.30	18.97	8.62	6.16	2.19	1.19
Student Response System (Kahoot, Quizizz, Padlet, Plickers, Brainrush)	7.64	11.58	20.94	20.20	39.66	3.73	1.30
Utilities (e.g. Voki, Storybird, Wallwisher, etc.)	1.48	2.46	10.59	16.50	68.97	4.49	0.89
Video Tools (Animoto, Vimeo, Wevideo)	3.20	6.40	15.27	25.37	49.75	4.12	1.09
Virtual Worlds (e.g. Active Worlds, Second Life, Twinity, etc.)	2.22	4.93	9.36	17.49	66.01	4.40	0.99
Web Exercise Creation (e.g. Content Generator, Hot Potatoes, SMILE, etc.)	0.74	1.23	6.16	12.56	79.31	4.68	0.71
Web Search Engines (e.g. Google, Yahoo!, Ask.com, etc.)	45.81	26.85	15.52	6.90	4.93	1.98	1.15
Website Creation (e.g. Google sites, Movable type, KompoZer, etc.)	2.96	9.11	16.75	20.20	50.99	4.07	1.14
Wikis (e.g. Wikispaces, Edmodo, etc.)	7.39	10.34	15.76	17.00	49.51	3.91	1.31

Appendix B. Frequency of using Web 2.0 Tools

How often do you use the following Technologies?	Never (1) %	Seldom (2) %	Sometimes (3) %	Often (4) %	Very frequently (5) %	Mean	SD
Audio discussions (e.g. Audacity, Voxopop, Audio Editor, VoiceThread, Audioboo, KVR audio, etc.)	40.33	30.07	21.96	6.68	0.95	1.98	0.99
Blogs (e.g. Blogger, Wordpress, Edublogs, etc.)	23.87	31.50	30.55	10.50	3.58	2.38	1.07
Chatbots (e.g. Verbot, Cleverbot, Jabberwacky, etc.)	69.45	17.18	9.91	3.10	0.95	1.49	0.86
Chats (e.g. Livemocha, Yahoo! Messenger, Windows Live Messenger, Skype, etc.)	9.55	19.33	26.25	28.16	16.71	3.23	1.21
Concordancers (e.g. VLC Web Concordancer, Wordsmith, AntConc, etc.)	73.03	19.33	5.49	1.67	0.48	1.37	0.71
Content Management Systems (e.g. Drupal, Joomla, Xoops, etc.)	83.53	12.17	2.63	1.67	0.00	1.22	0.57
Corpora (COCA corpus, BNC)	72.32	16.23	8.59	2.63	0.24	1.42	0.78
Dictionaries (e.g. Dictionary.com, OneLook.com, Forvo, etc.)	7.16	5.49	21.72	38.19	27.45	3.73	1.13
Digital Storytelling (ZimmerTwins, Story Bird, Someries, PicLists, Slidestory, Picturebookmaker, etc.)	44.63	22.43	24.11	7.16	1.67	1.99	1.06
Emails (e.g. Yahoo! Mail, Gmail, Hotmail, etc.)	0.72	4.06	11.93	27.68	55.61	4.33	0.89
Forums (e.g. MyBB, phpBB, Tangler, etc.)	52.98	25.78	12.17	5.97	3.10	1.80	1.06
Information Networking (e.g. Twitter, Evernote, Friendfeed, etc.)	10.98	9.55	21.96	30.31	27.21	3.53	1.28
Language Learning Websites (BBC, VOA)	13.37	15.04	32.70	29.59	9.31	3.06	1.16
Learning Management Systems (MOODLE, Blackboard, Desire2learn, etc.)	62.05	20.29	13.37	3.82	0.48	1.60	0.89
Presentation (e.g. 280 Slides, Animoto, SlideRocket, etc.)	43.20	17.18	17.42	13.60	8.59	2.27	1.36
Professional Networking (e.g. LinkedIn, Viadeo, XING, etc.)	60.62	20.29	13.37	4.77	0.95	1.65	0.95
Resource Sharing (e.g. Google Docs, Youtube, MyPodcast, etc.)	3.58	4.06	10.98	29.36	52.03	4.22	1.03
Social Bookmarking (e.g. Delicious, Diigo, Google bookmarks, etc.)	39.86	26.01	21.00	8.35	4.77	2.12	1.17
Social Networking (e.g. Facebook, Google +, MySpace, etc.)	7.40	11.22	16.95	28.16	36.28	3.75	1.26
Student Response System (Kahoot, Quizizz, Padlet, Plickers, Brainrush)	39.86	23.39	25.30	8.11	3.34	2.12	1.12
Utilities (e.g. Voki, Storybird, Wallwisher, etc.)	68.74	19.57	9.07	2.15	0.48	1.46	0.78
Video Tools (Animoto, Vimeo, Wevideo)	47.73	21.48	18.38	8.83	3.58	1.99	1.16
Virtual Worlds (e.g. Active Worlds, Second Life, Twinity, etc.)	69.69	18.62	8.35	2.39	0.95	1.46	0.82
Web Exercise Creation (e.g. Content Generator, Hot Potatoes, SMILE, etc.)	77.33	14.56	5.73	2.15	0.24	1.33	0.70
Web Search Engines (e.g. Google, Yahoo!, Ask.com, etc.)	3.34	5.97	9.31	20.53	60.86	4.30	1.07
Website Creation (e.g. Google sites, Movable type, KompoZer, etc.)	52.27	19.81	16.47	6.44	5.01	1.92	1.18
Wikis (e.g. PBWorks, Wikispaces, Edmodo, etc.)	41.05	20.05	18.38	11.69	8.83	2.27	1.34

Appendix C. Student teachers' familiarity with the Mobile Apps

How familiar are you with the following mobile applications?	Extremely Familiar	Very Familiar	Moderately Familiar	Slightly Familiar	Not Familiar Et All	Mean	SD
Babbel	1.02	1.53	4.07	5.85	87.53	4.77	0.69
Bible	1.02	2.29	3.31	7.38	86.01	4.75	0.72
Busuu	9.92	10.18	16.79	12.47	50.64	3.84	1.40
Charades	1.02	0.76	3.56	5.60	89.06	4.81	0.63
Duolingo	22.39	18.07	17.56	11.20	30.79	3.10	1.55
English launchPad	1.78	2.80	8.65	8.91	77.86	4.58	0.89
Hello-hello	2.04	3.82	5.85	9.41	78.88	4.59	0.91
Hello-talk	6.36	6.11	11.20	11.20	65.14	4.23	1.24
HiNative	1.27	2.29	6.87	8.40	81.17	4.66	0.81
iTunes	18.83	12.47	18.58	13.74	36.39	3.36	1.53
Line	5.34	6.11	15.27	9.67	63.61	4.20	1.21
LinguaLift	1.02	1.27	3.31	7.38	87.02	4.78	0.66
Lingua.ly	0.51	1.02	6.36	7.38	84.73	4.75	0.66
Memrise	10.43	6.87	11.45	8.65	62.60	4.06	1.40
Metro	0.51	0.76	4.07	4.58	90.08	4.83	0.57
Mindsnacks	0.00	1.27	1.78	5.85	91.09	4.87	0.48
MosaLingua	0.25	1.27	2.29	5.34	90.84	4.85	0.53
MyWordBook	1.02	1.02	5.60	10.18	82.19	4.72	0.71
NHK World	3.82	3.05	6.62	8.91	77.61	4.53	1.01
Speaking Pal	1.53	2.04	4.58	8.91	82.95	4.70	0.78
Tandem	4.83	4.07	5.09	10.94	75.06	4.47	1.08
Ted	20.87	18.32	18.07	9.41	33.33	3.16	1.56
TripLingo	0.76	1.27	4.07	6.87	87.02	4.78	0.65
Umano	0.00	0.25	2.54	6.87	90.33	4.87	0.42
Voxy	0.25	0.76	4.07	6.36	88.55	4.82	0.55
Whats up	35.88	12.21	11.45	6.11	34.35	2.91	1.73
Woscreen	13.74	9.67	9.67	9.41	57.51	3.87	1.51
Youtube	78.12	16.03	3.05	0.51	2.29	1.33	0.77
Zite	0.00	0.76	2.29	5.34	91.60	4.88	0.45

Appendix D. Frequency of using Mobile Apps

How often do you use the following mobile applications?	Never	Seldom	Sometimes	Often	Very frequently	M	SD
Babbel	87.17	5.08	2.18	3.15	2.42	1.29	0.85
Bible	92.49	5.57	1.21	0.48	0.24	1.10	0.42
Busuu	62.95	14.53	13.56	7.02	1.94	1.70	1.06
Charades	92.74	4.60	2.18	0.48	0.00	1.10	0.41
Duolingo	36.80	17.92	28.81	10.17	6.30	2.31	1.24
English launchPad	84.50	6.69	3.39	1.21	1.21	1.25	0.69
Hello-hello	86.44	6.05	4.12	2.18	1.21	1.26	0.74
Hello-talk	73.61	9.93	10.41	3.39	2.66	1.52	0.99
HiNative	86.92	6.54	4.84	0.97	0.73	1.22	0.64
iTunes	58.35	9.93	14.53	8.23	8.96	2.00	1.37
Line	77.72	12.11	7.02	1.45	1.69	1.37	0.82
LinguaLift	91.53	4.84	2.66	0.48	0.48	1.14	0.51
Lingua.ly	89.83	5.81	1.69	1.69	0.97	1.18	0.63
Memrise	69.73	9.93	9.69	7.75	2.91	1.64	1.11
Metro	94.43	3.87	0.73	0.48	0.48	1.09	0.43
Mindsnacks	93.70	4.12	1.45	0.48	0.24	1.09	0.42
MosaLingua	92.98	4.60	1.45	0.73	0.24	1.11	0.44
MyWordBook	87.41	7.99	3.39	0.97	0.24	1.19	0.55
NHK World	84.99	7.26	5.08	1.45	1.21	1.27	0.73
Speaking Pal	91.53	4.36	3.15	0.48	0.48	1.14	0.52
Tandem	83.29	6.30	5.81	2.18	2.42	1.34	0.87
Ted	40.19	9.20	20.58	17.92	12.11	2.53	1.46
TripLingo	92.01	5.57	1.21	0.73	0.48	1.12	0.48
Umano	95.16.36	3.15	0.73	0.73	0.24	1.08	0.40
Voxy	93.46	4.36	1.21	0.73	0.24	1.10	0.43
Whats up	34.38	6.05	8.23	10.65	40.68	3.17	1.77
Woscreen	64.89	7.51	11.62	10.41	5.57	1.84	1.29
Youtube	0.48	0.24	2.42	21.31	75.54	4.71	0.57
Zite	94.67	3.87	0.97	0.48	0.00	1.07	0.34

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Students' attitudes toward project-based learning in an intermediate Spanish course

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Abstract

The result of continuous advancements in technology is a constant questioning of proper methods for the academic teaching of foreign languages in k-12 and higher education. Using Culturally Relevant Andragogy (Parker, 2019) as a framework, this study sought to understand students' attitudes toward project-based learning in an intermediate Spanish as a second language course. After experiencing such a curriculum, students were surveyed. Results of the survey indicated that students generally liked project-based learning but felt that there were certain drawbacks with its implementation and measuring of their success.

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Keywords: *Foreign Language Education; Project-based Learning; Action Research; Spanish; Culturally Relevant Teaching; Andragogy; Multicultural Education*

1. Introduction

Contemporary foreign language education is in a state of change (Berman, 2011). Long gone are the days where traditional teaching styles such lecture, vocabulary and grammar memorization, and paper testing were seen as the most effective methods for guiding students to fluency in the target language. Current day foreign language classrooms do not have the capacity for such archaic methodology because of the increasing course sizes and more elaborate scheduling at both the k-12 and university levels. As a result, today's beginner and intermediate foreign language students are not given access to enough individualized attention to facilitate significant language acquisition as in the past.

At the university level, the common response to the aforementioned issue has commonly been study abroad programs. Although there are various types of study abroad programs offered to students at most universities, the majority of students do not have the available time and additional funding to participate. Thus, for higher education foreign language faculty, one on-going question has been how can they better guide students to advanced fluency in the target language while working within various physical, financial, and administrative constraints?

While recent literature (Parker, 2019a, 2019b) has suggested that multicultural education as an approach to curriculum design and instructional practice in foreign language courses is the answer, more research is needed. Because multicultural education is so dynamic, the scope of this study focused on understanding the value of equity pedagogies in foreign language education. Specifically, project-based learning as a form of experiential learning.

Previous literature (Lee, 2015; Maida, 2011; Park & Hiver, 2017; Petersen, C. & Nassaji 2016) has mainly suggested that students gain more knowledge through experiential learning than through passive classroom environments. More specifically, project-based learning, which is one form of experiential learning, has become very popular among those teaching skill-based courses such as foreign languages. Whereas a large amount of previous research focuses on English as a Second or Foreign Language, there is a need for research on its inclusion in the teaching of other second languages. Thus, the purpose of this study was to investigate students' attitudes toward project-based learning in an intermediate, level two Spanish as a foreign language course. The following section will review the previous literature that guided this study.

1.1. Literature review

There were various theoretical underpinnings guiding the undertaken study. The overarching theoretical framework was curriculum theory. Within curriculum theory, multicultural education served as the primary perspective on teaching and learning. Equity pedagogy is one dimension of critical multicultural education and focuses on instructional practices that consider diverse groups of learners (Banks, 2019). This study was structured around instructional practices as dictated by Culturally Relevant Andragogy (Parker, 2019). Likewise, this study centered on project-based learning as the main basis for guiding curricular and instructional decisions.

1.1.1. Equity Pedagogy

Equity pedagogy is a critical multicultural perspective on classroom instruction. In order to properly engage this instructional approach, teachers use techniques and methods in combination with a positive classroom environment to facilitate academic achievement for

students from diverse racial, ethnic, gender, exceptionality, sexuality, and social-class backgrounds. These instructional techniques are matched to the specific cultural groups of learners and their needs. These techniques are responsive to and take into account varying degrees of learning styles, skills for acquiring knowledge, attitudes toward what is needed to function in a democratic society, backgrounds, and the cultural characteristics of each student (Banks, 2016, 2019; McGee-Banks & Banks, 1995).

Through equity pedagogy students are taught to generate multiple solutions and perspectives on the course content. Equity pedagogy is opposite of pedagogy that teaches students to fit within society for the purpose of social mobility. When engaging with an equity pedagogy, students are actively involved in the knowledge construction process. Such pedagogy provides an environment that allows students to be able to critique and evaluate existing knowledge and produce new ideas.

Equity pedagogy helps in addressing the larger issue of transforming the curriculum and is thus closely intertwined with it. Equity pedagogy is usually implemented via strategies such as Cooperative Learning and Culturally Relevant Pedagogy. For this study, Culturally Relevant Andragogy was adopted.

1.1.2. Culturally Relevant Andragogy

In the contemporary state of higher education, a transition from pedagogy (the theory of teaching children) to andragogy (the theory of teaching adults) is necessary in program and course design. Because most k-12 students have experienced standardized testing throughout all of their academic career, many college students are accustomed to a process of “tell me what I need to know”. They consistently enter the classroom with this mentality and usually later shift to a “give me the tools necessary to pass the test” attitude. Andragogy seeks to drive learning from the perspective of “let’s explore this topic to better understand our individual worlds”. Thus, course instructors are considered to be the knowledge-facilitator rather than the knowledge holder.

The term “adult” in the educational sense means an individual who is around age 15 or 16 and his or her brain is reaching or has reached its last stage of development (Knowles & Associates, 1984; Knowles, Holton, & Swanson, 2005). This is not to be confused with the legal connotation of adult which means that an individual is 18 years of age or older. Because the typical post-secondary student is 16+, Culturally Relevant Andragogy (CRA) provides a critical lens for guiding instruction within the paradigm of multicultural education in the university setting.

CRA is an offshoot of Culturally Relevant Pedagogy and is considered to be a resource pedagogy. Such pedagogies are a response to perceived deficits in current approaches to

the teaching and learning process (Kumar, 2018). They aim to use student cultural practices as tools to help everyone in the course succeed via critical engagement with course content and each other.

As shown in figure 1.1., higher education faculty members who engage in CRA understand that the core of student learning is based on what the student brings to the classroom.

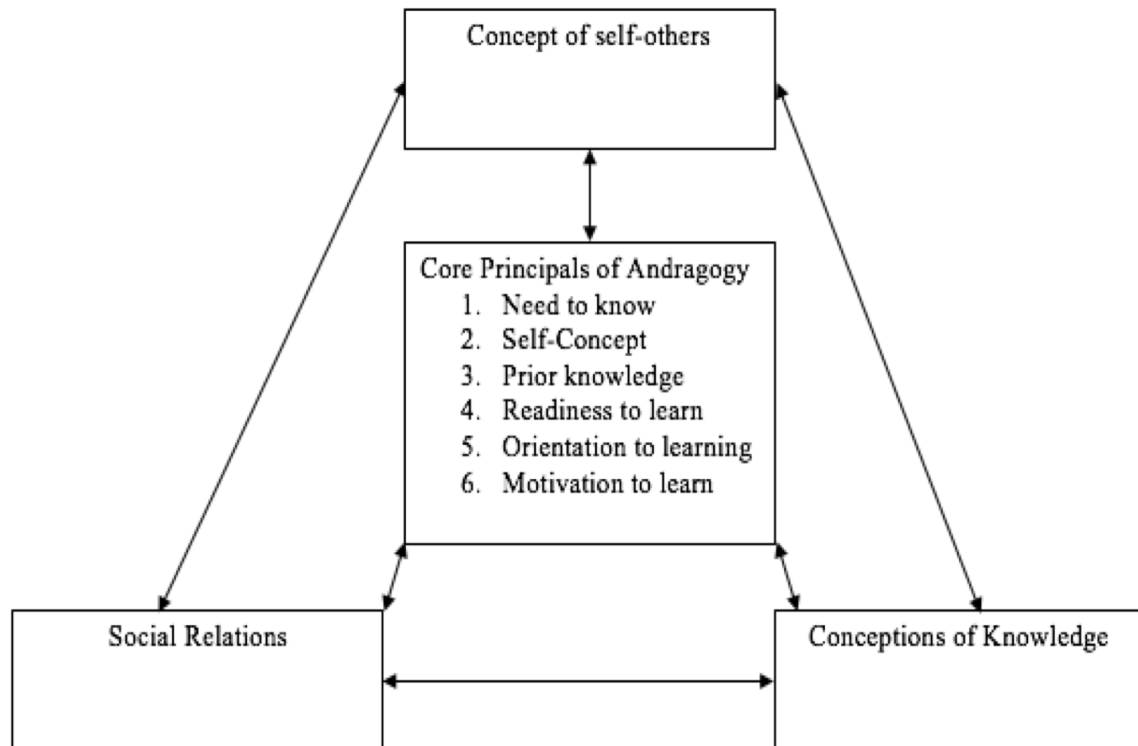


Figure 1.1. Parker, 2019. Culturally Relevant Andragogy.

Adult learners are self-directed (Knowles & Associates, 1984; Knowles, Holton, & Swanson, 2005). Traditionally, once they enter into educational situations they automatically switch back to their k-12 schooling where they depend on the teacher for knowledge. Interestingly, they do not expect to be treated like children, but rather anticipate being guided through their educational experience.

Adults enter into educational activities with previous knowledge. This knowledge shapes their identity and their attitude toward what will be learned. In classrooms, this previous knowledge varies. For this reason, adults learn best when they are engaged in group discussions, simulations, field experiences, and problem-solving projects. Controversially,

adult educators must also consider that adults have already formed their habits. There is always the possibility that they might become defensive, be prejudice, and/or think or act a certain way.

Adults are only ready to learn when they experience a need to know the information in order to accomplish a task or to perform more effectively in some aspect of their lives. In other words, traditionally, adults seek to learn new information when there has been a change in their life (e.g. births, deaths, divorce, job loss, seeking new employment).

Adults do not learn for the sake of learning. They come into the situation with a life-centered, task-centered, or problem-centered thought process. Everything they do and learn is viewed from one of these perspectives. The ultimate goal of their learning is to perform a task, solve a problem, or live a more satisfying life.

Adults learners have internal & external motivators for learning (i.e. self-esteem, recognition, better quality of life, better job, salary increase). Andragogy assumes that the teacher is not the end-all be-all of learning. There are other resources such as peers, other specialists, media resources, and field experiences that assist in the student's learning.

CRA views learning as student-centered. Practitioners take into consideration that college students come to the classroom in a transition period. They are expecting their professor to move them from pedagogical, guided learning to more andragogically-based, self-directed learning. While structuring instruction around the aforementioned six ideas, faculty members who engage in CRA also comprehend that there is a need for them to transgress the traditional teacher-student relationship. These faculty members focus their efforts on both teaching content and empowering their students.

Transgression while engaging CRA is guided by instructional practices that present course content in ways that teach students three main things (hooks, 1994; Parker, 2019). First, they learn new conceptions of self and others; thus, validating their home cultures and teaching them to accept others. Second, students learn the value of social relations which empowers them in the learning process and transgresses the notion that the professor is the sole knowledge constructor. Third, they learn new conceptions of knowledge which guides them to understand the dynamics of knowledge, its social construction, and how to critique its value.

In essence, CRA guides student to reconceptualize what it means to learn and be a student. It guides them to take control of their learning and build new knowledge with their professor. Within recent years, experiential learning in higher education has emerged as a useful equity pedagogy for also guiding students to take control of their learning. Particularly, project-based learning has offered many insights into ways that higher

education faculty can better provide students with an equal and equitable curricular experience in the classroom.

1.1.3. Project-based Learning

Project based learning is rooted in 20th century progressive education (Maida, 2011; Petersen, C. & Nassaji 2016). Progressives advocated for a pedagogy that emphasized flexible critical thinking and looked at schools as an important place for social and political change. John Dewey was the first to produce research on project-based learning with his experimental schools. He envisioned a school that had features of a workshop-like laboratory (Maida, 2011). This laboratory included all of the materials and tools that a child needed to construct, create, and inquire. Dewey viewed the classroom as a miniature community where play was integral to learning social roles and engaging with the physical environment.

Theoretically, project-based learning has roots in constructivist pedagogy and places importance on experiential learning and interaction (Park & Hiver, 2017). It views learning as an active social experience in a community that mediates development rather than consumerism. It is focused on experiential, hands-on, student-directed learning (Lee, 2015). This can be done via field trips, laboratory investigations, and interdisciplinary activities that extend the curriculum beyond the classroom.

The defining characteristic of project-based learning is that it takes a more student-centered approach to learning (Lee, 2015). The projects themselves are focused on questions or problems that drive students to encounter and address central concepts and principals of a discipline. Project-based learning engages students in learning knowledge and skills through an extended inquiry process that is structured on complex, authentic questions and a careful design of products and tasks (Maida, 2011).

Project-based learning helps to develop habits associated with personal and occupational success in the global economy and is underpinned by the notion of quality-driven work (Maida, 2011). In project-based learning activities, students are asked to explore, negotiate, interpret, and create in an attempt to construct solutions (Lee, 2015). There is also a focus on the practice of community (Maida, 2011). This allows for the exchange of data, information, and knowledge in a more open, informal manner. Students are pushed to develop critical thinking skills or higher order thinking skills such as analysis, evaluation, and synthesis (Lee, 2015). Students are ideally supposed to change their attitudes and behaviors toward the knowledge as a result of the project.

In project-based learning aligned classrooms, both learners and teachers focus on the process of learning which involves developing language and content knowledge or

completing the actual project work (Park & Hiver, 2017). In essence, the focus is more on what is learned through completing the project rather than the project itself. There is no limit to the forms that a project may take as long as it includes multiple products that can provide students with continuous feedback and learning opportunities.

With such a high level of variance offered, project-based learning can look very different from classroom to classroom and from subject to subject. Likewise, there is a clear division between project and problem-based learning (Roberts, 2016). Project-based learning takes more of a Socratic, dialogic approach to teaching and learning while problem-based learning takes a more technical, rationalist approach (Hanney & Savin-Baden, 2013). The issue with both approaches is that it is hard for teachers to measure what is learned and how it is learned. Because of the simultaneous learning and usage of the target language that is required, project-based learning can take on a very unique style in foreign language classrooms.

1.1.4. Foreign Language Education

University-level foreign language education has reached a turning point (MLA, 2007; Swaffar, 2003). In reaction to the major accountability-based budget cuts seen across the country, university departments have had to create a new perception of what it means to study a foreign language. The goal of literacy is now the core of the curriculum. University courses at all levels are being structured for students to discover how a specific culture is mediated through the use of language in lieu of rote memorization of grammar rules and lists of vocabulary words.

Berman (2011) argued that, while great strides have been made, there is still more work to be done. Foreign language education is still in a diminishing state because of the social forces surrounding its support and implementation. A contributory factor to the lack of consistency is the lack of a clear purpose of foreign language education. Teachers and stakeholders still are not clear on whether foreign language study is for communication purposes (the instrumentalist perspective) or for understanding different people, practices, and perspectives (the constitutivist perspective) (MLA, 2007).

While k-12 faculty are normally instrumentalist, higher education faculty and administration have habitually viewed languages from the constitutivist viewpoint. Ideally, all programs should strive for both. In university programs, lower level students need more culture and varying perspectives while upper level students need more cross-disciplinary language acquisition-based courses. This usually has been accomplished via the study of literature, but more approaches are still needed.

Durden (2015) argued that students these days see everything as transcultural and transnational and want practice to have all the skills necessary to participate in solving the world's problems. They favor interdisciplinary, transdisciplinary, experiential, and discovery-based learning courses. He believed that contemporary university foreign language course curricula need to be redesigned apart from literature. These curricula should serve to teach students from an interdisciplinary perspective. Students should be learning about how the language applies to various cultural contexts. It is through the usage of diverse approaches to curriculum and instruction that best practices in foreign language education can be established.

1.1.5. Project-based Learning in Foreign Language Courses

Foreign language teachers, stakeholders, and advocates, and mainly the American Council on the Teaching of Foreign Languages, suggest task-based learning (another form of problem-based learning) as the most effective approach to teaching foreign languages utilizing experiential learning (ACTFL, 2017, Park & Hiver, 2017; Petersen & Nassaji, 2016). This is the rationale behind thematic units such as shopping, food, and school where all grammar and vocabulary relate back to the theme. However, project-based learning is more long term and intensive, requiring more elaborate uses of the language. There also exists various documents such as the ACTFL 21st century skills map that assist in better guiding project-based learning and dictating what it should look like in the classroom.

Previous research (Petersen & Nassaji, 2016) has suggested that foreign language teachers show a more positive attitude toward project-based learning than students. They feel that it exposes students to the language and the different ways of using it. However, most teachers do not implement it in the classroom because of the amount of time that it takes to properly create, design, and grade the assignments. Additionally, there is little variance in the style of the projects. Most teachers rely on student presentations. Teachers do this because of time restraints and not having the ability to control students' work habits outside of class. Students also have expressed a positive attitude toward project-based learning in foreign language courses. Generally, they have only disliked the ways in which the teacher implemented it as part of the course curriculum. Mainly, they disliked cooperative learning-based projects. They preferred single-person projects because of the intellectual independence.

Overall, there exists a wide variance in the purpose and use of project-based learning in foreign language education. This study aimed to further understand university students' attitudes toward project-based learning and what is needed on the part of faculty to better integrate it into courses as standard practice. The unique factors of this study were that curricular and instructional practices were guided by Culturally Relevant Andragogy. The

following sections will present the methodology used to conduct this study along with the procedures, findings, analysis of results, and implications for future practice.

1.2. Methods

For this study, Critical Action Research methodology, as established by Mills (2017), was used. Action research is a style of research undertaken by teachers and/or teaching professors to gather information about school operations, teaching practices, and student learning. The goal of action research is to provide a better understanding of the school and its students, to create reflective teaching practices, to create change in the school, and to provide better outcomes for students.

A modified version of the Dialectic Action Research Spiral model was adapted for this study. As shown in figure 1.2, foreign language education was identified as the area of focus for this research.

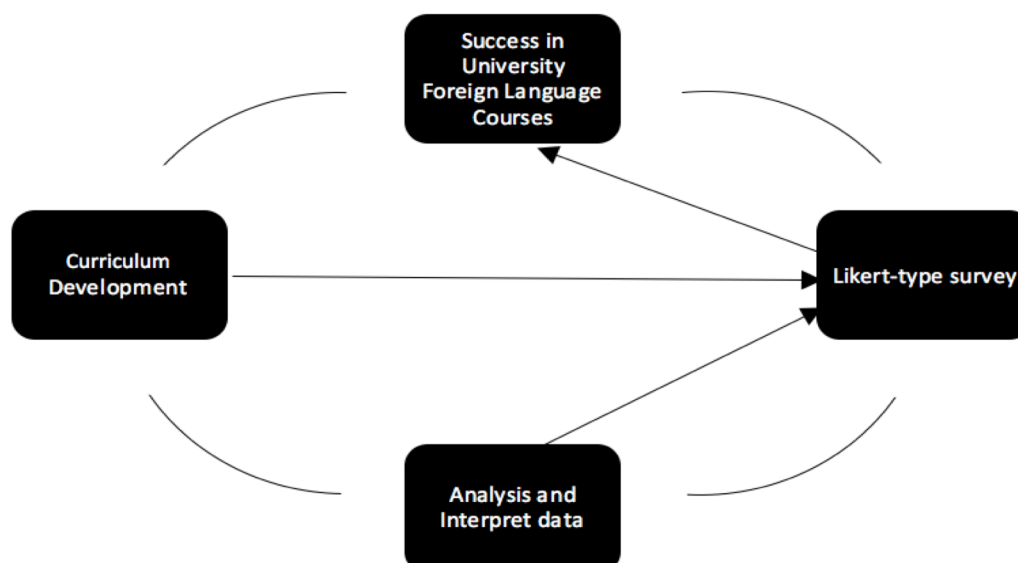


Figure 1.2. Dialectic Action Research Spiral model (Mills, 2017)

The data collection tool used in this study was a Likert-type scale survey. This survey included both pure Likert-scale attitudinal questions and qualitative, open-ended style questions. The survey results were analyzed and interpreted. From this, a series of suggestions for foreign language course curriculum development was provided (see conclusion section).

1.3. Course Demographics

This study was conducted at a rural, public university in the deep south with a student population of about 15,000 students. The intermediate Spanish II (Spanish 202) course started with an enrollment of 26 students. None of the students had previously taken and/or withdrawn from Spanish 202 in previous semesters. None of these students knew before registering for this course that project-based learning would be used. All of the students were informed that this course would be based on a form of experiential learning and include projects in lieu of traditional pen and paper testing on the first day of class. All students were either at junior or senior standing. None of these students were majoring in Spanish and only one was minoring in Spanish. The majority of these students were majoring in Communication or Psychology. Some of these students had previously taken either Spanish 101, Spanish 102, or both with me. The current methodology/approach had not been used in those courses. Two students withdrew from this course before the completion of the first project.

Of the remaining students, 19 identified as female and five identified as male. 12 of the students identified as white or Caucasian, seven identified as black or African American, two identified as biracial with South American heritage, one identified as biracial with South African heritage, one identified as Jamaican, and one identified as Asian.

This was a three-hour lecture course. It was scheduled for two, one-hour and fifteen-minute, face-to-face meetings per week. The semester was sixteen weeks long.

1.4. Course Information

At the university where this study was conducted, Spanish 202 is classified as an intermediate level, second sequence course. This course is traditionally a three-credit hour lecture with a prerequisite of Spanish 101, 102, 201 or the equivalent. This course is taught with an emphasis on proficiency in reading and a continuation of grammar review.

To do curriculum alignment among the course goals, department mission, and institutional purpose, each project was designed based on an interpretation of the appropriate grammar points that would most likely be used for communication in certain contexts. Each project was assigned as a summative assessment at the end of each unit. No official formative assessments were given during each unit. Formative assessments were integrated into each lesson, but no official grades were given.

The grammar of each unit was taught using the Communicative Approach to language teaching also known as Communicative Language Teaching. Each lesson followed the

PACE lesson plan model (Shrum & Glisan, 2016). Students were presented with the information, their attention was drawn to the grammar point, they were allowed time to co-construct an explanation of the grammar. This was typically done as a group, aloud. They were then given an extension activity to practice the grammar. This extension activity served as the formative assessment.

During each lecture, grammar and vocabulary activities used included clozed activities, group activities, matching, translations, and many others depending on the topic. Culture was taught via two in-class lectures and one online assignment. The first lecture addressed how the Spanish language is being used in various job fields. The second lecture addressed immigration from Latin America and the Caribbean to the United States of America and how Spanish usage has grown throughout the country. The online assignment required students to watch two videos about the indigenous of Central America. Students were to incorporate the knowledge that they gained from all three cultural activities into their projects as best as possible.

Each project was based on Culturally Relevant Andragogy and in some way related back to the students' cultural framework upon entering the class. Each project was based within the context of usage in the immediate community, around the university, and/or for their own personal usage after this course. Likewise, each project shared some type of reference to the university's mascot, colors, and other common cultural references from around campus.

The first project was a children's book. The grammar covered in this unit included: (1) the differences between the verbs *ser* and *estar* (2) the comparative and superlative (3) the present tense conjugation of –Ar, –Er, and –Ir verbs (4) the conjugation of the –Ar, –Er, and –Ir verbs in the preterite, imperfect, past perfect, and pluperfect tenses and (5) the usage of *hace...que*. The second project was a recruitment video. The grammar covered in this unit included (1) the present subjunctive (2) the past subjunctive (3) negative and affirmative formal commands (4) negative and affirmative informal commands (5) the future tense and (6) the conditional mood. The third unit required students to complete a comprehensive grammar guide entitled the "Language Learner Manual" which was assigned at the beginning of the course. For this unit, the grammar covered included all grammar previously taught in the course along with (1) direct and indirect object pronouns, (2) *por* vs *para*, (3) verbs like *gustar*, and (4) *saber* vs *conocer*. The following sections will give a detailed description of each project and observations of student behaviors during each project.

1.5. Project One: *Cuentos infantiles*

The first project was a children's book entitled *Cuentos infantiles*. The 24 students were divided into 12 groups of two. Groups were pre-chosen based on perceived pre-existing relationships depending on where they typically sat in class and with whom they normally associated. Students who usually sat by each other were grouped with students on the other side of the room thus forcing them to meet new people.

Each group was directed to create a short children's story in Spanish using mainly the Spanish grammar that we had studied in the first unit. Each story made up a chapter of the larger children's book. Each story was designed around a specific theme (*Todo sobre yo, un(a) estudiante a Southeastern; Autobiografía ; Tú sabes (sobre Hammond)?; La familia de Luisiana; Los amigos en Luisiana; En la escuela secundaria, yo era la persona...; Mi familia y yo; Mi libro favorito; Me llamo....y soy de Luisiana; Todo sobre Southeastern; Mi querida Luisiana; Mi querido Hammond; ¿Quién soy?; Yo Soy...; Lo que yo aprendí en la escuela secundaria*). Each group was allowed to freely interpret their theme and design their chapter of the book on their own including characters, plots, and illustrations. The only thing that was instructor controlled was the title of the book and the title of each group's chapter.

While groups were provided with detailed instructions in the course learning management system, students were allowed to match their interpretation of the title to the design, plot, and illustrations of their story. Students were required to submit a brainstorm of ideas, rough draft, second draft, and final copy. Each was graded for completion only. The final book chapter was graded using a rubric that assessed the students on grammar, spelling, vocabulary, content, and appropriateness. Each category equated to a specific number of points.

Students were given two class days to work on this assignment and two days outside of class to complete the assignment and turn in the final product. During the in-class time, I served as a facilitator and editor. I provided students with information on multicultural children's literature to serve as a model. I edited students work, asked them questions, and gave them advice about their story and plot progression. Mostly, I aimed to make sure that students were using their time wisely and not using social media, completing assignments for other courses, or engaging in irrelevant conversation. Students were consistently advised to not use online translators, but rather online and paper dictionaries.

This project was chosen as a way to have the students get to know each other. Additionally, the focus of this project was to have students work on their writing skills by recounting a story in the past tense. Students were guided to focus on the past vs present tense and the inclusion of details to relay a message.

1.6. Project Two: Recruitment Video

The second project was a recruitment video. Students created a four to seven-minute video, in Spanish, designed to recruit Spanish-speaking students to enroll at our university. Students were allowed to choose their group members with a maximum number of four people. All students were provided detailed instructions in the course learning management system. Each group was allowed to come up with their own theme and script. Each group independently obtained all of the technology needed to successfully shoot and edit the video.

Each group submitted their script to me for editing before recording the video. Students were required to follow a specific structure as designed by me. They had to (1) introduce themselves (2) introduce and discuss various aspects of the university (3) discuss various aspects of the foreign language department (4) give a little information about their home department and (5) give a conclusion to the video. Grammatically, students were required to use commands and the various forms of the present subjunctive. Students were given bonus points if they could get someone from outside the class to say a phrase in Spanish. Students were graded on a rubric that assessed their (1) fulfillment of assignment (2) development of content (3) language skills and (4) time management.

The rationale behind this project was based on the idea that recruitment videos traditionally used a lot of grammar that requires the subjunctive and commands. Additionally, students had enough grammar review from both unit one and two that this project was manageable. Lastly, because this course included a large majority of communication majors, each group had a student that was able to take charge if necessary to acquire the equipment, write a script, and produce a high-quality video.

1.7. Project Three: Language Learner Manual

The final and largest project of this course was the Language Learner Manual. Students were given this assignment at the beginning of the semester and were required to work on it outside of class throughout the semester. This project required students to create a textbook-like manual that was specific to their future career. Students were allowed to choose the theme, layout, design, and content of their manual. I created a pre-made template of all of the information that was required (i.e. title page, dedication page, table of contents, the specific grammar points), but students filled the manual with their own content (i.e. explanations of the grammar, examples of its usage, tables, charts, pictures). I also provided further detailed instructions via the course learning management system.

After the completion of each unit, students were required to submit a draft of what they had completed thus far. The only requirement of the draft was that the grammar of that

unit be thoroughly explained. With each draft, students were required to provide a concise interpretation of the grammar points presented in the unit, all of the appropriate rules, and an example of their usage in context. Students were allowed creative freedom to present their content in various ways (bullet points, a text summary, a narrative chart, or a combination of all three or other methods of presentation). For the manual layout and overall design, students were encouraged to be creative and thorough. They were graded via a modified version of the Value Rubrics created by the American Association of Universities and Colleges. Because students were to complete this project individually, no two manuals were the exact same.

The rationale behind this assignment was to have students create a physical document showing their understanding of the grammar presented in this course. Additionally, this project aimed to take an interdisciplinary perspective on the course by allowing students to tailor the manual toward their future career via the design and inclusion of career specific culture and grammar. This project also allowed students to metacognitively think about the Spanish language by having them to think about how to explain it to others in a written format.

To end the course, students we also required to complete an oral interview with a native speaker using an online software. Students were allowed to use their manual as a reference guide if they felt it was appropriate. The native speaker was given information about the student's competency level and told to gear the conversation toward the student's past experiences, his/her daily life, and his/her future plans upon graduation. On the last teaching day of class, students were given a survey to gauge their attitude toward their experience with experiential learning during the semester. The following section presents the finding of the survey.

2. Results

Upon completion of the course, students were required to complete a survey designed to measure their attitudes toward project-based learning as used in this course. The following section is an analysis of the results of student responses to the survey. The majority of students (86.36%) generally agreed that they gained a better comprehension of the Spanish language as a result of project-based learning. The lesser minority (4.55%) felt neutral, and the greater minority felt that they did not gain better comprehension of the Spanish language as a result of a project-based learning approach.

The vast majority of students felt that their listening skills (59.09%) and speaking skills (50.00%) were strengthened because of the project-based learning approach used in this class. The greater majority of students (31.82%) felt that their writing skills were

strengthened while the lesser majority of students (13.64%) felt that their reading skills in Spanish were strengthened as a result of the project-based learning approach.

The overall majority of students (86.37%) felt some level of comfortability with applying the grammar being taught in the course to complete a project; dually, the minority of students (13.64%) felt not so comfortable. Additionally, the majority of students (40.91%) felt somewhat concerned about the projects not accurately measuring their comprehension and/or ability to use the language. While the greater minority felt either extremely concerned (9.09%) or very concerned (9.09%), the lesser minority (13.64%) felt not concerned at all.

Considering that the students in this course had only completed three semesters of Spanish (101, 102, and 201) before this course, the majority (54.55%) felt that it was neither easy nor difficult to complete the projects that were assigned in the course. Likewise, the larger minority (27.27%) felt that, with their limited knowledge of Spanish, the projects were easy to complete. The lesser minority (18.18%) felt that the projects were difficult to complete with only intermediate fluency in the language.

Half of students felt that they were very likely (50.00%) to recommend an intermediate Spanish II course (202) that was designed based on project-based learning rather than the traditional lecture style. The greater minority (27.73%) felt that they were neutral on making such a recommendation. The lesser minority (22.73%) felt that they were just likely to make this recommendation, and no one felt that they were not likely at all to recommend such a course.

Students' overall opinion of the positive aspects of project-based learning was that it was hands on and allowed for real-world application and creativity. It was also a change from traditional testing and prepared them for actual two-way conversation. Likewise, students' overall opinion of the negative aspects of project-based learning was that there was a lack of advanced grammar skills necessary to complete the projects, there was not enough time to complete the projects, the directions of the assignments were not clear, and the students felt they had a misconception of what project-based learning was. The majority said their favorite assignment was the children's book and their least favorite was the recruitment video.

3. Discussion

The results of the student survey suggest that generally students felt that they better comprehended the Spanish language because of the project-based approach used in this class. Students felt that their listening and speaking skills mainly improved because of the use of project-based learning. Students mostly felt comfortable with having to apply the

grammar to complete a task. They were not very concerned with the projects not reflecting their understanding of the language. In other words, the projects had fidelity in measuring their ability to comprehend and use Spanish. Students mainly felt that they had the adequate level of Spanish necessary to complete each project.

Overall, the majority of students would recommend project-based learning in foreign language courses to other students. Students overall liked project-based learning because it was hands-on and allowed them to be creative and apply their knowledge. The negative aspect of project-based learning was that some students felt that they did not have the advanced grammar skills to truly express themselves the way that they would have liked. Likewise, students felt that the design and timing of the projects needed improvement. Also, most students had never heard of project-based learning and thus felt like they had a misconception of what they were expected to do in the course.

4. Conclusions

As shown in the present research, university students generally liked project-based learning because they are able to immediately apply what they were learning to complete a task which aligns with the immediacy of Culturally Relevant Andragogy. Through this research, it is evident that project-based learning is a valuable approach for university students to have a better understanding of and ability to listen, to speak, to read, and to write in the target language at the intermediate level. The structure of the university and the projects allows for students to experience everything necessary for adult learning to take place.

In the future, it would be best for all university professors teaching intermediate courses to start to include more project-based learning approaches in lieu of pen and paper evaluations & assessments to gauge students' ability to use and understand the target language. Likewise, project-based learning is the first step in pushing foreign language departments to a more progressive approach to language education. However, there is still more research needed on aspects of project-based learning, its usage in foreign language courses, effective structure and execution, students' attitudes towards it, and the measuring of student achievement.

Specifically, there is a lot more research needed in student achievement. Project based learning does not necessarily equate to advanced fluency in the target language. Consequently, there is a need to understand how beneficial the projects are to guiding students to advanced fluency which is one of the ultimate goals of foreign language education. Additionally, the way that culture can be better infused into the projects is still a necessary question that needs to be answered.

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References

- American Council on the Teaching of Foreign Languages. (2017). World-readiness standards for learning foreign languages. Retrieved from <https://www.actfl.org/publications/all/world-readiness-standards-learning-languages>
- Banks, J. A. (2019). *An introduction to Multicultural Education* (6th ed). Boston, MA: Pearson.
- Banks, J. A. (2016). Approaches to multicultural curriculum reform. In Banks, J. A. and Banks, C. (Eds.), *Multicultural education: Issues and perspectives*. Boston, MA: Wiley.
- Berman, R. (2011). The real language crisis. *Academe*, 97(5), 30-34.
- Durden, W. G. (2015). The challenge to foreign language learning in American colleges and universities: Location, location, location. *ADFL Bulletin*, 43(2), 37-44. doi:10.1632/adfl.43.2.37
- Hanney, R. & Savin-Baden, M. (2013). The problem of projects: understanding the theoretical underpinnings of project-led PBL. *London Review of Education*, 11(1), 7-19.
- hooks, b. (1994). *Teaching to Transgress*. New York, NY: Routledge
- Kumar, T. (2018). Advancing Culturally Relevant Pedagogy in a Secondary Methods Course. *Multicultural Perspectives*, 20(2), 111-116.
- Knowles, M. S. & Associates. (1984). *Andragogy in Action*. San Francisco, CA: Jossey-Bass Publishers.
- Knowles, M.S., Holton III, E. F., & Swanson, R. A. (2005). *The adult learner: The definitive classic in Adult Education and Human Resource Development*. (6th Ed.). Burlington, MA: Elsevier.
- Lee, C. (2015). Project-based learning and invitations: A comparison. *Journal of Curriculum Theorizing*, 30(3). 63-73.
- Lenz, B. (2016). Project-based learning with an equity lens. *Education Week's Blog*. Retrieved from https://blogs.edweek.org/edweek/learning_deeply/2016/08/project-based_learning_with_an_equity_lens.html?print=1

- Maida, C. A. (2011). Project-based learning: a critical pedagogy for the twenty-first century. *Policy Futures in Education*, 9(6), 759-768.
- McGee Banks, C. A. & Banks, J. A. (1995). Equity pedagogy: An essential component of multicultural education. *Theory into Practice*, 34(3), 152-158.
- Mills, G. E. (2017). *Action Research: A Guide for the Teacher Researcher*. New York, NY: Pearson.
- MLA Ad Hoc Committee on Foreign Languages. (2007). Foreign languages and higher education: New structures for a changing world. Retrieved from http://www.mla.org/pdf/forlang_news_pdf.pdf
- Park, H. & Hiver, P. (2017). Profiling and tracing motivational change in project-based L2 learning. *System*, 1-15.
- Parker, J. L. (2019). *¿C(o)m(m)o(é)nt se pr(é)sente?: Identifying instanced of epistemic Racism in French and Spanish introductory textbooks and the associated culturally relevant teaching practices in Louisiana universities*. (Doctoral Dissertation). Retrieved from Proquest. (22587245).
- Parker, J. L. (2019). Multicultural Education as a framework for educating English Language Learners. *Journal of Multidisciplinary Perspectives in Higher Education*, 4(1), 22-35.
- Petersen, C. & Nassaji, H. (2016). Project-based learning through the eyes of teachers and students on adult ESL classrooms. *The Canadian Modern Language Review/ La revue canadienne des langues vivants*, 72(1), 13-39.
- Radu, L. (2014). Directions in the contemporary American education. *Bulletin of the Transylvania University of Brasov*, 7(56), 57- 62.
- Roberts, J. W. (2016). *Experiential Education in the College Context*. New York, NY: Routledge.
- Shrum, J. L., & Glisan, E. W. (2016). *Teacher's handbook: Contextualized language instruction*. Boston, MA: Cengage Learning.
- Swaffar, J. (2003). Foreign languages: A discipline in crisis. *ADFL Bulletin*, 35(1), 20-24.
- Trowbridge, G. (2004). Progressive education and civil rights. *ENCOUNTER: Education for meaning and social justice*, 17(2), 5-8.

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Primary School Teachers' Knowledge, Attitude and Practice of Differentiated Instruction: The Case of In-Service Teacher-Trainees of Debre Markos College of Teacher Education, West Gojjam Zone, Amhara Region, Ethiopia

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Abstract

This study explored primary school teachers' knowledge, attitude and practice of differentiated instruction. The target population of this study was primary school (Grades 1-4) teachers of the Amhara Region who were attending summer in-service diploma level training at Debre Markos College of Teacher Education in 2017 academic year. To this end, questionnaire and FGD were used as data collection instruments. The findings of the study revealed that there was a general level of understanding of differentiated instruction among primary school teachers. Though there was a seemingly adequate level of understanding of differentiated instruction by primary school teachers regarding the ways to support each group of students (i.e., fast learners, medium learners, and slow learners), teachers lacked knowledge of specific strategies to manage mixed ability classrooms in a way that engages each group of students during classroom hours simultaneously. The findings also indicated that there was a lower degree of implementation of differentiated instruction as compared to their level of understanding. It was also found that differentiation of content was the lowest practiced area. The data revealed that teachers were not regularly differentiating instruction in their classrooms due to lack of knowledge of specific strategies, the time constraints to prepare differentiated instructional lessons, and lack of relevant resources. Some teachers mentioned that large class size also obstructed their attempt of implementing differentiated instruction. They also do not usually have adequate opportunities to plan ahead and reflect on their work due to extremely high work load. To alleviate these problems, the researcher has forwarded relevant recommendations in the paper.

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Keywords: *Interest; Readiness; Differentiated Instruction; Learning Profile*

1. Introduction

1.1. Background of the Study

Scholars around the globe have suggested curriculum differentiation as one way of tackling equity related problems in the education system. Nevertheless, curriculum differentiation

has been conceptualized and practiced in different ways. For instance, curriculum differentiation was equated with tracking or streaming, where students are grouped according to their varying abilities. This has been done either in separate classes as part of the formal operating structure of the school, or informally by means of special homogeneous instructional grouping within their respective classes (Ansalone, 2010). Early proponents of tracking argued that it facilitates individualized instruction and eliminates the probability of boredom experienced by advanced students due to the participation of slower ones. Similarly, it helps slow learners to benefit from instruction that considers their ability levels.

Streaming for relatively fixed groups of children is common educational practice all over the globe. In Germany, for instance, students are streamed and selected into different school types according to their ability starting from age 10 (Terwel, 2005). Nevertheless, this fixed notion of curriculum differentiation in the context of tracking and fixed notions of ability-grouping has been contested by many educators from the socio-cultural camp. They argued that tracking represents a “veiled attempt to reproduce and legitimate the stratification system” which offers inferior educational opportunities to children of the lower streams (Ansalone, 2010, p.17). As Ansalone further argues, there is also little support available for the assumption that tracking improves the academic achievement of all students.

Moreover, several studies have indicated that streaming is related to social disadvantage and reinforces social exclusion. It provides less opportunity for social integration and academic success across race and class (Caro, 2009; Schutz, et. al., 2008). In England and the United States, for instance, it was found out that students who were placed in the lower streams were more likely to be from low socio-economic backgrounds and ethnic minorities (Johnston & Wildy, 2016). Hence, streaming only legitimizes the structural inequalities of marginalized communities with the mainstream ones.

One of the reasons might be because students in low ability streams may have less access to positive role models and high achieving students have fewer leadership opportunities (Johnston & Wildy, 2016). Also, lower ability streamed students have less opportunity to learn from their higher-achieving peers when streamed, and conversely higher ability students have less opportunity to develop leadership skills through opportunities to mentor lower streamed students (Ibid).

When streaming is used to meet the needs of low ability students, teachers develop lower expectations of these students (Rubie-Davies, 2010). This can result in students being offered less homework, a slower pace of instruction, and less challenging tasks (Johnston & Wildy, 2016). This, in turn, results in self-fulfilling prophecies (Rubie-Davies, 2010). In other words, if teachers have ideas that their classes are homogenous in ability, the

expectations that they form for this ability level will affect student outcomes even more than any ideas they hold about the ability of individual students in the class. Also, there is a tendency that more experienced, qualified, and better-prepared teachers are commonly assigned to higher sets, where they cover more challenging material at a faster pace. Low-level classes are more often afflicted with interruptions and student misbehavior, while teachers emphasize seatwork instead of oral interaction with students.

Nowadays, it is generally accepted that average and remedial learners do not benefit from homogeneous grouping (Van Houtte & Stevens, 2009). However, for more talented students, ability grouping does show beneficial effects (Muijs & Reynolds, 2005). Consequently, scholars argued for a greater clarity into understanding curriculum differentiation as requiring flexible grouping of students according to their learning needs as opposed to the static and permanent grouping of students that defines streaming. Consequently, it was believed that setting high academic standards in mixed ability classrooms alleviates inequalities in curriculum and instruction and brings excellence by requiring all students to demonstrate higher levels of achievement and by providing all students with equal educational opportunities. Hence, providing a similar curriculum to all students irrespective of their ability differences was thought to solve the problem for granted.

However, de-tracking or mixed ability classrooms alone cannot bridge the achievement gaps among students. This is because, as Schutz, et al., (2008) argued, providing all students with equal educational opportunities do not mean providing them with identical educational opportunities. Educational needs are specific to particular learners, and academically advanced, or slower learners with diverse learning needs will not benefit from the equal educational opportunities extended to all students solely by means of de-tracking. As a result, educators came to feel that more is needed than de-tracking schools. Schutz, et al., (2008) argued that students with different abilities, interests and motivational levels should be provided with differentiated instruction to meet their unique learning needs. Moreover, they contend that it is not grouping per se that matters in the classroom, but it is what happens in the group (Solomon, 2015).

Hence, tracking and grouping are regarded as two quite different concepts. Tracking is the general and usually permanent assignment of students to classes that are taught at a certain level and with whole-group instruction (Schutz, et. al., 2008). Grouping is defined as a more flexible, less permanent arrangement of students that takes into account factors in addition to ability, such as motivation, interests, instructional levels, and student effort. This; therefore, distinguishes between curriculum differentiation, which involves the flexible grouping of students in a classroom and needs-based curriculum decisions that are reviewed from time to time, from tracking, which involves the permanent assignment of students to classes that tend to adopt whole-group, non-differentiated teaching

approaches. Scholars such as Tomlinson (2003) termed the condition where students are grouped into separate, relatively homogeneous loops where they are offered an adjusted curriculum (i.e., tracking) as an external form of differentiated instruction. In contrast, internal differentiation is used as an umbrella term for the multiplicity of strategies within the classroom that pay attention to the individual capacities and educational needs of learners (Adami, 2004).

Thus, the conceptualization of curriculum differentiation has shifted away from that of tracking to flexible grouping. Some educators prefer to use ‘differentiated instruction’ than ‘curriculum differentiation’ when they want to refer to classroom organization which consists of mixed ability students within the same class. Differentiated instruction takes cognizance of student variance by allowing the teachers to plan their content and process, supporting diverse learning styles (Lawrence-Brown, 2004). As Tomlinson (2001) contends, "in differentiated classrooms, teachers provide specific ways for each individual to learn as deeply as possible and as quickly as possible, without assuming one student's road map for learning is identical to anyone else's" (p. 2). As such, differentiated instruction refers to “a set of strategies that will help teachers meet each child where they are, when they enter a class and move them forward as far as possible on their educational path” (Levy, 2008, p. 162).

In a differentiated classroom, teachers have an understanding that culture, gender, socioeconomic status, and life experiences affect how and what students will learn (Van Garderen & Whittaker, 2006; Tomlinson, 2001). Today, curriculum differentiation is defined as "the process of modifying or adapting the curriculum according to the different ability levels of the students in one class" (UNESCO, 2004, p.14). However, this does not mean that curricular standards and expectations are compromised for slow learners. Rather, it means providing multiple opportunities and scaffolding for all students to meet or even exceed standards. As such, differentiated instruction has “balanced emphasis on individual students and course content” (Tomlinson & Imbeau, 2010, p. 14). In this regard, it supports the learning process of children so that each individual learner in the classroom can develop his/her individual capabilities and limitations. Differentiated instruction is a response to student academic readiness, interest and learning profile in academically diverse classrooms (Tomlinson & Eidson, 2003).

Generally, it is on this background that the current study tried to explore primary school teachers’ knowledge, attitude and practice of Differentiated Instruction.

1.2. Statement of the problem

The implementation of differentiated instruction in daily classroom practice seems to pose a challenge for many teachers (Holloway, 2000). This might be one of the reasons for

teachers' reliance on the didactic, technocratic and positivist way of teaching. Supporting this point, researchers (e.g., Daniels & Bizar, 2005; Tomlinson & Eidson, 2003) noted that though most teachers understand the importance of differentiated instruction, the majority of them do not differentiate instruction. The researchers underscored that while many teachers acknowledge the presence of diverse learners in their classrooms, most teachers do not engage in differentiated or academically responsive instruction and plan and teach for learner variance. While the causes might be of different kind, many scholars underscore that teachers' expertise, commitment, and supportive school environment are regarded as the major ones. This is because, as Pettig (2000) noted, differentiated instruction requires from teachers a persistent sharpening of their teaching skills in addition to encouraging significantly changing their classroom practices. Also cited is the way teachers are trained in teacher training institutes (Tomlinson, 2014; Holloway, 2000), which falls short of capacitating them for the hard and complex reality of teaching in differentiated classes.

Therefore, it is not enough for teachers to believe that all children can learn if they do not know how to enable diverse students to engage in challenging material successfully. It is important for teachers to be prepared as diagnosticians, planners, and leaders who can make informed, needs-based curricular decisions to meet the needs of diverse learners. As such, the teacher, who entails the key to a successful differentiated instruction, is challenged to facilitate learning for students of different readiness level, interests, learning profile (Tomlinson, 2003), socio-economic and cultural capital and psycho-emotional characteristics, all features that can affect the construction procedure of new knowledge (Caro, 2009).

Though the idea of differentiation has been duly recognized in various documents, the practice of differentiation seems to be not yet fully practical. The MoE of Ethiopia admits that there is a lack of flexibility in the primary school's curriculum. In line with this, the MoE states that there is a need to introduce "some flexibility to the curriculum, to enable differentiation so that teachers can target curriculum content at learners and select a pace depending on their level, needs and preferences" (MoE, 2015, p. 64). It was believed by the MoE that such flexibility will further improve the relevance of the curriculum for all students, including those with special educational needs. In its five years sector-wide program known as the ESDP V, the MoE puts "Designing a strategy for curriculum differentiation, including due attention to the needs of all children" as one of its major goals (MoE, 2015, p. 65). In spite of this attempt, there was no specific strategy for differentiating instruction so far that this study is hoped to bridge in.

Nevertheless, the MoE has earnestly worked on the utilization of the constructivist approaches to teaching in all tiers of the education system. Equally emphasized is the need for making classrooms more inclusive, catering the needs of each learner. Despite these

efforts, recent studies on the status of students' performance at primary grades revealed that the efforts might have fallen short from their targets. For instance, a recent nationwide reading assessment known as the Early Grade Reading Achievement (hereafter EGRA) indicated that 34% of the students in Grade 2 were unable to read a single word of a grade-level relevant story; 48% of the students were unable to answer a single comprehension question on a reading comprehension test prepared to the level; and only 5% of the students were able to read 60 words per minute in reading fluency (MoE, 2015). This could be attributed to the inadequate utilization of differentiated instruction in primary grades.

Planning to differentiate instruction requires adequate knowledge of the students and the contents for which the teacher is responsible, as well as a firm understanding of classroom management skills and pedagogical strategies. It also requires teachers' unreserved commitment to attentively assess and look for individual differences among students and thoughtfully designing alternate strategies. However, teachers nowadays are not that responsible to invest much mental energy that could help them take care of all these requirements (MoE, 2008). Hence, there is the need to study the extent to which primary school teachers understand and practice differentiated instruction in their classrooms.

1.3 Objectives of the Study

The purpose of this study was to explore the knowledge, attitude and practice of differentiated instruction among primary school (Grades 1-4) teachers who were enrolled in Debre Markos College of Teacher Education for Diploma level in-service training during the 2017 academic year cohort.

Specifically, the study tried to achieve the following research objectives:

- Assess primary school teachers' knowledge of differentiated instruction
- Examine primary school teachers' attitude to differentiated instruction
- Examine the extent to which primary school teachers practice differentiated instruction
- Ascertain the relationship between knowledge, attitude and actual practice of differentiated instruction

1.4 Research Questions

The study aimed to answer the following basic research questions:

- To what extent do primary school teachers understand differentiated instruction?
- What is the attitude of primary school teachers towards differentiated instruction?
- To what extent do primary school teachers practice differentiated instruction in their classrooms?
- To what extent is the practice of differentiated instruction related to primary school teachers' knowledge and attitude to differentiate instruction?

1.5 Significance of the Study

Teachers should be well equipped with their pedagogical skills thereby they could accommodate the learning needs of students with different intelligence, profiles and other academic and social needs. To this end, they must be given continued opportunities to deepen and expand their knowledge. Accordingly, this study might help to identify the status of the knowledge and attitude primary school teachers have regarding differentiated instruction as well as their practice. This may help teacher educators of the college to adjust curricular contents in a way that capacitate primary school teachers in this regard. It may also help to identify the types of supervisory and administrative supports primary school teachers need to receive in order to effectively differentiate instruction and design supportive mechanisms.

1.6 Scope of the Study

The study was delimited to the investigation of primary school teachers' knowledge, attitude and practice of differentiated instruction. To this end, in-service teacher-trainees of Debre Markos College of Teacher Education were taken as a sample. The respondents were the would-be graduates of the 2017 academic year cohort.

1.7 Limitations of the Study

There were certain limitations to this study. First, because all the participants were from one college of teacher education, findings may not be generalized to the situation within the Amhara Region. Second, the study was completed with primary school teachers who were on the verge of completing their diploma level in-service training in Debre Markos College of Teacher Education through a data collected using self-administered questionnaire and Focus Group Discussion. Thus, there was no formal attempt made to determine how effective classroom teachers actually were at differentiating instruction because observations of teaching practices were beyond the scope of this study.

2. Method

2.1 Research Approach and Design

The study employed a mixed research approach since it offers a better understanding of a phenomenon. Such an approach also enables to capitalize on the strengths and to minimize the weaknesses of quantitative and/or qualitative methods. In line with such an understanding, this study specifically adopted a QUAN – qual approach with a more quantitative focus.

2.2 Research Participants and Sampling

The target population of this study was primary school (Grades 1-4) teachers of the Amhara Region who were attending summer in-service diploma level training at Debre Markos College of Teacher Education in 2017 academic year cohort. In so doing, one

hundred fifty teachers were selected from the total population (3500) of primary school teachers in Amhara Region using stratified random sampling technique.

2.3 Instruments of Data Collection

Questionnaire and Focus Group Discussion (hereafter FGD) were used as data collection instruments. From 150 questionnaires distributed to the participants, 135 were returned and used in the final analysis. To supplement the quantitative data and understand the issue in-depth, six teachers were selected on purpose for the FGD.

The questionnaire was originally developed in English Language and later translated to the local language (Amharic) to ensure better understanding. The questionnaire was pilot-tested by collecting data from 30 primary school teachers who were not included in the actual survey. The collected data was analyzed for its reliability. Accordingly, the Cronbach alpha coefficients for the three scales viz. Knowledge (7 items), attitude (6 items) and practice (23 items) was $\alpha=.76$, $\alpha=.85$ and $\alpha=.75$, respectively. The Cronbach alpha coefficients for the three subscales of the survey were greater than .7, which suggested that the items have high internal consistency (Fink, 2013). The data gathered through questionnaire items were analyzed using mean, one-sample t-test and Pearson correlation using SPSS 20. In addition, narration through relevant themes was employed to analyze the qualitative data gathered through the FGD.

3 Results

3.1 Demographic Information

Table 1: Demographic characteristics of sampled Respondents of the study (n=135)

Category	Variable	N	%
Gender	Male	79	58.5
	Female	56	41.5
Age	18-24	39	28.9
	25-35	67	49.6
	>35	29	21.5
Teaching Experience	2-3 Years	39	28.9
	4-6 Years	79	58.5
	7 years & above	17	12.6
Education Status	Grade 10/12 Completer	41	30.4
	Certificate	94	69.6

From the total of 135 sampled respondents, 79 (58.5%) of them were male, while the remaining 56 (41.5%) were female. In terms of age, almost half, i.e., 67 (49.6%) of them were between the age of 25 to 35. More than half, i.e., 79 (58.5%) of them had teaching experience ranging between 4 to 6 years. While the majority, i.e., 94 (69.6%) had earned certificate in teaching, about 41 (30.4%) were tenth-grade completers. This suggests that a significant number of the respondents started the teaching career without having the necessary qualification.

3.2 Teachers' Knowledge about Differentiated Instruction

Table2: Teacher-trainees' knowledge of Differentiated Instruction (n=135)

Items	Mean	SD	t	Sig. (2-tailed)
Adapting lessons to meet the needs of remedial learners	3.68	1.26	6.276	.000
Assessing where students are and designing appropriate lessons	3.32	1.17	3.164	.002
Adapting instruction to meet the needs of gifted learners	3.09	1.16	.889	.376
Accommodating varying levels of ability in a class	2.85	1.08	-1.590	.114
Identifying gifted, talented and slow students	3.36	1.13	3.658	.000
Identifying students with special needs	3.61	.95	7.391	.000
Adapting instruction to meet the needs of students with special needs	3.35	1.07	3.790	.000
Grand Mean	3.32	.66	5.652	.000

As clearly depicted in the table, the respondents had above average knowledge in adapting lessons to meet the needs of remedial learners ($X=3.68$, $SD=1.26$), designing appropriate lessons ($X=3.32$, $SD=1.17$), identifying gifted, talented and slow learners ($X=3.36$, $SD=1.13$), identifying students with special needs ($X=3.61$, $SD=.95$) and adapting instruction to the needs of students with special needs. The finding also indicated that the respondents had slightly above average knowledge of accommodating instruction to satisfy the needs of gifted learners ($x=3.09$, $SD=1.16$). On the other hand, the result revealed that the respondents knowledge of accommodating students of diverse abilities (fast learners, medium learners, and slow learners) within the same classroom is below the mean ($X=2.85$, $SD=1.08$). This had been confirmed during the FGD where the discussants indicated that they usually faced difficulties to manage students of varied readiness level within the same classroom during instructional hours. The mean score for the knowledge scale is $X= 3.32$, $SD=.66$, which is statistically significant ($t= 5.652$, $p<.05$). The result suggested that the respondents had above average knowledge about differentiated instruction. The discussion revealed that their knowledge is largely about supporting each type of learners separately, however, they were usually uncertain about managing the diverse needs of learners simultaneously.

3.3 Teachers' Attitude towards Differentiating Instruction

Table3: Teacher-trainees attitude towards Differentiating Instruction (n=135)

Items	M	SD	t	Sig. (2-tailed)
Each student has his/her own unique intelligence that I, as a teacher, should help him/her to develop.	3.29	1.15	2.915	.004
I should acknowledge the differing learning rates and styles of students and adjust my lessons accordingly.	3.73	.88	9.653	.000
I should begin instruction from where the students really are, even though it might require additional time.	3.27	1.40	2.214	.029
While it is appropriate for students to work on different assignments corresponding with their ability levels, the means of assessment should be the same for all students.	3.50	1.32	4.431	.000
If pre-assessment indicates that groups of students in my class have already mastered basic skills of the lesson at hand, I should plan content that meets their readiness level.	3.04	1.37	.377	.707
If pre-assessment indicates that a student lacks basic skills to understand a lesson at hand, I should support the student until mastery is achieved even if it may be re-teaching lower grade contents.	3.07	1.33	.650	.517
Grand Mean	3.32	.79	4.68	.000

As presented in table 3, the respondents showed agreement on most of the statements aimed at measuring their attitude towards differentiating instruction. They believed that each student has his/her own intelligence and the responsibility to foster their potentialities rests upon the teachers ($X=3.29$, $SD=1.15$). In this regard, the discussants of the FGD confirmed that they want to help learners by identifying their multiple intelligences. But according to the discussants, they did not really know how to identify which intelligences are dominant among their students. They did not know how to do so. They also showed agreement with the statement ‘Teachers should acknowledge the differing learning paces and styles of students and adjust their lessons accordingly’. Their response to this statement averaged $X= 3.73$ with $SD=.88$. The SD indicated that the respondents had little variance on this statement. The respondents also showed agreement on the fact that teachers should begin instruction from where their students really are, even though it might require additional time ($X= 3.27$, $M= 1.40$). The mean score for the attitude score is $X= 3.32$, $SD= .79$ which is statistically significant ($t=4.680$, $p<.05$). The result suggested that the respondents had a positive attitude towards differentiating instruction.

3.4 Teachers’ Practice of Differentiated Instruction

Table 4: Teacher-trainees’ practice of differentiating content (n=135)

Items	Mean	SD	t	Sig. (2-tailed)
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When it is necessary, I modify textbook content according to student readiness level.	2.19	.91	-10.308	.000
I use multiple materials other than the standard textbook as instructional resources when I teach my students.	2.34	.89	-8.599	.000
I deliberately design easier tasks so that students can be more satisfied with their accomplishments.	2.24	.87	-10.140	.000
I use texts which are at varied difficulty levels based on each student's ability.	2.25	.82	-10.640	.000
I differentiate lesson contents by pre-assessing student skills and understandings, then matching learners with appropriate activities.	2.27	.79	-10.736	.000
I give fast learners additional resources that match their levels of understanding.	2.56	.88	-5.881	.000
I deliberately plan to pre-assess student readiness so that I can make appropriate content.	2.95	1.14	-.528	.599
I adapt the content to the needs of slow learners by serving them through tailored tasks during the regular class hours.	2.83	.94	-2.100	.038
Grand Mean	2.45	.45	-14.004	.000

As indicated in table4, the mean score for teachers practice of modifying textbook contents according to student readiness level is below average ($X = 2.19$, $M = .91$). Teachers' use of multiple materials other than the standard textbook as instructional resources is severely limited ($M = 2.34$, $SD = .89$). The practice of designing easier tasks for students to help them become more satisfied with their accomplishments averaged $X = 2.24$ with $SD = .87$. Teachers' use of texts which are at varied difficulty levels based on each student's ability ($X = 2.25$, $SD = .82$), pre-assessing student skills and understandings then matching learners with appropriate activities ($X = 2.27$, $SD = .79$), providing fast learners with additional resources that match their levels of understanding ($X = 2.56$, $SD = .88$), pre-assessing student readiness to make appropriate content ($X = 2.95$, $SD = 1.14$), adapting the content to the needs of slow learners by serving them through tailor made tasks during the regular class hours ($X = 2.83$, $SD = .94$) all items were below the expected mean. Moreover, the overall mean score of the respondents' practice of differentiating content is below the expected level ($X = 2.45$, $SD = .45$) which is statistically significant ($t = -14.004$, $p < .05$). The result is indicative of the fact that teachers solely rely on textbooks prepared by the regional educational bureau for their respective grade levels. As some of the discussants of the FGD put it boldly, there is a severe shortage of textbooks let alone having supplementary teaching materials in their schools.

3.5 Differentiating Process

Table 5: Teacher-trainees' practice of differentiating process (n=135)

Items	Mean	SD	t	Sig. (2-tailed)
I design activities that require students to do something with their knowledge (apply and extend major concepts and generalizations).	2.70	.91	-3.885	.000
I provide students with options and choices regarding how they are going to learn.	2.90	.82	-1.367	.174
I use a variety of instructional strategies simultaneously within a single lesson.	2.99	.90	-.192	.848
I employ alternative and multiple representations of lesson contents through audio, visual and audio-visual materials.	2.79	.88	-2.733	.007
I ensure that the learning activity provides opportunities for students to relate the key concept or topic to their own experiences or understanding.	2.98	.88	-.295	.769
I employ ongoing, diagnostics assessment so that I can adjust my instruction to help students understand the lesson well.	2.85	.80	-2.161	.032
I intentionally inquire about students' personal strengths, preferences, and interests and incorporate these into planning.	2.78	.93	-2.783	.006
I plan and encourage students to help other students and solve problems.	2.83	1.00	-1.986	.049
I make certain that pace of instruction varies based on individual learner needs.	2.76	1.05	-2.635	.009
I allow students to work, discuss, explore, wonder, and question collaboratively.	2.93	.96	-.897	.371
Grand Mean	2.82	.42	-4.900	.000

As portrayed in table 5, primary school teachers reported that they design activities that require students to do something with their knowledge (apply and extend major concepts and generalizations) ($X=2.70$, $SD=.91$). They also provided students with options and choices regarding how they are going to learn ($X= 2.90$, $SD=.82$). Respondents' use of a variety of instructional strategies simultaneously within a single lesson averaged $X=2.99$ with $SD=.90$. Respondents also reported that they employed alternative and multiple representations of lesson contents through audio, visual and audio-visual materials ($X=2.79$, $SD=.88$). Teachers' practice of providing opportunities for students to relate the key concept or topic to their own experiences or understanding averaged $X= 2.98$ with $SD=.88$. The mean score for utilization of ongoing, diagnostics assessment to adjust instruction to help students understand the lesson well is $X=2.85$, $SD=.80$. The practice of inquiring about students' personal strengths, preferences, and interests and incorporate these into planning is below average ($X=2.78$, $SD=.93$). Though it is relatively higher than the mean score for differentiating content, the overall mean score of the respondents' actual practice of differentiating process is below the expected level ($X=2.82$, $SD=.42$) which is statistically significant ($t=-4.900$, $p<.05$).

3.5 Differentiating Product

Table 6: Teacher-trainees' practice of differentiating Product (n=135)

Items	M	SD	t	Sig. (2-tailed)
While assessing my students, I design to allow students multiple ways of demonstrating progress.	2.56	1.03	-4.946	.000
I use assessment techniques such as portfolios, observations, and skills checklists, oral and written reports.	2.45	.90	-7.047	.000
I use multi-option assignments for assessing students' understanding.	2.63	.87	-4.945	.000
I allow for a wide range of product alternatives (e.g., oral, visual, kinesthetic, musical, written, spatial, creative, practical, etc.).	2.59	.66	-7.278	.000
I give assignments that differ based on individual (or group) readiness, learning profile and/or interest.	2.49	1.00	-5.944	.000
Grand Mean	2.53	.58	-9.399	.000

As depicted in table 6, teachers' practice of differentiating product is below the expected level. In all the five items included to measure product differentiation, the respondents' score is below the expected mean (i.e., 3). Teachers' use of varied assessment techniques such as observation, portfolios and skills checklists ($X=2.45$, $SD=.90$), allowing students multiple ways of demonstrating progress ($X=2.56$, $SD=1.03$), use of multi-option assignments for assessing students' understanding ($X=2.63$, $SD=.87$), allowing for a wide range of product alternatives (e.g., oral, visual, kinesthetic, musical, written, spatial, creative, practical, etc.) ($X=2.59$, $SD=.66$), giving assignments that differ based on individual (or group) readiness, learning profile and/or interest ($X=2.49$, $SD=1.00$) all were below the expected level. The overall mean score of the respondents' practice of differentiating process is below the expected level ($X=2.53$, $SD=.58$) which is statistically significant ($t=-9.399$, $p<.05$), suggesting that product differentiation is the least practiced component of differentiated instruction by primary school teachers. As the participants of the FGD indicated, they were mostly required to follow similar school made assessment procedures which are deemed necessary to be the same for all teachers who teach the same grade levels.

Table 7: One sample t-test results of knowledge, attitude and practice of Differentiated Instruction

Scales	Mean	SD	t	Sig. (2-tailed)	Mean Difference
Knowledge of Differentiated Instruction	3.32	.66	5.652	.000	.32169
Attitude to Differentiated Instruction	3.32	.79	4.680	.000	.31852
Overall Practice of Differentiated Instruction	2.63	.32	-13.220	.000	-.36715

Table 7 presents the overall knowledge, attitude, and practice of differentiated instruction by primary school teachers. As can be observed in table 7, the respondents' score on general knowledge about differentiated instruction ($M=3.24$, $SD=.68$) is above the expected mean value and it was significant ($p<.05$). By the same token, the mean scores for the attitude

scale indicated that the respondents had a positive attitude towards differentiated instruction ($X=3.32$, $SD=.79$) which is statistically significant ($t=4.680$, $p<.05$). However, practice of differentiated instruction, as reported by the respondents, is below the expected mean. The mean score for this subscale is $X=2.63$, $SD=.32$, which is significantly below the expected mean value ($t=-13.220$, $p<.05$).

Table 8: Pearson correlation analysis among knowledge, attitude and practice of differentiated instruction

		Knowledge	Attitude	Practice
Knowledge	Pearson Correlation	1	.566**	.177*
	Sig. (2-tailed)		.000	.039
	N	135	135	135
Attitude	Pearson Correlation	.566**	1	.446**
	Sig. (2-tailed)	.000		.000
	N	135	135	135
Practice	Pearson Correlation	.177*	.446**	1
	Sig. (2-tailed)	.039	.000	
	N	135	135	135

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 8 indicated that the relationship between the level of knowledge to the level of attitude, level of knowledge to the level of practice and level of attitude to the level of practice of differentiated instruction as reported by the participants. Accordingly, moderately positive relationship ($r=.566$, $p<.01$) was identified between teachers' knowledge of differentiated instruction and their attitude towards it. Similarly, a moderate positive relationship was observed between attitude and practice ($r=.446$, $p<.01$). However, it was found out that there was a positive but weak ($r=.177$, $p<.05$) relationship between knowledge and practice of differentiated instruction. This indicated that there were other factors that should be fulfilled if teachers are expected to practice differentiated instruction in primary schools. In fact, the participants of the FGD highlighted that they were torn with various responsibilities which were not directly related to their teaching roles. Furthermore, the discussants mentioned the lack of necessary resources such as teaching materials and textbooks as the bottlenecks for implementing differentiated instruction. Some of them indicated the poor incentive packages, unhealthy school climate, ineffective school administration, and large class size as additional challenges.

4 Discussion

The ultimate goal of differentiated instruction is to provide a learning environment that will maximize the potential for student success (Tomlinson, et. al., 2008). Differentiated instruction, as opposed to tracking or streaming, produces less inequality among students of varied abilities and cultural backgrounds. Differentiation promotes the idea of implementing patterns of instruction such as routine small-group teaching, informal

assessments, and multiple teaching modes likely to serve a variety of needs simultaneously (Schutz, et. al., 2008).

Assessment is an integral part of differentiated instruction since it serves as a basis for decisions in differentiated classrooms. When teaching with the philosophy of differentiated instruction, teachers should pre-assess students and provide formative assessments throughout the learning. Differentiated instruction is about supporting groups of students in line with their level of readiness, interest and learning profile.

Two theories particularly form the ground for differentiated instruction. Multiple intelligence theory helps the teacher to understand the innate strengths the child brings into the classroom. By understanding the diversity within a classroom and how cultural differences may impact learning, a teacher can complement his or her instruction to a student preferred way of learning. Different learners can benefit most from varied forms of instruction due to the fact that all individuals possess different strengths in different areas.

Differentiated instruction is equitable by maintaining the core of what students should learn. At the same time, it also encourages excellence by varying how students come to make sense of this core understanding. Differentiated instruction essentially seeks to balance the various needs of students with the requirements of the curriculum. Differentiated instruction provides opportunities for students to learn by engaging them in activities designed to enhance their strengths, learning needs, and preferences through a multitude of instructional formats, and allowing the students to demonstrate their understanding of concepts through a variety of means.

5 Conclusions

The finding of the study revealed that there was a general level of understanding of differentiated instruction among the participants. Nevertheless, there was a seemingly adequate level of understanding of differentiated instruction by primary school teachers regarding the ways to support each group of students (i.e., fast learners, medium learners, and slow learners), teachers lacked knowledge of specific strategies to manage mixed ability classrooms in a way that engages each group during classroom hours simultaneously.

The finding also indicated that there was a lower rate of implementation of differentiated instruction compared to understanding. It was also found that the differentiation of content was the lowest practiced area. The data revealed that teachers were not regularly differentiating instruction in their classrooms because of lack of knowledge of specific strategies, the time constraints to prepare differentiated instruction, and the lack of resources available. Some teachers mentioned that large class size also limited the implementation of differentiated instruction. They also do not usually have adequate opportunities to plan ahead and reflect on their work due to the amount of the job requirements as well as extra responsibilities as a teacher.

6. Recommendations

On the basis of the conclusions made in this study, an attempt is made to forward the following relevant recommendations:

- As to the findings of this study, many teachers do not feel equipped to differentiate for a class of diverse needs and abilities. Therefore, providing concerns based professional development for teachers may increase their ability and desire to differentiate instruction.
- Most teachers reported that they do not have sufficient time to implement differentiated instruction due to class size. Education officials should consider reducing class size so that teachers get an opportunity to work individually with students would significantly increase.
- School should organize ongoing professional development with attention to instruction, materials, and assessments that are especially appropriate for diverse students.
- Schools should use strategies like peer coaching, action research, study groups, and workshops on a continuous basis to their respective teachers.
- It is important to remember that while teachers play the primary role in the utilization of differentiated instruction in the classroom, school principals and supervisors should also understand differentiated instruction and receive training designed to improve staff development practices by higher education officials.
- The researcher also recommends further researches that complement the mentioned limitations of this study like including classroom observations.

References

- Adami, A.F. (2004). *Enhancing students' learning through differentiated approaches to teaching and learning: a Maltese perspective*. *Journal of Research in Special Educational Needs*, 4(2), 91-97.
- Ansalone, G. (2010). *Tracking: Educational differentiation or defective strategy?* *Educational Research Quarterly*, 24(2), 3-17.
- Benson, B. (2003). *How to meet standards, motivate students, and still enjoy teaching*. Thousand Oaks, CA: Corwin Press.
- Caro, D. H. (2009). *Socio-economic status and academic achievement trajectories from childhood to adolescence*. *Canadian Journal of Education*, 32(3), 558-591.
- Daniels, H., & Bizar, M. (2005). *Teaching the best practice way: Methods that matter*. Portland, ME: Stenhouse.
- Ethiopian Ministry of Education (2015). *Education Sector Development Programme V (ESDP V): 2015/16 – 2019/20 G.C.* Addis Ababa: Federal Ministry of Education.
- Holloway, J.H. (2000). *Preparing teachers for differentiated instruction*. *Educational Leadership*, 58(1), 82-83
- Johnston, O. & Wildy, H. (2016). *The effects of streaming in the secondary school on learning outcomes for Australian students – A review of the international literature*. *Australian Journal of Education*, 60(1), 42-59 Sage publishers.
- Lawrence-Brown, D. (2004). *Differentiated instruction: Inclusive strategies for standards-based learning that benefit the whole class*. *American Secondary Education*, 32(3), 34-62.
- Levy, H. (2008). *Meeting the needs of all students through differentiated instruction: Helping every child reach and exceed standards*. *The Clearing House*, 81(4) 161-178.

- Muijs, D. & Reynolds, D. (2005). *Effective teaching: Evidence and practice*. London/Thousand Oaks/New Delhi: Sage Publications.
- Pettig, K. L. (2000). "On the road to differentiated practice." *Educational Leadership*, 58(1), 14–18.
- Rubie-Davies, C. M. (2010). Teacher expectations and perceptions of student characteristics: Is there a relationship? *British Journal of Educational Psychology*, 80(2), 121–135.
- Schutz, G., Ursprung, H. W., & Woßmann, L. (2008). Educational policy and equality of opportunity. *Kyklos*, 61(2), 279–308.
- Terwel, J. (2005). Curriculum differentiation: Multiple perspectives and developments. In Tomlinson, C. A. (2003). *Differentiation into practice. A resource guide for differentiating curriculum, grades K-5*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Tomlinson, C.A. & Imbeau, M. (2010). *Leading and managing a differentiated classroom*. Alexandria, Virginia: ASCD.
- Tomlinson, C.A. & Eidson, C.C. (2003). *Differentiation in practice: A resource guide for differentiating curriculum*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Tomlinson, C. (2014). *The differentiated classroom: Responding to the needs of all learners*. Alexandria, VA: Association of Supervision and Curriculum Development.
- Tomlinson, C. A. (2003). *Differentiation into practice. A resource guide for differentiating curriculum, grades K-5*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Tomlinson, C.A. (2001). *How to differentiate instruction in mixed-ability classrooms*, (2nd ed). Alexandria, VA: Association for Supervision and Curriculum Development.
- Tomlinson, C.A., Brimijoin, K., & Narvaez, L. (2008). *The differentiated school: Making revolutionary changes in teaching and learning*. Alexandria, VA: Association for Supervision and Development.
- UNESCO (2004). *Changing Teaching Practices: Using curriculum differentiation to respond to student diversity*. Paris, UNESCO.
- Van Garderen, D., & Whittaker, C. (2006). Planning differentiated, multicultural instruction for secondary inclusive classrooms. *Teaching Exceptional Children*, 38(3), 12-20.
- Van Houtte, M. & Stevens, P.A.J. (2009). Study involvement of academic and vocational students: Does between-school tracking sharpen the difference? *American Educational Research Journal*, 46, (4), 943-973.

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Teacher variables and delinquent behaviour among primary school pupils in Ahoada West local government area of Rivers State, Nigeria

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Abstract

This study examines teacher variables and delinquent behavior among public primary school pupils in Ahoada West Local Government Area of River State. The independent variables examined were; teachers' attitude, teachers' classroom management, teacher-pupil relationship while dependent variable is pupils' delinquent behavior. To achieve the purpose of the study, three research questions and three research hypotheses were posed and formulated respectively to guide the study. Two hundred (200) pupils in public primary schools were randomly selected for this study. The instrument used for data collection was a 16-item questionnaire named Teacher Variables and Delinquent Behaviours (TVDB) constructed by the researchers. Independent Samples T-Test was used for data analysis. Each of the hypotheses was tested at .05 level of significance. The findings of the study revealed that there was significant influence of teachers' attitude, teachers' classroom management, and teacher-pupil relationship on delinquent behavior among pupils in Ahoada West Local Government Area of Rivers State. The study recommended that teachers should act and manage their classroom adequately to curb students' delinquent behaviours in the classroom.

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Keywords: Teachers' attitude, teachers' classroom management, teacher-pupil relationship.

1. Introduction

1.1. Introduce the problem

In primary school, the recurrence of pupils' delinquent behavior such as cultism, examination malpractices, sexual permissiveness, alcoholic and drug addiction, lying and dishonesty, disrespect for constituted authority, abortion, truancy, indecent dressing,

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bullying, rape, lateness, vulgarities and even suicide have been numerous issues to contend with. The problem of deviant behaviors as exhibited by the public primary school pupils have metamorphosed into a cankerworm with devastating consequences both on the students themselves and the Nigeria society at large (Cooper, 2014). These problems according to Ibok (2016) are “truancy, stealing, disrespect, bullying” (p.17). The situation has worsened as pupils are no longer committed to their studies and are not encouraged to do so. Most of them who involve in these wasting activities truncates their stay and years of study and the grave consequences of these behaviors includes dismissal, loss of position, loss of, expulsion while others who are not caught cannot defend the certificate issue to them. Also, these set of students cannot be useful to themselves, their families as well as the society when employed (Strong, 2013). In spite of the efforts made by both the government and the school authorities to checkmate deviant behaviors, it is observed with dismay that the chronicle of deviant activities in primary school is unending. Indeed the magnitude both in scale and in frequency has reached an alarming dimension. If primary school pupils cultivate ethical values such as humility, respect, love, kindness, justice, fair play, spirit of forgiveness, obedience, devotion to duty, orderly behavior and selfless service, these in turn may enhance their academic performance.

Currently, there has been a renewed interest in the role of the teacher as the key to improving pupils’ socio-ethical value in primary schools. There seem to be a growing consensus among parents and educational stakeholders as well as policy makers that pupils’ delinquent behaviors are exclusively dependent on teachers’ characteristics (Ibok, 2016). Based on this sentiment, teachers are frequently accused, blamed and held accountable for delinquent behaviors and pupils’ under-achievement in school. Many teachers have been demoted, sacked and threatened or even punished (especially those in private schools) for the causes of pupils’ delinquent behaviors. It is based on this premise that this study seeks to find out if there is any influence of teacher variables on delinquent behaviors among primary school pupils in Ahoada West local government area of River State. Teachers have the primary obligation to help students to learn how to recognize and solve problems, comprehend new phenomena, construct mental models of these phenomena and, given a new condition, set goals and regulate their own learning (Akubua, 2013). A teacher’s ability to influence pupils’ delinquent behaviors depends on several variables. A teacher is expected to be effective and professionally well-grounded to perform the task of teaching. According to Strong (2013), the dimensions that characterize teacher’s variable that may influence pupils’ delinquent behaviors include qualification, attitude and classroom management and teacher- pupil relationship. Each of these dimensions focuses on a fundamental aspect of the teacher’s professional qualifications or responsibilities. Essentially, teachers have two major roles in the classroom: the role of creating conducive learning environment and actual delivery of lesson. Yuce (2019) maintained that the role of language teachers for instance have changed compared to those

who taught 30years age. The author went ahead to mention such roles to include: controller, prompter, participant, resource and tutor. It is important to note that teacher perform several roles to affect their students positively. Some of the teacher variables that may influence pupil delinquent behavior examined include teachers' attitude, teachers' classroom management, and teacher-pupil relationship.

1.2. Literature Review

One of the challenges and opportunities of the 21st century will be for schools at all levels to focus more on assisting pupils to develop positive attitude toward learning in order to succeed in school. Attitude refers to an individual's thinking, disposition, feeling, interest, opinion or position taken with respect to others (Obodo, 2015). This suggests that some teachers transfer their values and aspirations on to learners. Again, the initial experiences provided by teachers may modify pupil's values, emotion, interest and attitudes (Cooper, 2014).

Isidore (2015) conducted a study on the influence of teachers' attitude on pupils' delinquent behaviour among primary schools in Uyo State. In order to achieve this, three hypotheses were formulated and tested at 0.05 alpha levels. The design adopted was the descriptive survey study. The sample for the study consisted of 250 primary schools pupils randomly selected from 5 secondary schools. The sample was selected using stratified and simple random sampling techniques. The instrument used for this study was an adapted 15 items, 5- option rating scale questionnaire. The data collected was subjected to statistical analysis using Chi-Square. The results obtained amongst others, revealed that, teachers' attitudes significantly influence pupils delinquency behaviours. This suggests that, teachers' positive attitude towards the pupils may help to curb the negative trend of socio-ethical values or morality among students in the society, the home and school have the stronger influence.

Pupils spend most of the time in the classroom than the home and many of the behaviors they learn are in the classroom. The way and manner the teacher manages his/her classroom during lesson delivery can make or mar the pupils' behaviors. Classroom management refers to all those essential teaching and learning activities which are highly necessary not only to create but also to maintain a supportive and orderly atmosphere. It includes planning and preparation of the materials, decoration of the classroom, creation of expectation, establishment and enforcement of rules and routines in the classroom (Tan, 2013). Akubue (2013) observed that in its most routine level, classroom management concerns a large variety of straight forward activities such as simple ensuring discipline amongst students, maintaining and distributing classroom materials and routine custodial caring for students' behavior. These actions may not be instructional in nature but they facilitate instruction and help in development of moral value among the pupils. Levin(2016) is of the view that, well qualified and competent teachers are better placed to manage their classrooms effectively than others.

Eze (2010) conducted a study on teachers' classroom management and pupils' delinquent behavior in Bakassi Local Government Area, Cross River State. In order to achieve this, two hypotheses were formulated and tested at 0.05 alpha levels. The design adopted for the study was the ex-post facto. The sample for the study consisted of 180

students randomly selected. The sample was selected using stratified and simple random sampling techniques. The instrument used for this study was an adapted 20 items, 4-option rating scale questionnaire. The data collected was subjected to statistical analysis using Chi-square. The results obtained amongst others, revealed that there is a significant influence of teachers classroom management on pupils delinquent behaviors in Bakassi Local Government Area, Cross River State. This implies that a poorly managed classroom may result to delinquent behaviors among pupils while a properly managed classroom will produce well behaved pupils.

Teacher-pupil relationship is key to building well behave pupils in the classroom. When the relationship between the teacher and the pupils is cordial, pupils will always look forward to meeting that teacher. But if the relationship is not cordial, pupils will tend to run away and that may lead to truancy. Jones(2012) opined that,pupils prefer teachers who are warm and friendly. In the classroom, the interpersonal relationship between teacher and pupils is an important element in the pupils' learning process and modification of pupils' behaviors. According to Adina and Ana (2012), the establishment of common ground between teachers and pupils is a fundamental component for a good and lasting interpersonal relationship. Teacher-pupils relationship is part and parcel of the teaching and learning process because it influences pupils' behaviors. Teachers have to bear in mind that their actions are likely to have a significant influence upon improving or detracting from the quality of their relationship with pupils which in turn will have a favorable or negative influence on pupils' behaviors.

King (2014) conducted the study, influence of teacher-pupil relationship on pupils' delinquent behaviour in primary school in Enugu State. In order to achieve this, three hypotheses were formulated and tested at 0.05 alpha levels. The design adopted for the study was the survey study. The sample for the study consisted of 200 primary school teacher randomly selected in 5 public primary schools in Enugu State. The sample was selected using stratified and simple random sampling techniques. The instrument used for this study was an adapted 12 items, 4- option rating scale questionnaire. The instrument was subjected to reliability measure using test- retest method. The data collected were subjected to statistical analysis using independent t-test. The results obtained amongst others, revealed that teacher-pupil relationship significantly influence pupils delinquent behaviors. Also, Nsihak (2012) conducted a study to examine the relationship between teacher-pupil relationship and pupils' deviant behavior in Uyo Local Government Area, Akwa State. In order to achieve this, two hypotheses were formulated and tested at 0.05 alpha levels. The design adopted for the study was the ex-post facto. The sample for the study consisted of 150 students randomly selected for the study. The sample was selected using stratified and simple random sampling techniques. The instrument used for this study was an adapted 12 items, 4- option rating scale questionnaire. The data collected were subjected to statistical analysis using Pearson Product Moment Correlation Coefficient. The results obtained amongst others, revealed that there is a significant relationship between teacher-pupil relationship and pupils' deviant behaviors.

However, the extent to which delinquent behavior has eaten deep amidst primary school pupils in Ahoada West Local Government Area of Rivers State has given the writers of the study a concern. This study therefore seeks to find out whether teacher variables have any

influence on pupils' delinquent behaviours in schools in the study area State hypotheses and their correspondence to research design.

1.3 *Statement of purposes, Questions and hypotheses*

Purpose of the Study

The main purpose of the study is to examine teacher variables and delinquent behavior of public primary school pupils in Ahoada West Local Government Area of Rivers State. Specifically, the study seeks to determine whether;

1. Teachers' attitude influence delinquent behaviors among public primary school pupils.
2. Teachers' classroom management influence delinquent behaviors among public primary school pupils.
3. Teacher pupil relationship influence delinquent behaviors among public primary school pupils.

Research Questions

1. How does teachers' attitude influence delinquent behavior among public primary school pupils?
2. To what extent can teachers' classroom management influence delinquent behavior among public primary school pupils?
3. Does teacher pupil relationship influence delinquent behavior among public primary school pupils?

Statement of Hypotheses

Based on the specific objectives and research questions raised, the following null hypotheses were put forth to guide the study:

1. There is no significant influence of teachers' attitude on delinquent behavior among primary school pupils
2. There is no significant influence of teachers' classroom management on delinquent behavior among primary school pupils.
3. There is no significant influence of teacher-pupil relationship on delinquent behavior among primary school pupils.

2. Method

The study area was Ahoada West Local Government Area, River State. The research designed adopted is survey design. This design method was preferred because it concerned with finding, describing and interpreting data collected from samples of population. The population for the study consist of all primary school pupils in public secondary school in Ahoada west Local Government Area of River State. A sample of 20

pupils was randomly selected for the study. A questionnaire was used in data collection. The questionnaire consisted of two sections (A&B). Section A described the bio data of the respondents while section B was developed on the main variables which include attitude, classroom management and teacher-pupil relationship. The questionnaire was based on four point likert scale used in measuring responding opinion level of strongly agreed, agreed, disagreed, and strongly disagreed

3.1. Subsection of the method.

The study area was Ahoada West Local Government Area, River State. The research designed adopted is survey design. This design method was preferred because it is concerned with finding, describing and interpreting data collected from samples of population. The population for the study consist of all primary school pupils in public secondary school in Ahoada west Local Government Area of River State. A sample of 200 pupils was randomly selected for the study

3.2. Participant (subject) characteristics

The study made use of public primary school pupils in Ahoda local Government Area of River State, Nigeria. These pupils were basically primary five pupils, why they were used was because they can read and write and are capable of responding to the questionnaire items. Moreover, they are of 7-8 years of age showing that they are mature to handle the instruments.

3.3. Sampling procedures

The sampling procedure adopted was the simple random sampling technique of hat and draw where each subject is given equal opportunity to be selected. Numbers were written and placed in a basket and subjects were asked to pick at random. This was done until the required number was obtained.

3.3.1. Sample size, power, and precision

A sample size of 200 was obtained from target population of all the primary school pupils of 1256 in public primary school in Ahoda West Local government area of River state. 16% of the population was taken to form the sample size.

3.3. 2. Validity and Reliability

The instrument was face-validated by two experts in measurement and evaluation from the University of Calabar. Corrections were pointed out by the expert and

adjusted by the researchers and the document was declared valid. To ascertain the internal consistency of the instrument, Cronbach Alpha reliability was employed which gave a reliability coefficient of .07-.08 respectively.

3.3.3. Data Analysis

The statistic package for Social Sciences (SPSS) computer programme was used to analyze the data collected. The data was analyzed using Independent t-test statistical tool. The results of the analysis are presented in tables 1, 2, and 3. The hypotheses were tested at .05 level of significance.

4. Results

Hypothesis one

Hypothesis one stated that there is no significant influence of teachers' attitude on delinquent behavior of primary school pupils. The independent variable in this hypothesis is teachers' attitude, while the dependent variable is delinquent behavior. Independent t-test statistical analysis was used to test this hypothesis. To test this hypothesis, teachers' attitudes were classified into two groups (positive and negative attitude). The subjects who sum of their responses in the questionnaire ranges from 5 to 12 are classified as teacher negative attitude while those responses from 13-20 are classified as teacher positive attitude, their means were compared using the independent t-test analysis. The result of the analysis is presented in Table 1.

Table 1

Independent T-Test Analysis on influence of teacher attitude on delinquent behaviours of primary school pupils. (N=200)

Variables	N	\bar{X}	SD	t-value
Positive attitude	134	14.63	5.99	5.56*
Negative attitude	66	10.10	5.11	

* Significant at .05, critical t = 1.96, df=198

The result of the analysis as presented in Table 1 revealed that, the calculated t-value of (5.56) is higher than the critical t-value of 1.96 at .05 levels of significance with 198 degrees of freedom. With this result, the null hypothesis which stated that there is no significant influence of teachers' attitude on delinquent behavior of primary school pupils was rejected. This result implies that, there is a significant influence of teachers' attitude on delinquent behavior of primary school pupils

Hypothesis two

There is no significant influence of teachers' classroom management on delinquent behavior of primary school pupils. The independent variable in this hypothesis is teachers' classroom management, while the dependent variable is delinquent behavior. Independent t-test statistical analysis was used to test this hypothesis. To test this hypothesis, teachers' classroom management was classified into two groups (low and high). The subjects who sum of their responses in the questionnaire ranges from 5 to 12 are classified as teacher high classroom management while those responses from 13-20 are classified as teacher high classroom management, their means were compared using the independent t-test analysis. The result of the analysis is presented in Table 2.

Table 2

Independent T-Test Analysis on influence of teacher classroom management on delinquent behaviours of primary school pupils. (N=200)

Variables	N	\bar{X}	SD	t-value
High classroom management	119	14.11	5.69	5.40*
Low classroom Management	81	9.99	5.01	

* Significant at .05, critical t = 1.96, df=198

The result of the analysis as presented in Table 2 revealed that, the calculated t-value of (5.40) is higher than the critical t-value of 1.96 at .05 levels of significance with 198 degrees of freedom. With this result, the null hypothesis which stated that there is no significant influence of teachers' classroom management on delinquent behavior of primary school pupils was rejected. This result implies that, there is a significant influence of teachers' classroom management on delinquent behavior of primary school pupils.

Hypothesis three

Hypothesis three stated that there is no significant influence of teacher-pupil relationship on delinquent behavior of primary school pupils. The independent variable in this hypothesis is teacher-pupil relationship, while the dependent variable is delinquent behavior. Independent t-test statistical analysis was used to test this hypothesis. To test this hypothesis, teachers' classroom management was classified into two groups (low and high). The subjects whose sum of their responses in the questionnaire ranges from 5 to 12 are classified as teacher low relationship while those responses from 13-20 are classified as teacher high relationship, their means were compared using the independent t-test analysis. The result of the analysis is presented in Table 3.

Table 3

Independent T-Test Analysis on influence of teacher –pupil relationship on delinquent behaviours of primary school pupils. (N=200)

Variables	N	\bar{X}	SD	t-value
Cordial relationship	132	14.61	5.49	6.10*
Not cordial relationship	68	9.21	5.11	

* Significant at .05, critical t = 1.96, df=198

The result in Table 3 revealed that, the calculated t-value of (6.10) is higher than the critical t-value of 1.96 at .05 levels of significance with 198 degrees of freedom. With this result, the null hypothesis which stated that there is no significant influence of teacher-pupil relationship on delinquent behavior of primary school pupils was rejected. This result implies that, there is a significant influence of teacher-pupil relationship and delinquent behavior of primary school pupils.

5. Discussion

The finding that states that, there is a significant influence of teachers' attitude on delinquent behaviours of public primary school pupils is in consonance with the finding of Doyne (2011) who found that, teachers' attitude significantly influence delinquent behavior among primary school pupils in basic schools. That is, if teachers are not well behaved, they can possibly influence the pupils negatively. The finding is also in accordance with Udom (2011) who maintained that; attitude is one's character and behavior to be well thought of and admired.

The second finding which stated that there a significant influence of on pupils' delinquent behaviours is in agreement with Cassias (2013) who ascertain that; teachers' classroom management significantly influence delinquent behavior among pupils in Basic schools. The finding of this study is also in line with Ibok (2016) who in his study found out that there is a significant effect of teachers' classroom management on delinquent behavior of primary school pupils.

The finding on teacher-pupils relationship was significant, meaning that when there a cordial relationship between the teacher and the pupils; they will imbibe positive behaviours which will enhance their personalities. This finding is in consonance with the finding of King (2013) who found that, there is a significant influence of teacher-pupils' relationship on delinquent behavior of primary school pupils. A person with moral values is able to endure hardship, overcome criticism, and optimistically confront challenges in a tranquil manner. The finding also aligned with the postulation of Blatt (2010) that teacher-pupils' relationship significantly influence pupils' deviant behaviors. It is important to recognize that when there is no cordial relationship between the teacher and the pupils, they pupils may become delinquent by engaging in unpleasant behaviours which are inimical to them and the society.

6. Conclusions

This study examined teacher variables and delinquent behavior of primary school pupils. Literature was reviewed and it was variously revealed that, there is a significant influence of teachers' attitudes, classroom management and teacher-pupil relationship on delinquent behaviours among primary school pupils. This study is carried out in a different location in Ahoada local government area of River State and the result has confirm those of other authors in the literature. From the foregoing, it was concluded that there is a significant influence of teachers' attitude, classroom management and teacher-pupil relationship on delinquent behavior of public primary school pupils in Ahoada West Local Government Area of Rivers State.

7. Acknowledgements

We want to sincerely acknowledge the authors whose articles or materials were used for this study. We also want to thank Dr Essien Ekpeyong Essien who took time out of his busy schedule to proof read the work and gave necessary corrections.

8. Recommendations

Based on the findings of the study, the following recommendations were made:

1. Teachers should develop positive attitudes toward the pupils they teach so that they can emulate them and become better citizens.
2. Teachers should present themselves approachable and not to make things difficult for the pupils.
3. Teachers should be able to manage their classes in terms of classroom management, positioning of pupils according to their abilities, control noise making, manage the time table effectively, dress neatly and smartly and be always punctual to school.
4. Teachers should establish a good and close relationship with the pupils so that they can Identify their problems and find a quick solution.

8. Implications of the study

The findings of this study have implications for the teachers, students and the society. For the past five years, Nigeria as a country has witnessed a lot of crisis and this has been evident in the delinquent behaviours exhibited by even primary school pupils. Primary school pupils are future leaders and if they become delinquent, then, the nation's future will be bleak. Teachers as role models have a lot to do in order to mould pupils' character. When teachers have the right attitudes, pupils will emulate them and develop right and positive attitudes and become responsible adults who will in turn build a better and peaceful society. Also, through adequate classroom management by teachers and provision of a conducive classroom climate, pupils' behaviours will be enhanced. Furthermore, when teachers are cordial in their relationship with the pupils, the pupils' confidence will be built and lasting peace can be witnessed as they relate positively with the outside world.

REFERENCE

- Abraham, A.M. (2016). *Professional skills for effective teaching*. Jos: Deka Publisher.
- Akubue, M.D (2013). *Teaching Methodologies for Population Education*, Makati: Population Centre Foundation.
- Blatt, Y.L.(2010). *Teacher classroom variables*. California: Wadsworth Publishing Company.
- Cassia, K.C.(2013). *Contemporary Moral issues in diverse society*. California: Wadsworth publishing co.
- Chidi, A. (2013). *The study of psycho-social and cultural factors in childhood mortality and morbidity in Nigeria*. Ibadan: Lasswell Book services
- Cooper, D. (2014). *Education, values and Mind*. London: Routledge and Kegan Paul.

- Dien, A. A. (2014). Effect of moral and value education on delinquency behaviour. An *unpublished B.ED Project*, Federal College of Education, Zamfara.
- Doyne, C. R. (2011). Effect of moral and value education on students' deviant behaviour. *Journal of Education Review*, 5(3), 34-56.
- Enang, P.I. (2006). *Educational Psychology: Learning to Learn and implication*: Uyo: Abaam Publishers.
- Erickson. S. A. & Philip. J.O. (2012). *Teaching approach to History and Religious Knowledge in higher Institutions*. Ibadan: Lasswell Book services.
- Eze, A. F. (2010). Effect of Socio ethical Value on students' deviant behaviour. *An unpublished M.Ed thesis*. University of Jos.
- Ibok, A.C (2016). Learner variable of academic performance and adjustment of junior secondary student. *The Counselor* 23(2): 17-58
- Isangedighi, A. I, Joshua, M. T., Asim, A. E. & Ekuri, E. E. (2004). *Fundamentals of research and statistics in education and social science*. Calabar: Nku-ubia ventures.
- Isidore, D.S. (2015). *Moral Education for Junior Secondary Schools*; Ibadan: Evans.
- John B. U. (2012). Teacher classroom management and effective teaching of secondary school student. *Journal of Education Research*, 3(2), 56-89
- King, L. F. (2014). Effect of teachers classroom management on deviant behaviour in secondary schools. *An unpublished M. Ed Thesis*, University of Jos.
- Levin, A. (2016). *The study of psycho-social and cultural factors in childhood mortality and morbidity in Nigeria*. Ibadan: Lasswell Book services.
- Mahi, D. R. (2013). *Human Values and Education*. New Delhi: Sterling Publishers Pvt .Ltd.
- Nsikak, S. F. (2012). Influence of teacher-pupil relationship on students delinquent behaviour. *Journal of Teacher Education*, 2 (2), 47–76
- Obinyan, S. F. (2010). Influence of teachers' variables on students delinquent behaviour. *An unpublished PhD thesis*. University of Ibadan
- Ododo, O. O. (2015). Students' attitude on student deviant behaviour. *An unpublished NCE Project*, College of Education, Akamkpa
- Okon, S.A, & Ibange, A.O. (2014). *Religious Education Method*. Ibadan: Department of Teacher Education, University of Ibadan Press.
- Pavlov, I. P. (1972). *Lectures on conditional reflexes*. London: Oxford University Press.
- Strong, L.R. (2013), 'Values pedagogy and teacher education: Re-conceiving the foundations. *Australian Journal of Teacher Education*, 36 (7), 31–44
- Tan, G.E (2013). *Religious education for life transformation*. Enugu: Chinecherem Press
- Udom, A.A. (2011). Effect of qualification on pupils' deviant attitude in Eket Education Zone. *Unpublished NCE project*, College of Education, Afahasit.
- Yüce, E. (2019). EPOSTL: Revisiting the roles of language teachers at a recently established ELT department. *International Online Journal of Education and Teaching (IOJET)*, 6(1).1272-1281.

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Evaluation of the Learning Outcomes in the Revised EFL Curriculum: A research on Outcome Verbs

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Abstract

EFL curricula for primary and secondary education in Turkey were revised based on the 2012 educational reform, and issued to the institutions of primary and secondary education affiliated to the Ministry of National Education (MoNE) in 2017 to be put into practice the following academic year. This study was motivated to examine the revised primary EFL curriculum with a focus on the outcome statements with respect to verb choice. Accordingly, seven sets of data were compiled from these statements identified for 2nd to 8th grades in the document, and a total of 376 outcome statements were analysed. The results demonstrated that active verbs that are recommended for writing learning outcomes constituted 14% of 403 verbs in these statements while over 41% were comprised of vague verbs that should be avoided in writing learning outcomes such as *understand* and *know* as they make the statements hard to evaluate. The findings were discussed and outlined in detail, and a couple of practical implications were offered for curriculum designers based the findings reported in this research.

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Keywords: EFL; curriculum; primary education; learning outcome; outcome verb

1. Introduction

Identified with such unique skills as soft skills (e.g. communication, IT and numeracy) and hard skills (e.g. entrepreneurship, life-long-learning and competitiveness), 21st century witnessed several developments and changes around the world. Turkey, like other countries, could not remain indifferent to these changes and restructured its educational system in consonance with the constructivist approach in 2004 (Ünsal et al., 2019). Accordingly, all course curricula including EFL for primary and secondary education were updated taking the related principles of the approach into consideration.

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Namely, the new EFL curriculum were grounded on such objectives as ‘promoting learners’ communicative proficiency in English by fostering integrated development of language skills with a particular emphasis on speaking and listening; addressing students’ individualized learning styles and interests; integrating content and language integrated learning into the ELT curriculum to allow for certain cross-curricular topics to be learned in English’ (Kırkgöz, 2009, p. 80).

The country witnessed another substantial change in its educational system in 2012, which entailed a transition from the 8+4 educational model to the 4+4+4 system (MoNE, 2017). Based on the new system, the starting age to foreign language instruction was lowered from 9 to 7. In parallel with the requirements of the transition, the existing curricula were redesigned considering the cognitive and social development of the target audience, and announced on the official website of the Ministry of National Education (MoNE) in 2017. The revised EFL curriculum mainly covers a rationale statement, key competences, suggestions for testing and evaluation, suggested techniques for the assessment of language skills, suggestions for practice and learning outcomes to be attained at the end of the course for each grade. As the new curricular model was constructed with a specific focus on communication in the target language, the communicative approach was adopted in teaching foreign languages, which necessitates ‘the use of the target language not only as an object of study, but as a means of interacting with others; the focus is not necessarily on grammatical structures and linguistic functions, but on authentic use of the language in an interactive context in order to generate real meaning’ (Larsen-Freeman & Anderson, 2011; Richards, 2006; cited in MoNE, 2017). It is also noted in the document that ‘use of English is emphasized in classroom interactions of all types, supporting learners in becoming language users, rather than students of the language, as they work toward communicative competence’ (CoE, 2001). Accordingly, the communicative skills such as listening, speaking and spoken interaction are emphasized over other language skills. This is especially mirrored through the quantity of the learning outcomes that are designed to improve learners’ communicative rather than reading and writing skills. Namely, approximately 50% of the outcome statements fall into the categories of spoken interaction and spoken production, followed by listening (30%), reading (14%) and writing (7%). Furthermore, no learning outcomes related to reading and writing skills appear in the sections for 2nd, 3rd and 3rd grades while those related to writing skill do not emerge till the second half of the section for 6th grade.

1.1. Review of literature

The relevant literature highlights the significance of using active verbs in writing effective and easy-to-measure outcome statements (Bingham, 1999; Fry et al., 2000;

Jenkins & Unwin, 2001; Osters & Tiu, 2003; Adam, 2006; Declan, 2006). More specifically, it is postulated that ambiguous verbs such as *understand*, *know*, *be aware* and *appreciate* should be avoided in learning outcomes (Bingham, 1999) since the key word is ‘do’ and the key need in drafting learning outcomes is to use active verbs (Jenkins & Unwin, 2001; Fry et al., 2000). Likewise, Osters and Tiu (2003) advocate that concrete verbs such as *define*, *apply* or *analyse* are more helpful for assessment than other verbs such as *be exposed to*, *understand*, *know* and *be familiar with*. In this vein, Jenkins and Unwin (2001) propose the use of certain verbs to specify different sorts of outcome, as shown in Table 1.

Table 1. Verbs for different sorts of outcomes (Jenkins & Unwin, 2001, p. 3)

Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
Arrange	Classify	Apply	Analyse	Arrange	Appraise
Define	Describe	Choose	Appraise	Assemble	Argue
Duplicate	Discuss	Demonstrate	Calculate	Create	Assess
Label	Explain	Dramatise	Categorise	Collect	Attach
List	Express	Employ	Compare	Compose	Choose
Memorise	Identify	Illustrate	Contrast	Construct	Compare
Name	Indicate	Interpret	Criticise	Design	Estimate
Order	Locate	Operate	Differentiate	Formulate	Evaluate
Recall	Recognise	Practice	Discriminate	Manage	Judge
Recognise	Report	Schedule	Distinguish	Organise	Predict
Relate	Review	Sketch	Examine	Plan	Rate
Repeat	Restate	Solve	Experiment	Prepare	Score
Reproduce	Select	Use	Question	Propose	Select
State	Translate	Write	Test	Write	Support
**	**	**	**	**	**

In a more recent research, Adelman (2015) contends that the verbs ‘*ask*, *consider*, *practice*, *question*, *read*, *think*, *comply*, *consult*, *act*, and *discuss* may all be default verbalizations of assignments or classroom interactions or learning directions, but are intermediary processes, not outcomes’ as they ‘describe routine activities of teaching (behavioural commands/requests/prods) and learning’ (p. 16). He goes on to state that ‘a learning outcome statement does not ascribe “ability” to do or demonstrate something’ as one does not know a student has the “ability” to do anything until the student actually does it, for which point we use verbs that indicate what the student actually did’ (p. 13). Hence, he recommends the use of verbs that allow practitioners to evaluate students’ achievement such as *identify*, *categorize*, *differentiate*, *design*, *disaggregate*, *reformulate*, or *evaluate*. Moving from these viewpoints, the identified outcome statements in the

revised EFL curriculum were expected to include the above-mentioned active verbs, some of which are provided in Table 1, and those identified by Adelman (Ibid).

The literature review on learning outcomes indicates that the studies have been mostly conducted on how to write effective learning outcomes –based on certain taxonomies and content (Janssen & Rijlaarsdam, 1996; Scroggins, 2004; Hanushek & Wossmann, 2005; Zumbach et al., 2008; Um & Plass, 2010; Eitel et al., 2013; Gezer & İlhan, 2015; Seemiller, 2016; Zorluoğlu et al., 2016; Göçer & Kurt, 2016; Ünsal & Korkmaz, 2017). In the Turkish context, the revised curricula for different courses were evaluated from various perspectives ranging from teachers' views (Batdı, 2017; Gürsoy et al., 2017; Aksoy et al., 2018; Yalçınkaya, 2018; Birgül & Nacakçı, 2019; Ünsal et al., 2019), content and implementation (Demir & Akar-Vural, 2017; Deveci & Çepni, 2017; Aydın et al., 2018; Güneş-Koç & Kayacan, 2018; Tarman & Kılınç, 2018, Doğan & Burak, 2018) to overall analysis (Altan, 2017; Erarslan, 2018), and assessment and evaluation (Duruk et al., 2017; Sarıgöz & Fişne, 2018). Outcome verbs, which constituted the major focus of the present study, were investigated in a very limited number of research mostly with the focus on alignment with the learning taxonomies (Stanny, 2016; Diab & Sartawi, 2017) and educational practices (Hutchings, 2016; Wagenaar, 2018; Schoepp, 2019). It is observed that they were conducted especially in the scope of higher education. Examining the learning outcomes in the revised Turkish curriculum for primary education in Turkey, Avşar and Mete (2018) reported a limited diversity in outcome verb choice and repeated inclusion of most outcomes into the curriculum.

1.2. Statement of the problem

To the best of the researchers' knowledge, no study has previously analysed outcome statements in the revised EFL curriculum for primary education in Turkey in terms of the recommended verbs for the construction of learning outcomes. Hence, in order to bridge the research gap, this study attempted to examine the revised curriculum in concern to see to what extent they include the suggested verbs for student learning outcome articulation (Adelman, 2015).

2. Method

2.1. Data collection and analysis

The document analysis method was exclusively employed in the current research as it required analysing the revised primary EFL curriculum. Document analysis is a form of qualitative research in which documents are interpreted by the researcher to give voice and meaning around an assessment topic (Bowen, 2009). The documents in concern are (i) public records (the official, ongoing records of an organization's activities; e.g., student

transcripts, mission statements, annual reports, policy manuals, student handbooks, strategic plans, and syllabi), (ii) Personal Documents (first-person accounts of an individual's actions, experiences, and beliefs; e.g., calendars, e-mails, scrapbooks, blogs, Facebook posts, duty logs, incident reports, reflections/journals, and newspapers) and (iii) Physical Evidence (physical objects found within the study setting; e.g., flyers, posters, agendas, handbooks, and training materials) (O'Leary, 2014). Accordingly, seven sets of data were compiled from outcome statements in the revised EFL curriculum for 2nd to 8th grades that were available on the official website of MoNE (2017) at the time of data collection. Figure 1 illustrates their distribution over grades.

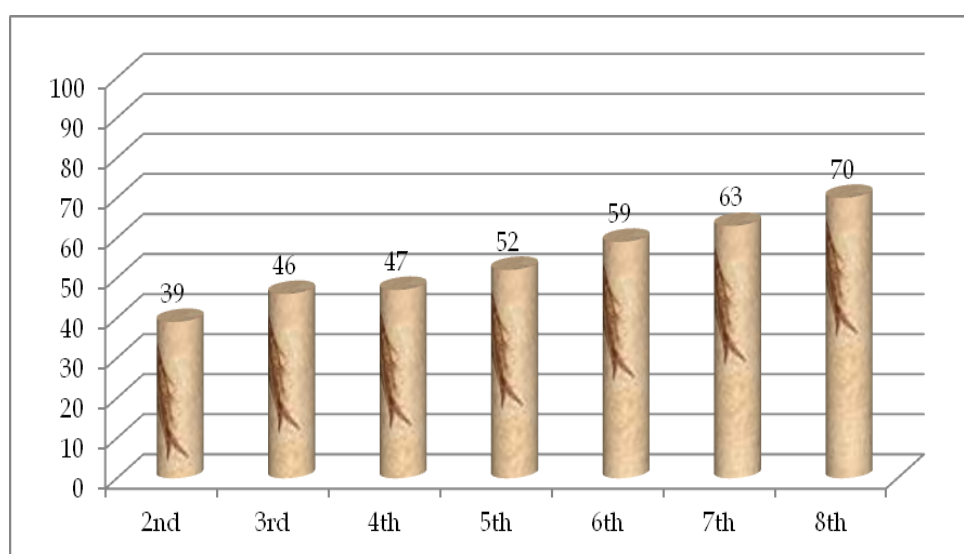


Figure 1. LOs in the revised primary EFL curriculum

403 verbs included in 376 outcome statements in the revised curriculum were simultaneously coded by the researchers based on the list proposed by Adelman (Ibid) who contends that 'writing verb-driven outcome statements requires an expanded vocabulary, along with a typology matched to the cognitive activities at issue' (p. 17). The categories of productive active and operational verb groups suggested by Adelman (Ibid) are displayed in Table 2.

Table 2. Active verbs for student learning outcome articulation (Adelman, 2015, p. 17-18)

CATEGORIES	VERBS
A. Verbs describing student acquisition and preparation of tools, materials, and texts of various types (including digital and archival)	<i>access, acquire, collect, accumulate, extract, gather, locate, obtain, retrieve</i>
B. Verbs indicating what students do to certify information, materials, texts, etc.	<i>cite, document, record, reference, source (v)</i>
C. Verbs indicating the modes of student characterization of the objects of knowledge or materials of production, performance, exhibit	<i>categorize, classify, define, describe, determine, frame, identify, prioritize, specify</i>
D. Verbs describing what students do in processing data and allied information	<i>calculate, determine, estimate, manipulate, measure, solve, test</i>
D1. Verbs further describing the ways in which students format data, information, materials	<i>arrange, assemble, collate, organize, sort</i>
E. Verbs describing what students do in explaining a position, creation, set of observations, or a text	<i>articulate, clarify, explicate, illustrate, interpret, outline, translate, elaborate, elucidate</i>
F. Verbs falling under the cognitive activities we group under “analyze”	<i>compare, contrast, differentiate, distinguish, formulate, map, match, equate</i>
G. Verbs describing what students do when they “inquire”	<i>examine, experiment, explore, hypothesize, investigate, research, test</i>
H. Verbs describing what students do when they combine ideas, materials, observations	<i>assimilate, consolidate, merge, connect, integrate, link, synthesize, summarize</i>
I. Verbs that describe what students do in various forms of “making”	<i>build, compose, construct, craft, create, design, develop, generate, model, shape, simulate</i>
J. Verbs that describe the various ways in which students utilize the materials of learning	<i>apply, carry out, conduct, demonstrate, employ, implement, perform, produce, use</i>
K. Verbs that describe various executive functions students perform	<i>operate, administer, control, coordinate, engage, lead, maintain, manage, navigate, optimize, plan</i>
L. Verbs that describe forms of deliberative activity in which students engage	<i>argue, challenge, debate, defend, justify, resolve, dispute, advocate, persuade</i>
M. Verbs that indicate how students value objects, experiences, texts, productions, etc.	<i>audit, appraise, assess, evaluate, judge, rank</i>
N. Verbs that reference the types of communication in which we ask students to engage	<i>report, edit, encode/decode, pantomime (v), map, display, draw/diagram</i>
O. Verbs, related to modes of communication, that indicate what students do in groups	<i>collaborate, contribute, negotiate, feed back</i>
P. Verbs that describe what students do in rethinking or reconstructing	<i>accommodate, adapt, adjust, improve, modify, refine, reflect, review</i>

The expert opinion was elicited from a faculty member with specialisation in curriculum and instruction. The research findings were reported via statistics and discussed in the following section.

3. Results

The initial findings of the study indicated that the learning outcomes used in the revised EFL curriculum for primary education unexceptionally begin with the expression “*Students will be able to ...*”. This finding largely coincides with the existing literature (Jenkins & Unwin, 2001; Caffarella, 2002; Jackson et al., 2003; Adam, 2006). The following outcomes were extracted from each grade for exemplification.

*Students will be able to **match** written letters with the sounds produced.* (Gr 2)

*Students will be able to **recognize** the physical qualities of individuals.* (Gr 3)

*Students will be able to **understand** short and clear utterances about requests.* (Gr 4)

*Students will be able to **talk about** daily routines.* (Gr 5)

*Students will be able to **describe** people doing different actions.* (Gr 6)

*Students will be able to **ask** questions related to the frequency of events.* (Gr 7)

*Students will be able to **express** obligations, likes and dislikes in simple terms.* (Gr 8)

Adam (2006) advocates that ‘this formulation of learning outcome statements has a number of benefits as it focuses the writer of the learning outcomes on precisely what skills, abilities and knowledge will be acquired’ (p. 6). According to him, these statements are typically characterised by the use of active verbs. However, the present findings have shown that slightly over 14% of the outcome statements in the revised curriculum include this sort of verbs while approximately half of them contain verbs that should be avoided in the writing process of outcome statements as they refer to future abilities of the students (Adelman, 2015). Hence, this particular finding of the research obviously contradicts with Bingham (1999), Fry et al. (2000), Jenkins and Unwin (2001), and Osters and Tiu (2003) who favoured the use of active verbs in drafting outcome statements. Figure 2 displays their proportion to all outcome verbs in the curriculum at stake.

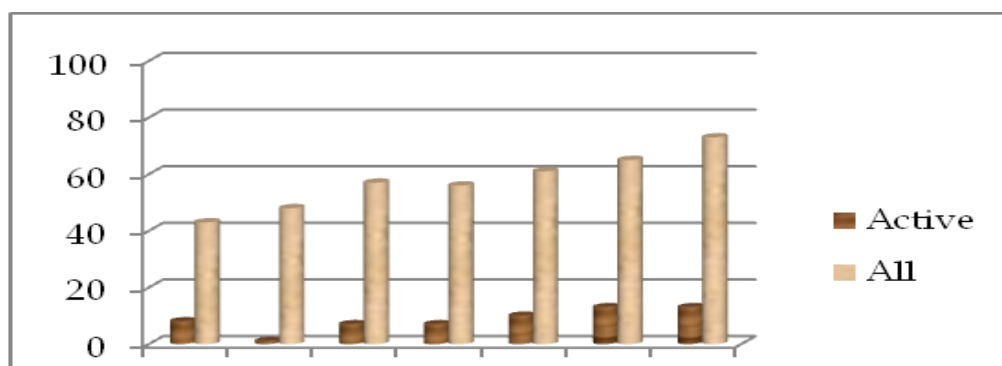


Figure 2. Active verbs in primary EFL outcome statements

As seen in Figure 2, active verbs constituted a limited quantity of all outcome verbs regardless of grades and some fluctuations were found in their distribution across grades. Namely, they seem to constitute 20% of the outcome verbs identified for 7th grade, followed by 2nd grade (19%), 8th grade (18%), and 6th grade (16%) whereas they represent 13% and 12% in those for 5th and 4th grades, respectively. It was striking to see that only one active verb was used in learning outcomes for 3rd grade (2%). Figure 3 presents the distribution of the verbs in concern across the revised curriculum.

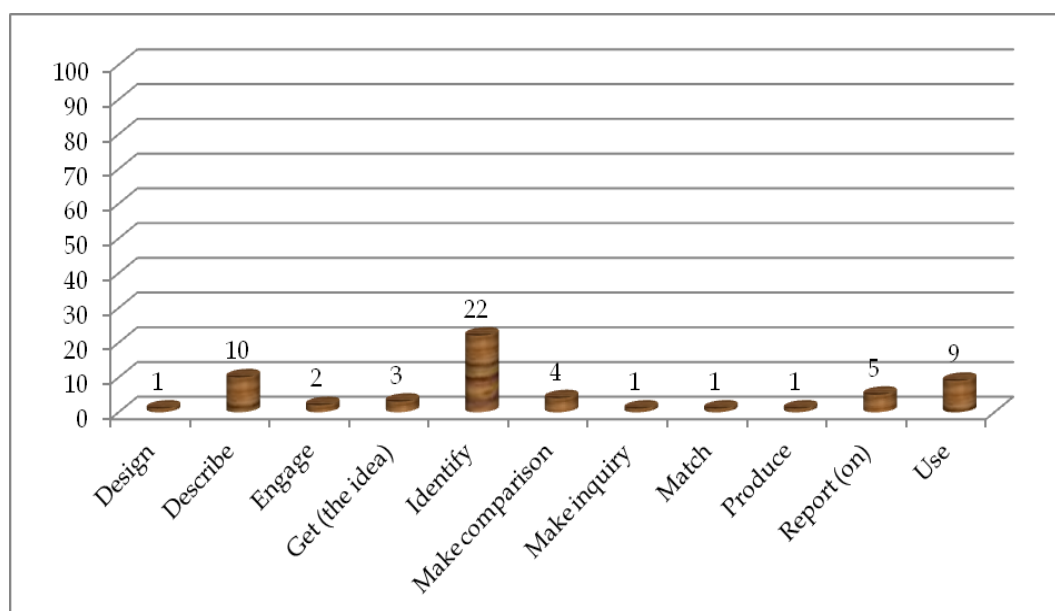


Figure 3. Recommended outcome verbs in the revised EFL curriculum

As outlined in Figure 3, *identify* was the most frequently used verb in the revised primary EFL learning outcomes, followed by *describe*, *use* and *report*. The two most

frequented verbs fall into the category of ‘verbs indicating the modes of student characterization of the objects of knowledge or materials of production, performance, exhibit’ while *use* belongs to the verb category that ‘describes the various ways in which students are required to utilize the materials of learning’. The verb *report*, on the other hand, is classified to the verb group that ‘references the types of communication in which students are asked to engage’. Nonetheless, these verbs could not be found in the revised curriculum at a desired level. More interestingly, the findings showed that no outcome verbs in the revised curriculum fell into half of the recommended verb categories by Adelman (Ibid): (i) verbs indicating the modes of student characterization of the objects of knowledge or materials of production, performance, exhibit, (ii) verbs describing what students do in processing data and allied information, (iii) verbs further describing the ways in which students format data, information, materials, (iv) verbs describing what students do in explaining a position, creation, set of observations, or a text, (v) verbs that describe forms of deliberative activity in which students engage, (vi) verbs that indicate how students value objects, experiences, texts, productions, etc., (vii) verbs describing what students do when they “inquire”, and (viii) verbs that describe what students do in rethinking or reconstructing. Figure 4 provides the most frequented ten verbs in the primary EFL outcome statements.

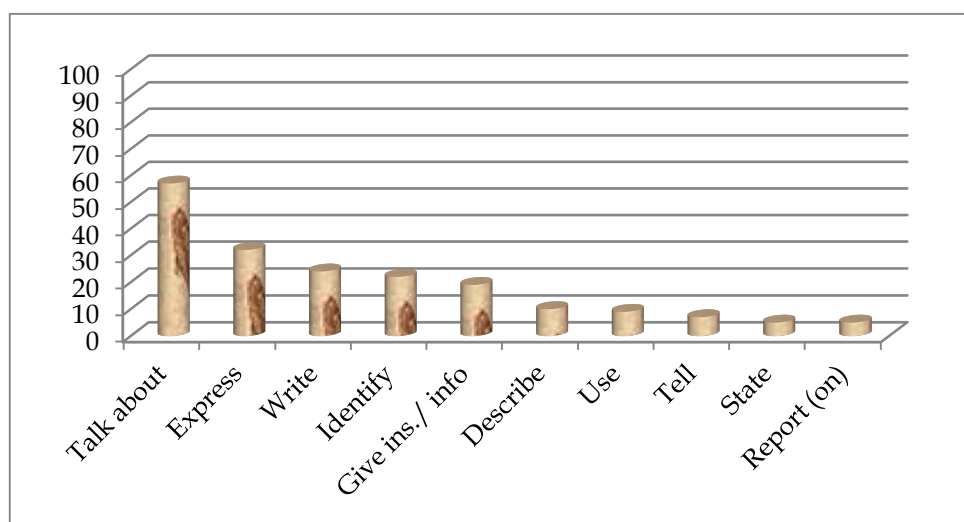


Figure 4. Top ten outcome verbs in the revised primary EFL curriculum

Figure 4 illustrates that only four out of top ten verbs belong to the recommended verb list for learning outcomes: *describe*, *identify*, *report* and *use*. The following were extracted from EFL curriculum of various grades to illustrate outcome statements with these verbs.

*Students will be able to **identify** certain pet animals. (Gr 2)*

*Students will be able to **describe** the weather conditions. (Gr 4)*

*Students will be able to **report on** appearances and personalities of other people. (Gr 7)*

*Students will be able to **use** various simple expressions to state the feelings and personal opinions about places and things. (Gr 6)*

As mentioned earlier, the majority of the outcome verbs used in the revised curriculum falls into the category that should be avoided according to Adelman (2015) who contends that they are ‘default verbalizations of assignments or classroom interactions or learning directions, but are intermediary processes, not outcomes’ (p. 16). The sample outcomes containing these verbs are presented below.

*Students will be able to **understand** common expressions about abilities. (Gr 2)*

*Students will be able to **recognize** information about other people. (Gr 4)*

*Students will be able to **follow** how a simple process is described in oral texts. (Gr 7)*

*Students will be able to **read** short and simple texts, such as personal narratives about repeated actions. (Gr 6)*

In the light of this finding, it could be concluded that the outcome statements were mostly designed in contradiction with Bingham (1999), Osters and Tiu (2003), McLean and Looker (2006), and Adelman (2015). The distribution of the verbs, which are specified as “to avoid” in the related literature, across grades are demonstrated in Figure 5.

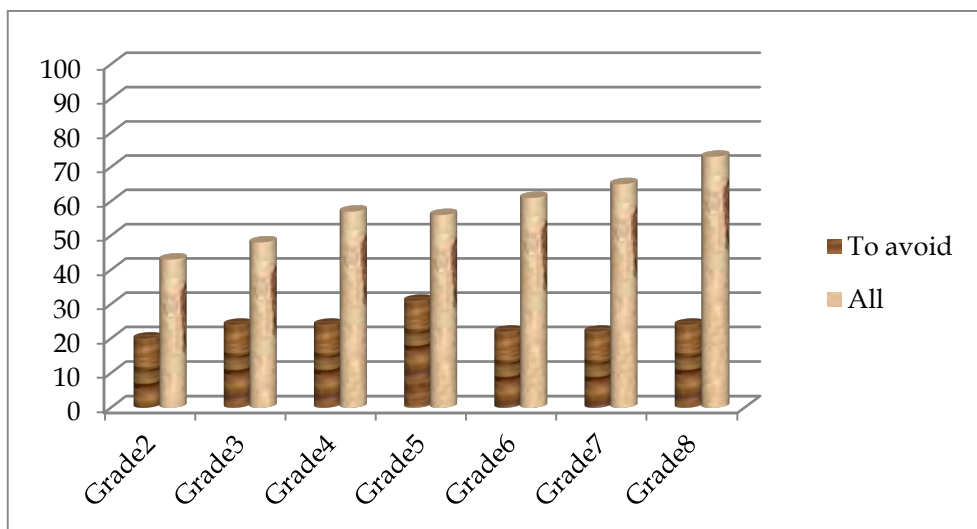


Figure 5. Outcome verbs to avoid in the revised EFL curriculum across grades

As depicted in Figure 5, the outcome verbs to avoid comprised over 40% of all verbs in the revised curriculum. They were mostly found in 5th grade (55%), followed by 3rd grade (50%), 2nd grade (47%), 4th grade (42%), 6th grade (36%), 7th grade (34%) and 8th grade (33%). Figure 6 provides the distribution of such verbs across the revised curriculum.

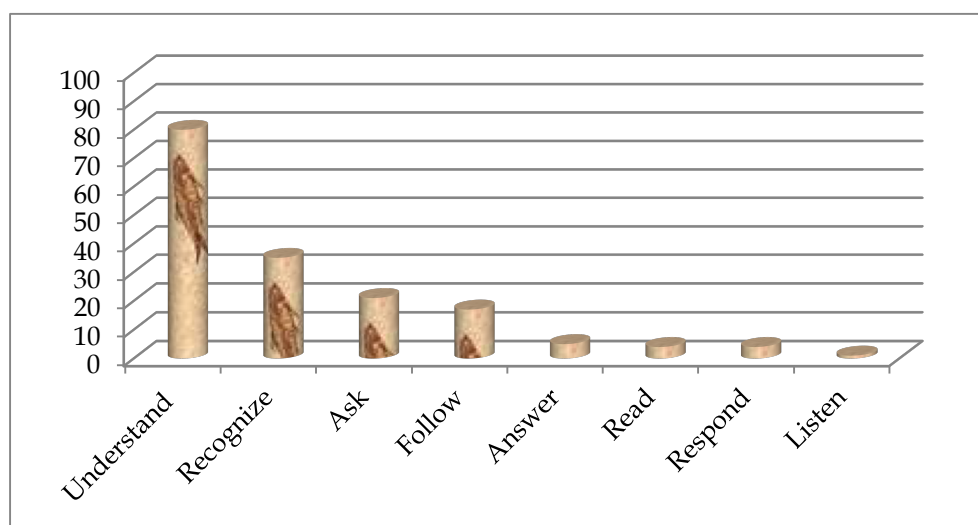


Figure 6. Outcome verbs to avoid in the revised primary EFL curriculum

As shown in Figure 6, the findings indicated that the verb *understand* was the most frequently employed verb representing approximately 50% of the verbs in this category, followed by *recognize* (20%); *ask* (13%) and *follow* (10%). Quite significantly, *understand* was increasingly used in the last four years (5th to 8th grades) when cognitively more demanding outcomes appeared in the primary EFL programme, which could be threatening when considering that it is unclear and subject to different interpretations in terms of what action it is specifying (American Association of Law Libraries, URL 3, & British Columbia Institute of Technology, 1996), and that it tends to focus on the process students have gone through rather than the final outcome of that process UCE Educational and Staff Development Unit, URL 7). The finding largely overlaps with Schoepp (2019) who previously reported ‘that the quality of learning outcomes is quite poor, and that a great deal of work is required until most outcomes would be aligned with internationally accepted best practices’ (p. 615).

The subsequent section offers discussion, conclusion and recommendations based on the research findings as well as suggestions for further directions based on the limitations of the current research.

4. Discussion and Conclusion

As noted earlier, learning outcome statements should focus on student behaviour and include some certain action verbs to explain what students are expected to demonstrate at the end of the course (<http://www.gavilan.edu/research/spd/Writing-Measurable-Learning-Outcomes.pdf>). The present study has revealed that only 14% of the outcome statements included active verbs, which are extensively recommended while writing learning outcomes in the related literature, and that over 41% of the verbs were constituted by those to avoid in the primary EFL outcome statements, which makes it hard to evaluate learning outcomes. This might be attributed to the mismatch between the general philosophy of the revised curriculum and the assessment and evaluation practices of MoNE. To be more precise, even though various types of CEFR-based techniques are suggested ‘to cover four language skills and implicit assessment of language components’ in the curriculum document (MoNE, 2017, p. 7), the high-stake exam administered by MoNE at the end of primary education does not evaluate the students’ communicative proficiency in English. To be even more precise, the latest Secondary School Entrance Exam included 10 multiple test items that merely required the examinees to read and comprehend the given situations/ tables/ figures and to choose among four items accordingly (The exam and the answer key are available at the official website of MONE https://www.meb.gov.tr/meb_iys_dosyalar/2019_06/02125953_2019_SOZEL_BOLUM.pdf). Besides, from the viewpoint of Adelman (Ibid), these statements could be considered objectives rather than learning outcomes. Hence, EFL curriculum designers could be recommended to avoid using the expressions that makes learning outcomes harder to measure, to employ such concrete verbs as define, apply or analyse (Osters & Tiu, 2003), and to elicit expert opinion from those with specialisation in the field of curriculum and instruction as well as measurement and evaluation in education while creating outcome statements.

e.g. *Students will be able to understand the names for colours of things. (Existing outcome/ G 2)*

Students will paint the shapes in the instructed colours. (Recommended outcome)

Alternatively, in-service training programmes on writing effective learning outcomes (e.g. seminars, workshops and courses) could be organized at educational institutions by MoNE.

This study was primarily limited to the investigation of the revised EFL teaching programme for primary education in Turkey. So, it could be extended to scrutinize the ones for secondary and higher education in the country and/ or abroad. It was also limited to the analysis of rationale and outcome statements regarding mood, modality and active verbs in the teaching programmes in concern. Hence, further research could

be conducted on teaching programmes of other courses such as Mathematics, History and Science.

References

- Adam, S. (2006). An introduction to learning outcomes. In Froment, E. (ed.), *EUA Bologna Handbook: Making Bologna Work*, Vol. I. Stuttgart, DE: Josef Raabe Verlag, Section B 2.3-1. https://is.muni.cz/do/1499/metodika/rozvoj/kvalita/Adam_IH_LP.pdf
- Adelman, C. (2015). To Imagine a Verb: The Language and Syntax of Learning Outcomes Statements. National Institute for Learning Outcomes Assessment. Accessed at <https://files.eric.ed.gov/fulltext/ED555528.pdf>
- Akmajian, A., Demers, R.A., Farmer, A.K. & Harnish, R. M. (1995). *Linguistics: An Introduction to Language and Communication (Fourth Edition)*. Cambridge, Massachusetts: The MIT Press.
- Aksoy, E., Bozdoğan, D., Akbaş, U., & Seferoğlu, G. (2018). Old wine in a new bottle: Implementation of intensive language program in the 5th grade in Turkey. *Eurasian Journal of Applied Linguistics*, 4(2), 301 – 324. <https://doi.org/10.32601/ejal.464187>
- Altan, M. Z. (2017). Globalization, English language teaching and Turkey. *International Journal of Languages' Education and Teaching*, 5(4), 764-776. DOI: 10.18298/ijlet.2238
- American Association of Law Libraries: <http://www.aallnet.org/prodev/outcomes.asp>
- Avşar, G., & Mete, F. (2018). Classification of actions used in Turkish teaching programs according to the revised Bloom taxonomy. *Karaelmas Journal of Educational Sciences*, 6(1), 75-87.
- Aydın, M., Laçın, S. & Keskin, İ. (2018). Teacher opinions on the implementation of the secondary school mathematics curriculum. *International e-Journal of Educational Studies (IEJES)*, 2(3), 1-11.
- Batdı, V. (2017). Comparing the high school English curriculum in Turkey through multi-analysis. *Educational Sciences: Theory and Practice*, 17(4), 1255-1290. DOI: 10.12738/estp.2017.4.0490
- Bingham, J. (1999). *Guide to developing learning outcomes*. The Learning and Teaching Institute Sheffield Hallam University, Sheffield: Sheffield Hallam University.
- Birgöl, Y., & Nacaklı, Z. (2019). Views of music teachers for 2017-2018 primary educations curriculum. *Fine Arts (NWSAFA)*, 14(1):60-70, DOI: 10.12739/NWSA.2019.14.1.D0226.
- Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, 9(2), 27-40. doi:10.3316/QRJ0902027
- Caffarella, R. S. (2002). *Planning programs for adult learners: A practical guide for educators, trainers and staff developers*. Jossey Bass, San Francisco, CA.
- Council of Europe (CoE). (2001). *Common European Framework of Reference for Languages: Learning, teaching, assessment*. Cambridge, England: Cambridge University Press.
- Declan, K. (2006). *Writing and using learning outcomes: A practical guide*. Cork, University College Cork.
- Demir, G., Akar-Vural, R. (2017). The examination of teacher opinions on mathematical competence and skills of secondary mathematics curriculum. *Adnan Menderes University Journal of Institute of Social Sciences*, 4(1), 118-139. <https://dergipark.org.tr/download/article-file/297511>

- Deveci, İ., & Çepni, S. (2017). Examination of science education curriculum (5-8 grades) in terms of entrepreneurial characteristics. *Alan Eğitimi Araştırmaları Dergisi*, 3(2), 51-74.
- Diab, S., & Sartawi, B. (2017). Classification of questions and learning outcome statements (LOS) into Blooms Taxonomy (BT) by similarity measurements towards extracting of learning outcome from learning material. *International Journal of Managing Information Technology*, 9(2), 1-12. DOI: 10.5121/ijmit.2017.9201
- Doğan, Y. & Burak, D. (2018). An investigation of the 4th grade science course's acquisitions according to the Revised Bloom's Taxonomy. *Mediterranean Journal of Educational Research*, 12(23), 34-56. doi: 10.29329/mjer.2018.138.3.
- Duruk, Ü., Akgün, A., Doğan, C., & Gülsuyu, F. (2017). Examining the learning outcomes included in the Turkish Science curriculum in terms of science process skills: A document analysis with standards-based assessment. *International Journal of Environmental and Science Education*, 12(2), 117-142. <https://files.eric.ed.gov/fulltext/EJ1137380.pdf>
- Eitel, A., Scheiter, K., Schüler, A. & Nyström, M. (2013). How a picture facilitates the process of learning from text: Evidence for scaffolding. *Learning and Instruction*, 28, 48-63. <http://dx.doi.org/10.1016/j.learninstruc.2013.05.002>
- Erarslan, A. (2018). Strengths and weaknesses of primary school English language teaching programs in Turkey: Issues regarding program components. *Eurasian Journal of Applied Linguistics*, 4(2), 325-347. <https://doi.org/10.32601/ejal.464194>
- Fry, H., Ketteridge, S., & Marshall (2000). *A handbook for teaching and learning in higher education*. London: Kogan Page.
- Gezer, M., & İlhan, M. (2015). An analysis on the assessment questions in the textbook and objectives of the curriculum social sciences course according to the SOLO taxonomy. *Sakarya University Journal of Faculty of Education*, 29, 1-25.
- Gosling, D. & Moon, J. (2001). *How to use Learning Outcomes and Assessment Criteria*. London: SEEC Office.
- Güneş-Koç, R. S., & Kayacan, K. (2018). The views of science teachers about engineering design skills. *Turkish Studies Educational Sciences*, 13(19), 865-881. <http://dx.doi.org/10.7827/TurkishStudies.13771>
- Gürsoy, E., Korkmaz, Ş. C., & Damar, E. A. (2017). English language teaching within the new educational policy of Turkey: Views of stakeholders. *International Education Studies*, 10(4), 18-30. DOI: 10.5539/ies.v10n4p18
- Hanushek, E. A., & Wosmann, L. (2005). Does educational tracking affect performance and inequality? Differences- in-differences evidence across countries. *Econ. J.* 116: C63–76.
- Hutchings, P. (2016). Aligning educational outcomes and practices. *National Institute for Learning Outcomes Assessment*, 3-20. Retrieved from <https://files.eric.ed.gov/fulltext/ED567005.pdf>
- Jackson, N, Wisdom, J., & Shaw, M. (2003). Guide for Busy Academics: Using Learning Outcomes to Design. Available at: <http://resourcelists.rgu.ac.uk/items/983A5107-3EAB-A3CF-ACB5-4B70E9722D7B.html>
- Janssen, T., & Rijlaarsdam, G. (1996). Approaches to the teaching of literature: a national survey of literary education in Dutch secondary schools. In Roger J. Kreuz & Mary Sue MacNealy (Eds.), *Empirical Approaches to Literature and Aesthetics*. Volume 52 in the Series Advances in Discourse Processes (pp. 513-536). Norwood, New Jersey: Ablex Publishing Corporation.

- Jenkins, A. & Unwin, D. (2001). How to write learning outcomes. Available online <https://www.ubalt.edu/cas/faculty/faculty-matters/How%20to%20write%20student%20learning%20outcomes.pdf>
- Kırkgöz, Y. (2009). Evaluating the English textbooks for young learners of English at Turkish primary education. *Procedia Social and Behavioral Sciences*, 1, 79–83. <https://doi.org/10.1016/j.sbspro.2009.01.016>
- Kırkgöz, Y., Çelik, S. & Arıkan, A. (2017). Designing a curriculum for young Turkish learners: Pedagogical foundations, practical considerations and procedures. *Paper presented at the 1st Eurasian Educational Research Congress*, Istanbul, Turkey. Retrieved from: http://eltktu.com/wp-content/uploads/2017/02/Kirkgoz_Celik_Arikan_Designing-an-ELT-Curriculum-for-Young-Turkish-Learners.pdf.
- Göçer, A., & Kurt, A. (2016). Türkçe dersi öğretim programı 6, 7 ve 8. sınıf sözlü iletişim kazanımlarının SOLO taksonomisine göre incelenmesi [Investigation of communicative learning outcomes in Turkish teaching programmes for 6th, 7th and 8th grades based on SOLO taxonomy]. *Bitlis Eren University Journal of Social Sciences Institute*, 5, 215-228. <https://dergipark.org.tr/en/download/article-file/713133>
- Larsen-Freeman, D., & Anderson, M. (2011). *Techniques and principles in language teaching* (3rd ed.). London, England: Oxford University Press.
- Merter, F., Kartal, Ş. & Çağlar, İ. (2012). The evaluation of new high school English curriculum in terms of teachers' opinions. *Mehmet Akif Ersoy University Journal of Education Faculty*, 12(23), 43 – 58. Retrieved from: <http://dergipark.gov.tr/download/article-file/181344>.
- Neary, M. (2002). *Curriculum studies in post-compulsory and adult education*. UK: Nelson Thornes.
- O'Leary, Z. (2014). *The essential guide to doing your research project* (2nd Ed.). Thousand Oaks, CA: SAGE Publications, Inc.
- Osters, S. & Tiu, F. (2003). Writing measurable learning outcomes. Article available on: <https://www.gavilan.edu/research/spd/Writing-Measurable-Learning-Outcomes.pdf>
- Richards, J. C. (2006). *Communicative language teaching today*. New York, NY: Cambridge University Press.
- Sarıgöz, H., & Fişne, F. N. (2018). English language assessment and evaluation practices in the 4th grade classes at main stream schools. *Journal of Language and Linguistic Studies*, 14(3), 380-395.
- Schoepp, K. (2019). The state of course learning outcomes at leading universities. *Studies in Higher Education*, 44(4), 615-327. <https://doi.org/10.1080/03075079.2017.1392500>
- Scroggins, B. (2004). *The teaching-learning cycle: Using student learning outcome results to improve teaching and learning*. Workshop Activities & Resource Materials.
- Seemiller, C. (2016). Leadership competency development: A higher education responsibility. In Guthrie, K. L. & Osteen, L. (Eds.), *New Directions for Higher Education: No: 174. Reclaiming higher education's purpose in leadership development*. San Francisco: Jossey-Bass.
- Stanny, C. J. (2016). Re-evaluating Bloom's taxonomy: What measurable verbs can and cannot say about student learning. *Education Sciences*, 6(4), 1-12. <https://doi.org/10.3390/educsci6040037>
- Tarman, B., & Kılınç, E. (2018). Poetry in the social studies textbooks in Turkey. *Journal of Culture and Values in Education*, 1(1), 50-62.

- Um, E. & Plass, J. L. (2010). Emotional design in multimedia learning. Accessed at <http://steinhardtapps.es.its.nyu.edu/create/courses/2174/reading/Um%20&%20Plass%20JEP%20Print.pdf>
- Ünsal, S., & Korkmaz, F. (2017). Analysis of attainments and evaluation questions in sociology curriculum according to the solo taxonomy. *Eurasian Journal of Educational Research (EJER)*, 69, 75-92. Retrieved from: <http://ejer.com.tr/0DOWNLOAD/pdfler/tr/fahrttinserkan69.pdf>
- Ünsal, S., Çetin, A., Korkmaz, F., & Aydemir, M. (2019). The change in the curricula: Teachers' perceptions. *Çukurova University Faculty of Education Journal*, 48(1), 623-661. DOI: 10.14812/cufej.479002
- Wagenaar, R. (2018). What do we know – What should we know? Measuring and comparing achievements of learning in European higher education: Initiating the new CALOHEE approach. In: Zlatkin-Troitschanskaia O., Toepper M., Pant H., Lautenbach C., Kuhn C. (Eds.), *Assessment of Learning Outcomes in Higher Education. Methodology of Educational Measurement and Assessment* (pp. 169-189). Cham: Springer International Publishing AG.
- Yalçinkaya, Y. (2018). Teachers opinion about the renewed 9th class mathematics lesson teaching program. *Journal of Education Theory and Practical Research*, 4(3), 100-110. Retrieved from <http://dergipark.org.tr/ekvad/issue/41379/500223>
- Zorluoğlu, S. L., Kızılaslan, A., & Sözbilir, M. (2016). Analysis and evaluation of learning outcomes in high school chemistry curriculum according to revised Bloom Taxonomy. *Necatibey Faculty of Education Electronic Journal of Science and Mathematics Education*, 10(1): 260-279. DOI: 10.17522/nefmed.22297
- Zumbach, J., Schwartz, N. H., Kestor, L. & Seufert, T. (2008). (Eds.) *Beyond Knowledge: The Legacy of Competence (Meaningful learning computer-based learning environments)*. Vienna, Austria: Springer Science Publishing.

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Evaluation of the Learning Outcomes in the Revised EFL Curriculum: A research on Outcome Verbs

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Abstract

EFL curricula for primary and secondary education in Turkey were revised based on the 2012 educational reform, and issued to the institutions of primary and secondary education affiliated to the Ministry of National Education (MoNE) in 2017 to be put into practice the following academic year. This study was motivated to examine the revised primary EFL curriculum with a focus on the outcome statements with respect to verb choice. Accordingly, seven sets of data were compiled from these statements identified for 2nd to 8th grades in the document, and a total of 376 outcome statements were analysed. The results demonstrated that active verbs that are recommended for writing learning outcomes constituted 14% of 403 verbs in these statements while over 41% were comprised of vague verbs that should be avoided in writing learning outcomes such as *understand* and *know* as they make the statements hard to evaluate. The findings were discussed and outlined in detail, and a couple of practical implications were offered for curriculum designers based the findings reported in this research.

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Keywords: EFL; curriculum; primary education; learning outcome; outcome verb

1. Introduction

Identified with such unique skills as soft skills (e.g. communication, IT and numeracy) and hard skills (e.g. entrepreneurship, life-long-learning and competitiveness), 21st century witnessed several developments and changes around the world. Turkey, like other countries, could not remain indifferent to these changes and restructured its educational system in consonance with the constructivist approach in 2004 (Ünsal et al., 2019). Accordingly, all course curricula including EFL for primary and secondary education were updated taking the related principles of the approach into consideration.

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Namely, the new EFL curriculum were grounded on such objectives as ‘promoting learners’ communicative proficiency in English by fostering integrated development of language skills with a particular emphasis on speaking and listening; addressing students’ individualized learning styles and interests; integrating content and language integrated learning into the ELT curriculum to allow for certain cross-curricular topics to be learned in English’ (Kırkgöz, 2009, p. 80).

The country witnessed another substantial change in its educational system in 2012, which entailed a transition from the 8+4 educational model to the 4+4+4 system (MoNE, 2017). Based on the new system, the starting age to foreign language instruction was lowered from 9 to 7. In parallel with the requirements of the transition, the existing curricula were redesigned considering the cognitive and social development of the target audience, and announced on the official website of the Ministry of National Education (MoNE) in 2017. The revised EFL curriculum mainly covers a rationale statement, key competences, suggestions for testing and evaluation, suggested techniques for the assessment of language skills, suggestions for practice and learning outcomes to be attained at the end of the course for each grade. As the new curricular model was constructed with a specific focus on communication in the target language, the communicative approach was adopted in teaching foreign languages, which necessitates ‘the use of the target language not only as an object of study, but as a means of interacting with others; the focus is not necessarily on grammatical structures and linguistic functions, but on authentic use of the language in an interactive context in order to generate real meaning’ (Larsen-Freeman & Anderson, 2011; Richards, 2006; cited in MoNE, 2017). It is also noted in the document that ‘use of English is emphasized in classroom interactions of all types, supporting learners in becoming language users, rather than students of the language, as they work toward communicative competence’ (CoE, 2001). Accordingly, the communicative skills such as listening, speaking and spoken interaction are emphasized over other language skills. This is especially mirrored through the quantity of the learning outcomes that are designed to improve learners’ communicative rather than reading and writing skills. Namely, approximately 50% of the outcome statements fall into the categories of spoken interaction and spoken production, followed by listening (30%), reading (14%) and writing (7%). Furthermore, no learning outcomes related to reading and writing skills appear in the sections for 2nd, 3rd and 3rd grades while those related to writing skill do not emerge till the second half of the section for 6th grade.

1.1. Review of literature

The relevant literature highlights the significance of using active verbs in writing effective and easy-to-measure outcome statements (Bingham, 1999; Fry et al., 2000;

Jenkins & Unwin, 2001; Osters & Tiu, 2003; Adam, 2006; Declan, 2006). More specifically, it is postulated that ambiguous verbs such as *understand*, *know*, *be aware* and *appreciate* should be avoided in learning outcomes (Bingham, 1999) since the key word is ‘do’ and the key need in drafting learning outcomes is to use active verbs (Jenkins & Unwin, 2001; Fry et al., 2000). Likewise, Osters and Tiu (2003) advocate that concrete verbs such as *define*, *apply* or *analyse* are more helpful for assessment than other verbs such as *be exposed to*, *understand*, *know* and *be familiar with*. In this vein, Jenkins and Unwin (2001) propose the use of certain verbs to specify different sorts of outcome, as shown in Table 1.

Table 1. Verbs for different sorts of outcomes (Jenkins & Unwin, 2001, p. 3)

Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
Arrange	Classify	Apply	Analyse	Arrange	Appraise
Define	Describe	Choose	Appraise	Assemble	Argue
Duplicate	Discuss	Demonstrate	Calculate	Create	Assess
Label	Explain	Dramatise	Categorise	Collect	Attach
List	Express	Employ	Compare	Compose	Choose
Memorise	Identify	Illustrate	Contrast	Construct	Compare
Name	Indicate	Interpret	Criticise	Design	Estimate
Order	Locate	Operate	Differentiate	Formulate	Evaluate
Recall	Recognise	Practice	Discriminate	Manage	Judge
Recognise	Report	Schedule	Distinguish	Organise	Predict
Relate	Review	Sketch	Examine	Plan	Rate
Repeat	Restate	Solve	Experiment	Prepare	Score
Reproduce	Select	Use	Question	Propose	Select
State	Translate	Write	Test	Write	Support
**	**	**	**	**	**

In a more recent research, Adelman (2015) contends that the verbs ‘*ask*, *consider*, *practice*, *question*, *read*, *think*, *comply*, *consult*, *act*, and *discuss* may all be default verbalizations of assignments or classroom interactions or learning directions, but are intermediary processes, not outcomes’ as they ‘describe routine activities of teaching (behavioural commands/requests/prods) and learning’ (p. 16). He goes on to state that ‘a learning outcome statement does not ascribe “ability” to do or demonstrate something’ as one does not know a student has the “ability” to do anything until the student actually does it, for which point we use verbs that indicate what the student actually did’ (p. 13). Hence, he recommends the use of verbs that allow practitioners to evaluate students’ achievement such as *identify*, *categorize*, *differentiate*, *design*, *disaggregate*, *reformulate*, or *evaluate*. Moving from these viewpoints, the identified outcome statements in the

revised EFL curriculum were expected to include the above-mentioned active verbs, some of which are provided in Table 1, and those identified by Adelman (Ibid).

The literature review on learning outcomes indicates that the studies have been mostly conducted on how to write effective learning outcomes –based on certain taxonomies and content (Janssen & Rijlaarsdam, 1996; Scroggins, 2004; Hanushek & Wossmann, 2005; Zumbach et al., 2008; Um & Plass, 2010; Eitel et al., 2013; Gezer & İlhan, 2015; Seemiller, 2016; Zorluoğlu et al., 2016; Göçer & Kurt, 2016; Ünsal & Korkmaz, 2017). In the Turkish context, the revised curricula for different courses were evaluated from various perspectives ranging from teachers' views (Batdı, 2017; Gürsoy et al., 2017; Aksoy et al., 2018; Yalçınkaya, 2018; Birgül & Nacakçı, 2019; Ünsal et al., 2019), content and implementation (Demir & Akar-Vural, 2017; Deveci & Çepni, 2017; Aydın et al., 2018; Güneş-Koç & Kayacan, 2018; Tarman & Kılınç, 2018, Doğan & Burak, 2018) to overall analysis (Altan, 2017; Erarslan, 2018), and assessment and evaluation (Duruk et al., 2017; Sarıgöz & Fişne, 2018). Outcome verbs, which constituted the major focus of the present study, were investigated in a very limited number of research mostly with the focus on alignment with the learning taxonomies (Stanny, 2016; Diab & Sartawi, 2017) and educational practices (Hutchings, 2016; Wagenaar, 2018; Schoepp, 2019). It is observed that they were conducted especially in the scope of higher education. Examining the learning outcomes in the revised Turkish curriculum for primary education in Turkey, Avşar and Mete (2018) reported a limited diversity in outcome verb choice and repeated inclusion of most outcomes into the curriculum.

1.2. Statement of the problem

To the best of the researchers' knowledge, no study has previously analysed outcome statements in the revised EFL curriculum for primary education in Turkey in terms of the recommended verbs for the construction of learning outcomes. Hence, in order to bridge the research gap, this study attempted to examine the revised curriculum in concern to see to what extent they include the suggested verbs for student learning outcome articulation (Adelman, 2015).

2. Method

2.1. Data collection and analysis

The document analysis method was exclusively employed in the current research as it required analysing the revised primary EFL curriculum. Document analysis is a form of qualitative research in which documents are interpreted by the researcher to give voice and meaning around an assessment topic (Bowen, 2009). The documents in concern are (i) public records (the official, ongoing records of an organization's activities; e.g., student

transcripts, mission statements, annual reports, policy manuals, student handbooks, strategic plans, and syllabi), (ii) Personal Documents (first-person accounts of an individual's actions, experiences, and beliefs; e.g., calendars, e-mails, scrapbooks, blogs, Facebook posts, duty logs, incident reports, reflections/journals, and newspapers) and (iii) Physical Evidence (physical objects found within the study setting; e.g., flyers, posters, agendas, handbooks, and training materials) (O'Leary, 2014). Accordingly, seven sets of data were compiled from outcome statements in the revised EFL curriculum for 2nd to 8th grades that were available on the official website of MoNE (2017) at the time of data collection. Figure 1 illustrates their distribution over grades.

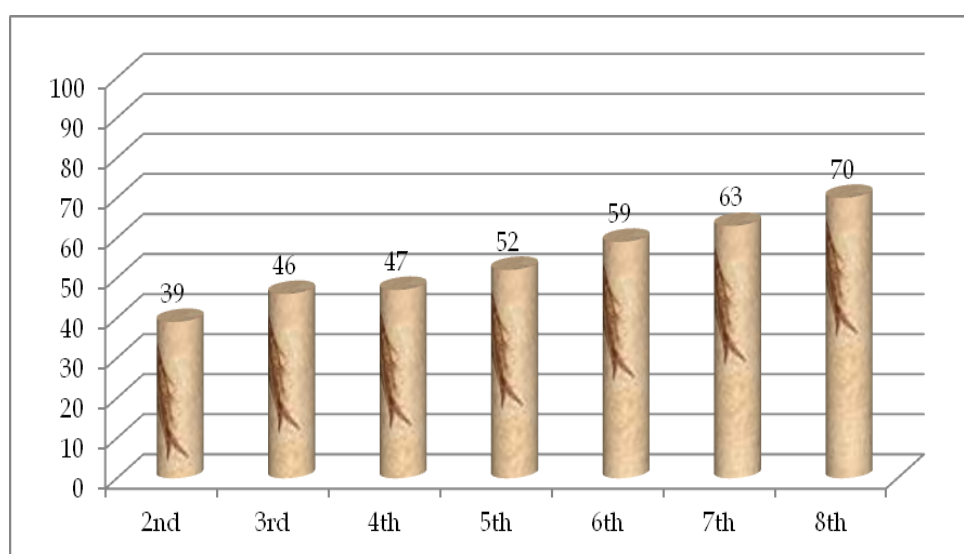


Figure 1. LOs in the revised primary EFL curriculum

403 verbs included in 376 outcome statements in the revised curriculum were simultaneously coded by the researchers based on the list proposed by Adelman (Ibid) who contends that 'writing verb-driven outcome statements requires an expanded vocabulary, along with a typology matched to the cognitive activities at issue' (p. 17). The categories of productive active and operational verb groups suggested by Adelman (Ibid) are displayed in Table 2.

Table 2. Active verbs for student learning outcome articulation (Adelman, 2015, p. 17-18)

CATEGORIES	VERBS
A. Verbs describing student acquisition and preparation of tools, materials, and texts of various types (including digital and archival)	<i>access, acquire, collect, accumulate, extract, gather, locate, obtain, retrieve</i>
B. Verbs indicating what students do to certify information, materials, texts, etc.	<i>cite, document, record, reference, source (v)</i>
C. Verbs indicating the modes of student characterization of the objects of knowledge or materials of production, performance, exhibit	<i>categorize, classify, define, describe, determine, frame, identify, prioritize, specify</i>
D. Verbs describing what students do in processing data and allied information	<i>calculate, determine, estimate, manipulate, measure, solve, test</i>
D1. Verbs further describing the ways in which students format data, information, materials	<i>arrange, assemble, collate, organize, sort</i>
E. Verbs describing what students do in explaining a position, creation, set of observations, or a text	<i>articulate, clarify, explicate, illustrate, interpret, outline, translate, elaborate, elucidate</i>
F. Verbs falling under the cognitive activities we group under “analyze”	<i>compare, contrast, differentiate, distinguish, formulate, map, match, equate</i>
G. Verbs describing what students do when they “inquire”	<i>examine, experiment, explore, hypothesize, investigate, research, test</i>
H. Verbs describing what students do when they combine ideas, materials, observations	<i>assimilate, consolidate, merge, connect, integrate, link, synthesize, summarize</i>
I. Verbs that describe what students do in various forms of “making”	<i>build, compose, construct, craft, create, design, develop, generate, model, shape, simulate</i>
J. Verbs that describe the various ways in which students utilize the materials of learning	<i>apply, carry out, conduct, demonstrate, employ, implement, perform, produce, use</i>
K. Verbs that describe various executive functions students perform	<i>operate, administer, control, coordinate, engage, lead, maintain, manage, navigate, optimize, plan</i>
L. Verbs that describe forms of deliberative activity in which students engage	<i>argue, challenge, debate, defend, justify, resolve, dispute, advocate, persuade</i>
M. Verbs that indicate how students value objects, experiences, texts, productions, etc.	<i>audit, appraise, assess, evaluate, judge, rank</i>
N. Verbs that reference the types of communication in which we ask students to engage	<i>report, edit, encode/decode, pantomime (v), map, display, draw/diagram</i>
O. Verbs, related to modes of communication, that indicate what students do in groups	<i>collaborate, contribute, negotiate, feed back</i>
P. Verbs that describe what students do in rethinking or reconstructing	<i>accommodate, adapt, adjust, improve, modify, refine, reflect, review</i>

The expert opinion was elicited from a faculty member with specialisation in curriculum and instruction. The research findings were reported via statistics and discussed in the following section.

3. Results

The initial findings of the study indicated that the learning outcomes used in the revised EFL curriculum for primary education unexceptionally begin with the expression “*Students will be able to ...*”. This finding largely coincides with the existing literature (Jenkins & Unwin, 2001; Caffarella, 2002; Jackson et al., 2003; Adam, 2006). The following outcomes were extracted from each grade for exemplification.

*Students will be able to **match** written letters with the sounds produced.* (Gr 2)

*Students will be able to **recognize** the physical qualities of individuals.* (Gr 3)

*Students will be able to **understand** short and clear utterances about requests.* (Gr 4)

*Students will be able to **talk about** daily routines.* (Gr 5)

*Students will be able to **describe** people doing different actions.* (Gr 6)

*Students will be able to **ask** questions related to the frequency of events.* (Gr 7)

*Students will be able to **express** obligations, likes and dislikes in simple terms.* (Gr 8)

Adam (2006) advocates that ‘this formulation of learning outcome statements has a number of benefits as it focuses the writer of the learning outcomes on precisely what skills, abilities and knowledge will be acquired’ (p. 6). According to him, these statements are typically characterised by the use of active verbs. However, the present findings have shown that slightly over 14% of the outcome statements in the revised curriculum include this sort of verbs while approximately half of them contain verbs that should be avoided in the writing process of outcome statements as they refer to future abilities of the students (Adelman, 2015). Hence, this particular finding of the research obviously contradicts with Bingham (1999), Fry et al. (2000), Jenkins and Unwin (2001), and Osters and Tiu (2003) who favoured the use of active verbs in drafting outcome statements. Figure 2 displays their proportion to all outcome verbs in the curriculum at stake.

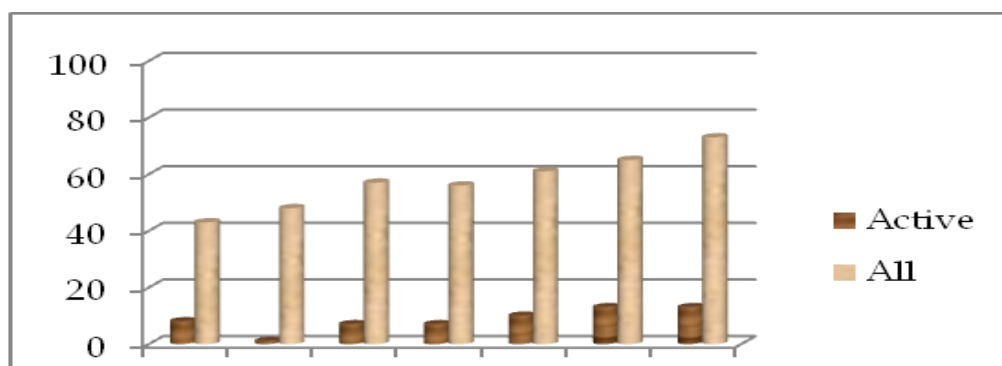


Figure 2. Active verbs in primary EFL outcome statements

As seen in Figure 2, active verbs constituted a limited quantity of all outcome verbs regardless of grades and some fluctuations were found in their distribution across grades. Namely, they seem to constitute 20% of the outcome verbs identified for 7th grade, followed by 2nd grade (19%), 8th grade (18%), and 6th grade (16%) whereas they represent 13% and 12% in those for 5th and 4th grades, respectively. It was striking to see that only one active verb was used in learning outcomes for 3rd grade (2%). Figure 3 presents the distribution of the verbs in concern across the revised curriculum.

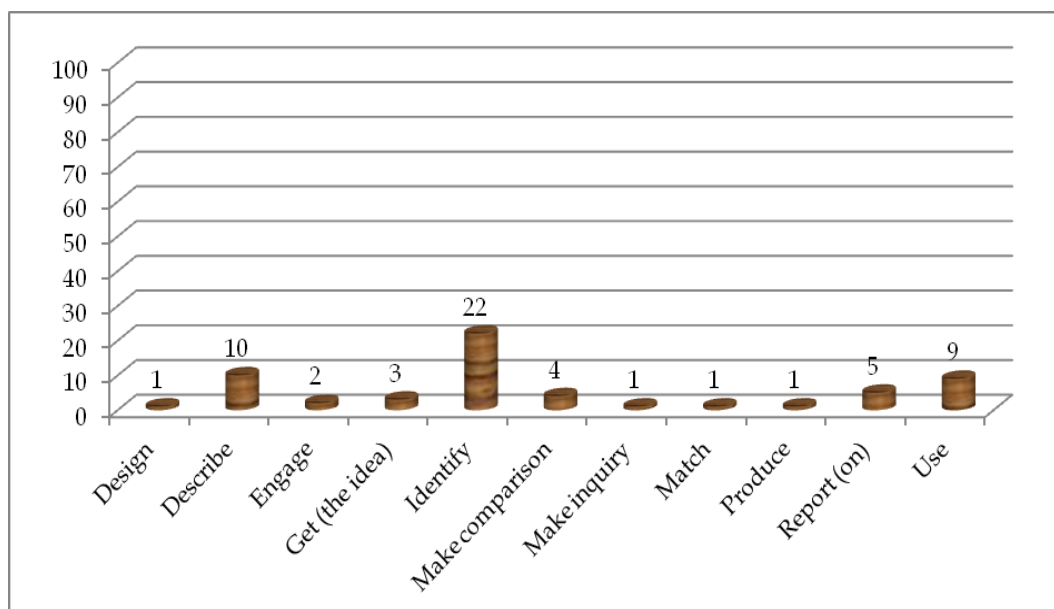


Figure 3. Recommended outcome verbs in the revised EFL curriculum

As outlined in Figure 3, *identify* was the most frequently used verb in the revised primary EFL learning outcomes, followed by *describe*, *use* and *report*. The two most

frequented verbs fall into the category of ‘verbs indicating the modes of student characterization of the objects of knowledge or materials of production, performance, exhibit’ while *use* belongs to the verb category that ‘describes the various ways in which students are required to utilize the materials of learning’. The verb *report*, on the other hand, is classified to the verb group that ‘references the types of communication in which students are asked to engage’. Nonetheless, these verbs could not be found in the revised curriculum at a desired level. More interestingly, the findings showed that no outcome verbs in the revised curriculum fell into half of the recommended verb categories by Adelman (Ibid): (i) verbs indicating the modes of student characterization of the objects of knowledge or materials of production, performance, exhibit, (ii) verbs describing what students do in processing data and allied information, (iii) verbs further describing the ways in which students format data, information, materials, (iv) verbs describing what students do in explaining a position, creation, set of observations, or a text, (v) verbs that describe forms of deliberative activity in which students engage, (vi) verbs that indicate how students value objects, experiences, texts, productions, etc., (vii) verbs describing what students do when they “inquire”, and (viii) verbs that describe what students do in rethinking or reconstructing. Figure 4 provides the most frequented ten verbs in the primary EFL outcome statements.

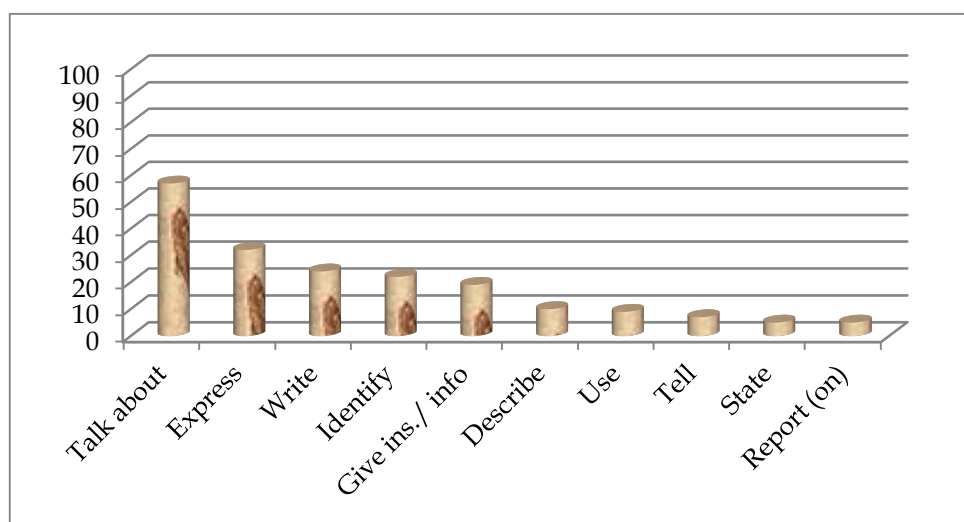


Figure 4. Top ten outcome verbs in the revised primary EFL curriculum

Figure 4 illustrates that only four out of top ten verbs belong to the recommended verb list for learning outcomes: *describe*, *identify*, *report* and *use*. The following were extracted from EFL curriculum of various grades to illustrate outcome statements with these verbs.

*Students will be able to **identify** certain pet animals. (Gr 2)*

*Students will be able to **describe** the weather conditions. (Gr 4)*

*Students will be able to **report on** appearances and personalities of other people. (Gr 7)*

*Students will be able to **use** various simple expressions to state the feelings and personal opinions about places and things. (Gr 6)*

As mentioned earlier, the majority of the outcome verbs used in the revised curriculum falls into the category that should be avoided according to Adelman (2015) who contends that they are ‘default verbalizations of assignments or classroom interactions or learning directions, but are intermediary processes, not outcomes’ (p. 16). The sample outcomes containing these verbs are presented below.

*Students will be able to **understand** common expressions about abilities. (Gr 2)*

*Students will be able to **recognize** information about other people. (Gr 4)*

*Students will be able to **follow** how a simple process is described in oral texts. (Gr 7)*

*Students will be able to **read** short and simple texts, such as personal narratives about repeated actions. (Gr 6)*

In the light of this finding, it could be concluded that the outcome statements were mostly designed in contradiction with Bingham (1999), Osters and Tiu (2003), McLean and Looker (2006), and Adelman (2015). The distribution of the verbs, which are specified as “to avoid” in the related literature, across grades are demonstrated in Figure 5.

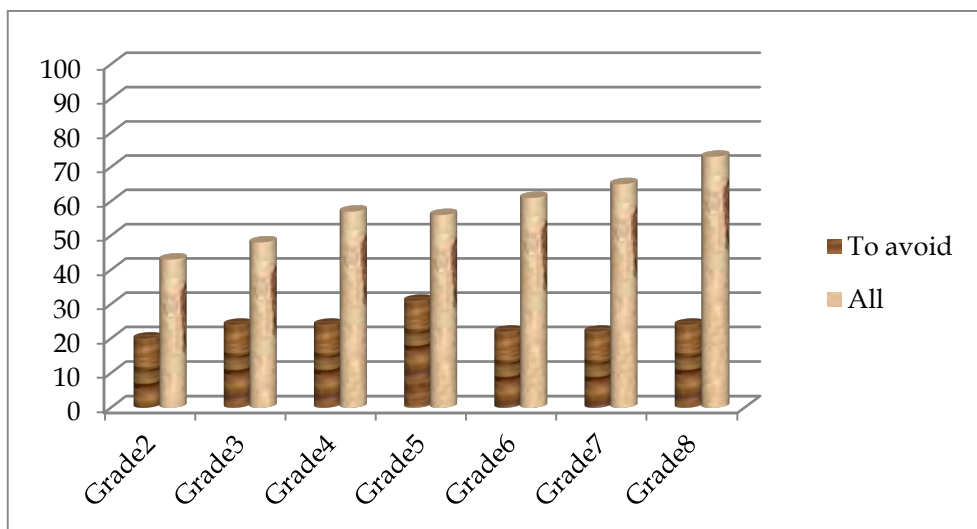


Figure 5. Outcome verbs to avoid in the revised EFL curriculum across grades

As depicted in Figure 5, the outcome verbs to avoid comprised over 40% of all verbs in the revised curriculum. They were mostly found in 5th grade (55%), followed by 3rd grade (50%), 2nd grade (47%), 4th grade (42%), 6th grade (36%), 7th grade (34%) and 8th grade (33%). Figure 6 provides the distribution of such verbs across the revised curriculum.

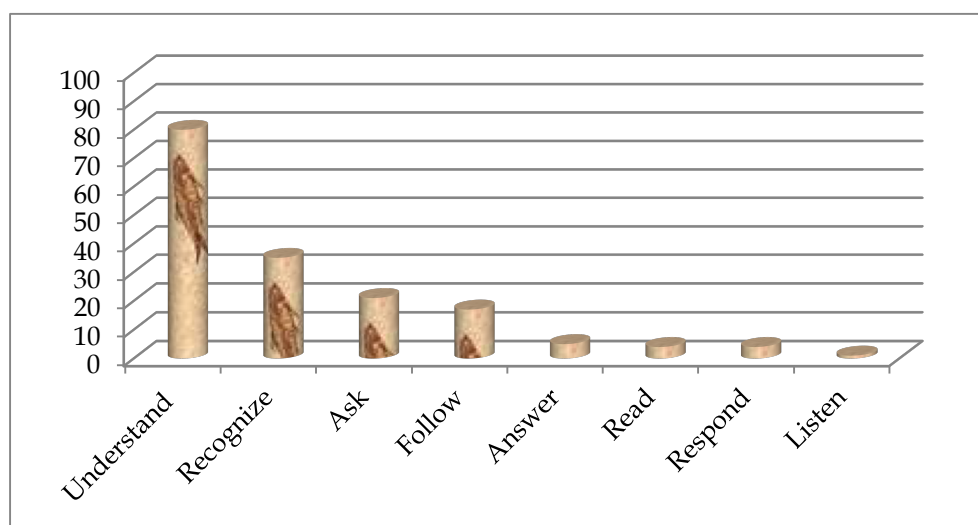


Figure 6. Outcome verbs to avoid in the revised primary EFL curriculum

As shown in Figure 6, the findings indicated that the verb *understand* was the most frequently employed verb representing approximately 50% of the verbs in this category, followed by *recognize* (20%); *ask* (13%) and *follow* (10%). Quite significantly, *understand* was increasingly used in the last four years (5th to 8th grades) when cognitively more demanding outcomes appeared in the primary EFL programme, which could be threatening when considering that it is unclear and subject to different interpretations in terms of what action it is specifying (American Association of Law Libraries, URL 3, & British Columbia Institute of Technology, 1996), and that it tends to focus on the process students have gone through rather than the final outcome of that process UCE Educational and Staff Development Unit, URL 7). The finding largely overlaps with Schoepp (2019) who previously reported ‘that the quality of learning outcomes is quite poor, and that a great deal of work is required until most outcomes would be aligned with internationally accepted best practices’ (p. 615).

The subsequent section offers discussion, conclusion and recommendations based on the research findings as well as suggestions for further directions based on the limitations of the current research.

4. Discussion and Conclusion

As noted earlier, learning outcome statements should focus on student behaviour and include some certain action verbs to explain what students are expected to demonstrate at the end of the course (<http://www.gavilan.edu/research/spd/Writing-Measurable-Learning-Outcomes.pdf>). The present study has revealed that only 14% of the outcome statements included active verbs, which are extensively recommended while writing learning outcomes in the related literature, and that over 41% of the verbs were constituted by those to avoid in the primary EFL outcome statements, which makes it hard to evaluate learning outcomes. This might be attributed to the mismatch between the general philosophy of the revised curriculum and the assessment and evaluation practices of MoNE. To be more precise, even though various types of CEFR-based techniques are suggested ‘to cover four language skills and implicit assessment of language components’ in the curriculum document (MoNE, 2017, p. 7), the high-stake exam administered by MoNE at the end of primary education does not evaluate the students’ communicative proficiency in English. To be even more precise, the latest Secondary School Entrance Exam included 10 multiple test items that merely required the examinees to read and comprehend the given situations/ tables/ figures and to choose among four items accordingly (The exam and the answer key are available at the official website of MONE https://www.meb.gov.tr/meb_iys_dosyalar/2019_06/02125953_2019_SOZEL_BOLUM.pdf). Besides, from the viewpoint of Adelman (Ibid), these statements could be considered objectives rather than learning outcomes. Hence, EFL curriculum designers could be recommended to avoid using the expressions that makes learning outcomes harder to measure, to employ such concrete verbs as define, apply or analyse (Osters & Tiu, 2003), and to elicit expert opinion from those with specialisation in the field of curriculum and instruction as well as measurement and evaluation in education while creating outcome statements.

e.g. *Students will be able to understand the names for colours of things. (Existing outcome/ G 2)*

Students will paint the shapes in the instructed colours. (Recommended outcome)

Alternatively, in-service training programmes on writing effective learning outcomes (e.g. seminars, workshops and courses) could be organized at educational institutions by MoNE.

This study was primarily limited to the investigation of the revised EFL teaching programme for primary education in Turkey. So, it could be extended to scrutinize the ones for secondary and higher education in the country and/ or abroad. It was also limited to the analysis of rationale and outcome statements regarding mood, modality and active verbs in the teaching programmes in concern. Hence, further research could

be conducted on teaching programmes of other courses such as Mathematics, History and Science.

References

- Adam, S. (2006). An introduction to learning outcomes. In Froment, E. (ed.), *EUA Bologna Handbook: Making Bologna Work*, Vol. I. Stuttgart, DE: Josef Raabe Verlag, Section B 2.3-1. https://is.muni.cz/do/1499/metodika/rozvoj/kvalita/Adam_IH_LP.pdf
- Adelman, C. (2015). To Imagine a Verb: The Language and Syntax of Learning Outcomes Statements. National Institute for Learning Outcomes Assessment. Accessed at <https://files.eric.ed.gov/fulltext/ED555528.pdf>
- Akmajian, A., Demers, R.A., Farmer, A.K. & Harnish, R. M. (1995). *Linguistics: An Introduction to Language and Communication (Fourth Edition)*. Cambridge, Massachusetts: The MIT Press.
- Aksoy, E., Bozdoğan, D., Akbaş, U., & Seferoğlu, G. (2018). Old wine in a new bottle: Implementation of intensive language program in the 5th grade in Turkey. *Eurasian Journal of Applied Linguistics*, 4(2), 301 – 324. <https://doi.org/10.32601/ejal.464187>
- Altan, M. Z. (2017). Globalization, English language teaching and Turkey. *International Journal of Languages' Education and Teaching*, 5(4), 764-776. DOI: 10.18298/ijlet.2238
- American Association of Law Libraries: <http://www.aallnet.org/prodev/outcomes.asp>
- Avşar, G., & Mete, F. (2018). Classification of actions used in Turkish teaching programs according to the revised Bloom taxonomy. *Karaelmas Journal of Educational Sciences*, 6(1), 75-87.
- Aydın, M., Laçın, S. & Keskin, İ. (2018). Teacher opinions on the implementation of the secondary school mathematics curriculum. *International e-Journal of Educational Studies (IEJES)*, 2(3), 1-11.
- Batdı, V. (2017). Comparing the high school English curriculum in Turkey through multi-analysis. *Educational Sciences: Theory and Practice*, 17(4), 1255-1290. DOI: 10.12738/estp.2017.4.0490
- Bingham, J. (1999). *Guide to developing learning outcomes*. The Learning and Teaching Institute Sheffield Hallam University, Sheffield: Sheffield Hallam University.
- Birgöl, Y., & Nacaklı, Z. (2019). Views of music teachers for 2017-2018 primary educations curriculum. *Fine Arts (NWSAFA)*, 14(1):60-70, DOI: 10.12739/NWSA.2019.14.1.D0226.
- Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, 9(2), 27-40. doi:10.3316/QRJ0902027
- Caffarella, R. S. (2002). *Planning programs for adult learners: A practical guide for educators, trainers and staff developers*. Jossey Bass, San Francisco, CA.
- Council of Europe (CoE). (2001). *Common European Framework of Reference for Languages: Learning, teaching, assessment*. Cambridge, England: Cambridge University Press.
- Declan, K. (2006). *Writing and using learning outcomes: A practical guide*. Cork, University College Cork.
- Demir, G., Akar-Vural, R. (2017). The examination of teacher opinions on mathematical competence and skills of secondary mathematics curriculum. *Adnan Menderes University Journal of Institute of Social Sciences*, 4(1), 118-139. <https://dergipark.org.tr/download/article-file/297511>

- Deveci, İ., & Çepni, S. (2017). Examination of science education curriculum (5-8 grades) in terms of entrepreneurial characteristics. *Alan Eğitimi Araştırmaları Dergisi*, 3(2), 51-74.
- Diab, S., & Sartawi, B. (2017). Classification of questions and learning outcome statements (LOS) into Blooms Taxonomy (BT) by similarity measurements towards extracting of learning outcome from learning material. *International Journal of Managing Information Technology*, 9(2), 1-12. DOI: 10.5121/ijmit.2017.9201
- Doğan, Y. & Burak, D. (2018). An investigation of the 4th grade science course's acquisitions according to the Revised Bloom's Taxonomy. *Mediterranean Journal of Educational Research*, 12(23), 34-56. doi: 10.29329/mjer.2018.138.3.
- Duruk, Ü., Akgün, A., Doğan, C., & Gülsuyu, F. (2017). Examining the learning outcomes included in the Turkish Science curriculum in terms of science process skills: A document analysis with standards-based assessment. *International Journal of Environmental and Science Education*, 12(2), 117-142. <https://files.eric.ed.gov/fulltext/EJ1137380.pdf>
- Eitel, A., Scheiter, K., Schüler, A. & Nyström, M. (2013). How a picture facilitates the process of learning from text: Evidence for scaffolding. *Learning and Instruction*, 28, 48-63. <http://dx.doi.org/10.1016/j.learninstruc.2013.05.002>
- Erarslan, A. (2018). Strengths and weaknesses of primary school English language teaching programs in Turkey: Issues regarding program components. *Eurasian Journal of Applied Linguistics*, 4(2), 325-347. <https://doi.org/10.32601/ejal.464194>
- Fry, H., Ketteridge, S., & Marshall (2000). *A handbook for teaching and learning in higher education*. London: Kogan Page.
- Gezer, M., & İlhan, M. (2015). An analysis on the assessment questions in the textbook and objectives of the curriculum social sciences course according to the SOLO taxonomy. *Sakarya University Journal of Faculty of Education*, 29, 1-25.
- Gosling, D. & Moon, J. (2001). *How to use Learning Outcomes and Assessment Criteria*. London: SEEC Office.
- Güneş-Koç, R. S., & Kayacan, K. (2018). The views of science teachers about engineering design skills. *Turkish Studies Educational Sciences*, 13(19), 865-881. <http://dx.doi.org/10.7827/TurkishStudies.13771>
- Gürsoy, E., Korkmaz, Ş. C., & Damar, E. A. (2017). English language teaching within the new educational policy of Turkey: Views of stakeholders. *International Education Studies*, 10(4), 18-30. DOI: 10.5539/ies.v10n4p18
- Hanushek, E. A., & Wosmann, L. (2005). Does educational tracking affect performance and inequality? Differences- in-differences evidence across countries. *Econ. J.* 116: C63–76.
- Hutchings, P. (2016). Aligning educational outcomes and practices. *National Institute for Learning Outcomes Assessment*, 3-20. Retrieved from <https://files.eric.ed.gov/fulltext/ED567005.pdf>
- Jackson, N, Wisdom, J., & Shaw, M. (2003). Guide for Busy Academics: Using Learning Outcomes to Design. Available at: <http://resourcelists.rgu.ac.uk/items/983A5107-3EAB-A3CF-ACB5-4B70E9722D7B.html>
- Janssen, T., & Rijlaarsdam, G. (1996). Approaches to the teaching of literature: a national survey of literary education in Dutch secondary schools. In Roger J. Kreuz & Mary Sue MacNealy (Eds.), *Empirical Approaches to Literature and Aesthetics*. Volume 52 in the Series Advances in Discourse Processes (pp. 513-536). Norwood, New Jersey: Ablex Publishing Corporation.

- Jenkins, A. & Unwin, D. (2001). How to write learning outcomes. Available online <https://www.ubalt.edu/cas/faculty/faculty-matters/How%20to%20write%20student%20learning%20outcomes.pdf>
- Kırkgöz, Y. (2009). Evaluating the English textbooks for young learners of English at Turkish primary education. *Procedia Social and Behavioral Sciences*, 1, 79–83. <https://doi.org/10.1016/j.sbspro.2009.01.016>
- Kırkgöz, Y., Çelik, S. & Arıkan, A. (2017). Designing a curriculum for young Turkish learners: Pedagogical foundations, practical considerations and procedures. *Paper presented at the 1st Eurasian Educational Research Congress*, Istanbul, Turkey. Retrieved from: http://eltktu.com/wp-content/uploads/2017/02/Kirkgoz_Celik_Arikan_Designing-an-ELT-Curriculum-for-Young-Turkish-Learners.pdf.
- Göçer, A., & Kurt, A. (2016). Türkçe dersi öğretim programı 6, 7 ve 8. sınıf sözlü iletişim kazanımlarının SOLO taksonomisine göre incelenmesi [Investigation of communicative learning outcomes in Turkish teaching programmes for 6th, 7th and 8th grades based on SOLO taxonomy]. *Bitlis Eren University Journal of Social Sciences Institute*, 5, 215-228. <https://dergipark.org.tr/en/download/article-file/713133>
- Larsen-Freeman, D., & Anderson, M. (2011). *Techniques and principles in language teaching* (3rd ed.). London, England: Oxford University Press.
- Merter, F., Kartal, Ş. & Çağlar, İ. (2012). The evaluation of new high school English curriculum in terms of teachers' opinions. *Mehmet Akif Ersoy University Journal of Education Faculty*, 12(23), 43 – 58. Retrieved from: <http://dergipark.gov.tr/download/article-file/181344>.
- Neary, M. (2002). *Curriculum studies in post-compulsory and adult education*. UK: Nelson Thornes.
- O'Leary, Z. (2014). *The essential guide to doing your research project* (2nd Ed.). Thousand Oaks, CA: SAGE Publications, Inc.
- Osters, S. & Tiu, F. (2003). Writing measurable learning outcomes. Article available on: <https://www.gavilan.edu/research/spd/Writing-Measurable-Learning-Outcomes.pdf>
- Richards, J. C. (2006). *Communicative language teaching today*. New York, NY: Cambridge University Press.
- Sarıgöz, H., & Fişne, F. N. (2018). English language assessment and evaluation practices in the 4th grade classes at main stream schools. *Journal of Language and Linguistic Studies*, 14(3), 380-395.
- Schoepp, K. (2019). The state of course learning outcomes at leading universities. *Studies in Higher Education*, 44(4), 615-327. <https://doi.org/10.1080/03075079.2017.1392500>
- Scroggins, B. (2004). *The teaching-learning cycle: Using student learning outcome results to improve teaching and learning*. Workshop Activities & Resource Materials.
- Seemiller, C. (2016). Leadership competency development: A higher education responsibility. In Guthrie, K. L. & Osteen, L. (Eds.), *New Directions for Higher Education: No: 174. Reclaiming higher education's purpose in leadership development*. San Francisco: Jossey-Bass.
- Stanny, C. J. (2016). Re-evaluating Bloom's taxonomy: What measurable verbs can and cannot say about student learning. *Education Sciences*, 6(4), 1-12. <https://doi.org/10.3390/educsci6040037>
- Tarman, B., & Kılınç, E. (2018). Poetry in the social studies textbooks in Turkey. *Journal of Culture and Values in Education*, 1(1), 50-62.

- Um, E. & Plass, J. L. (2010). Emotional design in multimedia learning. Accessed at <http://steinhardtapps.es.its.nyu.edu/create/courses/2174/reading/Um%20&%20Plass%20JEP%20Print.pdf>
- Ünsal, S., & Korkmaz, F. (2017). Analysis of attainments and evaluation questions in sociology curriculum according to the solo taxonomy. *Eurasian Journal of Educational Research (EJER)*, 69, 75-92. Retrieved from: <http://ejer.com.tr/0DOWNLOAD/pdfler/tr/fahrttinserkan69.pdf>
- Ünsal, S., Çetin, A., Korkmaz, F., & Aydemir, M. (2019). The change in the curricula: Teachers' perceptions. *Çukurova University Faculty of Education Journal*, 48(1), 623-661. DOI: 10.14812/cufej.479002
- Wagenaar, R. (2018). What do we know – What should we know? Measuring and comparing achievements of learning in European higher education: Initiating the new CALOHEE approach. In: Zlatkin-Troitschanskaia O., Toepper M., Pant H., Lautenbach C., Kuhn C. (Eds.), *Assessment of Learning Outcomes in Higher Education. Methodology of Educational Measurement and Assessment* (pp. 169-189). Cham: Springer International Publishing AG.
- Yalçinkaya, Y. (2018). Teachers opinion about the renewed 9th class mathematics lesson teaching program. *Journal of Education Theory and Practical Research*, 4(3), 100-110. Retrieved from <http://dergipark.org.tr/ekvad/issue/41379/500223>
- Zorluoğlu, S. L., Kızılaslan, A., & Sözbilir, M. (2016). Analysis and evaluation of learning outcomes in high school chemistry curriculum according to revised Bloom Taxonomy. *Necatibey Faculty of Education Electronic Journal of Science and Mathematics Education*, 10(1): 260-279. DOI: 10.17522/nefmed.22297
- Zumbach, J., Schwartz, N. H., Kestor, L. & Seufert, T. (2008). (Eds.) *Beyond Knowledge: The Legacy of Competence (Meaningful learning computer-based learning environments)*. Vienna, Austria: Springer Science Publishing.

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An analysis of graduate studies on in-service training programs for teachers in Turkey

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Abstract

The present study aims to examine the graduate studies related to in-service training programs for teachers conducted between the years 2000 and 2018 in Turkey. In this context, the content analysis of 88 graduate studies, including 71 master thesis and 17 dissertations, was conducted for the in-service teacher training accessible to the Council of Higher Education thesis center. In this study, research methods of the graduate thesis, university and institute, research methods, validity and reliability reports, sampling methods, study group characteristics, study area, research area, data analysis methods, and research tendencies of studies were investigated. When the research methods used in the studies examined, it was observed that the majority of the studies are carried out using the quantitative studies conducted through the survey method. When the reliability reports were reviewed, it was found that validity reports (22 of 88) and reliability reports (36 of 88) were not reported. Similarly, it was seen that the sampling techniques were not reported in 35 studies. The majority of the studies used the scale and questionnaire as data collecting tools. When the tendencies of studies are examined, it was seen that most studies focused on program evaluation. Most studies highlighted some problems caused by the place, time, and trainers of the in-service training. Concerning the findings of the present study, it can be suggested that further studies on in-service teacher training should be conducted in the visual art branch as well.

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Keywords: In-service training; educational curriculum; teacher education

1. Introduction

Education is a life-long process through which individuals gain knowledge of their profession, which in turn, leads to changes and developments in cultural, social, and economic fields in the society. Besides, the advances in science and technology, as well as their impact on education, forced policy makers, make necessary changes in education as well. To fulfill the requirements of these changes and follow up-to-date developments, it is

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inevitable that every individual in the field of education, especially the teachers and administrators, should do some endeavors to improve themselves as well as the schooling systems. Improving the quality of education has been one of the most critical issues addressed throughout the history of education (Huber, 2011). There are various ways of following cutting-edge developments in any field, such as in-service training or in job training. As for in-service training, which enables the individual to gain the knowledge, skills and attitudes necessary for his/her job (Taymaz, 1981), it is one of the essential elements of development and change in national educational institutions as well as in all social fields. The policymakers in education all over the world generally define the frames of such training. For instance, to support the development of the education system, the Turkish Ministry of National Education (MoNE, 1995) aims at in-service training as follows:

- to ensure the adaptation of the staff coming from pre-service training to the institution,
- to provide the staff with a common opinion in understanding and interpreting the aims and principles of Turkish National Education in a whole and to gain unity in practice,
- to complete the deficiencies of pre-service training in terms of professional competence,
- to gain the knowledge, skills and behaviors required by the innovations and developments in the field of education,
- to improve the professional expertise and understanding of the staff,
- to enable the willing and talented staff to move to the higher levels of their professions,
- to conduct completion training for the different trainings,
- to gain integrity in the interpretation of Turkish National Education policy,
- to provide unity in the application of basic principles and techniques of education,

The Turkish MoNE offers in-service training for the teachers and administrators working in institutions affiliated to MoNE at specific periods of the year for refreshment and raises the awareness of its staff on the changes and developments in the field. As Taymaz (1981) stated, in-service training is necessary to reveal the talents that individuals cannot develop at school, to ensure their adaptation to work and to allow them to follow the changes and developments in social, cultural, and economic spheres and developments in science and technology. Similarly, the Turkish MoNE (1988) defined in-service training as training given to increase the professional productivity, knowledge, and skills of individuals working in institutions affiliated with MoNE, to update their information and to facilitate their adaption to new situations from the beginning of the profession until

retirement. Concerningly, MoNE regularly provides in-service training to the staff working at different levels of educational institutions towards the purposes mentioned above. In light of the facts mentioned above, it can be claimed that in-service training is also a must for teachers working in MoNE to endure the training programs that enable them to follow both professional and individual development as well as to keep in touch with the recent developments in science and technology.

When the related and available literature is reviewed, it is seen that plenty of studies dealt with the various dimensions of in-service training at varying degrees and fields. The review of the literature revealed that while some of these studies examined the efficiency of in-service training programs, some others examined the program development aspects of in-service training, and some of them dealt with the in-service training needs of staff. Additionally, while some of those studies (Çakır-Sürmeli, 2004; Gümüşlüoğlu, 2016; Kaplan, 2018; Şahin, 2006; Şahin, 2012; Yılmaz, 2018; Yurttas, 2014) focused on the in-service training activities designed for teachers of English others concentrate on different fields such as; Biology teaching (Asilsoy, 2007); Physical Education (Avşar, 2006); Social Studies (Bulut, 2011); Religious Culture and Ethics (Öz, 2012); Vocational Education (Çelikkilek, 2012), German (Kızılarıslan, 2012); Chemistry (Baykan, 2015); Mathematics (Karakaya, 2016); preschool education (Özsirkıntı, 2018); and on the scope of in-service training (Güney, 2018).

As it is seen, numerous researchers have conducted studies about in-service training that were given to teachers in different fields. The review of related literature additionally revealed that while some of these studies were articles in journals that somehow reached their readers, most of them were unpublished graduate studies that were supposed not to reach expected readers yet. Therefore, the present study intends to examine the graduate thesis conducted on in-service training in line with the pre-determined criteria and report their significant findings to shed light on new studies and contribute to a gap in the field.

1.1. Purpose of the Study

When the related literature is reviewed in detail, it can be claimed that there is not a comprehensive study that focused on the content analysis of the studies on in-service training for teachers. Thus the present study aims to analyze the contents of graduate thesis related to in-service training for teachers that were conducted between 2000 and 2018 and to reach conclusions based on systematic synthesis. Bearing this primary purpose in mind, the graduate theses were scrutinized concerning some variables such as; their levels of the graduate studies, the universities, and institutes where the studies were conducted, year of study, fields of in-service training, the research methods including the design, sampling techniques and characteristics of the study group, data collection tools, data analysis methods, the validity and reliability estimations of the studies, the research

tendencies of studies, as well as the problems they figured out and solutions for these problems.

For this purpose, the following questions were posed in the present study. In terms of graduate studies conducted between 2000 and 2018 related to in-service training programs for teachers;

- What are the academic levels of the graduate studies, and in which institutes and universities were they conducted?
- What is the distribution of the graduate studies concerning their publication years?
- What are the method characteristics (research method, pattern, data collection tool, validity and reliability studies, sampling technique, sample/study group characteristics, sample/study group branch, and data analysis methods) that were frequently used in the graduate studies?
- What are their research tendencies?
- What are the problems raised in the graduate studies?
- What are the solutions offered for the problems in the graduate studies?

2. Method

The present study is a qualitative study in which content analysis of graduate thesis related to in-service training organized for teachers. Buyukozturk et al. (2015) defined qualitative research as a research process in which qualitative data collection tools are used to present facts and events realistically and holistically. The primary aim of qualitative research includes identifying, explaining, and describing the situations in detail. In qualitative research, where the research process is from a part-to whole- the study is carried out with a holistic approach. In the present study, it is aimed to figure out the findings obtained from various dimensions of the graduate studies descriptively with a holistic approach. Thus, in this study, the content analysis method was adopted to analyze the gathered data. According to Cohen, Manion, and Marrison (2007), content analysis is defined as the process of summarizing and specifying the main contents of the written information and the messages they contain. Similarly, Yıldırım and Şimşek (2008) claim that content analysis is the interpretation of data by bringing together the concepts and themes in a way that the reader can understand. In other words, the primary purpose of content analysis is to reach the concepts and relationships that can explain the collected data (Yıldırım & Şimşek; 2008).

In the first phase of the study, keywords were defined in line with the pre-determined criteria and field surveys were conducted. The graduate thesis reached after this phase were grouped concerning their levels and their numbers were reported as tables. Additionally, the findings gathered through content analysis are presented in Figures.

Finally, the findings were interpreted by the researchers in line with the results of previous studies in the field.

2.1. Data set and Sample

All graduate studies (master's theses and doctorate dissertations) related to in-service training conducted in Turkey constitute the universe of the research. Since it is not possible to reach the whole universe, a purposeful sampling method, which is one of the sampling methods appropriate for the research purpose, has been used. Thus, purposeful sampling is preferred as the type of sampling in the present study since one or more special cases with specific criteria and characteristics are desired to be researched depending on the purpose of the study (Metin, 2015). Consequently, a total of 110 graduate studies conducted between 2000 and 2018 that were reached through the Council of Higher Education (CHE) Thesis Center were included in the data set of the study. The criteria in reaching the graduate studies are as follows; the graduate studies should be related to

- the in-service training held for teachers in Turkey,
- conducted between 2000 and 2018,
- be accessible from the Council of Higher Education thesis center, and
- cover “in-service training” and “teacher training” as the keywords.

In the light of the defined criteria, sample or the study group formed as 88 graduate thesis; 71 of which were master's thesis and 17 were doctorate dissertations.

2.2. Data Collecting Instrument

The data set of the present study is examined through content analysis by using Article Review Form, developed by Sözbilir and Kutu (2008), which consisted of the method and design of the research, data collection tools, and data analysis method. The form was adopted by the researchers in accordance with expert opinions. Thus, in addition to its original form, new dimensions such as the sampling technique, validity, and reliability estimations of the studies, as well as the research tendencies of the studies, were added to the form as new criteria.

2.3. Data Collection Process

As the first phase in the data collection process, all of the graduate studies conducted between 2000 and 2018 and deposited in the Council of Higher Education thesis center were reviewed by using the previously defined keywords. As a result of the initial stage, a total of 110 graduate studies were reached. All accessible studies conducted for the in-service training program in Turkey were classified in chronological order concerning their publication years. After determining the appropriateness of the studies with the

determined criteria by the researchers, the expert opinion was consulted. Based on the expert opinions, 22 of the studies were excluded from the data set of the research, and 88 studies were considered valid for further analysis. Categories and sub-categories were formed according to the subject of each graduate study. In this process, each study was examined in accordance with the research data, method, data collection tool, validity and reliability studies, sampling and sampling technique, data analysis method and research tendencies included in the titles of article classification form. To ensure the reliability of the data analysis, 88 studies were analyzed independently by the researchers. The frequency values of the obtained findings are presented in figures.

2.4. Data Analysis

The graduate studies which formed the data set of the present study were examined in agreement with the research questions of the present study. “The Article Classification Form” was used under the headings identified by researchers, and the content analysis of the studies was conducted. Based on the findings of the content analysis, the distribution of the studies concerning their levels, years, the method characteristics, the sample characteristics, and the tendencies of the research are presented in figures. Additionally, the information in the accessible studies obtained from the literature review was interpreted systematically in line with the general purpose of the research in a descriptive way.

3. Results

Findings obtained as a result of content analysis are presented as sub-headings in line with the research questions of the present study.

3.1. Academic levels of studies, institutes and universities

The first research question inquired about the academic levels of graduate studies and the institutions and universities where the studies carried out. The findings concerning the answer to the first research question are presented in Figure 1, Figure 2, and Figure 3.

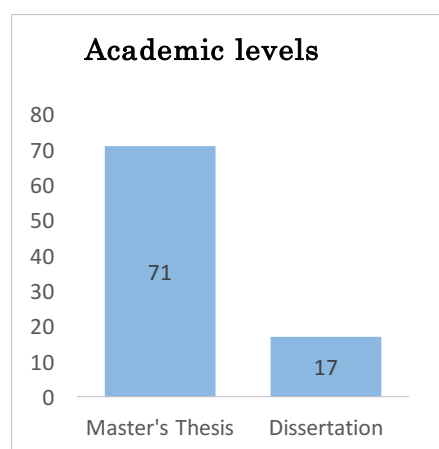


Figure 1. Distribution of studies concerning their levels.

As is seen in Figure 1, 71 of the graduate studies conducted between 2000 and 2018 related to in-service training programs for teachers are at the master's level and 17 of them are at the doctorate level. The results depicted in Figure 2 revealed that most of the studies were conducted in the field of social sciences and educational sciences and related institutes.

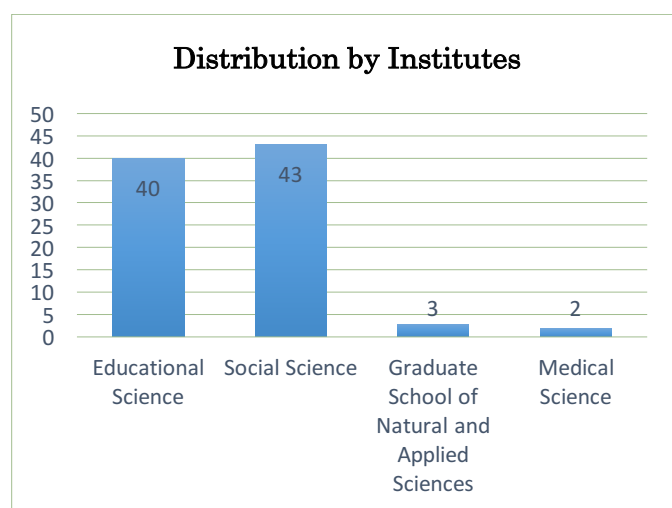


Figure 2. Distribution of studies examined by institutes.

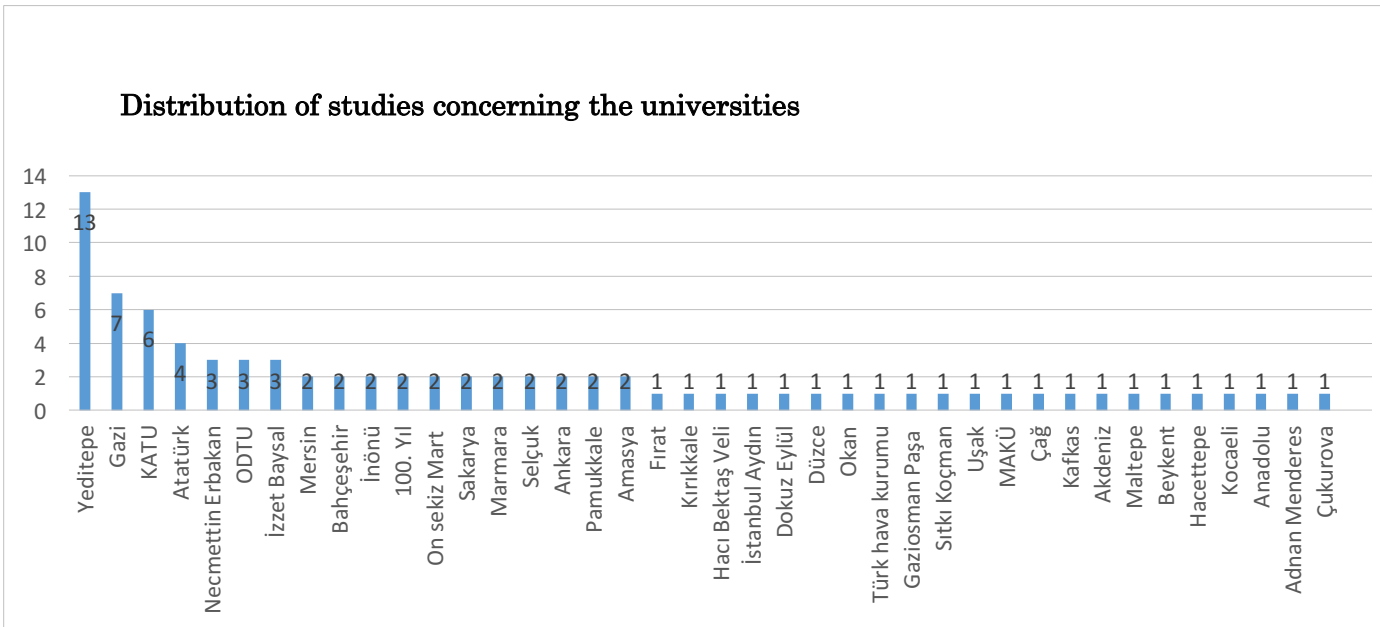


Figure 3. Distribution of studies concerning universities.

The findings presented in Figure 3 show the ratios of the universities where the studies were conducted. It is found that Yeditepe University, with 13 graduate studies, is the leading university where the studies conducted. Gazi University with 7 studies; Karadeniz Technical University with 6 studies; and Atatürk University with 4 studies; and the universities which have 3 or fewer studies follow the list. The distribution of the studies concerning their total numbers of the universities in Turkey revealed that there are not a sufficient number of studies dealing with the in-service training for teachers. According to data achieved from Higher Education Information Management System, there are 129 state universities, 72 private universities and five private higher vocational schools that run education and research by the year 2019 in Turkey (YOK, 2019). When the total number of the universities and related research institutions in Turkey are taken into consideration, it can be seen that only 41 of 206 higher education institutions encouraged their researchers to conduct graduate studies related to in-service training programs for teachers.

3.2. Distribution of studies by years

The findings concerning the second research question, which inquire about the distribution of the graduate studies concerning their publication years, are given in Figure 4.

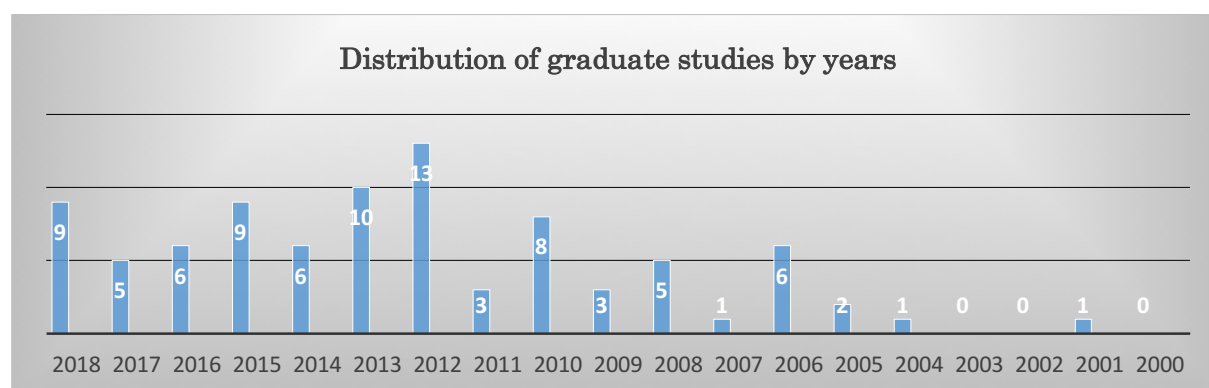


Figure 4. Distribution of studies examined by years.

As seen in Figure 4, 13 of the studies were conducted in 2012, 10 were in 2013, 9 were in 2015 and 2018, 8 were in 2010, 6 were in 2006, 2014 and 2016, 5 were in 2008 and 2017 and 3 and less than 3 studies were conducted in different years. Additionally -assuming being able to reach all of the studies conducted between 2000 and 2018- it is found that there was not any study that was held in the years 2000, 2002, and 2003.

3.3. The research methods used in the studies

As for the research method characteristics of graduate studies, the method characteristics; research method types, research design, data collection tools, validity and reliability studies, sampling technique, sample/study group characteristics, sample/study group branches, and data analysis method were examined in detail, and the findings were presented in figures respectively.

3.3.1. Types of research methods used in studies

The research methods used in the graduate studies in the data set are presented in Figure 5.

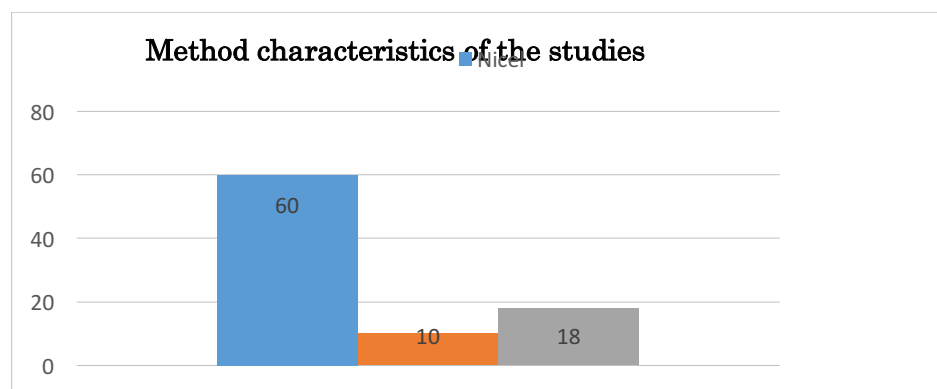


Figure 5. Method characteristics of the studies

As seen in Figure 5, the quantitative method ($n = 60$) was a highly used research method in graduate studies. In contrast, mixed-method research was in the second rank ($n = 18$), and it is found that the least used research method was qualitative ($n = 10$). It is found that the quantitative research method was mostly preferred in the studies concerning in-service training programs for teachers. The possibility of reaching more participants by adopting a quantitative research method might be the core reason for such a preference among the graduate studies.

3.3.2. Research design of studies

Figure 6 shows the distribution of the research designs used in the studies.

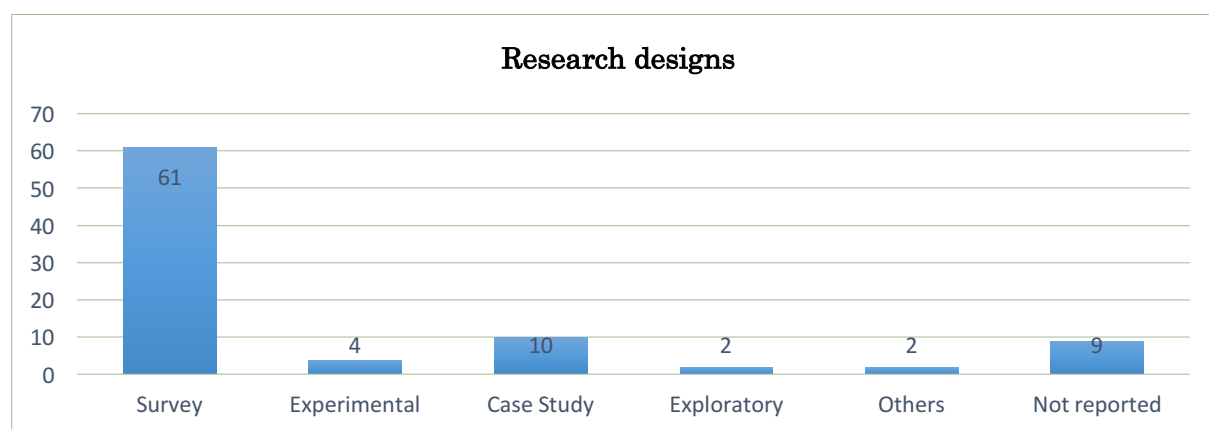


Figure 6. Research Patterns of Studies.

As can be seen in Figure 6, quantitative studies mostly use survey design ($n = 61$) and experimental design ($n = 4$), whereas case study design ($n = 10$) was mostly preferred research design in qualitative studies. Additionally, it should be noted that the research design or model was explicitly expressed only in 9 of the studies; however, the research design was not mentioned in the rest of the studies in the data set.

3.3.3. Data collection tool used in studies

The data collection tool used in the studies is given in Figure 7.

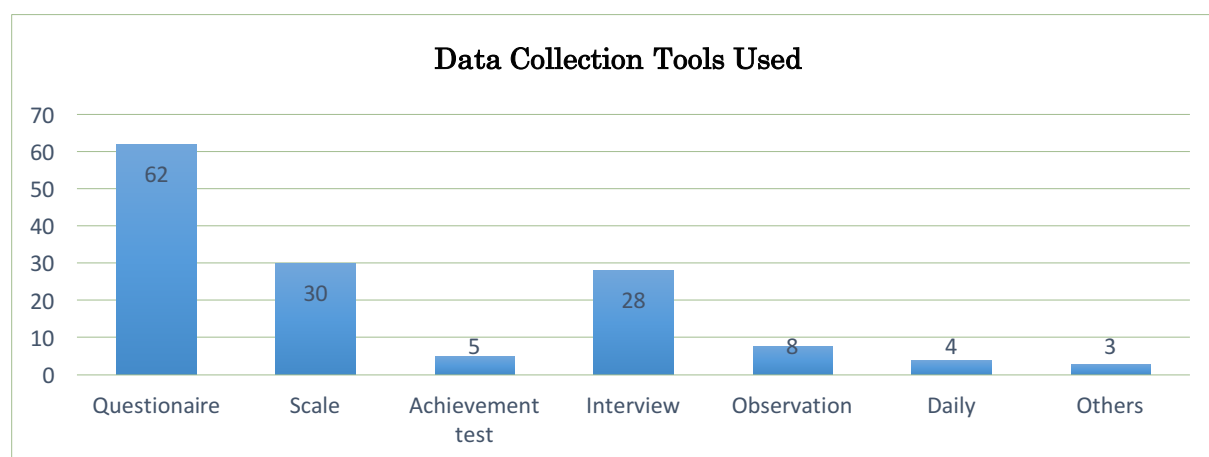


Figure 7. Data Collection Tool Used in Studies.

As seen in Figure 7, the questionnaire ($n=62$) was the most frequently used data gathering instrument in the studies. This may be due to the fact that the surveys can be conducted with large groups in a short time besides its economic advantages. Besides, it is observed that the majority of the studies aimed to evaluate the in-service training program conducted by MoNE by asking teachers' and administrators' opinions. Thus such a tendency may also lead to such a preference in data-gathering instruments in the graduate studies. Nonetheless, it should be noted that the content analysis of the studies in the data set revealed that most of the studies used the terms "scale" and "questionnaire" interchangeably when referring to their data collection tools. Another data gathering instrument that was mostly used in the studies is the semi-structured interview forms ($n=28$). Additionally, although it is rare, the diary ($n=4$) is also used as a data collection tool in the studies. It should be noted here that in some studies, "literature review" is claimed as the data collection tool -that were labeled as "others" in Figure 7; however, it can be a data collection process rather than any data collection tool.

3.3.4. *Validity reports of studies*

The validity reports of the data collection tools are presented in Figure 8 and the reliability reports are shown in Figure 9, respectively.

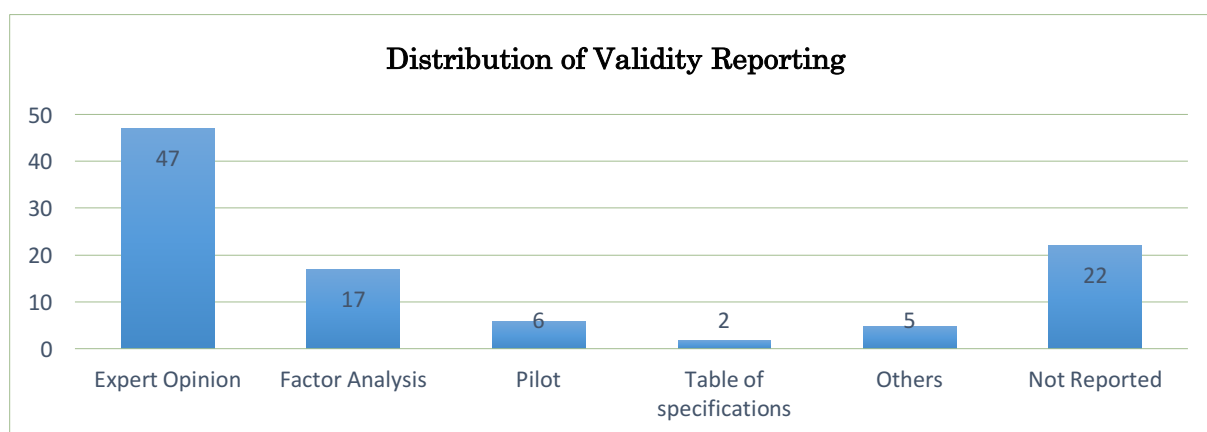


Figure 8. Distribution of Studies According to Validity Reports.

Based on the validity report findings presented in Figure 8, it is seen that “expert opinion” ($n = 47$) was a widely used validity estimation method. It can be said that the reason for asking expert opinion in estimating the validity of the data gathering instruments grounds in the practicality of using this method. On the other hand, the least used validity method was found as the “table of specifications” ($n=2$). It should be noted here that some studies estimated the validity of their instruments however, they did not give any detail on their validity estimations; therefore, those studies were labeled under the “other” classification ($n=5$). Besides, it is found that some studies did not estimate the validity of their instruments thus, they have categorized as “not reported” classification ($n=22$) since no information was provided about the validity estimations of the studies.

3.3.5. Reliability reports of the studies

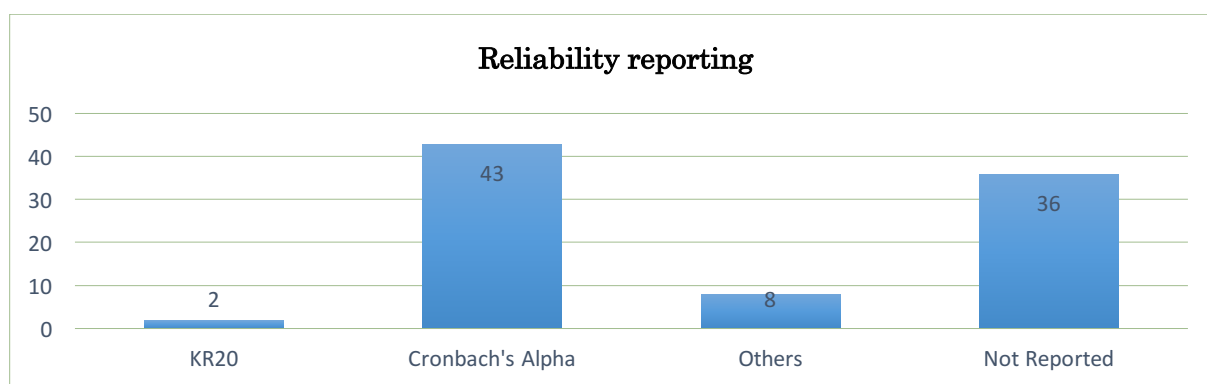


Figure 9. Distribution of Studies According to Reliability Reports.

As seen in Figure 9, the most widely used reliability determination method in the studies is Cronbach's Alpha (43), whereas the least used process is KR20 ($n = 2$). Since, in most of the studies, the terms “scales” and “questionnaires” are commonly used interchangeably as data collection tools, they may have caused to reach such a conclusion that the use of Cronbach's Alpha is the most preferred way of reliability determination. Similarly, it can

be regarded that the less use of “achievement test” in the studies might lead to conclude that the least used reliability determination method is the KR 20 in the studies. Another point that should be emphasized about the reliability studies is that some studies categorized under “others” ($n = 8$) did not explicitly report their reliability determination method. Moreover, it is also found that a significant number of the studies ($n = 36$) did not report any reliability determination method in their methodology sections.

3.3.6. Sampling technique of studies

The sampling technique used in the studies is presented in Figure 10.

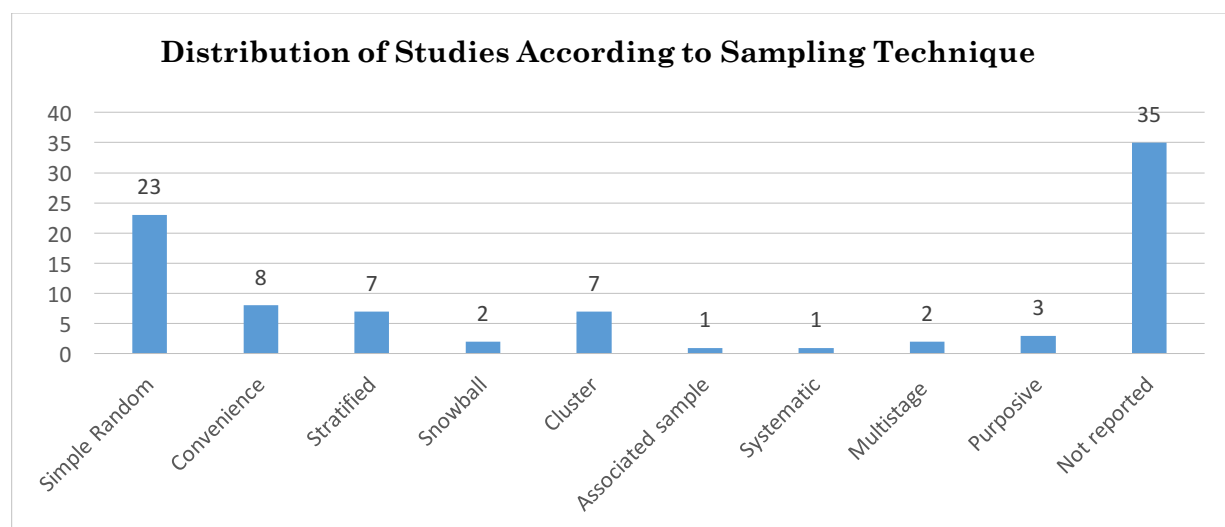


Figure 10. Distribution of the studies studied according to the sample technique characteristics.

As can be seen in Figure 10, it was found that most of the studies ($n = 35$) did not mention any sampling technique. When the other studies were taken into consideration, it can be seen that random sampling ($n = 23$) technique was frequently preferred among the sampling techniques. It was also found that “appropriate” ($n=8$), “stratified” ($n=7$), and “cluster” ($n=7$) sampling techniques were also used in the studies, respectively.

3.3.7. Study group characteristics of the studies

The study group characteristics of the studies were summarized in Figure 11.

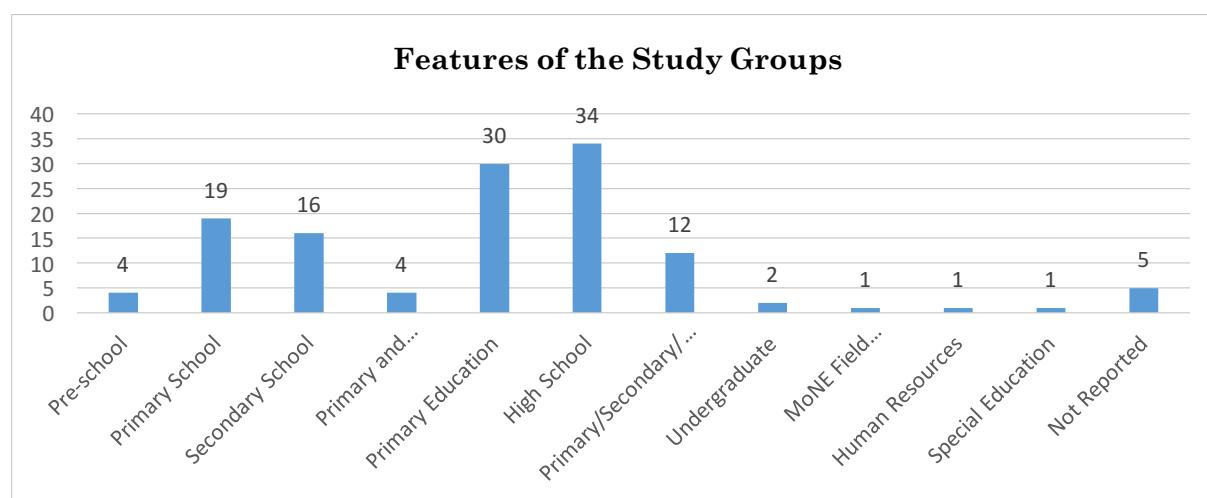


Figure 11. Features of the study group of the researchers studied.

When Figure 11 is examined, it is seen that the studies were mostly conducted in high school ($n = 34$) and primary education ($n = 30$) levels. It was found that the studies in primary school ($n = 19$), middle school ($n = 16$), primary/secondary and high school levels ($n = 12$) follow these studies. It can be said that the characteristics of the study group may change under different classifications as a result of curricula. In addition to this, it was found that there were also studies conducted in MoNE Provincial Organization ($n = 1$), human resource management ($n = 1$), and special education ($n = 1$). It is also found that there are some studies ($n = 5$) that did not report their study group or participants of their research.

3.3.8. Distribution of studies according to the branches

The distribution of the studies concerning their areas of research is presented in Figure 12.

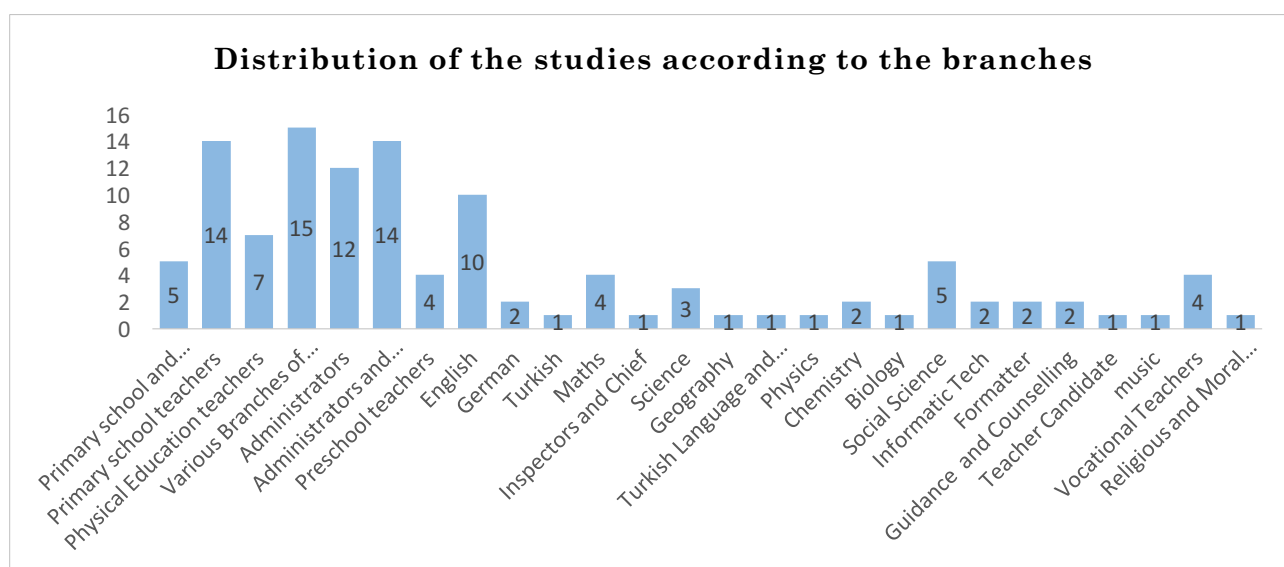


Figure 12. Distribution of the studies examined according to the subject areas.

In light of the data presented in Figure 12, it is seen that most of the studies ($n = 15$) were conducted with “different branch teachers”. These studies are followed by primary school teachers ($n = 14$) and studies conducted with administrators and primary school teachers ($n = 14$). When the studies conducted concerning the branch teachers were examined in detail, it is found that the studies generally conducted with the participation of English language teachers ($n = 10$).

3.3.9. Data analysis methods used in studies

The data analysis methods used in graduate studies are presented in Figure 13.

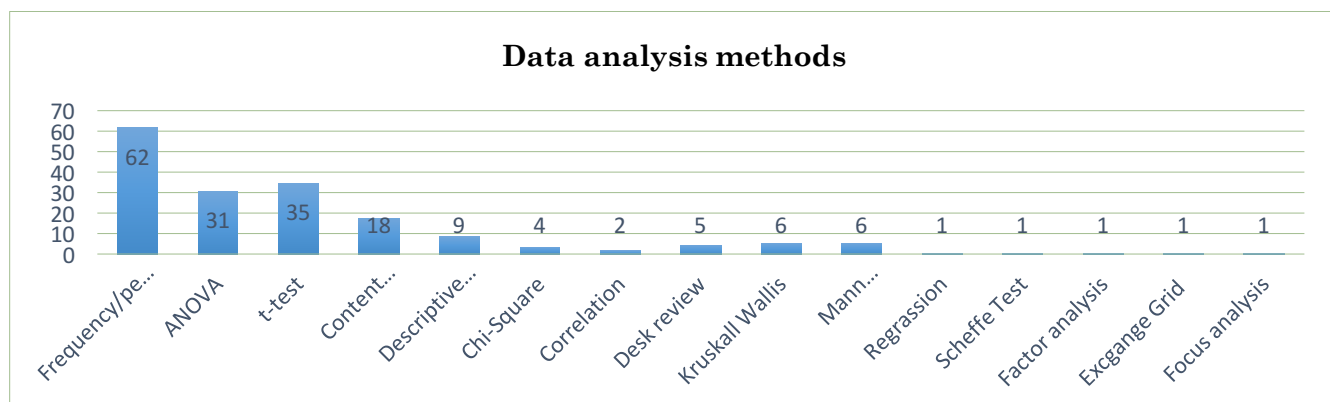


Figure 13 Data analysis methods of studies.

In academic studies, it is necessary to specify methodological features of the study clearly to guide future researchers in terms of reproducibility and to interpret their findings correctly. As seen in Figure 13, the most commonly used data analysis method in

the studies is frequency-percentage-average ($n = 62$). Additionally, it is found that statistical methods were also used in the majority of studies. The fact that surveys and scales were mostly used as data collection tools in the studies may be the reason for this finding. It is found that the least used data analysis methods were regression, scheffe test, factor analysis, exchange grid, and focused analysis ($n = 1$). Besides, it is found that the data in qualitative studies were mostly analyzed by the content analysis method ($n=18$).

3.3.10. Research tendencies of studies

The findings regarding the research tendencies of the studies are presented in Figure 14.

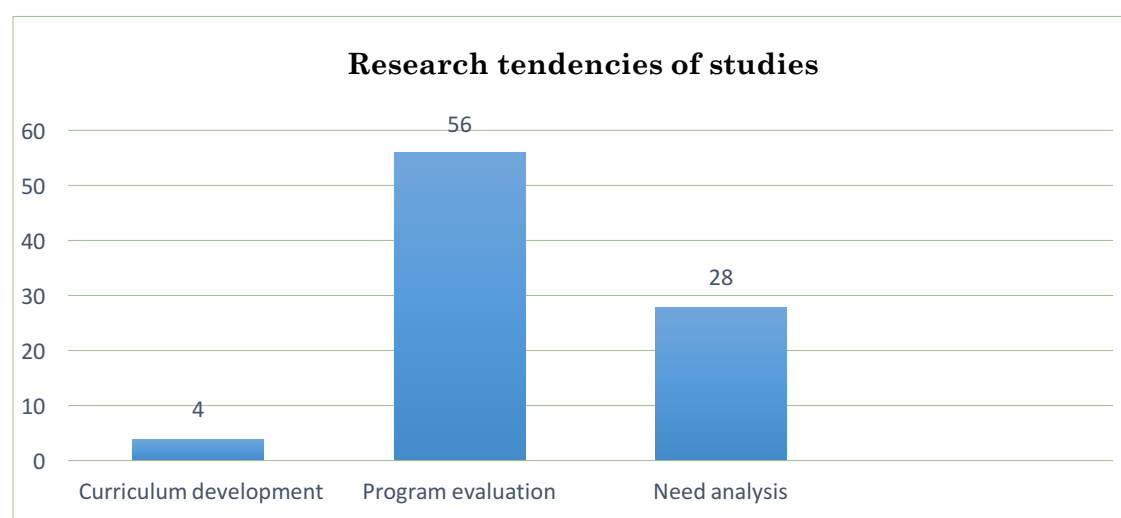


Figure 14. Research tendencies of the studies

As Figure 14 showed, it has been found that while more than half of the studies ($n=56$) were carried out to evaluate in-service training curriculum, some of them ($n=28$) were carried out to determine the need for in-service training and only a small part of the studies ($n=4$) were conducted to develop curriculum. It is considered that more than half of the studies were conducted to evaluate the curriculum to assess in-service training carried out by the MoNE. Another important finding from the in-depth analysis of this finding is that almost any of the studies used a curriculum evaluation model in evaluating the in-service programs.

3.3.11. Stated problem in the studies

The fifth research question of the study was inquiring about the issues raised in the graduate studies. Thus the problems questioned in the studies within the scope are themed and presented in Figure 15.

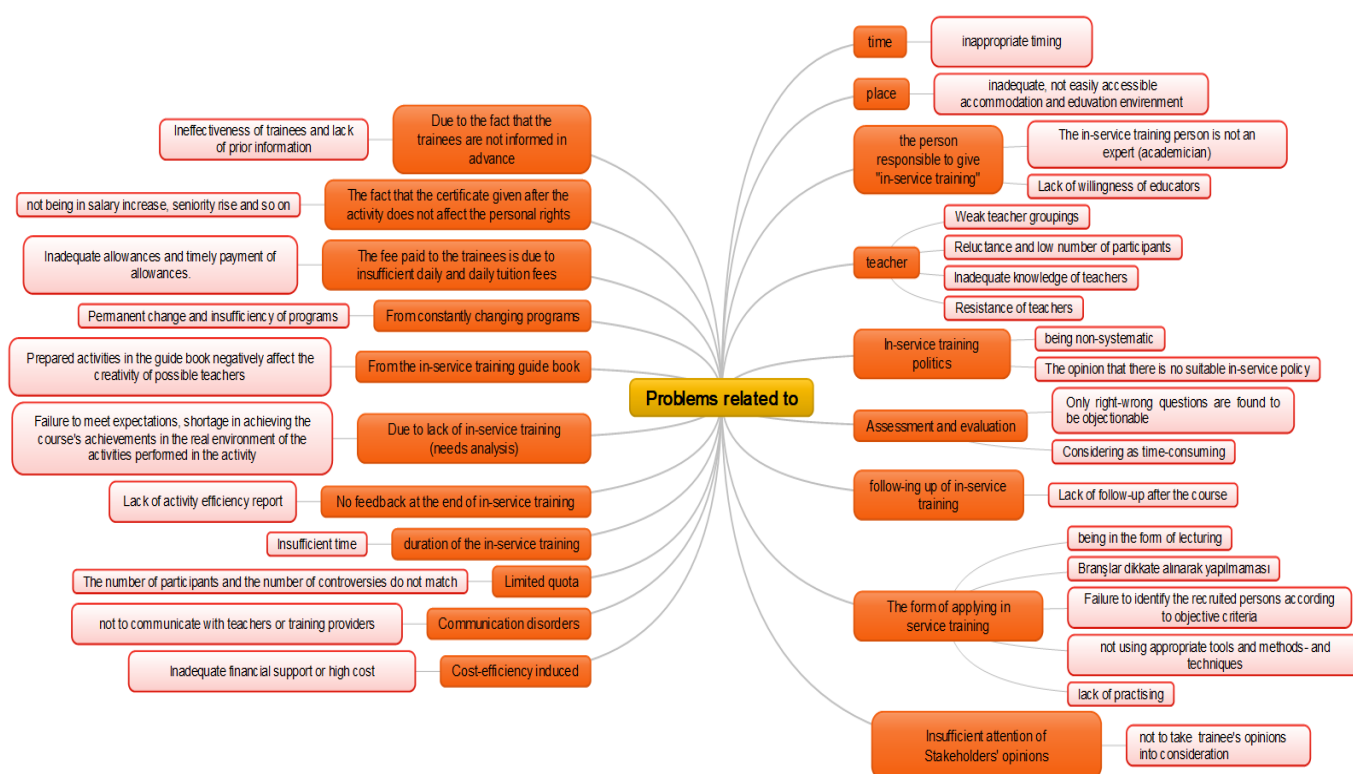


Figure 15. Problems raised in the studies.

As seen in Figure 15, the most highlighted problems in the studies are that the in-service training was not planned to meet the expectations of participants, and the person providing the training was not an expert or academician. Additionally, it is found that the least mentioned problems in the studies are; insufficiency of the fees paid to the trainees, wages and course fees, constantly changing programs, in-service training guide book, no feedback at the end of in-service training, limited quota, communication disorder, lack of willingness of trainers, insufficient in-service training policy, follow-up of in-service training and in-service application.

3.3.12. Solutions offered to the problems in studies

The sixth research question of the study was inquired about the solutions to the problems raised in graduate studies. Within the scope of this research question, solutions for the problems put forward in the studies are themed and presented in Figure 16.

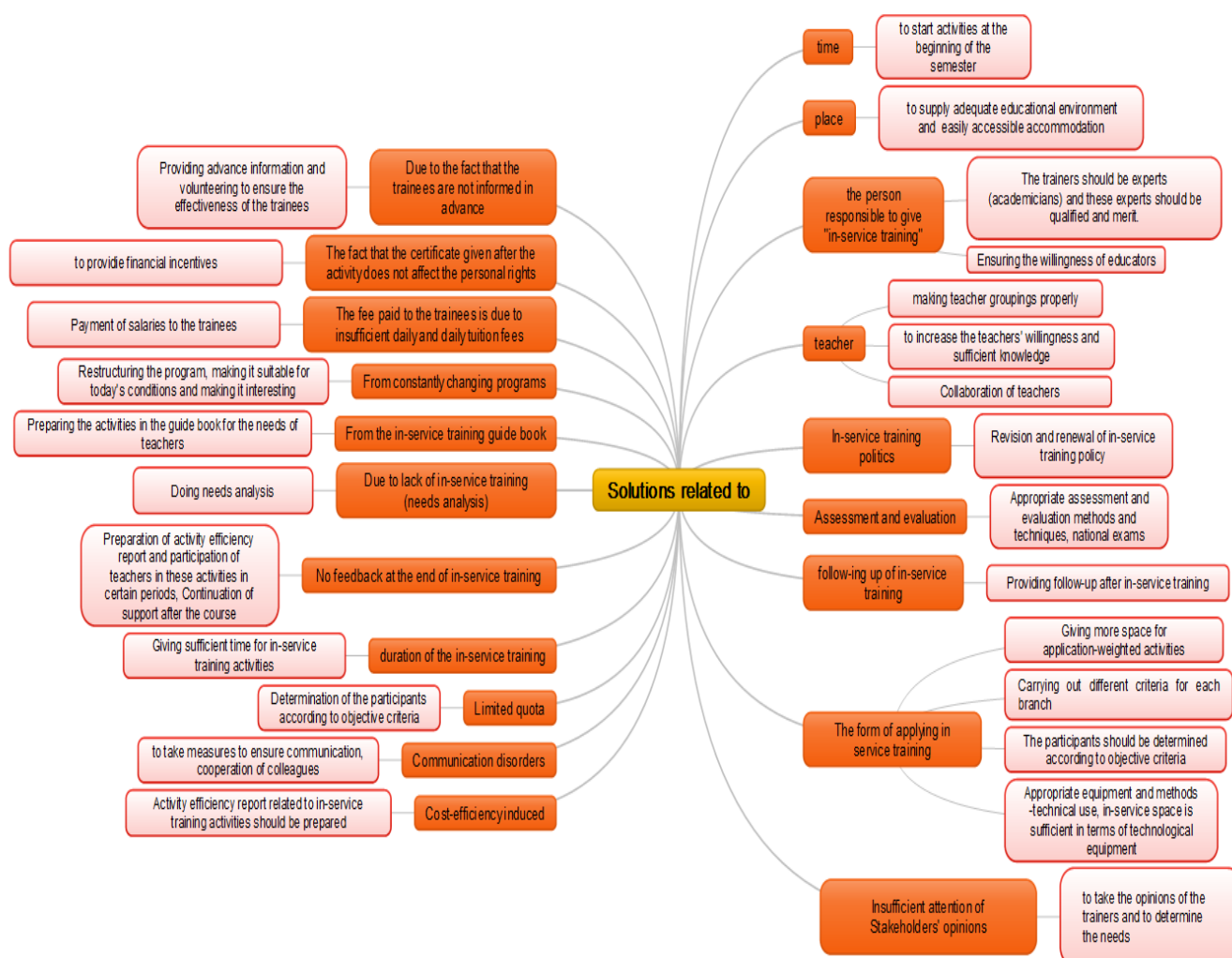


Figure 16. Solutions to the problems raised in the studies

As seen in Figure 16, the solutions mentioned in the studies are themed in different labels. It is found that the most frequently mentioned solutions or suggestions have been expressed as identifying the need analysis for in-service training. On the other hand, paying daily fees to the trainees, making ready-made activities available in the guide book concerning the needs of teachers, determining the participants according to objective criteria, ensuring the willingness of the trainers, grouping the teachers correctly, providing teachers' cooperation and renewing in-service training policy are expressed as the least suggested solutions in the studies.

4. Discussion & Conclusion

In the present study, the graduate studies that were accessible from the Higher Education thesis center that were conducted between 2000 and 2018 on in-service training for teachers were examined through content analysis.

As for the academic levels of the studies, it was found that most of them were masters level studies. It can be said that the majority of the studies are at the master's degree since the number of master's researchers is partly higher than the ones doing doctorate dissertations. When the studies have been examined in terms of the universities, it can be said that only 41 universities in Turkey have conducted studies on in-service training for teachers, which shows that only a certain number of universities are focused on in-service training for teachers. When the amount of the state and private universities of Turkey is taken into consideration, it can be claimed that the number of universities researching in-service training for teachers is quite insufficient.

When the findings were analyzed concerning the years of the studies, it was found that in-service training activities for teachers have shown a distribution by years. Still, most of the studies were conducted in 2012, while no studies were undertaken/reached in 2000, 2002, and 2003. It can be claimed that the reason for many studies carried out in 2012 was the increase in the number of in-service training organized by the MoNE within the scope of Fatih Project, which was put into practice in 2012.

When the findings are scrutinized in terms of the method characteristics of the studies, it is seen that the quantitative research method and survey design were preferred in most of the studies about in-service training programs for teachers. It is also found that questionnaires or scales were used as a data collecting tool in most of these studies. It can be said that the reason why the questionnaire and scale were used in the majority of studies might be grounded to the aim of reaching more participants and more generalizable conclusions. Besides, the findings of the present study revealed that quantitative/descriptive data analysis methods are used more frequently due to the majority of the studies conducted with quantitative survey design. Besides, it was seen that the majority of the content analysis studies were conducted at different levels and in various branches in line with the changing needs of the time. It is also considered that the studies are valuable in terms of evaluating the problems encountered in in-service training since the participants whose opinions were obtained in the studies reached were mostly from different branch teachers. Taking various participants' views increased the effectiveness of the findings. It can be claimed that the variety contributed to the more comprehensive identification of the needs, problems, and solution suggestions regarding the in-service training organized for the teachers.

In light of the findings of the present study, one of the outstanding results is the methodological characteristics (research design, data collection tool, validity, reliability

calculations, sampling technique, and study group characteristics), which are not visibly reported in some of the studies. It is a necessity in academic studies that the methodological aspects should be indicated clearly and detailed for the studies to be based on a scientific basis to guide researchers in terms of reproducibility and to interpret their findings correctly.

Additionally, studies were examined in terms of research tendencies, and it was found that more than half of the studies aimed to evaluate the curriculum of in-service training that was held for teachers. In contrast, some of the studies were conducted to determine the in-service training needs of teachers, and very few studies aimed to develop a curriculum for in-service training. It can be thought that the reason why most studies were conducted in the field of curriculum evaluation was to evaluate the in-service training carried out by the MoNE.

Another important finding from the in-depth analysis of the data set is that almost all of the studies evaluating the in-service training program did not use a curriculum evaluation model. In curriculum evaluation studies, it is vital that using a curriculum evaluation model that is proper for the subject to be evaluated and the aim of evaluation. Solely taking the participant's opinion may not be considered sufficient in curriculum evaluation as a comprehensive process.

Another finding obtained within the scope of the research tendencies of the studies is that the curriculum development studies related to in-service training for teachers did not take into consideration the constantly renewed and updated training programs and the curriculum development studies regarding in-service training programs for teachers were not at the desired level.

Another question that this study seeks to answers is about the problems raised in the studies. The findings showed that the in-service training activities for teachers were not given by the experts or academicians. Additionally, they are taught more like courses, in other words, they do not include practice, but the transmission of theoretical knowledge is in the majority. There are also problems that do not overlap with the gains of education. The fact that such in-service trainings are not given by experts or academicians, and that the courses are far from practicality and based on the transmission of the theory can be considered as the reasons for the insufficient contribution to the professional development of the teachers.

5. Suggestions

In this section, suggestions raised in light of the results obtained by analyzing the content of the studies on in-service training in education held for teachers. According to the findings obtained as a result of content analysis of studies, it was observed that no studies were made on the field of visual arts. When this absence is taken into consideration,

it is recommended to research in-service training in all levels and branches within the scope of the research subject. Among the studies analyzed in line with the data obtained, it was seen that most studies were conducted with primary and secondary education, and the studies related to the ‘special education’ area were very few. It may be recommended to organize in-service training activities for those who provide instruction to the students in the field of special education.

In addition, when the research tendencies of the studies were examined, it was found that the curriculum evaluation studies were quite high. Still, no curriculum evaluation model was used in these studies. Thus, it may be suggested to use an evaluation model that enables the systematic and in-depth evaluation of the curriculum. Besides, it is strongly recommended that all stakeholders, as well as teachers who are the primary practitioners of the program, should be consulted before in-service training is provided.

In light of the findings, it has been figured out that those who provide training in activities in in-service training for teachers generally use the traditional methods-transmitting the information- more frequently. In this context, it may be suggested to plan practice-oriented in-service training that enables the trainers to practice appropriate techniques and methods.

To carry out the activities included in the program within the scope of the problems encountered in in-service training, technological equipment, infrastructure, appropriate tools and equipment should be provided and the grouping of teachers should be made properly. Moreover, concerning the demands of the participants of most of the studies, regular feedback should be offered for the trainees after the in-service training activities.

In the light of the findings obtained from the content analysis of the studies, the significant problems determined in the studies in the data set is that the in-service training was programmed appropriately and the teachers were reluctant to participate in in-service training due to lack of space, lack of implementation in activities. In this context, it may be suggested that both program developers, school administrators, and the ministries and directorates of national education should take necessary measures to solve the problems and make arrangements in the forthcoming in-service training programs.

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References

- Asilsoy, Ö. (2007). Biyoloji öğretmenleri için proje tabanlı öğrenme yaklaşımı konulu bir hizmet içi eğitim kurs programı geliştirilmesi ve etkililiğinin araştırılması [Developing an in-service education service education course on project based learning approach for biology

- teachers and testing its efficiency]. (Unpublished master's thesis). Karadeniz Teknik University, Trabzon.
- Avşar, P. (2006). Beden eğitimi öğretmenlerinin kendilerine yönelik hizmetiçi eğitim programlarını değerlendirmesi [Physical education teachers evaluation of in-service training programme employed them]. (Unpublished master's thesis). Ankara University, Ankara
- Baykan, P. (2015). Kimya öğretmenlerinin etkileşimli tahta kullanımına ilişkin ihtiyaçlarına dayalı örnek hizmet içi eğitim etkinliği geliştirilmesi, uygulanması ve değerlendirilmesi [Being development implementation and evaluation of the sample in-service training activity based on chemistry teachers' needs of using interactive white board]. (Unpublished doctoral dissertation). Atatürk University, Erzurum.
- Bulut, K. (2011). Sosyal bilgiler öğretmenlerinin hizmet içi eğitim ihtiyaçlarının tespiti, Kars ili örneği [Needs assessment of in-service training teachers in the field of social sciences, example of the city of Kars]. (Unpublished master's thesis). Kafkas University, Kars.
- Büyüköztürk, Ş., Kılıç Çakmak, E., Akgün, Ö. E., Karadeniz, Ş. & Demirel, F. (2014). Bilimsel araştırma yöntemleri. Ankara: Pegem Akademi.
- Cohen, L., Manion, L., & Morrison, K. (2007). Research methods in education (6th Ed.). New York, NY: Routledge.
- Çakır- Sürmeli, E. (2004). Implementation of neuro linguistic programming NLP into personal and professional development programs of English language teachers. (Unpublished master's thesis). Çukurova University, Adana.
- Çelikkale, E. (2012). Ticaret meslek liselerinde görev yapan meslek dersi öğretmenlerinin katıldığı hizmet içi eğitim programlarına ilişkin değerlendirmeleri [The evaluation of in-service training programs by the vocational high school teachers who participated in]. (Unpublished master's thesis). Yeditepe University, İstanbul.
- Güney, B. (2018). Sınıf öğretmenlerinin hizmetiçi eğitim programlarına ilişkin görüşleri (Mardin ili Midyat ilçesi örneği) [Views of the classroom teachers on the in-service training programs (sample of Mardin, Midyat)]. (Unpublished master's thesis). İnönü University, Malatya.
- Gümüş, M. (2018). İlkokul yönetici ve öğretmenlerinin meb hizmet içi eğitim uygulamalarına ilişkin görüşleri: Keçiören ilçesi örneği [The opinion of primary school managers and teachers related to ministry of national education (MEB) in- service education practice: Keçiören district sample]. (Unpublished master's thesis). Kırıkkale University, Kırıkkale.
- Huber, S. G. (2011). The impact of professional development: a theoretical model for empirical research, evaluation, planning and conducting training and development programmes. *Professional Development in Education*, 37(5), 837-853.
- Kaplan, A. (2018). An investigation of knowledge, practices and professional training needs of high school EFL teachers for oral language assessment. (Unpublished master's thesis). Bahçeşehir University, İstanbul.
- Karakaya, M. (2016). İşbaşı destekli hizmetiçi eğitimin ilköğretim matematik öğretmenlerinin pedagojik değişimlerine etkisi [The effects of in-service education supported via on-site visits on the pedagogies of elementary mathematics teachers]. (Unpublished master's thesis). Abant İzzet Baysal University, Bolu.
- Kızılarıslan, S. (2012). Almanca öğretmenlerinin hizmet içi eğitim hakkındaki görüşleri ve bir araştırma [Examination of opinions of German language teachers about in service training]. (Unpublished master's thesis). Yeditepe University, İstanbul.
- MEB. (1988). Hizmet içi Eğitim, Kuruluş, Gelişme, Faaliyetler 1960-1987. Ankara. [MoNE].

- MEB.(1995). Milli Eğitim Bakanlığı Hizmetiçi Eğitim Yönetmeliği. [MoNE].
- Metin, M. (Ed.). (2015). Kuramdan Uygulamaya Eğitimde Bilimsel Araştırma Yöntemi. Ankara: Pegem Akademi.
- Öz, A. (2012). Milli eğitim bakanlığı bünyesinde düzenlenen hizmet içi eğitimlerin din kültürü ve ahlak bilgisi öğretmenlerinin mesleki gelişimine katısı İstanbul ili örneği [The contribution of inservice educations organized within the ministry of national education to professional development of religious culture and ethic course teachers (the case of Istanbul)] (Unpublished doctoral dissertation). Marmara University, İstanbul.
- Özsırkıntı, D. (2018). Okul öncesi öğretmenler için kaynaştırma uygulamalarına yönelik pilot bir hizmet içi eğitim programı geliştirilmesi (Adana ili örneği) [Developing a pilot in-service training programme for pre-school teachers to inclusive education applications (in Adana context)]. (Unpublished master's thesis). Mersin University, Mersin.
- Şahin, İ. (2012). Connecting staff development to teacher improvement: a case study of an in-service teacher education program for English teachers. (Unpublished doctoral dissertation). Orta Doğu Teknik University, Ankara.
- Şahin,V. (2006). Evaluation of the in-service teacher training program “the certificate for teachers of English” at the Middle East Technical University School of foreign Languages. (Unpublished doctoral dissertation). Orta Doğu Teknik University, Ankara.
- Sözbilir, M. & Kutu, H. (2008). Development and current status of science education research InTurkey. *Essays in Education*, Special Issue, 1-22.
- Yıldırım, A. & Şimşek, H. (2008). Sosyal bilimlerde nitel araştırma yöntemleri. Ankara: Seçkin Yayıncılık.
- Taymaz, H. (1981). Hizmet İçi Eğitim Kavramlar İlkeler Yöntemler. Ankara University Eğitim Fakültesi Yayınları. Ankara: Sevinç Matbaa.
- Yılmaz, H. (2018). Motivation levels of in-service English teachers: From tradition to change. (Unpublished master's thesis). Balıkesir University, Balıkesir.
- Yurttaş, A. (2014). EFL teachers' perceptions on the effectiveness of components of an EFL in-service training program. (Unpublished master's thesis). Orta Doğu Teknik University, Ankara.
- YOK. (2019). <https://istatistik.yok.gov.tr/>

Appendix: The Analyzed Studies (n=88)

- Akdemir, E. (2015). Okul yöneticilerinin teknolojiye yönelik hizmet içi eğitim ihtiyaçlarının belirlenmesi ve bir hizmet içi eğitim programı önerisi [Determination of in-service training needs of school administrators for technology and a proposal for the in-service training program]. (Unpublished doctoral dissertation). NecmettinErbakanUniversity, Konya.
- Akkaya, A-E. (2010). Okul yöneticilerinin bilgi teknolojileri becerilerinin ve tutumlarının geliştirilmesi: bir hizmetiçi eğitim uygulaması [Development of school managers' skills and attitudes of information technologies: an educational application]. (Unpublished master's thesis). Akdeniz University, Antalya.
- Aksakal, N. (2018). Beden eğitimi öğretmenlerine yönelik hizmetiçi eğitim içeriğinin değerlendirilmesi ve kurs program önerisi [The evaluation of the content of in-service training for physical education teachers and the course program proposal]. (Unpublished doctoral dissertation). Anadolu University, Eskişehir.

- Altun-Könez, N. (2015). Özel eğitim ve iş uygulama merkezlerinde görev yapan branş öğretmenlerinin hizmet içi eğitim ihtiyaçlarının belirlenmesi [Determining the in service training needs of branch teachers working in special education and work and application centers]. (Unpublished master's thesis). Gazi University, Ankara.
- Arık, K. (2017). İlkokul ve ortaokul öğretmenlerinin 4+4+4 eğitim sistemi sonrası hizmet içi eğitim uygulamalarına ilişkin görüşleri (Kütahya ili örneği) [Primary and secondary school teachers' perception on in- service education after 4+4+4 system (Kütahya sample)]. (Unpublished master's thesis). Çanakkale Onsekiz Mart University, Çanakkale.
- Arslan, M. (2015). Türkiye milli eğitim sistemindeki değişmeler ışığında "hizmet içi eğitim" [Turkish national education system change in light of the 'service training']. (Unpublished master's thesis). İstanbul Aydın University, İstanbul.
- Arslan, H. (2013). Hizmetiçi eğitim kurslarının bilişim teknolojileri öğretmenlerinin mesleki ve kişisel gelişimine etkisi [Effect of inservice training courses on information technology teachers' professional and personal development]. (Unpublished master's thesis). Necmettin Erbakan University, Konya.
- Asilsoy, Ö. (2007). Biyoloji öğretmenleri için proje tabanlı öğrenme yaklaşımı konulu bir hizmet içi eğitim kurs programı geliştirilmesi ve etkililiğinin araştırılması [Developing an in-service education service education course on project based learning approach for biology teachers and testing its efficiency]. (Unpublished master's thesis). Karadeniz Teknik University, Trabzon.
- Avşar, P. (2006). Beden eğitimi öğretmenlerinin kendilerine yönelik hizmetiçi eğitim programlarını değerlendirmesi [Physical education teachers evaluation of in-service training programme employed them]. (Unpublished master's thesis). Ankara University , Ankara.
- Aykat, Ş. (2017). Mesleki lise öğretmenlerinin, öğrencilerinin ve idarecilerinin hizmetiçi eğitim öncesi ile sonrası etkileşimli tahtaya ilişkin görüşlerinin incelenmesi [Examination the views of vocational high school teachers, students and managers about interactive board before and after in-service training]. (Unpublished master's thesis). Yüzüncü Yıl University, Van.
- Aydın, D. (2008). Öğretmenlerin, yöneticiler tarafından hizmetiçi eğitim programıyla desteklenmesi sonucunda kazandıkları bilgi ve becerileri eğitime yansıtma düzeylerinin incelenmesi (İstanbul Beykoz ilçesi örneği) [Investigation of instructor's skill level to reflect their knowledge and abilities into the education which gained by the assistance given by the administrators by means of in-service training programs]. (Unpublished master's thesis). Yeditepe University, İstanbul.
- Avcı, Ü. (2013). Sosyal bilgiler öğretmenlerinin hizmetiçi eğitim ihtiyaçlarının belirlenmesi [Assessing social studies teachers in- service training needs]. (Unpublished master's thesis). Uşak University, Uşak.
- Avcı, E. (2018). Öğretmenlerin hizmet içi eğitim ihtiyaçlarının belirlenmesi [Determining the in-service training needs of teachers]. (Unpublished master's thesis). Yeditepe University, İstanbul.
- Babacan, Ş. (2015). Coğrafya öğretmenlerinin hizmet içi eğitim ihtiyaçlarının belirlenmesi [Determining the in-service training needs of geography teachers]. (Unpublished doctoral dissertation). Marmara University, İstanbul.
- Bağ, C. (2015). Okul öncesi öğretmenlerinin öğretmen yeterlikleri ve hizmet içi eğitim ihtiyaçları.[Pre-school teachers' teacher competences and in-service training needs]. (Unpublished master's thesis). Düzce University, Düzce.

- Balkız, M. (2013). Meb hizmet içi eğitim uygulamalarının değerlendirilmesi: Kastamonu ili aday öğretmenleri örneği [The evaluation in-service training applications of the ministry of national education: Kastamonu province candidate teachers model]. (Unpublished master's thesis). Gazi University, Ankara.
- Baran, F. (2008). Milli eğitim bakanlığının uzaktan hizmetiçi eğitim yöntemiyle bilgisayar eğitimi uygulamasına ilişkin öğretmen görüş ve önerileri [The opinions and suggestions of the teachers about the ministry of education's application of computer education through distance in-service training method]. (Unpublished master's thesis). Yeditepe University, İstanbul.
- Başak, M-H. (2016). Fen bilimleri öğretmenlerinin teknoloji entegrasyonunu geliştirmeye yönelik hizmet içi eğitim kurs programının hazırlanması ve etkililiğinin değerlendirilmesi: FATİH projesi örneği [Preparation of teacher professional development training course programme for science teachers' technology integration development and the evaluation of its efficiency: sample of FATİH project study]. (Unpublished doctoral dissertation). Karadeniz Teknik University, Trabzon.
- Baykan, P. (2015). Kimya öğretmenlerinin etkileşimli tahta kullanımına ilişkin ihtiyaçlarına dayalı örnek hizmet içi eğitim etkinliği geliştirilmesi, uygulanması ve değerlendirilmesi [Being development implementation and evaluation of the sample in-service training activity based on chemistry teachers' needs of using interactive white board]. (Unpublished doctoral dissertation). Atatürk University, Erzurum.
- Bayrak, G. (2012). Öğretmenlerin lcd panelli etkileşimli tahtalar hakkındaki hizmet içi eğitim sonrası görüşleri [The views of teachers about LCD-panel interactive boards after in-service training]. (Unpublished master's thesis). Atatürk University, Erzurum.
- Bulut, K. (2011). Sosyal bilgiler öğretmenlerinin hizmet içi eğitim ihtiyaçlarının tespiti, Kars ili örneği [Needs assessment of in-service training teachers in the field of social sciences, example of the city of Kars]. (Unpublished master's thesis). Kafkas University, Kars.
- Cesur, E. (2010). Intel öğretmen programı karma modeli hizmetiçi eğitimi hakkındaki öğretmen görüşleri. [Teachers' opinions about in-service training related to mixed model of intel instruction programme] (Unpublished master's thesis). Mersin University, Mersin.
- Cin, M. (2008). Hizmet içi eğitim programlarının etkinliği ve eğitimcilerin verimliliğine etkisi: mesleki ve teknik eğitim kurumlarında bir uygulama [Effectiveness of in-service training programs and their effects on teacher efficiency: a case of vocational and technical education institutions]. (Unpublished master's thesis). Beykent University, İstanbul.
- Coşkun-Kitiş, A. (2010). Okul yöneticilerinin uzaktan hizmetiçi eğitime ilişkin görüşleri (Denizli ili örneği) [School administrators' concepts of distance in-service training]. (Unpublished master's thesis). Pamukkale University, Denizli.
- Çakır- Sürmeli, E. (2004). Implementation of neuro linguistic programming nlp into personal and professional development programs of English language teachers (Unpublished master's thesis). Çukurova University, Adana.
- Çalgan, S-P. (2008). Özel ilköğretim okullarında çalışan İngilizce öğretmenlerinin hizmet içi eğitim çalışmalarına bakışları [The view point of English teachers in private schools on in-service trainings]. (Unpublished master's thesis). Beykent University, İstanbul.
- Çam, E. (2017). İlköğretim öğretmenlerinin teknolojik pedagojik alan bilgisi (TBAP) düzeylerinin yaşam boyu öğrenme, özyeterlik düzeyleri ve hizmet içi eğitim gereksinimleri açısından incelenmesi: Muş/Bulanık örneği. [Examination of primary school teachers' levels of technological pedagogical knowledge (TPACK) in terms of lifelong learning, self-efficacy levels and in-service training needs: Muş/Bulanık example]. (Unpublished master's thesis). Amasya University, Amasya.

- Çatmalı, M. (2006). Gelecek için eğitim" hizmetiçi eğitim kursunun değerlendirilmesi [Evaluation of in-service education program 'teach to the future']. (Unpublished master's thesis). Balıkesir University, Balıkesir.
- Çelikkalek, E. (2012). Ticaret meslek liselerinde görev yapan meslek dersi öğretmenlerinin katıldığı hizmet içi eğitim programlarına ilişkin değerlendirmeleri [The evaluation of in-service training programs by the vocational high school teachers who participated in] (Unpublished master's thesis). Yeditepe University, İstanbul.
- Çiftçi, E. (2008). Türkiye'de millî eğitim bakanlığı tarafından müzik öğretmenlerine verilen hizmet içi eğitimin incelenmesi [An analysis of education given to in-service music teachers by ministry of national education in Turkey and determining the needs for in-service training of music teachers]. (Unpublished Doctoral Dissertation). Gazi University, Ankara.
- Diler, U. (2016). In-service education and training needs of instructors working in the accreditation process at vocational qualification test centers. (Unpublished doctoral dissertation). İstanbul Aydın University, İstanbul.
- Doğan, O. (2009). Hizmetiçi eğitime katılımın eğitim öğretim sürecine etkisi ile ilgili yönetici ve öğretmen görüşleri [The opinions of administrators and teachers on the education process about the effects of participation in in-service training]. (Unpublished master's thesis). Maltepe University, İstanbul.
- Dülgergil, S. (2014). Sınıf öğretmenlerinin 4. Sınıf fen ve teknoloji dersine ilişkin hizmet içi eğitim ihtiyaçlarının belirlenmesi [Determination of in-service education requirements of class teachers related to fourth class science and technology course]. (Unpublished master's thesis). Gazi University, Ankara.
- Ekşi, İ. (2001). Okul müdürlerinin hizmet içi eğitim ihtiyacı [The need for head masters in service training]. (Unpublished master's thesis). Kocaeli University, Kocaeli.
- Ercan, O. (2013). Beden eğitimi ve spor öğretmenlerinin hizmet içi eğitim ihtiyacının belirlenmesi (Denizli ili örneği) [Determine the need for service training of physical education teachers (Example of the province of Denizli)]. (Unpublished master's thesis). Muğla Sıtkı Koçman University, Muğla.
- Göçebe, H. (2010). MEB merkezi hizmetiçi eğitim kurslarının etkinliği ve yönetim becerilerine katkıları (sağlık meslek lisesi yöneticileri kapsamında bir araştırma) [Efficiency of ministry of national education central in-service training and its contribution to management skills (a research in the context of the directors of health-occupation high school)]. (Unpublished master's thesis). Yeditepe University / Sosyal Bilimler Enstitüsü, İstanbul.
- Gümüş, M. (2018). İlkokul yönetici ve öğretmenlerinin MEB hizmet içi eğitim uygulamalarına ilişkin görüşleri: Keçiören ilçesi örneği. [The opinion of primary school managers and teachers related to ministry of national education (MoNE) in-service education practice: Keçiören district sample]. (Unpublished master's thesis). Kırıkkale University, Kırıkkale.
- Gümüş, E. (2012). Türkiye ve Amerika birleşik devletleri ilköğretim kurumları müdürlerinin hizmet öncesi ve hizmet içi eğitim faaliyetlerinin karşılaştırılmasına yönelik nitel bir araştırma: Erzurum ili ve Michigan eyaleti örneği. [A qualitative study on the comparison of pre-service and in-service training activities of primary school principals in Turkey and the U.S.A.: province of Erzurum and state of Michigan case]. (Unpublished doctoral dissertation). Atatürk University, Erzurum.
- Gümüşlüoğlu, D. (2016). İngilizce öğretmenlerinin hizmetiçi eğitim süreçleri ve hizmetiçi eğitim etkinliklerinin sınıf içi performanslarına etkisine ilişkin algıları. [The perceptions of English

- teachers regarding in service training processes and its impact on their in class performance]. (Unpublished master's thesis). Yeditepe University, İstanbul.
- Güneş, M. (2006). İlköğretim okulu öğretmenlerinin hizmet içi eğitim programlarına katılmayı isteme ve istememe nedenleri (mamak ilçesi örneği) [The reasons for the primary school teachers' willingness or unwillingness to participate in in-service training programmes (sample of Mamak)]. (Unpublished master's thesis). Hacettepe University, Ankara.
- Güney, B. (2018). Sınıf öğretmenlerinin hizmetiçi eğitim programlarına ilişkin görüşleri (Mardin ili Midyat ilçesi örneği) [Views of the classroom teachers on the inservice training programs (sample of Mardin, Midyat)]. (Unpublished master's thesis). İnönü University, Malatya.
- Kahraman, B. (2018). Hizmetiçi eğitimlerdeki hizmet kalitesi konusunda öğretmenlerin görüşleri (Kayseri ili örneği) [Views of teachers on the service quality of in-service training (case of Kayseri province)]. (Unpublished master's thesis). Gazi University, Ankara.
- Kaplan, A. (2018). An investigation of knowledge, practices and professional training needs of high school EFL teachers for oral language assessment. (Unpublished master's thesis). Bahçeşehir University, İstanbul.
- Karabulut, E. (2015). Okullarda çalışanların hizmetiçi eğitime yönelik algıları ve bunların iş tatminine etkilerinin incelenmesi [The perceptions of the school employees toward in-training and investigating their effects on working performance]. (Unpublished master's thesis). Türk Hava Kurumu University, Ankara.
- Karaca, A. (2010). İlköğretim okulu öğretmenlerinin hizmet içi eğitim programlarına ilişkin görüşleri (Mudurnu örneği) [Primaryschool teachers' opinions about in service training programs (Mudurnu case)]. (Unpublished master's thesis). Abant İzzet Baysal University, Bolu.
- Karakaya, M. (2016). İşbaşı destekli hizmetiçi eğitimin ilköğretim matematik öğretmenlerinin pedagojik değişimlerine etkisi [The effects of in-service education supported via on-site visits on the pedagogies of elementary mathematics teachers]. (Unpublished master's thesis). Abant İzzet Baysal University, Bolu.
- Kaya, İ. (2017). Meb'in hizmet içi eğitim faaliyetlerinin ve Türkçe öğretmenlerinin bu faaliyetlere ilişkin görüşlerinin değerlendirilmesi [Evaluation of meb in-service training activities and the views of turkish language teachers about these activities]. (Unpublished master's thesis).Nevşehir Hacı Bektaş Veli University, Nevşehir.
- Karlı, M-H. (2013). Türkiye eğitim sisteminde bir alternatif hizmetiçi eğitim modeli olarak örav-öğretmenin sınırı yok projesi [Orav-no limit to teaching/teachers as an alternative professional development model in Turkish education system]. (Unpublished master's thesis). Yeditepe University, İstanbul.
- Kefeli, P. (2013). Öğretim sürecinde etkileşimli tahta kullanmına yönelik geliştirilen bir hizmet içi eğitim kursu ve yansımaları [An in-service training course developed for the use of interactive whiteboard in teaching process and its reflections]. (Unpublished master's thesis). Karadeniz Teknik University, Trabzon.
- Kızılarıslan, S. (2012). Almanca öğretmenlerinin hizmet içi eğitim hakkındaki görüşleri ve bir araştırma [Examination of opinions of German language teachers about in service training]. (Unpublished master's thesis).Yeditepe University, İstanbul.
- Korkmaz, İ. (2009). The views of secondary schools administrators and teachers about in-service training and personnel development in the Turkish educational system. (Unpublished master's thesis). Abant İzzet Baysal University, Bolu.

- Korukluoğlu, P. (2012). İlköğretim okulu yöneticilerinin okuldaki hizmet içi eğitim etkinlikleri [Primary school administrators' in-service training activities]. (Unpublished master's thesis). Yeditepe University, İstanbul.
- Kösreli, S. (2012). Sınıf öğretmenlerinin müzik dersine ilişkin hizmet içi eğitim ihtiyaçları üzerine bir inceleme: Erzincan ili örneği [A research on in-service training needs of class teachers about music lesson: example of Erzincan city]. (Unpublished master's thesis). İnönü University, Malatya.
- Kösterelioğlu, İ. (2012). Sosyal bilgiler ders programının öğelerinin değerlendirilmesi ve öğretmenlerin hizmet içi eğitim ihtiyaç analizi [The evaluation of social sciences lesson program elements and teachers' inservice training needs analysis]. (Unpublished doctoral dissertation). Abant İzzet Baysal University, Bolu.
- Kulaz, E. (2013). İlkokul öğretmenlerinin kendilerine yönelik hizmetiçi eğitim uygulamalarının koşulları ve verimliliği hakkındaki görüşleri. [Thoughts of elementary school teachers regarding the conditions of in-service training practices oriented towards them]. (Unpublished master's thesis). Yeditepe University, İstanbul
- Küçükert-Ertekin, S. (2010). In-service education and training needs of science teachers related to 2004 science and technology curriculum in terms of field and methodology knowledge. (Unpublished master's thesis). Yeditepe University, İstanbul.
- Limon, İ. (2014). Yüz yüze ve uzaktan hizmet içi eğitim faaliyetlerine yönelik öğretmen algıları (Sakarya ili örneği) [Teachers' perceptions about conventional and distance inservice training activities (the sample of Sakarya province)]. (Unpublished master's thesis). Sakarya University, Sakarya.
- Metin, M. 2010. Fen ve teknoloji öğretmenleri için hazırlanan performans değerlendirmeye yönelik hizmet içi eğitim kursunun etkililiği [Effectiveness of preparing in service training programs for science and technology teachers on performance assessment]. (Unpublished doctoral dissertation). Karadeniz Teknik Üniversitesi, Trabzon
- MISIRLI, S. (2011). İngilizce öğretmenlerinin hizmetiçi eğitim ihtiyacı analizi ve örnek bir model çalışması [A study for the in-service training needs of primary EFL teachers and a suggested model]. (Unpublished master's thesis). Gazi University, Ankara.
- Nemli, S. (2017). İlkokul öğretmenlerinin hizmet içi eğitim programlarının etkililiğine yönelik görüşleri [Opinions of primary school teachers on efficacy of in-service training]. (Unpublished master's thesis). Sakarya University / Eğitim Bilimleri Enstitüsü, Sakarya.
- Oturak-Eyecisoy, H. (2014). Sosyal bilgiler öğretmenlerinin, hizmetiçi eğitim programlarına ilişkin görüşleri (Denizli ili örneği) [The opinions of social sciences teachers about the in service training programmes(the sample of Denizli)]. (Unpublished master's thesis). Pamukkale University, Denizli.
- Öz, A. (2012). Milli eğitim bakanlığı bünyesinde düzenlenen hizmet içi eğitimlerin din kültürü ve ahlak bilgisi öğretmenlerinin mesleki gelişimine katkısı (İstanbul ili örneği) [The contribution of in-service educations organized within the ministry of national education to professional development of religious culture and ethic course teachers (the case of Istanbul)] (unpublished doctoral dissertation). Marmara University, İstanbul
- Özavcı, E. (2015). Milli eğitim bakanlığı, e-hizmet içi eğitim uygulamalarında öğretmen görüşlerine göre karşılaşılan sorunlar ve çözüm önerileri [Teachers' perspectives on the problems encountered in electronic teacher training programs held by the ministry of national education and solutions they offer to those problems]. (Unpublished master's thesis). Okan University, İstanbul.

- Özen, B. (2014). Web tabanlı uzaktan öğretim yönteminin okul yöneticilerinin hizmetiçi eğitimlerinde uygulanabilirliği [The practicability of web-based distance education method in the in-service training of the school administrators]. (Unpublished master's thesis). Gaziosmanpaşa University, Tokat.
- Özkan, M. (2010). Hizmet içi eğitim programlarının oluşturulmasına ilişkin öğretmen görüşleri [Teacher's opinions on preparing the in-service teacher training programs]. (Unpublished doctoral dissertation). Selçuk University, Konya.
- Özsirkıntı, D. (2018). Okul öncesi öğretmenler için kaynaştırma uygulamalarına yönelik pilot bir hizmet içi eğitim programı geliştirilmesi (Adana ili örneği). [Developing a pilot in-service training programme for pre-school teachers to inclusive education applications (in Adana context)]. (Unpublished master's thesis). Mersin University, Mersin.
- Sabah, S. (2016). Beden eğitimi öğretmenlerinin hizmet-içi eğitim faaliyetlerine katılımını etkileyen faktörler [Factors influencing physical education teachers' participation in in-service training programs]. (Unpublished master's thesis). Amasya University, Amasya.
- Saka, F. (2005). Milli eğitim bakanlığı hizmet içi eğitim etkinliklerinin meslek lisesi öğretmenleri tarafından değerlendirilmesi [Assesment of in-service training activities of ministry of national education by the teachers of vocational high schools (sampling of Ankara)]. (Unpublished master's thesis). Gazi University, Ankara.
- Sezer, E. (2006). Milli eğitim bakanlığına bağlı devlet okullarında çalışan psikolojik danışman ve rehber öğretmenlerin hizmetiçi eğitime ilişkin görüşlerinin değerlendirilmesi (İstanbul ili örneği) [Ministry of education, state schools' guidance counselors and psychological consultants' view sregarding in-service training (the case of Istanbul)]. (Unpublished master's thesis). Yeditepe University, İstanbul.
- Süngü, D. (2012). Okul öncesi öğretmenlerinin hizmet içi eğitim hakkındaki görüşlerinin çeşitli değişkenler açısından incelenmesi (Adıyaman ili örneği). [Analyzing preschool teachers' conceptions about in service training from different variables (Adıyaman case)]. (Unpublished master'sthesis). Necmettin Erbakan University, Konya.
- Şahin, Ü. (2013). Sınıf öğretmenlerinin hizmet içi eğitim ihtiyaçlarının belirlenmesi ve bir model önerisi [Determining the inservice training needs of the classroom teachers and a suggestion of a model]. (Unpublished doctoral dissertation) Adnan Menderes University, Aydın.
- Şahin,İ. (2012). Connecting staff development to teacher improvement: a case study of an in-service teacher education program for English teachers. (Unpublished doctoral dissertation). Orta Doğu Teknik University, Ankara.
- Şahin,V. (2006). Evaluation of the in-service teacher training program “the certificate for teachers of English” at the Middle East Technical University School of foreign languages. (Unpublished doctoral dissertation). Orta Doğu Teknik University, Ankara.
- Şen, B. (2011). Okul öncesi öğretmenlerinin mesleki doyumları ve hizmet içi eğitim ihtiyaçları üzerine bir araştırma (Uşak ili örneği) [An examine about pre-school teachers' proffesional satisfaction and needs of in-service training (example of Uşak)]. (Unpublished master's thesis). Selçuk University, Konya.
- Tutaş, S. (2018). Gençlik ve spor bakanlığında çalışan sportif eğitim uzmanlarının hizmet içi eğitim ihtiyaçlarının belirlenmesi [Determination of the in-service training needs of sporting education experts in the youth and sport ministry]. (Unpublished master's thesis). Fırat University, Elazığ.

- Turgut, S. (2012). İlköğretim sınıf öğretmenlerinin hizmet içi eğitim ihtiyaçlarının saptanması [Determination of primary school teachers in service training needs]. (Unpublished master's thesis). Mehmet Akif Ersoy University, Burdur.
- Türkoğlu, R. (2016). MEB taşra örgütündeki maarif müfettişleri ve yöneticilerin görev tanımları ve hizmet içi eğitim ihtiyaçlarının belirlenmesi [Job definitions and determination of in-service training needs of supervisors and administrators at MoNE sub-provincial organization]. (Unpublished doctoral dissertation). Hacettepe University, Ankara.
- Uçar, R. (2005). İlköğretim okullarında görev yapan yönetici ve öğretmenlerin meb hizmet içi eğitim uygulamalarına ilişkin görüşleri (Van ili örneği) [On opinions of primary schools administrators and teachers about in service training programs (the case of Van)]. (Unpublished master's thesis). Yüzüncü Yıl University, Van.
- Ulum, Ö-G. (2012). Milli eğitim bakanlığında çalışan İngilizce öğretmenlerinin hizmet içi öğretmen gelişim programları hakkındaki görüşleri [EFL state school teachers' perceptions on in-service teacher development programs in the Turkish educational system]. (Unpublished master's thesis). Çağ University, Mersin.
- Usta, Z-S. (2015). Fizik öğretmenleri için hazırlanan sorgulama temelli öğretime yönelik bir hizmet-içi eğitim programının etkililiği [Effectiveness of an in-service training program regarding inquiry-based teaching for physics teachers]. (Unpublished master's thesis). Dokuz Eylül University, İzmir.
- Veyis, F. (2012). Türk dili ve edebiyatı öğretmenlerinin hizmet içi eğitim ihtiyaçlarının belirlenmesi [Determination of Turkish language and literature teachers' requirements of the inservice education and training]. (Unpublished master's thesis). Atatürk University, Erzurum.
- Yadigaroglu, M. (2014). Kimya öğretmenlerinin teknolojik pedagojik alan bilgisi modeli hakkında bilgi ve becerilerini geliştirmeye yönelik hizmet içi eğitim programı geliştirilmesi ve etkililiğinin araştırılması [Developing an in- service training programme for improving chemistry teachers' knowledge and skills about technological pedagogical content knowledge model and investigating its effectiveness]. (Unpublished doctoral dissertation). Karadeniz Teknik University, Trabzon.
- Yeşilay-Daşiran, (T). (2013). Okul öncesi eğitimde etkili sınıf yönetimi becerilerini geliştirmeye yönelik hazırlanan hizmet içi eğitim programının etkisinin değerlendirilmesi [Assessment of the influence of in-service training program to develop classroom management skills in early childhood education]. (Unpublished master's thesis). Ankara University, Ankara.
- Yıldız, C. (2006). Endüstri meslek liselerinde görevli atölye ve laboratuvar öğretmenlerinin hizmetiçi eğitim ihtiyacının saptanması [Determining the necessity on in-service education of the workshop and laboratory teachers who work at technical high-schools]. (Unpublished master's thesis). Yeditepe University, İstanbul.
- Yılmaz, H. (2018). Motivation levels of in-service English teachers: from tradition to change. (Unpublished master's thesis). Balıkesir University, Balıkesir.
- Yılmaz, N. (2013). İlköğretim matematik öğretmenlerine yansıtıcı düşünme becerisinin kazandırılmasına yönelik hizmet içi eğitimin uygulanması ve değerlendirilmesi. [The application and evaluation of in-service education (inset) course prepared for gaining the reflective thinking skills to the primary school mathematics teachers]. (Unpublished master's thesis). Karadeniz Teknik University, Trabzon.
- Yurttaş, A. (2014). Efl teachers' perceptions on the effectiveness of components of an EFL in-service training program. (Unpublished master's thesis). Orta Doğu Teknik University, Ankara.

Yüce-Maral, D. (2009). Sınıf öğretmenlerinin ölçme ve değerlendirme yeterlilik düzeyleri ve hizmet içi eğitim gereksinimleri. [Determination of classroom teachers' adequacy of assessment and evaluation and their in-service education requirements]. (Unpublished master's thesis). Çanakkale Onsekiz Mart University, Çanakkale.

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The Effect of Concrete and Technology-Assisted Learning Tools on Place Value Concept, Achievement in Mathematics and Arithmetic Performance

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Abstract

The purpose of this study is to examine the effects of concrete and technology-assisted learning tools on developing the conception of place value, mathematical achievement and arithmetical performance of primary school 4th graders. The study group was comprised of three different primary schools. There were no group differences prior to intervention based on the scores obtained from “Place Value Test”, “Mathematics Achievement Test” “Arithmetic Performance Test”. The study has been conducted over 8 class hours with two experimental and a control group. Results showed that; place value conception, mathematical achievement and arithmetic performance achievement of experimental groups using concrete (trial 1) and technology-assisted (trial 2) learning tools was higher than the control group where no intervention has been made. No significant difference has been observed between the “Place Value Test” and “Mathematics Achievement Test” post-test and retention test score averages of Trial 1 and Trial 2 groups, but there was a significant difference between trial groups and control group. According to the retention test results, obtained three weeks after the practice, all the groups did remember what has been taught to them. In this sense, it is deemed to be important to use effectively designed teaching tools in mathematics education to improve the achievement levels of students.

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Keywords: arithmetic performance; concrete tools; digital material; mathematics achievement; place value

1. Introduction

The ever-growing importance of mathematical skills in reaching academic and professional success in the modern world is an undeniable fact. When teaching mathematics, the highly complicated processes of the subject-specific cognitive development must be taken into consideration. In general, the development of numerical skills takes place at a different rate for each child. In particular, the fact that individuals

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with difficulties in learning mathematics lag two-years behind their peers (Shalev, 2004) led researchers to provide additional learning opportunities that aim to give education together with their peers in standard classes and increase their potential. Early detection of individuals with lower achievement levels in mathematics and the effectiveness of the education provided to such students are deemed to be important in leading them to achievement (Olkun, Altun, Cangöz, Gelbal & Sucuoğlu, 2012), since brain plasticity is at a very high level during early ages (Zamarian, Ischebeck & Delazer, 2009). As the brain is more flexible during the younger years in terms of learning, renewing and changing abilities, intervention (education) programs are now being developed for younger children (Griffin, Case & Siegler, 1994; Whyte & Bull, 2008; Wilson, Revkin, Cohen, Cohen & Dehaene, 2006). One of the areas where intervention programs are being used in mathematics education is the place value concept.

1.1. Place Value Concept

Each figure in a multi-digit number takes-up a value depending on its position. This is called the place value. Place value is a complicated system that is difficult to indicate. Furthermore, place value (PV) concept also constitutes the basis of many areas of mathematics programs in schools. Because the number system we are using is a precondition in areas such as arithmetic and evaluation works. PV concept is the building stone of multi-digit operations, particularly for those related to arithmetic development.

Despite being very important for mathematics education, the concept of PV is probably the biggest challenge for kids up to that point regarding numbers. Because PV concept was not so important in the past for the learning processes of students and it was thought that children would grasp this concept in no time (Olkun & Toluk-Uçar, 2018). As a result, many children are facing difficulties in learning PV concepts and mastering related skills (Baroody, 1990).

1.2. The Relation between Mathematics Achievement, Arithmetical Performance and Place Value Concepts

Individuals having difficulties in learning mathematics are also finding it difficult to understand simple number concepts and lack the intuition of perceiving numbers. They experience problems in learning numerical conditions and making calculations. Even if they provide correct answers to questions or use the right method, they may do it mechanically and without any confidence (Education-Skills, 2001). They have difficulties in performing simple arithmetic works (Shalev et al, 2001) and performing skills based on remembering when solving verbal problems (Geary, 2004). They have difficulties in estimating the size and dimension of numbers. They are insufficient in understanding the relation between numbers (Sharma, 2015). They are slow in grasping numbers and working with numbers (Geary, 2004).

It has been reported that students with particular difficulties in understanding mathematics are finding it difficult in integrating numbers into place value structure (Dietrich, Huber, Dackermann, Moeller & Fischer, 2016). The difficulties in understanding the place value system is deemed as a great obstacle for the mathematical development of students (Chan et al., 2014; Nataraj & Thomas, 2007), because understanding PV is a basic numerical skill and forms the basis of the following numerical development. Understanding the PV concept is located right at the center of developing number sense and forms the basis of four basic operations of mathematics (addition, subtraction, multiplication and division) (Nataraj & Thomas, 2007). PV concept constitutes the infrastructure of many areas in school mathematic programs and a comprehensive grasp of this concept has a significant effect on learning many themes such as whole numbers, decimal numbers, problem solving, and percentages among others (Andreasen, 2006; Chan et al, 2014). Therefore, a grasp of PV concept by students acts as an important pre-condition skill factor for their future achievement in mathematics (McGuire & Kinzie, 2013; Nataraj & Thomas, 2007; Sarı & Olkun, 2019). In other words, a flexible understanding of place value plays an important role in learning and understanding mathematics (Ladel & Kortenkamp, 2016).

Despite the general assumption by researchers that PV concept is an important factor for the arithmetic achievement of students and understanding several areas of mathematics (percentage, fraction etc.), the studies conducted reveal that most of the students are deprived of the understanding of PV concept (Baroody, 1990; Cooper & Tomayko, 2011; Dinç-Artut & Tarım, 2006; Thomas, 2004; Ian Thompson, 2000; Thouless, 2014; Tosun, 2011). For instance; a study conducted by Cooper and Tomayko (2011) has reported that students deprived of the PV idea have considered the numbers “26” and “62” to be the same. Similarly, a study by Thouless (2014) reported that students had difficulties in understanding the concept of decimal base, which led them fail to develop a skill of correctly solving mathematic-based verbal problems. This is an indication that the students have a limited understanding of the PV concept.

The limited understanding of PV concept by students can be seen in the domestic body of literature too. A study by Dinç-Artut and Tarım (2006) asked primary school students to give as many tokens as the number seen in the units digit of number “16” and they did extend the correct amount of tokens (6 of them), however they only gave 1 token for the tens digit, instead of 10 units. Tosun (2011) reported that primary school 5th grade students were unable to distinguish between place value and face value and unable to understand the relation between them.

Looking at the findings in the domestic and international literature as a whole; it can be said that many students from all levels are experiencing significant difficulties with regards to PV concept. This failure in understating PV concept is limiting the future mathematics achievement of both normal developing children and of those having

difficulties in learning mathematics and causes hardships in the education of many children (Byrge, Smith & Mix, 2014). Insufficient development of PV concept can lead to negative consequences in terms of mathematics achievement of students. In primary school level mathematics in particular, basic arithmetic based on place value can obstruct or slow down conceptual understanding of algorithms (Cooper & Tomayko, 2011). In case this deficiency of understanding is not rectified, the gap arising from the place value idea will make it even harder for children to deal with more complicated algorithms (Cuffel, 2009).

1.3. Concrete and Technology-Assisted Tools in Mathematics Education

Concrete (manipulative) tools are objects designed to clearly and tangibly represent abstract mathematical ideas (Moyer, 2001). In other words, concrete manipulatives or physical manipulatives are objects that are used as tools that help students to try and explore mathematical concepts (Demetriou, 2016). Concrete tools are important as they help mathematics to become meaningful for students by ensuring some concepts, theories and operations to be expressed tangibly; contribute to create an environment where students are made to feel that they are learning and ensure students gain a positive attitude towards mathematics (Bulut, Çömlekoğlu, Özkaya-Seçil, Yıldırım & Tuncay-Yıldız, 2006).

Concrete tools, along with advancements in technology, merge the beneficial aspects of concrete manipulatives and the unique capabilities of computer technology to create a new manipulative class (virtual or computer-based manipulatives) (Burns & Hamm, 2011). In this sense, technology-assisted (virtual) manipulatives are the interactive, web-based virtual presentations of dynamic objects that offer opportunities for creating mathematical information (Demetriou, 2016). Virtual manipulatives are tools that can be used by students to solve their troubles when creating connections between mathematical concepts and operations and they provide interactive environments where students can get instant feedback about their actions (Durmuş & Karakırık, 2006). In this sense, virtual manipulatives are dynamic, interactive, flexible and easy to manage (Petit, 2013).

A review of the body of literature indicates that the use of concrete and technology-assisted manipulatives in mathematics education have different kinds of impacts on the achievement of students. In other words, studies have yielded different findings with regards to the impact of using concrete and virtual manipulatives on the mathematics achievement of students in teaching mathematics. Some studies indicate that the use of concrete tools have an impact on the achievement of students (Kontaş, 2016; Larbi & Mavis, 2016; Olkun, 2003). For instance, Kontaş (2016) conducted a study with 7th graders, concluding that the use of concrete tools in geometry increased the achievement of students compared to those who did not use any and that it also had an impact on the attitudes of the students. Larbi and Mavis (2016) concluded that the concrete tools, algebra tiles, used in their study had an impact on the students' achievement in algebra.

Some studies indicate that the use of virtual tools have an impact on the mathematics achievement of students (Demetriou, 2016; Olkun, 2003; Reimer & Moyer, 2005). Demetriou (2016) reported that even though both concrete and virtual manipulatives are developing the symmetry capabilities of students, use of virtual manipulatives can increase the student performance more than the use of concrete manipulatives. Reimer and Moyer (2005), on the other hand, conducted a study with third grade students with regards to virtual manipulatives and fractions and reported a statistically meaningful development in the conceptual knowledge of students and a meaningful relation between the final test scores of the students in terms of their conceptual and procedural knowledge.

There are other studies which conclude there are no meaningful differences between the use of concrete and virtual tools in teaching mathematics (Fung, 2005; Yuan, Lee & Wang 2010; Kablan, Baran, Işık, Kal & Hazar, 2013; Suh & Moyer, 2007; Yaman & Şahin, 2013). For instance, Fung (2005) reported the use of both concrete and virtual manipulatives develop the spatial capabilities of students. However, no evidence was produced with regards to one being better than the other. Similarly, an empirical study by Kablan, Baran, Işık, Kal and Hazar (2013) compared PowerPoint teaching materials with concrete teaching materials but no meaningful difference has been observed between the successes of groups.

All these findings are evidence that the use of manipulatives in teaching mathematics have a small or medium size impact on the learning capabilities of students (Carbonneau, Marley & Selig, 2013). However, the number of studies comparing the use of concrete and computer-assisted manipulatives is limited and it is difficult to generalize such studies among mathematical concepts and class levels (Burns & Hamm, 2011). Therefore, it is possible to say that there is a need for more studies where concrete and technology-assisted tools are used in learning environments.

In conclusion, the conducted studies have shown that scientific learning environments based on educational interventions are being designed to develop the concept of PV. Even though the educational interventions are providing the authors with some kind of idea about the development of PV concept, the limitations of these studies need to be tackled, through the currently designed study. This is deemed to be important so that the outcomes can be generalized at a wider scale and that these educational materials can be used in real classes. From this point of view, the purpose of this study is to examine the effects of concrete and technology-assisted tools on the place value achievement, mathematics achievement and arithmetic performance of primary school fourth grade students with lower achievement levels in mathematics. This study has made contributions in terms of comparing the effects of concrete and technology-assisted tools used in learning- teaching environments and to reveal such effect. In particular, trying to reveal the effects of learning environments achieved through concrete and technology-assisted education intervention oriented towards place value concept on the mathematics achievement and arithmetic

performance of students is another valuable aspect of this study. Within the scope of the mentioned purpose and importance, the problems and sub-problems of the study are given below:

Problem: Does a teaching process not including any concrete tools, technology-assisted materials and any interventions have any effect on the place value achievement, mathematics achievement and arithmetic performances of students studying in primary school 4th grade?

Under the scope of the aforementioned problem, answers have been sought for the following sub-problems:

- 1) Is there a meaningful difference between the “place value achievement test” pre-test-final test and retention test score averages of primary school 4th grade students in terms of the type of tool (concrete, technology-assisted, no intervention) used during the teaching process?
- 2) Is there a meaningful difference between the “mathematics achievement test” pre-test-final test and retention test score averages of primary school 4th grade students in terms of the type of tool (concrete, technology-assisted, no intervention) used during the teaching process?
- 3) Is there a meaningful difference between the “arithmetic performance test” pre-test-final test and retention test score averages of primary school 4th grade students in terms of the type of tool (concrete, technology-assisted, no intervention) used during the teaching process?

2. Method

2.1. Research Design

This research has been conducted as a 3x3 split-plot factorial (mixed) design. In mixed designs, there are at least two independent variables whose effects on dependent variable are being examined. One of these variables defines different empirical action conditions while the other defines the recurring measurements of participants in different times (Büyüköztürk, Çakmak, Akgün, Karadeniz & Demirel, 2016, p.215). The first parameter specified in factorial design refers to the type of tool used in the study group while the second parameter refers to the number of measurements made in each group. The independent variable of the study is the type of tool used during the teaching process. Independent variable has three dimensions, namely; not using any kind of tools at all, using concrete tools and use of technology-assisted materials. Dependent variables of the research are students’ place value achievement, mathematics achievement and arithmetic performance levels. Symbolic view of research design is given in Table 1.

Table 1. Symbolic view of research design

Group	Pre-test		Post test	Retention test
G ₁	O ₁ , O ₂ , O ₃		O ₄ , O ₅ , O ₆	O ₇ , O ₈ , O ₉
G ₂	O ₁ , O ₂ , O ₃	X ₁	O ₄ , O ₅ , O ₆	O ₇ , O ₈ , O ₉
G ₃	O ₁ , O ₂ , O ₃	X ₂	O ₄ , O ₅ , O ₆	O ₇ , O ₈ , O ₉

G₁: Learning environment where students are thought without any interventions (Control)

G₂: Learning environment where concrete tools are used (Trial 1)

G₃: Learning environment where technology-assisted learning tools are used (Trial 2)

O₁: Place value achievement pre-test

O₂: Mathematics achievement pre-test

O₃: Arithmetic performance post test

O₄: Place value achievement post test

O₅: Mathematics achievement post test

O₆: Arithmetic performance post test

O₇: Place value achievement retention test

O₈: Mathematics achievement retention test

O₉: Arithmetic performance retention test

X₁: Use of concrete tools

X₂: Use of technology-assisted learning tools

Despite being a strong research model, factorial design does at the same time contain some weaknesses such as the risk of awareness mitigation of the subjects as multiple measurement tools are distributed to the groups. Therefore, it is suggested to perform some monitoring works a certain while after completing the empirical action (Heppner, Kivlighan & Wampold, 1999). In this sense, three weeks after the end of the trail a retention test has been conducted to see whether the impact of the teaching is still on.

2.2. Study Group

The study group of the research consisted of 4th grade students from three different public primary schools with intermediate socio-economic levels located in Nevşehir province. Group matching method has been employed for determining the study group of the research. This method works by defining groups that are equal and/or close in terms of the averages of relevant variables (quoted by Büyüköztürk from Eckhardt & Ermann, 2014, p. 22). In order to conduct such a group matching, 370 4th grade students from three different primary schools have been subjected to "Place Value Test [PVT]", "Mathematic Achievement Test [MAT]" and "Arithmetic Performance Test [APT]". In every school, the bottom 25% group who received low scores from each one of these tests has been included in the research. With regards to the general average of the groups, students below 6,91/ for PVT (The highest possible score from the test is 21), below 4,58/ for MAT (The highest possible score from the test is 24) and below 46,20/ for APT (The highest possible score from the test is 200) have been included in the study groups. The average and standard deviation values of the scores obtained by the groups through the measuring tools applied as pre-test are shown in Table 2.

Table 2. The Average and Standard Deviation Values Related to Pre-Test Scores Obtained by Trial 1, Trial 2 and Control Groups from Tests

Placement Test	Groups	N	\bar{X}	sd
Place Value Test	Trial 1**	19	5.36	3.16
	Trial 2***	23	5.91	1.86
	Control	21	4.38	2.11
Mathematics Achievement Test	Trial 1	19	4.05	1.61
	Trial 2	23	4.13	1.18
	Control	21	3.19	1.88
Arithmetic Performance Test	Trial 1	19	45.73	21.95
	Trial 2	23	44.08	13.94
	Control	21	41.47	15.21

** Trial 1, Learning environment using concrete tools

*** Trial 2, Learning environment using technology-assisted learning tools

As indicated in Table 2, the place value test average of Trial 1 group (concrete) is $\bar{X} = 5.36$, Trial 2 group's (technology-assisted) average is $\bar{X} = 5.91$ and Control group's average is $\bar{X} = 4.38$. Trial 1 group's mathematics achievement test average is $\bar{X} = 4.05$, Trial 2 group's average is $\bar{X} = 4.13$ and Control group's average is $\bar{X} = 3.19$. And in terms of arithmetic performance test averages, Trial 1 average is $\bar{X} = 45.73$, Trial 2 average is $\bar{X} = 44.08$ and Control group average is $\bar{X} = 41.47$.

2.3. Data Collection Tools

During the data collection phase of the current study; participants included in the trial and control groups have been subjected to place value test, mathematic achievement test and arithmetic performance test as pre-test, post-test and retention test.

Place value test has been developed by Sarı and Olkun (2019). The test contains a total of 21 questions containing grouping and ungrouping skills related to the place value concept. The questions are related to reading and writing numbers based on place value. A reliability study by Sarı and Olkun (2019) conducted on a total of 175 people reported the KR-20 coefficient as .84. In this study the KR-20 reliability coefficient has calculated as .86 over a total of 370 people.

Mathematics achievement test has been developed by Fidan (2013) based on primary school 4th grade mathematics curriculum (Ministry of National Education, 2015). It contains such topics as counting numbers, number patterns, four operation questions and problems and fractions among others. The KR-20 reliability coefficient of the test has been calculated as .96, while the reliability coefficient of the current test has been calculated as .91. The duration of the test is one class hour.

Arithmetic performance test has been developed by De Vos (1992) and adopted into Turkish by Olkun, Can, and Yeşilpınar (2013) and it consists of arithmetic operations (addition, subtraction, multiplication and division). It consists of a total of 200 questions, with 40 questions in each column. First column is about addition, 2nd column is subtraction, 3rd column is multiplication, 4th column is division and 5th column is about mixed operations. Applied as a limited-time test, Olkun et al. (2013) found the KR-20 reliability coefficient as .95. KR-20 coefficient has been calculated as .94 in this study. Each column is distributed separately to the students during the test and the recommended duration for each column is 1 minute.

2.4. Research Process

The stages followed during the research process are shown in Figure 1. During the first stage of the research process, the concrete tools to be used in the study have been identified and the technology-assisted material has been developed. The process of developing technology-assisted materials and the scope of the material has been explained by Sarı, Aydoğdu and Özaydın-Aydoğdu (2019).

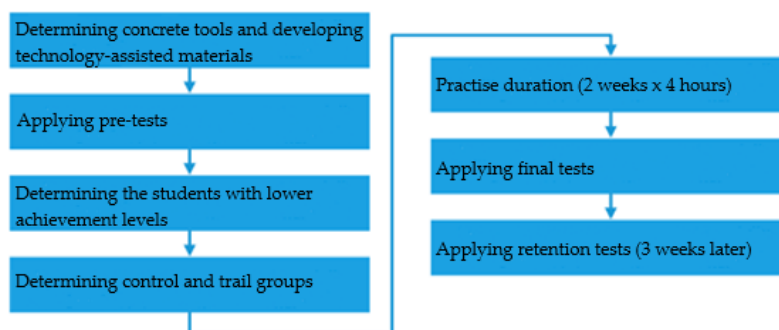


Figure 1. Stages followed during the research process

As already specified under the study group title, pre-tests have been conducted to identify the students to take part in the research. Students with lower achievement rates in the pre-tests have been included to the research. Afterwards, the control and trial groups of the research have been formed. Groups have been randomly assigned as trial or control groups.

The actual practice for both trial groups and control group lasted 8 class hours (2 weeks). Groups have been subjected to retention test following a three-week break. Mathematics classes in trial and control groups have been held for 4 hours per week.

In Trial 1 group, concrete tools have been used to perform activities oriented towards the place value concept. As concrete tools, Dienes blocks and Snapcube have been used. In Trial 2 group, educational digital materials, related to place value concept have been used. The concrete tools and digital materials were described in ESM (see Appendix A). No intervention has been made during the learning-teaching process of the control group.

Students continued to receive education in their own classrooms. During the pre-test, final-test and retention test stage, students have been taken from their classes and subjected to the tests.

2.5. Data Analysis

Before deciding on which analysis technique is to be used, data have been reviewed to see if they meet normality assumptions. One of the other conditions of checking normality assumption is to interpret Skewness and Kurtosis values. Data of independent variables indicate that Skewness and Kurtosis values are lower than the accepted threshold of 1.96 (Can, 2014). In this sense, it has been decided that data are distributed normally and parametric statistical analysis methods could be used. One-Way Analysis of Variance (ANOVA) has been used for the comparison of pre-test score averages obtained from the groups (Büyüköztürk, 2010, p.48-54; Can, 2014, p.147-158).

In order to interpret the "Place Value Test", "Mathematic Achievement Test" Arithmetic Performance Test" scores obtained during the pre-test, final-test and retention test stages of the experimental design, Two-Way ANOVA method for Mixed Measurements has been used. With regards to the groups formed in accordance with the methods used for the research, Two-Way ANOVA method for Mixed Measurements can be used to test the difference between the scores obtained by the groups in the repetitive measurements and also to test the difference between measurements regardless of groups (Büyüköztürk, 2010). Analyses have been conducted by using SPSS 20.00 package program.

3. Findings

3.1. Findings Related to the Difference between Control and Trial Groups' Place Value Achievement and Pre-test, Final-test and Retention Scores

ANOVA results related to the average pre-test score differences for place value achievement are given in Table 3.

Table 3. ANOVA results related to the place value achievement pre-test scores of the control and trial groups of the study

Groups		N	Df	Mean of Squares	F	p*
Between groups	26.229	19	2	13.115	2.279	.111
Inter-groups	345.200	23	60	5.753		
Total	371.429	21	62			

*p<.05

Looking at the results of One-Way Analysis of Variance (ANOVA) (Table 3), held to determine if there are any meaningful differences between the pre-test score averages obtained by trial and control groups from place value test, there are no meaningful differences between the place value $[F(2-60)= 2.279, p> .05]$, pre-test score averages of the groups involved in the research. Therefore, it is safe to say that groups were on an equal level in terms of place value achievement pre-test scores before the commencement of the research.

The average and standard deviation values per group of the scores obtained by students from pre-test, post-test and retention tests are given in Table 4.

Table 4. Place value achievement test average and standard deviation values

Groups	PRE-TEST			POST-TEST			RETENTION		
	N	\bar{X}	S	N	\bar{X}	S	N	\bar{X}	S
Control group	21	4.38	2.11	21	7.38	4.59	21	8.14	4.13
Concrete Tools	19	5.37	3.17	19	13.11	4.95	19	13.32	4.96
Technology-assisted	23	5.91	1.86	23	13.35	2.90	23	14.70	2.98

Regarding the place value achievement test of the control group students, their pre-test average score is $\bar{X}=4.38$, final-test average score is $\bar{X}=7.38$ and retention test average score is $\bar{X}=8.14$. The average scores obtained from the same test by the students taught by using concrete tools are $\bar{X}=5.37$ for pre-test, $\bar{X}=13.11$ for final- test and $\bar{X}=13.32$ for retention test. Finally, the students taught by using technology-assisted tools scored a pre-test score average of $\bar{X}= 5.91$, final-test score average of $\bar{X}= 13.35$ and retention test score average of $\bar{X}=14.70$ from the same test. ANOVA test results comparing the average scores of groups and measurements are given in Table 5.

Table 5. ANOVA results of place value achievement test pre-test-final test-retention scores

Variance source	SS	df	SM	F	p*	η^2
Between Subjects	2613.619	62				
Group (Concrete tool-tech-assisted-control group)	813.644	2	406.822	13.561	.000	.311
Error	1799.975	60	30.000			

Inter-Subjects	2528.257	126				
Measurement (pre-test – final-test - retention)	1752.162	2	876.081	184.202	.000	.754
Group*Measurement	205.365	4	51.341	10.795	.000	.265
Error	570.730	120	4.756			
Total	5141.876	188				

*p<.05

Data given in Table 5 indicates that group*measurement factor has a joint effect on dependent variable. According to this, there is a meaningful difference between the place value achievement test scores of students learning in different learning environments $F(4,120)=10.795$, $p<.05$. In order to identify the two sub-groups whose difference has caused this effect, one of the post-hoc methods, “Scheffe” test has been applied.

Table 6. Post-hoc results of place value achievement test scores

Group	Measurement	Control group			Concrete tool			Technology-assisted		
		Pre-test	Post-test	Retention	Pre-test	Post-test	Retention	Pre-test	Post-test	Retention
Control group	Pre-test	-	-3.00	-3.76	-.99	-8.72*	-8.93*	-1.50	-8.97*	-10.31*
	Post-test		-	-.76	2.01	-5.72*	-5.93*	1.47	-5.97*	-7.31*
	Retention			-	2.77	-4.96*	-5.17*	2.23	-5.20*	-6.55*
Concrete tool	Pre-test				-	-7.74*	-7.95*	-.54	-7.98*	-9.33*
	Post-test					-	-.21	7.19*	-.24	-1.59
	Retention						-	7.40*	-.03	-1.38
Technology-assisted	Pre-test							-	-7.43*	-8.78*
	Post-test								-	-1.35
	Retention									-

*p<.05

According to the multiple comparison results between groups and measurements (Table 6), there is a meaningful difference between the pre-test ($\bar{X} = 5.37$) – post-test ($\bar{X} = 13.11$) and pre-test ($\bar{X} = 5.37$) – retention test ($\bar{X} = 13.32$) scores of the students who learned by using concrete tools. Furthermore, the analysis result indicates that there is no meaningful difference between the post-test ($\bar{X} = 13.11$) and retention test ($\bar{X} = 13.32$) score averages of the students in this group. Based on this finding, it can be said the place value achievement of the students using concrete tools has increased following the trial. In addition, the fact that there is no meaningful difference between the final test and

retention test results of the students makes it possible to say that the knowledge learned with regards to place value concept has not been forgotten.

Following the post hoc analysis, a meaningful difference has been observed between the pre-test ($\bar{X} = 5.91$) – final test ($\bar{X} = 13.35$) and pre-test ($\bar{X} = 5.91$) – retention test ($\bar{X} = 14.70$) scores of students who used technology-assisted learning materials. There is no meaningful difference between the score averages obtained by these students from final-test ($\bar{X} = 13.35$) and retention test ($\bar{X} = 14.70$). According to this, after the experiment there was an increase in the place value achievement of students using technology-assisted learning materials. Furthermore, having no difference between the final test and retention test is an indication that the students did not forget what they have learned about place value concept.

No meaningful difference has been observed between the pre-test score average ($\bar{X} = 4.38$) – final test score average ($\bar{X} = 7.38$) and retention test score average ($\bar{X} = 8.14$) scores obtained from the place value achievement test by the control group students. In the non-intervention group, the place value achievement of the students had continuously increased according to the measurements. Even though there was an increase in the place value achievement of the students in this group, comparing the differences between the groups leads us to the conclusion that students subjected to an experimental action are more successful. Measurement differences between groups have been compared and can be found below.

According to the multiple comparison analysis, there is a meaningful difference between the place value post-test achievement score average ($\bar{X} = 13.11$) of the students using concrete tools and the post-test achievement score ($\bar{X} = 7.38$) of the control group not subjected to any interventions. Similarly, there is a meaningful difference between the place value post-test achievement score average ($\bar{X} = 13.35$) of the students using technology-assisted materials and the post-test achievement score ($\bar{X} = 7.38$) of the control group not subjected to any interventions. However, there is no meaningful difference between the place value post-test achievement score average ($\bar{X} = 13.11$) of the students using concrete tools and the place value post-test achievement score average ($\bar{X} = 13.35$) of the students using technology-assisted materials. This finding suggests that the place value achievement of students in trial groups is higher than those in the control group. The fact that there is no difference between the students using concrete tools and the students using technology-assisted material is an indication that these tools have similar effects on the place value achievement of the students.

A review of the place value achievement scores obtained from the retention test indicates a meaningful difference between the score averages of students using concrete tools ($\bar{X} = 13.32$) and control group students ($\bar{X} = 8.14$). Similarly, there is a meaningful difference between the place value achievement score average obtained from retention test by students using technology-assisted material ($\bar{X} = 14.70$) and the achievement score

average of control group students ($\bar{X} = 8.14$). Finally, in all of the measurements there is no meaningful difference between the place value achievement test average scores of the students using concrete tools ($\bar{X} = 13.32$) and students using technology-assisted material ($\bar{X} = 14.70$). This finding indicates that the effect of the experimental action continues in a similar way in trial groups. At the same time, comparing the retention test scores of trial and control groups indicates a higher place value achievement in favor of the trial group students.

3.2. Findings Regarding the Difference between Mathematics Achievement and Pre-test, Post-test and Retention Scores of Control and Trial Groups

ANOVA results related to the average score differences, between and inter-groups, by the students obtained from mathematics achievement pre-test, is given in Table 7.

Table 7. ANOVA results related to the mathematics achievement test pre-test scores of the control and trial groups

Groups		N	df	Mean of Squares	F	p*
Between groups	11.523	19	2	5.762	2.323	.107
Inter-groups	148.794	23	60	2.480		
Total	160.317	21	62			

*p<.05

Looking at the results of the One-Way Analysis of Variance (ANOVA), held to determine whether there are any meaningful differences between the pre-test scores averages obtained by the trial and control groups from mathematics achievement test (Table 7), there is no meaningful difference between the mathematics achievement test [$F[2-60] = 2.323$, $p > .05$] pre-test score averages of the groups involved in the study. This finding is an indication that the groups were at a similar mathematics achievement level before the trial.

Concerning the second sub-problem of the research, “Is there a meaningful difference between the “mathematics achievement test” pre-test-post-test and retention test score averages of primary school 4th grade students in terms of the type of tool (concrete, technology-assisted, no intervention) used during the teaching process?”, the average and standard deviation values obtained by students in pre-test, post- test and retention tests is given in Table 8.

Table 8. Mathematics achievement test average and standard deviation values

Groups	PRE-TEST			POST-TEST			RETENTION		
	N	\bar{X}	S	N	\bar{X}	S	N	\bar{X}	S

Control group	21	3.19	1.89	21	4.67	3.61	21	5.00	3.54
Concrete Tools	19	4.05	1.61	19	10.16	4.17	19	8.68	3.62
Technology-assisted	23	4.13	1.18	23	10.09	2.68	23	7.70	2.44

According to the mathematics achievement test score averages given in Table 8, mathematics achievement test pre-test average score of the control group students is $\bar{X}=3.19$, post-test average score is $\bar{X}=4.67$ and retention test average score is $\bar{X}=5.00$. The average scores obtained from the same test by the students using concrete tools have been calculated as $\bar{X}=4.05$ for pre-test, $\bar{X}=10.16$ for post-test and $\bar{X}=8.68$ for retention. Students using technology-assisted tools had pre-test score average of $\bar{X}=4.13$, final test score average of $\bar{X}=10.09$ and retention test score average of $\bar{X}=7.70$ for the same test. ANOVA results testing the difference between the average scores are given in Table 9.

Table 9. ANOVA results of mathematics achievement test pre-test-final test-retention scores

Variance source	SS	df	SM	F	p*	η^2
Between Subjects	424.509	2	212.255	11.726	.000	.281
Group (Concrete tool-tech-assisted-control group)	1086.062	60	18.101			
Error	1248.635	126				
Inter-Subjects	686.190	2	343.095	100.241	.000	.626
Measurement (pre-test – final-test - retention)	151.719	4	37.930	11.082	.000	.270
Group*Measurement	410.726	120	3.423			
Error	2759.206	188				
Total	424.509	2	212.255	11.726	.000	.281

*p<.05

According to the ANOVA results, given in Table 9, of the score averages obtained from mathematics achievement test, the group*measurement factor has a joint effect on the dependent variable. According to this finding, there is a meaningful difference in the mathematics achievement test scores of the students, depending on the type of material they are using $F(4, 120)=11.082$, $p<.05$. Scheffe test has been performed to identify the groups and measurements where these differences have occurred.

Table 10. Post-hoc results of mathematics achievement test scores

Control group	Concrete tool	Technology-assisted
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Group	Measurement	Pre-test	Post-test	Retention	Pre-test	Post-test	Retention	Pre-test	Post-test	Retention
Control group	Pre-test	-	-1.48	-1.81	-.86	-6.97*	-5.49*	-.94	-6.90*	-4.51*
	Post-test		-	-.33	.61	-5.49*	-4.02*	.54	-5.42*	-3.03
	Retention			-	.95	-5.16*	-3.68*	.87	-5.09*	-2.70
Concrete tool	Pre-test				-	-6.11*	-4.63*	-.08	-6.03*	-3.64*
	Post-test					-	1.47	6.03*	.07	2.46
	Retention						-	4.55*	-1.40	.99
Technology-assisted	Pre-test							-	-5.96*	-3.57*
	Post-test								-	2.39
	Retention									-

*p<.05

According to Scheffe test findings (Table 10), there is no meaningful difference in the pre-test ($\bar{X} = 3.19$), post-test ($\bar{X} = 4.67$) and retention ($\bar{X} = 5.00$) test score averages of the control group students in their mathematics achievement. According to this finding, no progress has been observed in the development of mathematics achievement of the students not subjected to any intervention.

There is a meaningful difference between the mathematics achievement test score averages pre-test ($\bar{X} = 4.05$) – post-test ($\bar{X} = 10.16$) and pre-test ($\bar{X} = 4.05$) – retention test ($\bar{X} = 8.68$) results of the students using concrete tools. But there is no meaningful difference between the post-test ($\bar{X} = 10.16$) and retention test ($\bar{X} = 8.68$) score averages of the students in this group. This finding could be an indication that there is an increase in the mathematics achievement of students using concrete tool after the experiment and also that the effect is still on-going.

Similarly, there is also a meaningful difference in the mathematics achievement test score averages pre-test ($\bar{X} = 4.13$) - post-test ($\bar{X} = 10.09$) and pre-test ($\bar{X} = 4.13$) - retention ($\bar{X} = 7.70$) test of the students using technology-assisted materials. There is no meaningful difference between the score averages obtained by these students in post-test ($\bar{X} = 10.09$) and retention ($\bar{X} = 7.70$) test. According to this, it can be said that the achievement rate of the students using technology-assisted material has increased following the experiment and the effect of the experiment is still ongoing.

Analyzing the differences between groups on the basis of the measurements taken in post-hoc analysis, there is a meaningful difference in the mathematics achievement post-test score averages; between the control group students ($\bar{X} = 4.67$) and students using concrete tool ($\bar{X} = 10.16$) and control group students ($\bar{X} = 4.67$) and students using technology-assisted material ($\bar{X} = 10.09$), but there is no meaningful difference between

students using concrete tool ($\bar{X} = 10.16$) and students using technology-assisted material ($\bar{X} = 10.09$). According to this finding, mathematics achievement of the students subjected to experimental action was higher than that of the control group students. In addition to this, there was no difference in terms of mathematics achievement between trial groups (concrete-technology-assisted). This can be interpreted as concrete tools and technology-assisted materials have similar kind of effects on the development of mathematics achievement of students.

Looking at the score averages of the retention test, there is a meaningful difference between control group students ($\bar{X} = 5.00$) and the students who used concrete tools ($\bar{X} = 8.68$).

3.3. Findings Regarding the Difference between Arithmetic Performance Test Achievement and Pre-test, Final-test and Retention Scores of Control and Trial Groups

The results of ANOVA, held to analyze the difference between the pre-test score averages obtained by students from the arithmetic performance test, is presented in Table 11.

Table 11. ANOVA Results Related to the Arithmetic Performance Test Pre-test Scores of Trial 1, Trial 2 and Control Groups

Groups		N	df	Mean of Squares	F	p*
Between groups	186.109	19	2	93.054	.318	.729
Inter groups	17580.748	23	60	293.012		
Total	17766.857	21	62			

*p<.05

According to the One-Way Analysis of Variance (ANOVA) results (Table 11), held to identify any meaningful differences between the pre-test score averages obtained by the groups from the arithmetic performance test, there is no meaningful difference between the groups in terms of arithmetic performance test [F(2-60)=.318, p> .05] pre-test score averages.

Table 12. Arithmetic performance test average and standard deviation values

Groups	PRE-TEST			POST-TEST			RETENTION		
	N	\bar{X}	S	N	\bar{X}	S	N	\bar{X}	S
Control group	21	41.48	15.21	21	51.10	17.63	21	55.86	21.71
Concrete Tools	19	45.74	21.95	19	64.37	23.61	19	58.05	20.91

Technology-assisted	23	44.09	13.95	23	66.48	17.68	23	65.61	17.61
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According to the arithmetic performance test results given in Table 12, the average score obtained by the control group students from pre-test is $\bar{X} = 41.48$, average score obtained from post-test is $\bar{X} = 51.10$ and average score obtained from retention test is $\bar{X} = 55.86$. The average score values obtained from the same test by students using concrete tools has been calculated as $\bar{X} = 45.74$ for pre-test, $\bar{X} = 64.37$ for post-test and $\bar{X} = 58.05$ for retention test. Students using technology-assisted learning material scored a pre-test score average of $\bar{X} = 44.09$, post-test score average of 66.48 and retention test score average of $\bar{X} = 65.61$. ANOVA and post-hoc analysis results, comparing the average scores of groups and differences between measurements are given below.

Table 13. ANOVA results of arithmetic performance test pre-test-final test-retention scores

Variance source	SS	df	SM	F	p*	η^2
Between Subjects	60061.249	62				
Group (Concrete tool-tech-assisted-control group)	2937.591	2	1468.795	1.543	.222	.049
Error	57123.658	60	952.061			
Inter-Subjects	20414.62	126				
Measurement (pre-test – final-test - retention)	11353.552	2	5676.776	88.515	.000	.596
Group*Measurement	1365.011	4	341.253	5.321	.001	.151
Error	7696.057	120	64.134			
Total	424.509	2	212.255	11.726	.000	.281

*p<.05

According to the ANOVA results of the score averages obtained from the arithmetic performance test, as shown in Table 13, group*measurement factor has a joint effect on the dependent variable. According to this finding, the type of material used by students leads to a meaningful difference between the arithmetic performance test scores $F(4, 120)=5.321, p<.05$.

Table 14. Post-hoc results of arithmetic performance test scores

Group	Measurement	Control group			Concrete tool			Technology-assisted		
		Pre-test	Post-test	Retention	Pre-test	Post-test	Retention	Pre-test	Post-test	Retention

Control group	Pre-test	-	-9.62	-14.38	-4.26	-22.89	-16.58	-2.61	-25.00*	-24.13*
	Post-test		-	-4.76	5.36	-13.27	-6.96	7.01	-15.38	-14.51
	Retention			-	10.12	-8.51	-2.20	11.77	-10.62	-9.75
Concrete tool	Pre-test				-	-18.63	-12.32	1.65	-20.74	-19.87
	Post-test					-	6.32	20.28	-2.11	-1.24
	Retention						-	13.97	-8.43	-7.56
Technology-assisted	Pre-test							-	-22.39*	-21.52
	Post-test								-	.87
	Retention									-

*p<.05

According to the Scheffe test results (Table 14), measurements did not yield any meaningful differences between groups. The analysis conducted indicated a meaningful difference between the pre-test ($\bar{X}=44.09$) and post-test scores ($\bar{X}=66.48$) of the students using technology-assisted a material. But in terms of arithmetic performance, there is no other meaningful difference between the measurements among the groups. According to this finding, there was an increase in the mathematics performance of students using a technology-assisted material, following the experiment. The fact that there is no difference between the final test and retention test scores of these students is an indication that the effect of the experiment is still ongoing.

4. Discussion, Conclusions and Recommendations

This current research is examining the effect of concrete and technology-assisted learning tools on developing the place value conception, mathematics achievement and arithmetic performances of students. The findings acquired from this research can be distributed under three different main headlines; the effect of concrete and technology-assisted learning tools on developing the place value conception, on developing mathematics achievement and on developing arithmetic performance.

The effect of both concrete and technology-assisted learning tools on developing the place value perception of primary school 4th grade students is significantly high when compared with students who did not use any such learning tools. In other words, prepared with the purpose of developing place value concept, concrete (Dienes blocks, snap cubes) and technology-assisted (place value materials) learning tools were effective in developing the place value conception of students. The acquired findings are in line with the literature. Previous researches have shown that concrete tools (Broadbent, 2004; Kamii and Joseph, 1988; Moore, 1992; Schmidt, 1995; Valeras & Becker, 1997) and technology-assisted learning tools (Mutlu & Sarı, 2019) have positive effects on developing the place value perception of students. For instance, “decimals-based game” designed by Broadbent (2004)

proved that the use of concrete materials helps students to develop their level of understanding the structure of counting system. Similarly, a study conducted by Mutlu and Sarı (2019) on 3rd grade students reported that computer-assisted educational materials develop the place value understanding of students. Computer-assisted education did not have any meaningful effect on the affective variables of students, such as anxiety and attitude.

Concrete and technology-assisted learning tools helped students to develop their place value conception much higher than the control group students, because concrete learning materials are objects that are used to make abstract mathematical concepts more concrete and they simplify the understanding process of these concepts (Moyer, 2001). Furthermore, technology-assisted learning tools are dynamic, interactive, flexible, manageable and easy to receive feedback (Petit, 2013; Sarama & Clements, 2016) and therefore they provide important opportunities for creating an effective learning-teaching process. Both concrete and technology-assisted tools play important roles in helping students to produce meaningful ideas (Clements, 1999). Concrete and technology-assisted are highly important as they are helping abstract mathematical ideas to be expressed tangibly, making mathematics meaningful for students, and also because they contribute to creating an environment where students can feel the things they are learning (Bulut, Çömlekoğlu, Özkaya-Seçil, Yıldırım & Tuncay-Yıldız, 2006).

One of the important findings of this research was that the comparison of the effect of both concrete and technology-assisted learning tools on developing the place value conception of students did not yield any meaningful difference. In other words, concrete and technology-assisted learning tools had a similar effect on developing the place value concept. A review of the literature did not yield a clear preference between computer and concrete manipulatives in mathematics education (Burns & Hamm, 2011). Some researches emphasize the effect of concrete tools (Clements, 1999; Petit, 2013; Konaş, 2016; Larbi & Mavis, 2016; Sarama & Clements, 2016) while others favor technology-assisted learning tools (Li & Ma, 2010; Turgut & Dogan-Temur, 2017) to have a better effect on mathematics achievement. From this perspective, this current research has shed some valuable light onto this uncertainty as it has revealed the same level of effect by concrete and technology-assisted learning tools on the place value conception of primary school 4th grade students. Concrete and technology-assisted learning tools are particularly useful in comprehensive and well-planned education environments. Environments designed with both concrete and technology-assisted concrete tools provide students with meanings that they can use to build, enhance and bind their mathematical ideas (Clements & McMillen, 1996; Sarama & Clements, 2016).

Another finding of the study is related to revealing the effect of concrete and technology-assisted learning materials, designed to develop the place value conception, on the mathematics achievement and arithmetic performance of primary school 4th grade

students. The learning environment with concrete learning tools, used by the trial groups was more effective on the mathematics achievement of students when compared to the mathematics achievement of control group students. Likewise, the environment using technology-assisted learning tools had a meaningful effect on the mathematics achievement of students when compared to the environment not using such tools. And the use of concrete and technology-assisted learning tools yielded a similar effect on mathematics achievement. In other words, the effect of both concrete and technology-assisted learning tools on developing mathematics achievement of students is at a similar level.

With regards to the effect of concrete and technology-assisted learning environments, designed to develop the place value conception of students, on the arithmetic performances of 4th grade students, the arithmetic performance developing effect on trial groups in technology-assisted learning environment was higher when compared to the control group students and those in a learning environment using concrete tools. The possible reasons for the greater development of arithmetic performance in technology-assisted learning environment could be the content of the educational design, such as various counting strategies (taking a reference at 5 and 10) and grouping/solution strategies.

The reflection of the developed place value conception on both mathematics achievement and arithmetic performance is in line with the findings in literature. Failure to get a grasp of decimal system and place value concept creates difficulties in learning several other related concepts (Sarı & Olkun, 2019), because place value concept is highly important when learning to count (Boulton-Lewis, 1993), four operations, and the technique of operations (Dinç-Artut & Tarım, 2006). At the same time, there are several studies which point out to the critical importance of understanding PV concept in solving a mathematical problem (Fuson et al., 1997). The critical importance of place value in learning to count and performing four operations (Chan et al., 2014), place value performance estimating mathematics performance at a high level (Moeller et al., 2011; Sarı & Olkun, 2019) are important in the mathematics achievement of students. Understanding the concept of place value (PV) is a basic numerical ability and forms the basis of future numerical development. Therefore, place value conception of students acts as a pre-conditional skill for the further mathematics achievement of students (McGuire & Kinzie, 2013; Nataraj & Thomas, 2007). In other words, a flexible understanding of place value plays an important role in learning and understanding mathematics (Ladel & Kortenkamp, 2016).

Another finding of the research is related to the retention test scores. The fact that there is no meaningful difference between the retention test, held three weeks after the trial, and post-test average scores is an indication that practices with both concrete and technology-assisted learning tools make the PV-related acquirements of students permanent. From this perspective, it is possible to say that computer-assisted education is important for ensuring retention of learned knowledge. Computer-assisted education is

seen as a tool that helps knowledge to become permanent (Kula & Erdem, 2005). Findings related to the retention of learned knowledge have similarities with the findings in literature. Knowledge gained in learning environments with computer assisted education software are observed to be more permanent than those gained in environments without such tools (Mutlu & Sarı, 2019).

This research also includes a number of limitations. First of all, both concrete and technology-assisted learning tools have been applied to students with relatively weaker place value conception. In his sense, their effect is unknown on students with ordinary and higher level of achievement. Furthermore, arithmetic performance achievement has developed more in environments using a technology-assisted learning tool. This is something that requires support through future studies. It is also deemed important to expand the samples of the study so that not only the effect of concrete tools and technology-assisted materials on dependent variables is reviewed but the interaction between dependent variables is also analyzed.

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References

- Andreasen, J. B. (2006). *Classroom mathematical practices in a preservice elementary mathematics education course using an instructional sequence related to place value and operations*. University of Central Florida Orlando, Florida.
- Baroody, A. J. (1990). How and when should place-value concepts and skills be taught? *Journal for Research in Mathematics Education*, 21(4), 281–286.
- Boulton-Lewis, G. M. (1993). An analysis of the relation between sequence counting and knowledge of place value in the early years of school. *Mathematics Education Research Journal*, 5(2), 94–106.
- Broadbent, A. (2004). Understanding Place-Value: A Case Study of the Base Ten Game. *Australian Primary Mathematics Classroom*, 9(4), 45-46.
- Bulut, S., Çömlekoğlu, G., Seçil, S.Ö., Yıldırım H. & Yıldız, B.T. (2002). Matematik öğretiminde somut materyallerin kullanılması [Using manipulatives in Teaching Mathematics]. V. *Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi*, Ankara.
- Burns, B. A., & Hamm, E. M. (2011). A comparison of concrete and virtual manipulative use in third and fourth-grade mathematics. *School Science and Mathematic*. 111(6), 256–261.
- Büyüköztürk, Ş. (2010). *Sosyal bilimler için veri analizi el kitabı [The handbook of data analysis for social sciences]* (11 ed.). Ankara: Pegem Akademi.
- Büyüköztürk, Ş. (2014). *Deneyisel desenler [Experimental designs]* (4 ed.). Ankara: Pegem Akademi.
- Büyüköztürk, Ş., Çakmak, E.K., Akgün, Ö.E., Karadeniz, Ş., & Demirel, F. (2009). *Bilimsel araştırma yöntemleri [Scientific research methods]* (4 ed.). Ankara: Pegem Akademi.

- Byrge, L., Smith, L. B., & Mix, K. S. (2014). Beginnings of Place Value: How Preschoolers Write Three- Digit Numbers. *Child development*, 85(2), 437-443.
- Can, A. (2014). *SPSS ile bilimsel araştırma sürecinde nicel veri analizi [Quantitative data analysis in scientific research process with SPSS]* (3 ed). Ankara: Pegem Akademi.
- Carbonneau, K. J., Marley, S. C., & Selig, J. P. (2013). A meta-analysis of the efficacy of teaching mathematics with concrete manipulatives. *Journal of Educational Psychology*, 105(2), 380.
- Chan, W. W. L., Au, T. K., & Tang, J. (2014). Strategic counting: A novel assessment of place-value understanding. *Learning and Instruction*, 29, 78-94. doi: <http://dx.doi.org/10.1016/j.learninstruc.2013.09.001>
- Clements, D. H., & McMillen, S. (1996). Rethinking concrete manipulatives. *Teaching Children Educational Studies in Mathematics*, 47, 175-197.
- Clements, D.H. (1999). "Concrete" manipulatives, concrete ideas. *Contemporary Issues in Early Childhood*, 1 (1): 45-60.
- Cooper, L. L., & Tomayko, M. C. (2011). Understanding place value. *Teaching Children Mathematics*, 17(9), 558-567.
- Cuffel, T. A. (2009). *Linking place value concepts with computational practices in third grade*. University of Central Florida Orlando, Florida.
- De Vos, T. (1992). "Tempo-test rekenen (Number fact retrieval test)." Nijmegen: Berkhout.
- Demetriou, L. (2016). The use of virtual and concrete manipulatives in kindergarten school. *CERME 9 - Ninth Congress of the European Society for Research in Mathematics Education*, Charles University in Prague, Faculty of Education; ERME, Feb 2015, Prague, Czech Republic. pp.1911-1917. hal- 01288463
- Department for Education and Skills. (2001). *Guidance to Support Pupils with Dyslexia and Dyscalculia: The Daily Mathematics Lesson*. Department for Education and Skills.
- Dietrich, J. F., Huber, S., Dackermann, T., Moeller, K., & Fischer, U. (2016). Place-value understanding in number line estimation predicts future arithmetic performance. *British Journal of Developmental Psychology*, 34(4), 502-517. doi: [10.1111/bjdp.12146](https://doi.org/10.1111/bjdp.12146)
- Diñç Artut, P., & Tarım, K. (2006). İlköğretim öğrencilerinin basamak değer kavramını anlama düzeyleri [Elementary students' comprehension of place value concept]. *Eğitimde Kuram ve Uygulama*, 2(1), 26–36.
- Durmus, S., & Karakirik, E. (2006). *Virtual Manipulatives in Mathematics Education: A Theoretical Framework*. Turkish Online Journal of Educational Technology-TOJET, 5(1), 117-123.
- Fidan, E. (2013). *İlkokul öğrencileri için matematik dersi sayılar öğrenme alanında başarı testi geliştirilmesi [Development of achievement tests in the number domain of mathematics course for elementary school students]*. (Unpublished master's thesis), Ankara Üniversitesi, Eğitim Bilimleri Enstitüsü.
- Fuson, K. C., Wearne, D., Hiebert, J., Murray, H. G., Human, P. G., Olivier, A. I., vd. (1997). Children's conceptual structures for multidigit numbers and methods of multidigit addition and subtraction. *Journal of Research in Mathematics Education*, 28,130-162.
- Geary, D. C. (2004). Mathematics and learning disabilities. *Journal of learning disabilities*, 37(1), 4-15.
- Griffin, S., Case, R., & Siegler, R. S. (1994). *Rightstart: Providing the central conceptual prerequisites for first formal learning of arithmetic to students at risk for school failure*. In K. McGilly (Ed.), *Classroom lessons: Integrating cognitive theory and classroom practice* (pp. 25-49). Cambridge, MA: MIT Press.

- Heppner, P. P., Kivlighan, D. M. J. & Wampold, B. E. (1999). *Research design in counseling* (2. ed.). Belmont, CA: Wadsworth.
- Kablan, Z., Baran, T., Işık, Ç., Kal, F. M., & Hazer, Ö. (2013). PowerPoint öğretim materyalleri ile somut öğretim materyallerin öğrenme etkililiği açısından karşılaştırılması [Comparison of powerpoint and concrete teaching materials in terms of learning efficiency]. *Eğitim ve Bilim*, 38(170), 206-222.
- Kamii, C., & Joseph, L. (1988). Teaching Place Value and Double-Column Addition. *Arithmetic Teacher*, 35(6), 48-52.
- Kontas, H. (2016). The Effect of Manipulatives on Mathematics Achievement and Attitudes of Secondary School Students. *Journal of Education and Learning*, 5(3), 10-20.
- Kula, A., & Erdem, M. (2005). Öğretimsel bilgisayar oyunlarının temel aritmetik işlem becerilerinin gelişmesine etkisi [The effect of educational computer games on the development of basic arithmetical operation skills]. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, 29, 127-136.
- Ladel, S., & Kortenkamp, U. (2016). *Development of a Flexible Understanding of Place Value*. In T. Meaney, O. Helenius, M. L. Johansson, T. Lange, & A. Wernberg (Eds.), *Mathematics Education in the Early Years: Results from the POEM2 Conference, 2014* (pp. 289-307). Cham: Springer International Publishing.
- Larbi, E., & Mavis, O. (2016). The Use of Manipulatives in Mathematics Education. *Journal of Education and Practice*, 7(36), 53-61.
- Lee, Y. (2005). Develop students' spatial ability with physical and virtual manipulatives. (Thesis). University of Hong Kong, Pokfulam, Hong Kong SAR. Retrieved from http://dx.doi.org/10.5353/th_b3567780
- Li, Q., & Ma, X. (2010). A Meta-analysis of the effects of computer technology on school students' mathematics learning. *Educational Psychology Review*, 22(3), 215–243. <https://doi.org/10.1007/s10648-010-9125-8>
- McGuire, P., & Kinzie, M. B. (2013). Analysis of Place Value Instruction and Development in Pre-Kindergarten Mathematics. *Early Childhood Education Journal*, 41(5), 355-364. doi: [10.1007/s10643-013-0580-y](https://doi.org/10.1007/s10643-013-0580-y)
- Moore, B. S. (1992). A comparison of two approaches to place-value instruction in first-grade classrooms. (Master's Thesis), San Jose State University, California.
- Moyer, P. S. (2001). Are we having fun yet? How teachers use manipulatives to teach mathematics. *Educational Studies in Mathematics*, 47, 175-197.
- Mutlu, Y. & Sarı, M.H. (2019). İlkokul öğrencilerinin basamak değeri kavrayışlarının geliştirilmesi. *Kastamonu Education Journal*, 27(2), 657-667. doi:10.24106/kefdergi.2645
- Nataraj, M. S., & Thomas, M. O. (2007). Developing the concept of place value. *Mathematics: Essential Research, Essential Practice*, 523-532.
- Olkun, S. (2003). Comparing computer versus concrete manipulatives in learning 2d geometry. *Journal of Computers in Mathematics and Science Teaching*, 22(1), 43-56.
- Olkun, S., Can, D., & Yeşilpınar, M. (2013). Hesaplama performansı testi: geçerlilik ve güvenilirlik çalışması [Calculation performance test: validity and reliability study]. *XII. Ulusal Sınıf Öğretmenliği Eğitimi Sempozyumu*. Aydın: Adnan Menderes Üniversitesi, 89-92.
- Olkun, S. & Toluk-Uçar, Z. (2018). *İlköğretimde etkinlik temelli matematik öğretimi [Activity based mathematics teaching in primary education]*. Nevşehir: Genç Kalemler Yayıncılık.
- Olkun, S., & Sarı, M.H. (2016). Geometric aspect of number line estimations. *13th International Congress on Mathematical Education*, July 24-31, Hamburg, Germany.

- Olkun, S., Altun, A., Cangöz, B., Gelbal, S., & Sucuoğlu, B. (2012). Developing tasks for screening dyscalculia tendencies. Paper presented at the E-Leader, Berlin
- Petit, M. (2013). Comparing Concrete to Virtual Manipulatives in Mathematics Education. *Science Lib*, 5, 130911.
- Reimer, K., & Moyer, P. S. (2005). Third-graders learn about fractions using virtual manipulatives: A classroom study. *Journal of Computers in Mathematics and Science Teaching*, 24(1), 5-25.
- Sarama, J., & Clements, D. H. (2016). *Physical and Virtual Manipulatives: What Is “Concrete”?*. In International perspectives on teaching and learning mathematics with virtual manipulatives(pp. 71-93). Springer, Cham.
- Sarı, M.H., & Olkun, S. (2019). Relationship between place value understanding, arithmetic performance and mathematics achievement in general. *İlköğretim Online*, 18(2), 953-958, [Online]:<http://ilkogretim-online.org.tr>
- Sarı, M.H., Aydoğdu, Ş., & Aydoğdu-Özaydın, Y. (2019). İlkokul 4.sınıfta basamak değeri kavramını geliştirmeye yönelik eğitsel alıştırmaya yazılımının geliştirilmesi. *III. International Congress on Science and Education*, 21-24 March, Afyonkarahisar, Türkiye.
- Schmidt, M. E. (1995). Mathematics intervention: Second grade place value concepts. *Education*, 116(2), 229.
- Shalev, R. S. (2004). “Developmental dyscalculia.” *Journal of Child Neurology*, 19(10), 765-771.
- Shalev, R. S., Manor, O., Kerem, B., Ayali, M., Badichi, N., Friedlander, Y., & Gross-Tsur, V. (2001). Developmental dyscalculia is a familial learning disability. *Journal of learning disabilities*, 34(1), 59-65.
- Sharma, M. C. (2015). *A window into dyscalculia and other mathematics difficulties*. The Routledge international handbook of dyscalculia and mathematical learning difficulties, 277.
- Suh, J., & Moyer-Packenham, P. (2007). Developing students’ representational fluency using virtual and physical algebra balances. *Journal of Computers in Mathematics and Science Teaching*, 26(2), 155-173.
- Thomas, N. (2004). *The Development of Structure in the Number System*. International Group for the Psychology of Mathematics Education.
- Thompson, I. (2000). Teaching Place Value in the UK: Time for a reappraisal? *Educational Review*, 52(3), 291-298. doi: **10.1080/713664046**
- Thouless, H. (2014). Whole-number place-value understanding of students with learning disabilities (Doctoral dissertation).
- Tosun, M. (2011). *İlköğretim öğrencilerinin basamak değeri kavramına ilişkin becerilerinin incelenmesi [The investigation of primary school students' skill in place value]*. (Unpublished master's thesis), Çukurova Üniversitesi, Sosyal Bilimler Enstitüsü.
- Turgut, S., & Dogan-Temur, Ö. (2017). The effect of game-assisted mathematics education on academic achievement in Turkey: A meta-analysis study. *International Electronic Journal of Elementary Education*, 10(2), 195–206.
- Valeras, M., & Becker, J. (1997). Children's developing understanding of place value: Semiotic aspects. *Cognition and Instruction*, 15(2), 265-286.
- Whyte, J. C., & Bull, R. (2008). “Number games, magnitude representation, and basic number skills in preschoolers.” *Developmental Psychology*, 44, 588–596.

- Wilson, A. J., Revkin, S. K., Cohen, D., Cohen, L., & Dehaene, S. (2006). “An open trial assessment of “The Number Race”, an adaptive computer game for remediation of dyscalculia.” *Behavioral and Brain Functions*, 2(20).
- Yaman, H., & Şahin, T. (2014). Somut ve sanal manipülatif destekli geometri öğretiminin 5. sınıf öğrencilerinin geometrik yapıları inşa etme ve çizmedeki başarılarına etkisi [Concrete and virtual manipulative-assisted teaching of geometry's impact on the success of building and drawing geometric structures of 5th grade students]. *Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi*, 202-220.
- Yuan, Y., Lee, C. Y., & Wang, C. H. (2010). A comparison study of polyominoes explorations in a physical and virtual manipulative environment. *Journal of Computer Assisted Learning*, 26(4), 307-316.
- Zamarian, L., Ischebeck, A., & Delazer, M. (2009). “Neuroscience of learning arithmetic--evidence from brain imaging studies.” *Neurosci Biobehav Rev*, 33(6), 909-925. doi: **10.1016/j.neubiorev.2009.03.005**

Appendix A. Description of Materials Used in Research Process

In Trial 1 group, concrete tools have been used to perform activities oriented towards the place value concept. As concrete tools, Dienes blocks and Snapcube have been used, as shown in Figure 1. Concrete tools have been used by the students under the guidance of their teacher. Learning-teaching process has been ensured through activities based on grouping and resolution strategies forming the place value concept. Learning-teaching process of Trial 1 group has been shaped within the scope of 8-hour study plan and study pages.



Figure 1. Concrete tools used in the study (Dienes blocs and Snap cubes)

In Trial 2 group, educational digital materials, related to place value concept have been used. Educational exercise software has been created by running analysis, design and development processes. During the analysis stage, place value acquisitions, included in mathematic teaching program, have been reviewed. 9 different sections have been created in the application by taking these acquisitions into consideration. Design of the sections have been prepared in relation to the grouping and resolution skills related to place value. Sections consist of the following stages: counting the multitudes given, grouping or solving the multitudes given, verbal expression of multitudes and symbolic expression of multitudes (See Figure 2, Figure 3 and Figure 4). Educational digital material developed for the place value concept has been practised with the students throughout the 8 class hours. Materials have been uploaded into computers in the schools of students and two students were available in each computer to try the application.

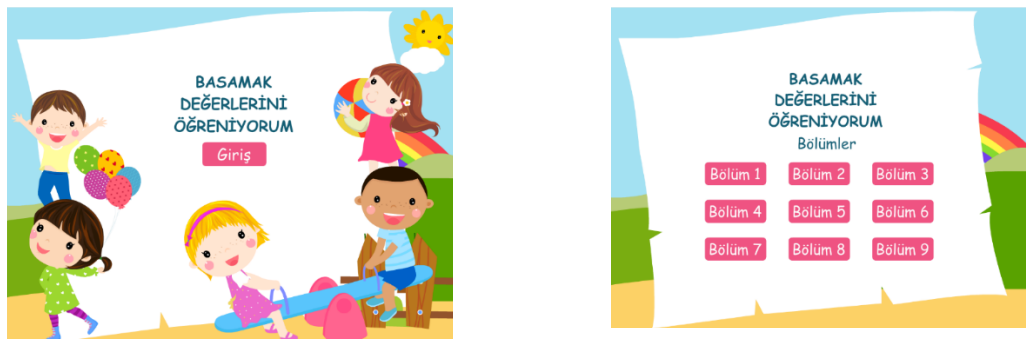


Figure 2. Application screens (Home page and Section menu)

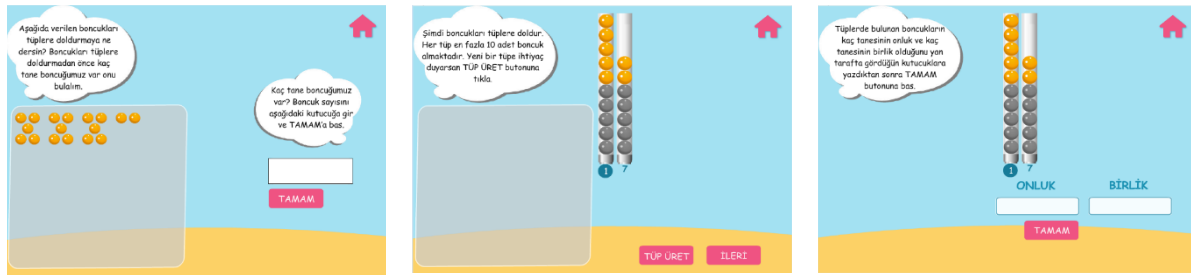


Figure 3. First section, placing the beads (Counting, Placing beads and Entering decimal and unit values)



Figure 4. Fourth section: number of eggs and expressing their place value (Giving a certain amount of eggs and Expressing the number of eggs in tens and units)

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Teacher and Administrator Perceptions of Religion and Ethics Education Practices in the Primary Schools of TRNC

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Abstract

An Education of religion and ethics has been a long-standing element of the school curriculum in the Turkish Republic of Northern Cyprus, delivered as a compulsory subject to primary grades 4 and 5 as well as in secondary schools. Numerous issues concerning this practice have been raised by both the national media and the teacher's unions. In the Turkish Republic of Northern Cyprus, research studies conducted on religious education are scarce. The existing studies have largely focused on various teaching methodologies for religious education, desired teacher qualities and qualifications and so on. A review of the relevant literature suggested that no research study has so far been conducted specifically on the teachers' and administrators' perceptions of how to deliver the religious education lessons in schools. Taking account of teacher and administrator perceptions, this study aims to investigate the processes of teaching the religion and ethics lessons effectively in the primary schools of TRNC. To that end, a questionnaire was developed following deliberations and evaluations with specialists in the field. The questionnaire was composed of two sections. While the first section collected demographic information about the participant teachers and administrators, the latter posed four open-ended questions about the religion and ethics lesson. The questionnaire was distributed to the teachers and administrators involved with the teaching of the concerned lessons at the primary level in the city of Güzelyurt, TRNC. Ten teachers and ten administrators returned the filled questionnaire. Five of the teacher participants taught grade 4 and the other five taught grade 5. While five of the administrators were employed at the time of the study, the other five had been retired. The questionnaire data revealed that the religion and ethics lessons were not implemented efficiently in the primary schools of TRNC and that the lessons were offered by the schools even though the teachers assigned to deliver them were nonspecialists. However, it was also found that, owing to the exam anxiety surrounding college entrance, demanding curricular content and nonspecialist teacher profiles, overall little or no classroom practice existed regarding the education of religion and ethics.

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Keywords: Religious culture, ethics knowledge, TRNC, primary education

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1. Introduction

The Turkish Republic of Northern Cyprus (TRNC) which is only officially recognised by the Republic of Turkey in the international arena, follows the example of Turkey in every field including the field of education. This includes religious education, which is taught in primary and middle schools in the TRNC.

Cyprus was conquered by the Ottoman State in 1571. During the Ottoman period, the requirements of social life were met through charitable foundations. Aside from the madrasahs (Muslim theological schools) and ottoman primary schools, institutions that contribute to education such as Islamic monasteries, mosques, the libraries, etc., were established. When the island was leased to the British in 1878, Turks fell in a weaker position in the island (The fact that the institution of religion was not on the island weakened the religious institutions). At that time, various Qur'an schools and mosque classes, which were free education institutions, continued their activities. In 1915, until the unilateral invasion of Cyprus by the British, Turkish schools adhered to the Ottoman schools' curriculum, school programs and school books were brought from Turkey. With the Lausanne Treaty signed in 1923, the British officially incorporated Cyprus to its lands. The most far-reaching impacts of this outcome for the Turkish society were the removal of the office of the mufti from the Island and the conversion of the pious foundation into a government office. The Turkish Cypriots, who were defined as the Muslim community by the British Administration, became religiously uncertain when the office of the mufti was abolished. At the same time, due to the fact that the mosques were no longer able to serve their purpose, these religious places became neglected and imams (Muslim religious leaders) could not be trained.

As a result of struggles, the office of the mufti was re-established in 1953. In the period of the Republic of Cyprus, except for primary schools and the teachers' college, religious lessons were not taught in Turkish middle schools and high schools. For the first time in 1973, at the request of the Cyprus office of mufti, four religious officials from Turkey served in Cyprus, in Ramadan. Thus, began the process of employing religious officials in Cyprus who were connected to the Turkish Directorate of Religious Affairs to carry out mosque duties. In 1974 the island was divided into two: North Cyprus (Turkish side) and South Cyprus (Greek side).

After this date, the Turks started to rebuild charitable foundations and the office of the mufti. The most important difficulty of the Religious Affairs Office that exists in the Island is the fact that they do not have enough staff to perform religious services. The void that has been created due to long years of neglect has not been filled, and the Turkish Cypriots have not been able to raise a personal cadre of religious officers within their population who would be sufficient for them.

After 1974, in 1976, the Turkish Cypriot Ministry of Education decided that in parallel with the religious education in secondary schools within the secondary education program in Turkey, religion lessons be taught as an elective subject. However, due to the reasons such as not being able to find suitably qualified teachers for the subject and the subject being put in hours that were not suitable, the expected yield was not obtained (Atalay, 2005).

In the Constitution of the Turkish Cypriot Federated State (TCFS), which was established following the Happy Peace Operation in 1975, it was stated that "Religious education and training is under the supervision of the state. It is dependent on the request of the legal representatives of the minor." Through this, religious lessons for the Turkish Cypriots were adopted and put into practice as elective courses (Turkish Cypriot Federal State Constitution, 1975).

However, despite the clear provision in the Constitution of the TCFS, unfortunately, religious education was not implemented sufficiently effectively and efficiently due to many reasons.

In 1982, in mother country Turkey, religion classes were reconfigured as Religious Culture and Morality, and incorporated within the scope of compulsory subjects taught in schools and this decision was put into practice. Despite the fact that there have been various arguments over many years in Turkey as to whether the Religious Culture and Morality classes should be compulsory or optional, they are still taught as compulsory subjects (Yıldız, 2009). In parallel with Turkey, in Northern Cyprus, Religious Culture and Morality class was incorporated into compulsory subjects and was put into practice within primary and middle schools in the TRNC. Since 1982 the Religious Culture and Morality course books which were used for this class in mother country Turkey's schools began to be used by the Cyprus Turks.

Nevertheless, since TRNC does not have the existing conditions and the teaching staff in Turkey it has not been possible for religion to be taught in schools in an effective and healthy manner.

Religious Culture and Morality Course are organized through the 23rd article of the TRNC Constitution which states that "Religious training and education is carried out under the supervision and control of the state" and this course is required as a compulsory course in elementary and middle schools attached to the Ministry of National Education and Culture. (TRNC Constitution, 1983). Religious Culture and Morality Course are taught according to the TRNC National Education Law, "Secularism is essential in National Education (National Education Law, 1986), religious education can be done in educational institutions provided that it does not contradict this principle". This course is still compulsory and given for one hour a week in the 4th and 5th grades of primary schools and 6th, 7th and 8th grades of middle schools in the TRNC.

However, there are many problems in the implementation of the religious education which is required by the Constitution and the law because of many reasons, especially the lack of subject teachers in the field of religion in the TRNC.

Although it is legally obligatory in the TRNC, in practice, the necessary importance is not given to religious education and the Religious Culture and Morality Course is treated as an unnecessary course.

1.1. The Teaching Staff of Religious Culture and Morality Course

The Ministry of National Education and Culture of the TRNC has no permanent teachers who provide religious education in primary and middle education. Religion classes in primary schools in TRNC are given for one hour a week in the 4th and 5th grades and are taught by the class teacher.

In middle schools, this course is taught by contracted people appointed by the Republic of Turkey. These people are usually the graduates of the Faculty of Theology or another four-year undergraduate program. These teachers, who give religious education, work in the TRNC for one year at the beginning of each academic year under contract.

TRNC religious education curriculum is the same as the religious education curriculum implemented in Turkey, the teaching materials used in Turkey are also exactly the same for this course in Northern Cyprus

1.2. The Problems in the Implementation of Religious Culture and Morality Course

There have been some problems expressed by teacher circles and parents about the application of the Religious Culture and Morality course in the TRNC. The most important of these problems are summarized below:

- Attitudes from the Past Related to Religion,
- The Absence of Branch Teachers for the Religion Culture and Morality Course,
- Training and Competence Problems of the Teachers Giving the Religion Course,
- Problems Caused by Students,
- Problems Related to Curriculum and Course Times

2. Method

The research is a qualitative study using the stratified random sampling method. This method of sampling is used when there is diversity within the general population among the units and involves grouping these units of similar characteristics in terms of the traits that are being investigated into subgroups called "**strata**". The sampling is

performed by combining samples selected from each stratum using the simple random sampling method (sampling, ppt).

This section of the study includes samples of the study, data collection tool, and the analysis and interpretation of the data.

2.1. Working group

This Research Working Group, which was established with the aim of determining the opinions of teachers and administrators regarding the effective teaching of the Religious Culture and Morality Course in TRNC Primary Schools, constitutes of teachers who are still teaching or have thought the religion course in the primary schools operating in the Güzelyurt District.

A total of 20 people including 10 teachers and 10 administrators were included in the study. The sample was selected according to stratified grouping method, 5 participants were retired administrators, 5 participants were administrators, 5 participants were 5th-grade teachers and 5 participants were 4th-grade teachers.

2.2. Data Collection and Analysis

For the collection of the data, an interview form questionnaire was developed as a result of the interviews and evaluations made with experts in this field. The questionnaire consists of two main sections. The first section comprises of the demographic information of teachers and administrators and the second section of four open-ended questions related to the Religion Culture and Morality lesson (Appendix 1). A pilot study was conducted with 5 people for the created questionnaire form. As a result of the pilot study, the survey was given its final form.

The survey was conducted between 20th of April and 20th of May 2016 by face to face interview. The minimum duration of the interview was 10 minutes and the maximum duration was 30 minutes. The answers given by each interviewee were sent back to them for checking. 15 people returned the questionnaire without making any changes and 5 people made minor corrections and updated the answers they gave.

Table 1 shows the demographic distribution of the teachers and administrators participating in the study in terms of gender, age, professional seniority and working status.

Table 1. The Demographic Characteristics of Teachers and Administrators

Variable		N	%
Gender	Female	9	45
	Male	11	55
Age	Between 20-30	3	15

	Between 31-40	2	10
	Between 41-50	8	40
	51 and above	7	35
Professional Seniority	Between 1-5 years	1	5
	Between 6-10 years	2	10
	Between 11-20 years	5	25
	21 years and above	12	60
Employment Status	Working-teacher	10	50
	Working-administrator	5	25
	Retired-teacher	-	-
	Retired-administrator	5	25

According to Table 1, 11 (55%) of the participants were male and 9 (45%) were female. Teachers who were between the ages of 20 and 30; were 3 (15%), between the ages of 31 and 40 were 2 (10%), between the ages of 41 and 50 were 8 (40%) and 51 and above were 8 (35%). Were 8. In terms of professional seniority, there was 1 (5%) participant with experience between 1-5 years, 2 (10%) for 6-10 years, 5 (25%) for 11-20 years and 12 (60%) for over 21 years. In terms of working status, 10 participants (50%) are teachers, 5 managers (25%) and 5 (25%) are retired managers.

The results obtained from the responses given to the open-ended questions asked in the second section of the questionnaire to the teachers and administrators participating in the study can be summarized as follows:

Question 1: *‘Are you teaching the Religious Culture and Morality lessons sufficiently effectively and efficiently?’*

The vast majority of the teachers (16 people) participating in the study stated that they did not teach the "Religious Culture and " lessons sufficiently effectively and efficiently, and 4 people stated that they taught the course efficiently in the first years of their profession. K16 stated that "Religion is the most important element in unifying society. But it's a disregarded lesson. In the years when I first started working in the profession, I showed everything from visits to the mosque to the ritual prayers of Islam.

After the secondary school entrance exam system was implemented, I taught the 5 important surahs (sections of the Koran) and the life of the prophet. K2 stated that "I do not believe that it is a lesson that is necessary to be given in primary school. It is very difficult for children to learn the surahs. It is suitable that only Morality is taught" The most important and most significant of the answers given to this question is that almost half of the teachers said that they did not teach this lesson effectively in the years when the TRNC college exams were being held and that at other times they taught it effectively.

Question 2: *"If you are not teaching this lesson effectively why? List your reasons in order of importance."*

The reasons for the teachers and administrators who participated in the survey and answered negatively to Question 1 are given below in terms of importance.

- TRNC Secondary School Entrance Exams
- The intensity of the curriculum
- There were students from different religions in the classroom
- Not believing in the necessity of religious education
- Seeing themselves as not competent in this subject

K3, "In the fourth grade, the priority is on mathematics, science and social studies. We need to prepare for the secondary school entrance exams as necessitated by the system", K1, K2, K4, K6, K7, K8, K11, K13 (6 teachers and 2 administrators from the participants) state that "I never teach this course due to the college exams I cannot find the time to teach this course", While K5 and K10 (two teachers from the participants) say that "We have non-Muslim children in the class".

Question 3: *"How competent do you see yourself for the Religious Culture and Morality course?"*

11 of the teachers and administrators participating in the study considered themselves competent for this course, 4 saw themselves as less competent and 5 saw themselves as not competent. While K14 states "I see myself as quite competent" K1, K2,

K4, K5, K6, K7, K15 (6 teachers and 1 manager from the participants) see themselves as "competent for only elementary school". K5 states "I don't see myself as competent"

Question 4: *"Do you think that the Religious Culture and Morality course should be given by a graduate of this area? Why?"*

15 of the teachers and administrators participating in the study stated that primary school teachers who did not graduate from the field but who graduated from Atatürk Teacher Academy could give these lessons. Teachers and administrators who share this point of view consider it harmful for these lessons to be given to students in an excessively intense and overwhelming manner by those who are graduates of this field. They stated their belief that students of elementary school age could be prematurely influenced and adversely affected. 5 teachers and administrators responded to this question by stating that the Religious Culture and Morality course should be taught by those who graduated from the field and have pedagogical formation. Teachers and administrators who support the teaching of religion by field graduates have emphasized that the course would be more useful too if given by experts without going deeply into religious matters and that just as in any other field it is important and necessary for experts in the field to provide training in the field.

K12 stated that "Subjects should be taught superficially at the level of elementary school." K8 stated that "It is necessary for the field graduate who is going to give this course to have complete pedagogical knowledge and to have pedagogical training." K1 stated that "If students are exempt from secondary school entrance exams and the curriculum is reduced, primary school teachers can teach the Religious Culture and Morality course quite comfortably".

3. Discussion and conclusion

Religion and Morality course is taught as a compulsory course both in primary and middle schools in the TRNC. Individuals belonging to other religions in the TRNC have no arrangements or schools for religious education. There are few studies in the literature on the teaching of religion and morality in schools in the Turkish Republic of Northern Cyprus.

With the opening of the Hala Sultan Theology College in the TRNC in recent years, the issue of religious education in the TRNC has become a centre of attention both in the public and in the media circles. It is especially the fact that religious education is predominantly carried out by an official state school in a college is seriously criticized by certain circles.

On the other hand, there is also a significant segment that argues such a college is needed and that students who want to receive this education should also be provided for especially considering the TRNC population structure. There are articles on these issues which are sometimes published in the media which are disturbing to public opinion. In addition to this, the practices of the Ministry of National Education and Culture concerning religious education are criticized especially by certain teacher unions. Most of these criticisms are not based on scientific grounds but are based on political or ideological foundations.

This study was conducted in order to find out whether the course of Religious Culture and Morality in the Turkish Republic of Northern Cyprus is taught effectively in primary schools. The results of the study, conducted through participants chosen by the stratified sampling method, using a qualitative questionnaire with 20 actively working or retired teachers and administrators, who gave lessons of religion in elementary schools in Güzelyurt District. Indicate that Religious Education and Morality class is not taught in an effective and productive manner in TRNC primary schools due to the fact that the teachers who teach this course are not experts in this field.

There is an overconcern about the secondary school entrance examination and the curriculum is already too heavy, all of which result in the Religious Culture and Morality course being taught little or none at all in practice. At the same time, it was stated that it would be appropriate for the Religious Culture and Morality lesson to be given by teachers who had graduated from Atatürk Teacher College or by teachers who have education on religion with a pedagogical formation.

At the end of the study, it emerged that teachers and administrators have different views on the effective and productive teaching of the Religious Culture and Morality in TRNC primary schools.

Findings obtained from this study point that the things that are first and foremost necessary for the Religious Culture and Morality lesson to be taught efficiently and productively in TRNC. Elementary schools are firstly the Ministry of National Education and Culture authorities, with the participation of relevant stakeholders, prepare a religious education curriculum specific to the TRNC with the contribution of experts from the field, the creation of a permanent teaching staff for the field, and informing the society in a way in which religious education can be acceptable to it.

This study is limited only to the Güzelyurt district in the TRNC. Therefore, if similar studies are conducted in all provinces of the TRNC and actions are taken in accordance with the general results, more healthy results could be obtained. Moreover, it is clear that the inclusion of parental opinions in these studies would be very useful for the effective and productive teaching of the Religious Culture and Morality course in TRNC primary schools.

References

- American Alan, D. (2012). "İkibin Öğrenciye Kur'an Kursu", www.haberkibris.com/2-bin-ogrenciye-kuran-kursu-2012-07-07.html 7/7/
- Atalay, T. (2003). "Geçmişten Günümüze Kıbrıs, İdari Yapılanma ve Din Eğitimi", Mehir Vakfı Yayınları, Konya.
- Atalay, T. (2005). "Öğretmen ve Müfredat Ekseninde KKTC'de Örgün Din Öğretimi", *Değerler Eğitimi Dergisi*, Cilt: 2, Sayı:7-8, Sayfa: 7-40.
- Atalay, T. (2013). "Kıbrıs'ta Dine Karşı Önyargı Kırılıyor", *Dünya Bülteni*.
- "Din Öğretmeni Sorunu" (2016). www.brtk.net/page/61/?author=1
- Gündem Kıbrıs, (2016). "KKTC'de Din Kültürü ve Ahlak Bilgisi Dersinde Çirkin Olay'.
- Hala Sultan İlahiyat Koleji Açıldı (2013). www.evkaif.org/site/sayfa.aspx?pkey=27
- Yıldız, İ. (2009). "Din Kültürü ve Ahlak Bilgisi Dersi Zorunlu mu Kalmalı Yoksa Seçmeli mi Olmalı?", *TÜBAV Bilim Dergisi*, Cilt:2, Sayı:2, Sayfa: 243-256, Kıbrıs 7/24, KKTC'nin Din Dersi Kararı.
- "Onbeş Yaşa Kadar Zorunlu Din Eğitimi Kararı'nın Arkasındayız", <http://www.kibrissondakika.com/15-yasa-kadar-zorunlu-din-egitimi-kararinin-arkasindayiz/>
- Kıbrıs Türk Federe Devleti Anayasası. www.mahkemeler.net/cgi-bin/anayasa/ktfdana.doc
- KKTC Anayasası. www.mahkemeler.net/cgi-bin/anayasa/anayasa.doc
- KKTC Milli Eğitim Yasası (1986). www.ncyodak.eu/turkce/yasalar/milliegitim.pdf
- Nesim, A. (1990). "Kıbrıs Türklerin Kimliği", Milli Eğitim ve Kültür Bakanlığı Yayınları, Lefkoşa, KKTC.
- Menteş, D. (2015). *Yenidüzen Gazetesi*, "Din Dersinde Cinsellik Tartışması".

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A Qualitative Study on EFL Teachers' Self-perceived Beliefs about Teacher Autonomy

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Abstract

Teacher autonomy has been debated for a long time as a term and for its possible functions. It is a multi-faceted term which has lots of definitions in the literature. And more studies have been conducted to investigate it but there is still a need for in-depth analysis of the term and its dimensions. The purpose of this study is to explore EFL teachers' self-perceived beliefs about teacher autonomy. The present study seeks out the answers to what EFL teachers know about teacher autonomy, how they define it, whether they have had any practices in their teaching career so far or not regarding teacher autonomy and what assumptions are underlying behind their self-reported practices. The participants of this study were EFL teachers (12 female and 2 male) who work in different contexts. The data was collected through written interviews and primary data was further discussed in a focus group interview. The findings of the study reveal that all the participant teachers have an idea about teacher autonomy. While most of the teachers have a broader perspective about the issue, a few of them have some views about the term even if they don't perceive themselves as a fully autonomous teacher. It also shows that most of the participant teachers in the current study are aware of the importance of teacher autonomy.

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Key Words: Teacher perceptions, teacher beliefs, teacher autonomy, ELT, EFL

1. Introduction

Teacher autonomy has a lot of conceptualizations which have been developed and broadened through the years. Whereas the term has many definitions by the various scholars, there is still not an agreement on it. Although lots of studies (Crawford, 2001;

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LaCoe, 2006; Rudolph, 2006) have been conducted to investigate it, there is still a need for in-depth analysis of the term and its dimensions. Furthermore, it is a well-known fact that

teachers' beliefs, practices and attitudes are really significant for understanding and improving educational processes as they have important roles in teachers' decision making processes. While there are some quantitative studies, there are not many qualitative studies about the issue. Depending on this, present research aims to fill this gap. In the literature, there exist a number of definitions on teacher autonomy. Despite the existent definitions, it is argued whether EFL teachers are aware of its definitions, functions and importance in EFL teaching and learning. In line with these, the present study was designed to explore EFL teachers' self-perceived beliefs on teacher autonomy.

1.2 Literature Review

1.2.1. Teacher Beliefs

Borg (2003) conceptualises teacher belief what he terms “teacher cognition as teachers' knowledge, theories, attitudes, images, assumptions, metaphors, conceptions, perspective about teaching, teachers, learning, students, subject matter, curricula, materials, instructional activities, and self” (p.81). All these are closely associated with teachers' strategies for coping with challenges in their daily professional life and their general well-being while shaping students' learning environment which influences student motivation and achievement. In a similar vein, Ghaith (2004) proposes that the teachers' beliefs are a total combination of conceptions of several aspects such as education, teaching and learning, curricula and the teaching profession in general and those beliefs create the “education culture” which is linked to pedagogical objectives and values.

For Borg, on the other hand, “a belief is a mental state, which has in its content a proposition that is accepted as true by the individual holding it, although the individual may recognize that alternative beliefs may be held by others” (2001, p.187). Similarly, Pajares (1992) asserts that belief systems are like a personal guide that helps individuals define and understand the world and themselves. Nonetheless, Mansour (2008) and Richards (1998) suggest that the teachers' beliefs are described as being the most valuable in the psychological composition of the teacher. Furthermore, Borg defined teachers' educational beliefs as “pedagogic beliefs or those beliefs of relevance to an individual's teaching” (Borg 2001, p.186). Borg also highlights that “teachers are active, thinking decision-makers who make instructional choices by drawing on complex, practically-oriented, personalised, and context-sensitive networks of knowledge, thought, and beliefs” (2003, p.81).

Moreover, regarding the nature of perception, Hardy and Heyes (1979) explain that the perception system filters some information that will be brought to conscious awareness, organizes and interprets this information to build up the model of the world that is experienced.

1.2.2. Teacher Autonomy

Autonomy means “having a sense of one's own identity and an ability to act independently and to exert some control over one's environment, including a sense of task mastery, internal locus of control, and self-efficacy” (Benard, 1995, p. 1). Similarly, teacher autonomy is “the independence teachers maintain in exercising discretion within their classrooms to make instructional decisions” (Street, 1988, p. 4).

On the other hand, teacher autonomy may emphasize “critical reflection” (Smyth 1989) and “transformation through dialogue” (Shor & Freire 1987). According to Little (1995, 179), “...successful teachers have always been autonomous in the sense of having a strong sense of personal responsibility for their teaching, exercising through continuous reflection and analysing the highest possible degree of affective and cognitive control of the teaching process, and exploiting the freedom that this confers”. What is more, teacher autonomy can

simply be defined as “the ability to develop appropriate skills, knowledge and attitudes for oneself as a teacher, in cooperation with others” (Smith, 2003, p. 1).

Lacoe (2006), O'Hara (2006) and Rudolph (2006) categorized the autonomy depending on their practices in terms of six distinct aspects such as curriculum, pedagogy, assessment, student behaviour, classroom environment, and professional development. Teachers' autonomy appears to function as two major regions. The first one is that teaching pedagogy, which is so called individual classroom operations. It is the most common area in which teachers perceive having autonomy (Blase & Kirby, 2009; LaCoe). And the second one is that school-wide autonomy, which is about management and planning for the overall school. And it is the other inclusive region that teachers' autonomy may be manifested (Ingersoll, 1994).

Another element of teacher autonomy, which is common in literature, is decision-making ability (Pearson, 1995; Sentovich, 2004). This element allows teachers choice and determination in the critical issues concerning their responsibilities. Crawford (2001) views a teacher's power to make decisions as the symbol of teachers' autonomy.

Moreover, freedom is another aspect of teacher autonomy. Teachers with autonomy are accepted to possess certain freedoms to determine their work processes (Blase & Kirby, 2009). Brunetti (2001) claimed autonomy is the type of freedom out of demands or pressure from other teachers or administrators.

Finally, one more dimension of teacher autonomy is control (Rudolph, 2006). The concept of control is closely related to latitude (Ingersoll, 1994; Ingersoll, 1996; LaCoe, 2006). Sentovich (2004) viewed autonomous control as the teacher being “in charge” of classroom duties. A teacher with autonomy will have the authority and latitude to control his/her classroom.

1.3 Research Questions

Within the scope of this study, it is attempted to answer the following research questions:

- 1) What do teachers think about teacher autonomy?
- 2) How do the teachers define teacher autonomy? What metaphors do they use to describe teacher autonomy?
- 3) What strategies or practices do the teachers benefit from to enable teacher autonomy?
- 4) Are the teachers aware of the importance of teacher autonomy in EFL context (teaching and learning)? Why/ Why not?

2. Method

This study adopted a qualitative research design methodology to seek out the answers of the research questions since qualitative methodology provides in-depth analysis of an issue. Burn (1997) asserts that the purpose of the qualitative researcher is to conceptualize what people say and do as a product of how they perceive the world and interpret the events from the perspectives of the participants. Therefore, qualitative research methods were utilised in this study for gathering the data as it seeks the answers of what the teachers' self-perceived beliefs and practices are about teacher autonomy. The data was collected through two phases. First, a written interview involving demographic info was applied. While some of the participants preferred to complete the written interviews via e-mails, the others preferred to complete the hard copy of written interviews. After that, a focus

group interview was conducted to further evaluate the primary data and the emerging themes.

2.1. Participants

This exploratory study was conducted with fourteen EFL instructors. There were twelve female and two male participants. They all had different backgrounds. Only two participants had BA and MA degree. However, nine of these EFL instructors were PhD candidates and three of them had PhD degrees. Four of these instructors had less than ten years of experience. And six of them had experience more than ten years. Finally, four of them had experience more than twenty years. Detailed information is shown in Table 1 below.

Table 1: Demographic Information

Teachers/ Type of Institution	Degree	Gender	Years of Experience
Teacher 1/ State School	PhD Candidate	Female	13
Teacher 2/State University	PhD Candidate	Female	8
Teacher 3/State School	PhD Candidate	Male	5
Teacher 4 /State University	PhD Candidate	Female	24
Teacher 5/State University	PhD Candidate	Female	18
Teacher 6/Private University	PhD Candidate	Female	18
Teacher 7/State School	PhD Candidate	Female	1
Teacher 8/State University	MA	Female	28
Teacher 9/State University	PhD Candidate	Male	7
Teacher 10/State University	PhD	Female	16
Teacher 11/State University	BA	Female	25
Teacher 12/State University	PhD	Female	20
Teacher 13/State University	PhD	Female	12
Teacher 14/State University	PhD Candidate	Female	11

2.2. Sampling

The present study applied purposive sampling which is one type of non-probability sampling to determine its participants. In applying this sampling, the criterion was that all the teachers were EFL instructors who had different educational backgrounds with various years of teaching experiences in different contexts. The participant teachers in the current study work in different contexts such as state schools, state universities and private universities.

2.3. Data Collection

2.3.1. Written Interview

First of all, primary data for the current study was gathered through in-depth written interviews which benefitted from open-ended questions. The interview questions (see

appendix) were prepared by the researchers. It was piloted with two instructors and revised based on the comments and feedbacks before it was given to all the participants. Interview questions prepared by the researchers were used to identify teachers' self-reported beliefs, experiences, practices and views about teacher autonomy. Demographic information was included in the interview which also gives information about the nature of the study and asks for the consents of the participants. The written interviews were applied in English since all the participants were English language teachers with proficient language skills.

2.3.2 Focus Group Interview

As a second tool, a focus group interview was applied after the analysis of the primary data for the triangulation. Three instructors (T4, T8, and T13) participated in the focus group interview and they were given the results of the study which figures emerging themes for each research question. Then, they were asked to contemplate on the findings. It lasted twenty-five minutes.

3. Results

3.1. Data Analysis

Qualitative data were analysed using content analysis. First of all, the researchers analysed the data individually and then they compared their analyses to identify the emerging themes and categorize the data. While analysing the data, member checking was carried out when the researchers felt the need to understand the participants better and overcome the ambiguities. The researchers asked some follow up questions to the participants informally when it was needed to verify the data. Additionally, the researchers had informal and short interviews with the participants in person when the participants did not answer a question. The researchers carried out these steps to be able understand whether the participants did not have an idea on the issue or they did not want to answer the question since it was a written interview. When all these steps were completed, the data were classified based on the aspects investigated in the study. Following the initial coding, participants of the focus group were asked to check the primary findings of the study independently to ensure internal validity. Therefore, the categories were revised with the participants in the focus group interview to guarantee reliability because of the nature of the study.

3.2. Findings

Direct quotations from the interviews were used to clarify the findings and strengthen the emerging themes out of reported data.

3.2.1. Teachers' Definitions on Teacher Autonomy

As seen in Table 2 below, emerging themes were categorized based on the analysis of the gathered data.

Table 2: Teachers' Definitions on Teacher Autonomy

Emerging Themes	Responses of Participants	Participants	Total
Freedom	Making Personal Decisions	T1, T2, T3, T4, T7, T8, T10, T13	8
	Professional Freedom	T4, T6, T7, T8, T13	5

	Free from administration/ outer factors	T2, T3 T9, T13	4
	Teacher Power and independence	T13	1
Responsibility	Professional Responsibility	T1, T13	2
	Personal Responsibility	T1, T11	2
Awareness	Self-Awareness	T7, T8, T14	3
	Professional Awareness	T6	1
	Knowledge Awareness	T6	1
Development	Personal Development	T1, T8, T14	3
	Professional Development	T14	1
Other Factors	Motivation and Job Satisfaction	T5	1

3.2.1.1. *Freedom*

Most of the EFL instructors in the current study consider that teacher autonomy is about freedom; however, they have different reasons behind their thoughts. Eight of them focus on making personal decisions. And five of them focus on professional freedom. More, four of them talk about being free from the outer factors. Following excerpts are some examples that present their ideas:

T2: I suppose that it means teachers' being free in the decisions related to their teaching.

T4: It is about professional freedom about what to teach and how to teach and how to deal with problems occurring in the class by finding your own solution.

T3: Teacher autonomy, for me, is the ability of teachers to make their own decisions, plans and organizations about teaching independently without being dependent on colleagues, school administration or materials.

T13: I think teacher autonomy is the power and independence of teacher in preparing or selecting of materials, his/her independence in choosing of teaching methods, and also his/her independence in selecting the methods of evaluation and assessment in his/her classes according to the needs of his/her students.

In short, the results show that there is a strong relationship between autonomy and freedom from the point of teachers.

3.2.1.2. *Responsibility*

Two of the teachers touch upon the issue of responsibility and their ideas are provided below.

T1: It is the ability to plan one's own learning procedures and the ability to take a part in planning goals, materials and processes of learning.

T11: It is personal responsibility for the techniques I use in class changing according to the aim of the profile of the students.

It can be understood from the excerpts that the first teacher talks about professional responsibility while the other deals with personal responsibility.

3.2.1.3. *Awareness*

One important point emerged from the teachers' definitions of teacher autonomy is that there is a strong relation between autonomy and awareness. The extracts below reveal it clearly:

T8: It is about the teacher's attitude towards students, her self-development, self-awareness of her own teaching, self-reflection, tendency to criticize and assess herself to improve skills needed. An autonomous teacher should be innovative in all aspects of teaching.

T6: It is related to knowing what to do as a next step in your teaching or being conscious of your professional skills. It is the knowledge of realization about where, what and how to teach.

T14: It means that you are aware of what, how and why you do something. You have a rationale behind your actions as a teacher.

To sum up, teachers perceive that their autonomy is connected to their self-awareness and professional awareness.

3.2.1.4. *Development*

Teacher autonomy is seen as a way of development by the participant of the study. Two teachers share the belief that teacher autonomy is about self-development. They reflect on this aspect stating that:

T1: We need to take responsibility for our own development rather than allowing the others provide us with the practices they consider the best for us.

T14: It is about being a professional and following your own development as a life-long learner in your profession.

As it is clear from the excerpts, two of the participants conceive teacher autonomy as a method of development.

3.2.1.5. *Other Factors*

There is a teacher who is talking about more factors about teacher autonomy. She shared her ideas in this way:

T5: *Teacher autonomy is related to many different factors such as motivation, and job satisfaction. That is if teachers are autonomous they will be motivated and satisfied with their jobs or vice versa. I think they are interrelated issues.*

As a result, the emerging themes with the reported data show that participants have a variety of definitions on the term from multiple aspects.

3.2.2. *Teachers' Metaphors on Teacher Autonomy*

The participants were asked to define teacher autonomy providing an explanation for one metaphor and to explain why they associated their definition with it. The intention was that it would help to reveal the participants' self-perceived beliefs, feelings, and experiences regarding teacher autonomy. However, we ended up with really interesting metaphors.

The metaphors which the participants depicted were 'being like a bonsai tree', 'choosing a meal from a menu', 'perspective of a musician', 'like being a single mother', 'empowerment' (mentioned twice), 'creating a pottery', 'being the queen of the field', 'being an inventor', 'like a bird', 'being a teacher of yourself', 'teacher independence' (mentioned twice), 'creativity' (mentioned twice). As it is seen, the metaphors used for 'teacher autonomy' are mostly different from each other. Most of the teachers approached the term from a different perspective except for a few teachers. There are only three metaphors

which are repeated. Furthermore, all these metaphors are described positively even if they may have some negative connotations as the following excerpt shows:

T4: It is like being a single mother. A single mother takes over the responsibility of the father in a creative way. She has to cope with all the challenges by coming up with different ideas and strategies. She always reflects on the results of her actions to keep the children happy and for their personal and psychological development.

Some other descriptions for the choice of metaphors, which teachers see the term as an individual responsibility, are demonstrated below:

T1: The bonsai tree can grow 24 meters if not pruned by a gardener. Our relationship with students or our relationship as teachers with the institutionally superior parts always reminds me the story of bonsai tree. We need to take responsibility for our own development rather than allowing the others provide us with the practices they consider the best for us.

T14: Being a teacher of yourself. You are the teacher and you can teach yourself as well. You know how to teach and why not teaching and guiding yourself. It is always possible to approach yourself critically and change yourself when/if necessary. It is about being open-minded and let yourself grow. There is always time for it. If you want it intimately, you can do it in a way. It is about standing on your feet as a person who believes in self-determination and improvement.

On the other hand, others perceive the term from other aspects in a creative manner as provided below:

T3: Teacher autonomy can be viewed from the perspective of a musician. Sometimes musicians on the stage decide to change the pre-determined order of the songs because they realize that the audience is not enjoying. They play more enjoyable songs earlier than planned. Or sometimes singers or instrumentalists make an unexpected mistake, and professional musicians are able to realize it immediately and compensate for it by being more slowly or faster while playing or singing to catch up with each other.

T9: We all know that a potter processes the clay and creates pots out of it. When creating these pots, he/she may sometimes use creativity in order to make different types of pots unlike those of ordinary ones. And the potter sells those unusual pots with a higher price. It can be stated here that when the potter uses this autonomy by going out of standard tradition, he/she can create better products. Using teacher autonomy has a similar effect on the teaching and students. When the teachers use their creativity and autonomy during the teaching practice, they can create better learning and teaching atmosphere for the learners.

As it is expressed in the excerpts, it is clear that they really expressed themselves creatively from the perspectives they stand on. It is understood that all the teachers participating in this study have an idea about teacher autonomy even metaphorically.

3.2.3. Teachers' Strengths and Weaknesses Regarding Teacher Autonomy

In this study, it was aimed to investigate more about teachers' self-perceived strengths and weaknesses in terms of teacher autonomy. Teachers talked about them intimately and they provided rich bulk of information about the reasons behind their beliefs.

3.2.3.1. Teacher-Perceived Strengths Regarding Teacher Autonomy

Teachers evaluate themselves from many different aspects in terms of their strengths and the emerging themes are presented in the Table 3 below.

Table 3: Teacher-Perceived Strengths regarding Teacher Autonomy

Teacher-Perceived Strengths	Responses of Participants	Participants	Total
	Adapting and arranging materials	T4, T5, T8, T9, T12, T13	6
	Being able to choose the best methodology for the learners	T3, T5, T11, T13, T14	5
	Reading articles	T7, T14	2
	Trying to understand students' needs and plan the lessons accordingly.	T1, T7	2
	Using Technology	T9	1
	Doing research and sharing the results with colleagues	T4	1
	Being able to not care school administration too much.	T3	1
	Appreciation of students, parents and the management	T1	1
	Involving student in the learning process and being patient.	T4	1
	Asking for help from more experienced teachers	T7	1

As it is shown in Table 3, six of the teachers state that adapting the materials is their strength and also five of the teachers assert that being able to choose the best methodology for the learners is their strength. However, only two teachers see understanding students' needs as their strength. And two teachers focus on reading articles in terms of strength. For the others, there are a variety of strengths which are presented on the table.

3.2.3.2. *Teacher-Perceived Weaknesses regarding Teacher Autonomy*

The table below demonstrates emerging themes from the self-reported weaknesses of teachers with respect to teacher autonomy in different ways.

Table 4: Teacher-Perceived Strengths regarding Teacher Autonomy

Teacher-Perceived Weaknesses	Responses of Participants	Participants	Total
	Not being able to choose the course content according to needs, problems or expectations of my students/ Following pre-determined syllabi.	T1, T2, T10, T5, T7, T9, T13	6
	Not having enough time and workload	T3, T13, T14	3
	Having problems with time management.	T7, T10	2

	Reading fewer articles about the profession and not attending the conferences.	T 8	1
	More dependent on learning rather than test policies at schools	T6	1
	Getting feedback from the learners	T6	1
	Acting more autonomously	T12	1
	Feeling demotivated when seeing no progress	T7	1

As it is clearly shown on the table, six of the teachers depict that following a pre-determined syllabus is a limitation for them to be autonomous teachers. Three of the teachers complain about not having enough time and busy workload. And two of them touch upon time management.

In conclusion, teachers evaluate their strengths and weaknesses from different aspects. Some of them approach the issue with regard to internal or personal factors while the others were talking about external factors. Additionally, there are some teacher-perceived overlapping strengths and weaknesses. While some of them perceive something as a weakness, the others can perceive it as strength due the fact that all the individuals have different perspectives and experiences. When the two tables are evaluated together, it can be seen that strengths of teachers are mostly associated with internal factors while the weaknesses are mostly because of the external factors.

3.2.3.3. *Teachers' Strategies and Practices for Their Weaknesses and External Factors*

Most of the teachers talk about reading articles, getting professional support, or getting help from their colleagues. Nonetheless, four of the participants report that they do not or cannot cope with their weaknesses for some reasons. And some following excerpts present their ideas:

T2: I don't make an effort to deal with my weaknesses. I am more focused on instant solutions than deeply analysed and researched ones.

T3: Honestly, I am not able to deal with my weaknesses. If I were able to deal with them, they would not be weaknesses.

On the other side, there is a teacher who prefers using adaptation techniques and shares her ideas as in the following.

T5: I try to adapt what I cannot change in order to compensate the weaknesses. For example I cannot change the fact that I am going to teach a reading text that day but I can arrange a reader, runner, writer game to deal with the same reading text.

Even though most of the teachers do not like being observed and evaluated by an outsider, there is an exceptional teacher. She relates her ideas as follows:

T11: I prefer being monitored by other teachers for PhD research with certain ways to see real class situation and having genuine feedback from the other sides' view.

To sum up, while some of the teachers have common assumptions, some of them react really differently from the others.

3.2.4. *Teachers' Self-Evaluation Strategies Regarding Teacher Autonomy*

Most of the participant teachers prefer using self-evaluation strategies. And nine teachers (T1, T2, T3, T4, T6, T8, T10, T12, and T14) prefer getting feedback from students and/or colleagues but not from the administration or mentors. Their reasons are presented in the following excerpts:

T3: I get no feedback from school administration or colleagues as they are mostly unaware of what is happening in the classroom. However, I get mostly positive feedback from my students as they are not used to teachers who do not follow an ordinary teaching style but sometimes behave differently from other teachers.

T12: I believe the only people who should evaluate me as an autonomous teacher are my colleagues and students. So far, I have only got feedback about my teaching from my colleagues.

On the other hand, the others do not believe that they need evaluation by the others. They only believe in self-reflection. Some excerpts can be seen below:

T5: In my opinion I try to be as autonomous as I can. I do not get any feedback from others but when I reflect on my classroom experiences I am satisfied with what I do in the classroom.

T9: To say the truth, I evaluate myself on my own in general. I rarely request help from my colleagues, students or mentors. I have some methods to check my autonomy as a teacher. The most important of them is to reflect on my classroom practices. I try to remember and write down my negative experiences caused of my lack of autonomy, I try to avoid doing the same mistakes again for my future practices.

Furthermore, there is only one teacher who believes that autonomy is not about evaluation as below:

T2: At the end of every semester I have student feedback about my classes. But being autonomous is not a fact that is evaluated.

To this end, most of the teachers in the current study benefit from evaluation techniques in terms of being an autonomous teacher even if they prefer different ways of it.

3.2.5. *Teachers' Thoughts about the Importance of Teacher Autonomy*

In the light of our findings, it is revealed that teacher autonomy is a term which can be described by the teachers from many different perspectives. Even though a few of them state that they do not know the term exactly, still they can describe it based on their understanding and experiences. They have both positive and negative comments on it depending on their personal and professional experiences. However, they mostly find it significant as they perceive themselves as autonomous teachers. Hence, following excerpts were exemplified to show their ideas:

T9: Teacher autonomy is a very important concept not only for teachers but also for the students. I think teacher autonomy even has positive impact on the autonomy level of the learners who will be the future teachers in this profession. For this reason, more attention and emphasis should be given to the teacher autonomy phenomenon in order to increase the quality of education.

T14: Teacher autonomy leads to learner autonomy as well. Autonomous teachers can be good role models for their students and they can equip their learners with autonomous learning. Teachers can teach what they believe. So, if teachers broaden their way of thinking, they can broaden their way of teaching. This is really significant to me.

To conclude, the participant teachers in the present study consider that teacher autonomy is significant for some reasons mentioned above. And all these show that they are aware of the importance of teacher autonomy in teaching.

4. Discussion

Based on the findings from the current study, rich descriptive data were gathered to get a deeper understanding about teacher autonomy from the teachers' perspectives. The findings revealed a variety of definitions about the term which are parallel to the literature and beyond it. In the present study, the first and second research questions seek out the teachers' definitions of teacher autonomy. Teachers in the current study approached the term from multiple aspects not only with the definitions but also with the metaphors. Frase and Sorenson (1992) contends that teacher autonomy is perceived very differently: one teacher may perceive autonomy as a means to gain substantial freedom from interference or supervision; another may perceive it as the freedom to develop collegial relationships and accomplish tasks that extend beyond the classroom; and even some others may perceive it as a means for principals to avoid their duties. In line with this, our findings which are completely based on self-reports of the participants without the interventions of the researchers provided insightful examples to our questions.

The third research question in the present study focuses on teachers' practices about teacher autonomy. And most of the teachers talked about their adaptive expertise with the specific examples. Studies in the literature also reveal that teacher autonomy is vital to educational effectiveness and empowers individuals within the system to adapt teaching to the changing needs of the students. To illustrate, Pearson and Hall (1993) found that the degree of autonomy perceived by new teachers is a symbol of job satisfaction and a positive reaction to teaching, and teachers who had higher autonomy scores showed a willingness to enter teaching again when necessary. This study also shows that teacher autonomy is really important for teachers. Teachers' autonomy appears to be a critical component in working conditions. For instance, teachers' autonomy is perceived to affect teachers' conception of their professional life and job satisfaction (Bogler, 2001). This is specifically depicted by one of the participant teachers in the current study as well. Moreover, in another study Stockard and Lehman (2004) concluded that first-year teachers mentioned a sense of control and influence over their work environment was an important factor in their job satisfaction. The findings of the current study support these results as well.

Finally, the last research question deals with the importance of teacher autonomy. The reports of teachers in the present study reveal that they are aware of the importance of teacher autonomy even though they have a limited perspective of it and they mostly focus on external factors rather than internal factors. Similarly, teacher autonomy is seen as a crucial factor in many of the studies on teacher retention (Guarino et al., 2006; Horng, 2009; Ingersoll, 2001; Johnson & Birkeland).

5. Conclusion

All in all, this study sheds light on the term of teacher autonomy through the eyes of the teachers with a rich bulk of data from teachers' self-reports. Since the teachers are the real practitioners, it may be useful to learn more about their opinions about the issue to get in-depth insights in terms of understanding their perceptions. That's why this research topic should be investigated and evaluated more through the eyes of the teachers from various perspectives in the future studies.

However, there are some limitations of this qualitative study since there is a limited number of participants in the current study. Therefore, it can be conducted with more

participants with an equal number of female and male participants. Moreover, some different data collection tools can be used for further steps to get more reliable data.

References

- Benard, B. (1995). *Fostering resilience in children*. Urbana, IL: ERIC Clearinghouse on Elementary and Childhood Education. (ERIC Document Reproduction Service No ED386327)
- Blase, J., & Kirby, P. C. (2009). *Bringing out the best in teachers: What effective principals do*. Thousand Oaks, CA: Corwin Press. *Educational Administration Quarterly*, 37, 662-683.
- Borg, M. (2001) "Key concepts in ELT", in *Teacher's Beliefs*, 55, 2: 186-188.
- Borg, S. (2003). Teacher cognition in language teaching: A review of research on what language teachers think, know, believe, and do. *Language teaching*, 38, 81-109.
- Brunetti, G. J. (2001). Why do they teach? A study of job satisfaction among long-term high school teachers. *Teacher Education Quarterly*, 28, 49-74.
- Burn, R. B. (1997) *Introduction of research methods*, (3rd Ed.). Longman.
- Crawford, J. R. (2001). Teacher autonomy and accountability in charter schools. *Education and Urban Society*, 33, 186-200.
- Frase, L. E. and Sorenson, L. (1992). Teacher motivation and satisfaction: Impact on participatory management. *NASSP Bulletin* (January 1992): 37-43.
- Ghaith, G., & Yahgi, H. (1997). Relationships among experience, teacher efficacy, and attitudes toward the implementation of instructional innovation. *Teaching & Teacher Education*, 13, 451-458.
- Guarino, C. M., Santibanez, L., & Daley, G. A. (2006). Teacher recruitment and retention: A review of recent empirical literature. *Review of Educational Research*, 76, 173-208.
- Hedge, Hardy, M. and Heyes, S. (1979). *Beginning Psychology: A comprehensive Introduction to Psychology* (4th edition). Oxford: Oxford University Press.
- Horng, E. L. (2009). Teacher tradeoffs: Disentangling teachers' preferences for working conditions and student demographics. *Administrative Educational Research Journal*, 46, 690-717.
- Ingersoll, R. M. (1994). Teacher control in secondary schools. *Harvard Educational Review*, 64, 150-169.
- Ingersoll, R. M. (1996). Teachers' decision-making power and school conflict. *Sociology of Education*, 69, 159-176.
- Johnson, S. M., & Birkeland, S. E. (2001). Pursuing a "sense of success": New teachers explain their career decisions. *American Educational Research Journal*, 38, 581-617

- LaCoe, C. S. (2006). Decomposing teacher autonomy: A study investigating types of Teacher autonomy and how current public school climate affects teacher autonomy. *Dissertation Abstracts International*, 63(11), 798A. (UMI No. 3209987)
- Little, D. (1995). Learning as dialogue: The dependence of learner autonomy on teacher autonomy. *System* 23.2: 175– 182.
- Lortie, D. C. (1969). *The balance and control and autonomy in elementary school teaching*. Chicago: University of Chicago, Department of Education.
- Mansour, N. (2009). Science Teachers' Beliefs and Practices: Issues, Implications and Research Agenda. *International Journal of Environmental & Science Education*, 4(1), 25-48.
- O'Hara, D. P. (2006). Teacher autonomy: Why do teachers want it, and how do principals determine who deserves it? *Dissertation Abstracts International*, 67(07), p. 2413A. (UMI No. 3227718)
- Pajares, M. F., (1992). Teachers' beliefs and educational research: Cleaning up a messy construct. *Review of Educational Research*, 62 (3), 307-332.
- Pearson, L. C. (1995). Prediction of teacher autonomy from set of work-related variables. *Journal of Research and Development in Education*, 28, 79-84.
- Pearson, L. C., Hall, B. W. (1993). Initial construct validation of the teaching autonomy scale. *Journal of Educational Research*, 86(3), 172-177.
- Richards, J. C., Pennington, M., (1998). The first year of teaching. In J. C. Richards, ed. *Beyond Training*. Cambridge University Press, 173-190.
- Rudolph, L. (2006). Decomposing teacher autonomy: A study investigating types of teacher autonomy and how it relates to job satisfaction. *Dissertation Abstracts International*, 67(03), p. 804A. (UMI No. 320991)
- Sentovich, C. (2004). Teacher satisfaction in public, private, and charter schools: A multi-level analysis. *Dissertation Abstracts International*, 65(07), 2449A. (UMI No. 3140225)
- Stockard, J., & Lehman, M. B. (2004). Influences on the satisfaction and retention of first year teachers: The importance of effective school management. *Educational Administration Quarterly*, 40, 742-771.
- Street, M. S. (1988). An investigation of the relationships among supervisory expertise of the principal, teacher autonomy, and environmental robustness of the school. (Doctoral dissertation, Louisiana State University, 1988). *Dissertations Abstracts International*, 50 (05A), 1172.
- Smith, R.C. (2003). Teacher education for teacher-learner autonomy. In J. Gollin, G. Ferguson & H. Trappes-Lomax (eds), *Symposium for Language TeacherEducators: Papers from Three IALSSymposia* (CD-ROM). Edinburgh: IALS, University of Edinburgh.
- Smyth, J. (1989). Developing and sustaining critical reflection in teacher education. *Journal of Teacher Education* 40 (2): 2-9.

Shor, I. & Freire, P. (1987). *A pedagogy for liberation: dialogues on transforming education*. South Hadley, New York: Bergin & Garvey.

Appendix A. Written Interview

Dear Participants,

We are working on a study about EFL teachers' self-perceived beliefs of teacher autonomy. To carry out this study successfully, we need volunteer participants. If you are willing to participate in this study, please answer the questions below, keeping in mind that this is a qualitative study. The research will be conducted according to ethical guidelines. Accordingly, we promise that your names and identities will be kept anonymous. Your answers will be treated in confidence and the data will only be used for the purposes of this research. Your positive response will mean that you have provided your consent to participate in this research.

Thank you very much in advance.

I- Please answer the following by putting a tick in the places provided.

Gender: (Female)_____ (Male)_____

Work Experience (please write the number of years you worked): _____

Type of Institution you work for:

University

State: _____

Foundation: _____

Minister of Education:

Primary: _____

Secondary: _____

High School: _____

Latest Degree of Education:

BA: _____

MA: _____

PhD: _____

II-Please answer the questions below.

- 1) What does 'teacher autonomy' mean to you? Please explain it in your own words.
- 2) What metaphors do you use for explaining 'teacher autonomy'? Please specify them.
- 3) Do you believe that you are an autonomous teacher? Why/Why not?
- 4) Can you identify your strengths and weaknesses in your teaching profession regarding teacher autonomy? Please specify them.
- 5) How do you deal with your weaknesses in terms of being an autonomous teacher? Please explain it with examples if any.
- 6) How do you evaluate yourself as an autonomous teacher? Do you get any feedback about your teaching from your colleagues, students or mentors if any? Please specify it.

- 7) Do you have any further comments which you would like to add on this topic?

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Vocational High School Readiness for Applying Curriculum Outcome Based Education (OBE) in Industrial 4.0 Era

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Abstract

This study is a curriculum relevance study of the Vocational High Schools (VHS) Curriculum 2013 on the implementation and impact of graduates in the workforce in the Industrial 4.0 era. The population is the teachers of VHS in Jakarta-Indonesia, who teach productive groups in the fields of Machining and Automotive expertise. Using purposive sampling obtained 193 respondents. The data were collected using an instrument that consists of indicators include 4 criteria, that is (1) Graduate Competency Orientation, (2) Learning Implementation, (3) Expected Learning Outcomes Assessment, and (4) Continuous Improvement. The results of the study can be concluded as follows (1) Graduate Competency Orientation criteria, showing 87% of respondents think the competency of VHS graduates using the "very high" and "high". (2) Learning Implementation criteria describe the suitability of the results of "very high" and "high" of 88.6%. (3) The Expected Learning Outcomes Assessment criteria are illustrated as "very high" and "high" categories of 90.7%. (4) The Continuous Improvement criteria describe that there are categories of "very high" and "high" obtained by 92.8%. (5) Aggregat OBE criteria obtained a description that the category of "very high" and "high" of 94.8%. The results of this study can be concluded that the Vocational High School (VHS) Curriculum 2013 is in accordance with the OBE criteria in the Industrial 4.0 era in the State and Private Vocational High Schools in the Jakarta-Indonesia environment.

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Keywords: First Outcome Based Education; Industrial 4.0 era and VHS Curriculum 2013

1. Introduction

Currently in Indonesia there are formal vocational education institutions called Vocational High Schools (VHS) of 13,710 (Statistics Data for Vocational Schools 2017/2018) which include public and private education units, consisting of various groups

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of expertise. In addition there are also vocational non-formal education units called the Institute of Courses and Training of 16,000 with various fields of expertise. The education unit has the same goal that is to provide skilled workers in accordance with the competencies in their fields of expertise.

Labor data shows that only 23% of graduates at the senior secondary level can be absorbed in the workforce. There are more than 77% who are not absorbed due to various reasons, including incompatibility with their field of work and most because they do not have the competency in accordance with the formation of expertise required.

Vocational High Schools which are part of the education unit that prepares skilled workers for the business world and the industrial world, should always innovate to adjust to their main objectives. The development of an increasingly complex era, of course must be a thought of change that is continuously carried out by vocational education units. The ability to adapt to this education unit is demonstrated by the outcomes of graduates who occupy suitable job formations and are even able to open new jobs.

Now it has entered the era of Industry 4.0 which has a different character from the previous period. The digital age encompasses all jobs in the Industrial 4.0 era. Disruption is happening to workers who are unable to adapt to the developing digital technology at this time, even many workers have been replaced by robotic machines that have the ability to include accuracy, precision, speed, free working hours, and free from social and humanitarian problems. Although this does not mean that robot machines do not have flaws or weaknesses, this gap should be filled by human resources (HR) who have adequate competence. Industrial 4.0 that can not be avoided can be anticipated by continuing to improve the capacity of human resources with a variety of things that are not owned by robot machines. Digital mastery becomes the main thing, the utilization of data systems owned by digital systems called "big data ", and other information based on information technology.

Vocational readiness resources at stake with all daring late to change the educational paradigm that is more open to adapt to the Industry 4.0 era. The education curriculum becomes part of the education process that must adapt to the development of the Industrial 4.0 era, being the key to structured change, becoming the pulse of education towards success in preparing the nation's children to face future changes.

Outcome Based Education (OBE) is one model of education that is currently widely used in universities to achieve the learning outcomes (LO) graduates, have a future himself in accordance with the field of interest and usefulness in society. The OBE model is expected to have a positive impact in preparing graduates in accordance with the Industrial 4.0 era. This also has an impact on curriculum changes, assessment systems, learning patterns, and the involvement of many stakeholders in networking to prepare the nation's young generation.

This study wants to see (1) the VHS Curriculum 2013 in accordance with the OBE model criteria, (2) the relevance of the VHS Curriculum 2013 to the readiness of Human Resources in the Industrial 4.0 era, and (3) The existence of the VHS Curriculum 2013 is in line with the Industrial 4.0 era. The output of this research is expected to be a consideration for policy makers in determining adjustments to the VHS curriculum which graduates outcomes enter in the Industrial 4.0 era.

Outcomes Based Education (OBE) is a process that involves the practice of assessment and evaluation in education to reflect the expected learning achievements and show mastery in the field of the program. OBE can be regarded as an education that achieves predetermined tangible results that includes results-oriented knowledge, abilities and behavior. OBE involves curriculum restructuring, assessment and practice that reflects learning achievement and mastery levels from the accumulation of the educational process.

OBE focuses on student learning by (1) Using statements of learning outcomes to make explicit what is expected to be known, understood or done by students; (2) Provides learning activities that will help students to achieve this result; and (3) Assessing the extent to which students meet these results through the use of explicit assessment criteria.

Following is the comparison between Input-Output Based Education and Outcome Based Education.

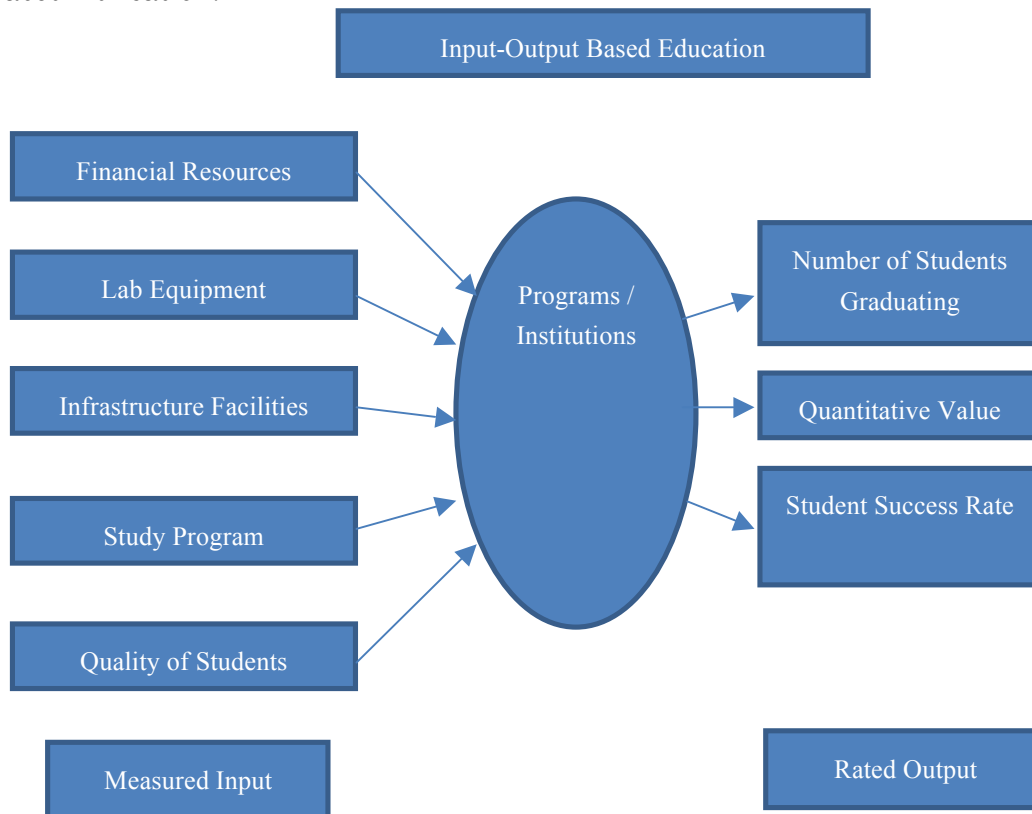


Figure 1. Input and Output Based Education

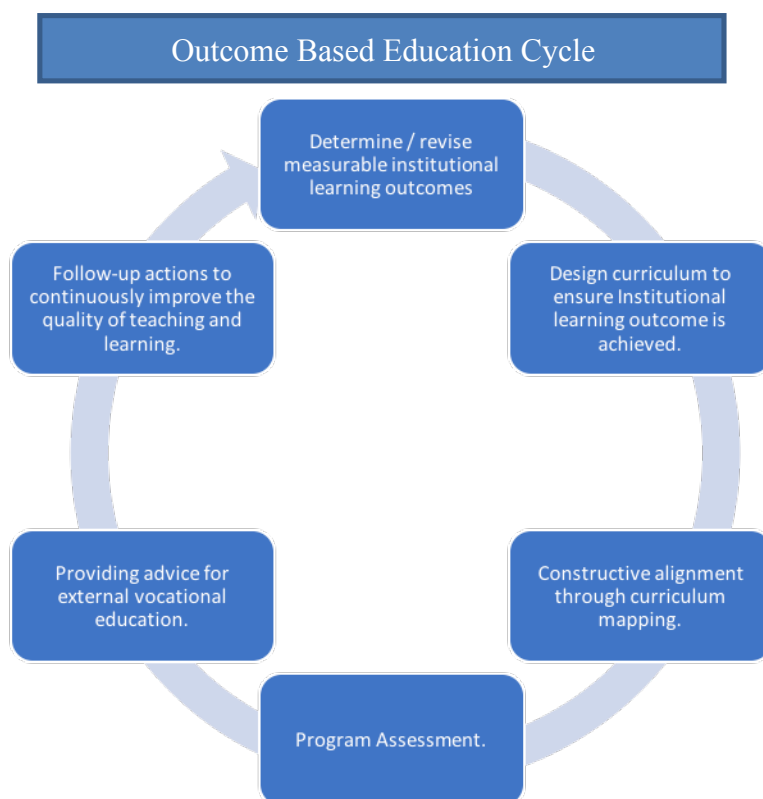


Figure 2. Outcome Based Education

Industry 4.0 is the name of the latest automation and data exchange trends in manufacturing technology. This term includes the cyber-physical system, the internet for everything, cloud computing, and cognitive computing ([#cite_note-2](https://id.wikipedia.org/wiki/Industri_4.0)). In general, the definition of an industrial revolution is when major technological advancements are accompanied by significant socio-economic and cultural changes. The industrial revolution 4.0 is in sight, Indonesia is no exception. Since our president, Joko Widodo, inaugurated a roadmap called "Making Indonesia 4.0", this topic has become a subject of discussion in various sections of the community.

The concept of the Industrial Revolution 4.0 is a concept that was first introduced by Professor Klaus Schwab. He is a well-known economist from Germany as well as the originator of the World Economic Forum (WEF), which through his book, *The Fourth*

Industrial Revolution, states that the Industrial Revolution 4.0 can fundamentally change the way we live, work and relate to one another.

This computer-based automation system made industrial machines no longer human-controlled, beginning in 2018 until now the Industrial Revolution 4.0. Industry 4.0 is an industry that combines automation technology with cyber technology. This is a trend of automation and data exchange in manufacturing technology. In this era, industry began to touch the virtual world, in the form of human, machine and data connectivity, all of which were everywhere. This term is known as the Internet of Things (IoT).

The curriculum is a tool to achieve educational goals, as well as a guide in implementing education. The curriculum developed with the national scope in a country reflects the philosophy of life of the nation, in which direction and how the life forms of a nation will be determined by the curriculum used by the nation today. The curriculum can plan the expected educational or teaching outcomes because it can show what needs to be done and what activities must be experienced by students. Educational outcomes can sometimes not be known immediately or after students complete an education program. Curriculum reform must be done immediately because there is no suitable curriculum of all time. The curriculum must be able to adjust to the changing times. In the process, the curriculum undergoes changes that always follow the times to lead to a better life for humans.

Curriculum development is a process that runs through different stages and is carried out after each specified period. All educational institutions regardless of type, origin and size must consider: (1) environmental variables around the institution; (2) pedagogical strategies that will be used to carry out learning and teaching activities that are considered in the curriculum; (3) competencies to be developed; and (4) leadership of educational institutions needed.

Curriculum development with an integrative approach is a curriculum that balances cognitive aspects (understanding concepts and theories), aspects of attitudes and psychomotor aspects, which are obtained from co-curricular or extracurricular with various strategies used to improve student soft skills and hard skills. Curriculum development aims to improve student abilities in learning and socializing. The change in curriculum is expected to be able to increase the learning opportunities of students, that is increasing planned and controlled relationships between students, teachers, materials, equipment, and the environment in which students learn.

The learning material in the integrated curriculum is actual according to the development and needs of the community and students as whole individuals so that it can be functionally useful and will be able to improve student ability to learn (Hadijaya, 2015: 310). To implement an integrative curriculum, teachers must have the ability to implement a variety of teaching and learning strategies. Finally, curriculum evaluation as a component in decision making is very useful for developing educational programs

(Hadijaya, 2015: 280). The achievements that the teachers want to produce in this curriculum are the cognitive, affective, and psychomotor domains, which certainly cannot be separated from one another to improve students soft skills and hard skills.

2. Method

This research was conducted at the Vocational High School (VHS) in Jakarta-Indonesia, from April to September 2019. The research was carried out using the Outcome Based Education (OBE) Model. Data collected using instruments. The instrument consists of 75 statements with 4 (four) alternative answer choices. The instrument was used to obtain data on the implementation of the VHS Curriculum 2013 in public and private schools based on the OBE model criteria in dealing with the Industrial 4.0. The instrument includes 4 criteria, that is (1) Graduate Competency Orientation, (2) Implementation of Learning, (3) Expected Learning Outcomes Assessment, and (4) Continuous Improvement.

Sources of data in this study are teachers who teach productive group subjects in the field of Machining and Automotive expertise. Information that is expected is information about the suitability of the implementation of the VHS Curriculum 2013 to the application of OBE criteria and the current curriculum readiness to anticipate Industrial 4.0 era.

The research instrument used has been tested for reliability and validity. A reliability test is needed to show the extent to which a measuring device can be trusted or reliable or show the consistency of a measuring device in measuring the same symptoms. Validity test is done to measure the validity or validity of a questionnaire, carried out using the content validity approach using R Test statistics and analyse using quantitative descriptive.

Success criteria used are based on ideal criteria. The ideal criteria if the score (X) meets the following Table 1:

Table 1. Ideal criteria

Score (X)	Category
$X \geq Mi + 1.5 SDi$	Very high
$Mi + 0.5 SDi \leq X < Mi + 1.5 SDi$	High
$Mi - 0.5 SDi \leq X < Mi + 0.5 SDi$	Medium
$Mi - 1.5 SDi \leq X < Mi - 0.5 SDi$	Low
$X < Mi - 1.5 SDi$	Very low

Information:

Mi: The average is ideal

SDi: Ideal standard deviation

The study was conducted in the Jakarta-Indonesia involving 193 respondents consisting of Teachers who were divided into 61 Teachers from State Vocational Schools and 132 Teachers from Private Vocational Schools

3. Results

In this study the data will be divided into two major groups, that is the State VHS and Private VHS. This is intended to see whether there are similarities between the two groups, so that the VHS which is the object of research has the same characteristics of the teaching and learning process and the quality of teacher capacity in managing curriculum. The instruments are grouped into 4 (four) criteria, that is (1) Graduate Competency Orientation, (2) Learning Implementation, (3) Expected Learning Outcomes Assessment, and (4) Continuous Improvement. The results of data acquisition through a questionnaire for each criterion are as follows.

3.1. Graduate Competency Orientation Criteria

Retrieval of data on the criteria of graduate competency orientation is divided into several sub-variables and several indicators, sub-variables and indicators referred to are as follows:

Sub-variable data includes 3 (three) aspects, that is (1) Graduate Profile, (2) Formation Profile, and (3) Competency of learning outcomes, this aspect includes 10 sub aspects, that is (a) mathematical ability, (b) Ability utilize the potential of engineering resources, (c) the ability to analyze technical problems, (d) the ability to solve engineering problems, (e) the ability to engineer skills, (f) the ability to communicate effectively, (g) the ability to plan, complete and evaluate engineering tasks, (h) Ability to work in multidisciplinary and multicultural teams, (i) Ability to comply responsibly, and (j) Ability to continue learning.

The results of the data obtained from the questionnaire as in Figure 3.

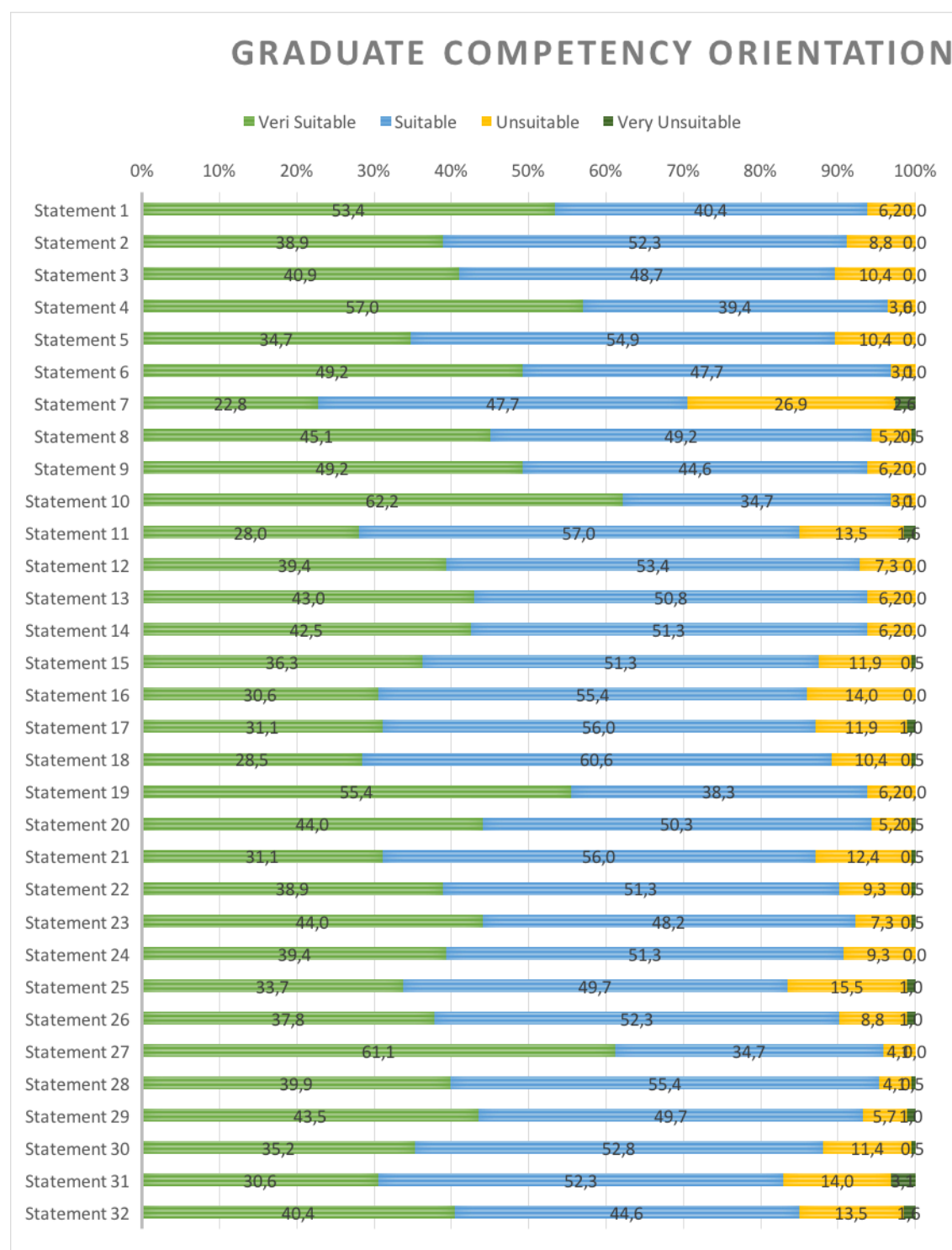


Figure 3. Alternative Graph of Respondents Answers for Public and Private Vocational High School of Graduate Competency Orientation Criteria

3.2. Learning Implementation Criteria

Learning Implementation Criteria include 5 (five) aspects, that is (1) Curriculum, (2) Managers, (3) Student and Academic Atmosphere, (4) Facilities, and (5) School Responsibilities. All 37 questionnaire items are part of the sub-5 (five) aspects.

The results of the data are captured through a questionnaire, as in Figure 4.

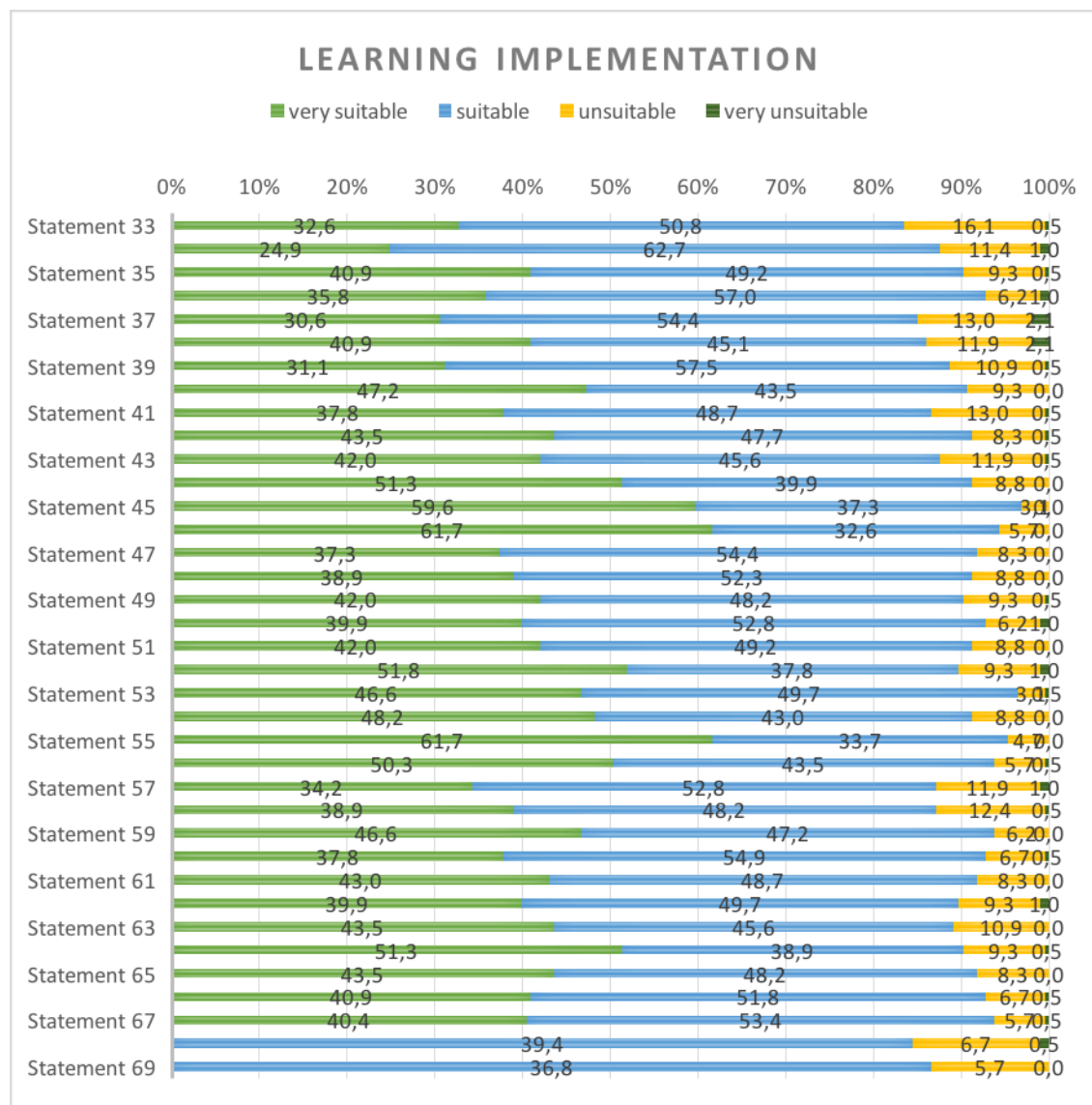


Figure 4. Alternative Graph of Respondents Answers for Public and Private Vocational High School of Learning Implementation Criteria

3.3. Expected Learning Outcomes Assessment Criteria

The data measured and analyzed on the criteria for the Expected Learning Outcomes Assessment are taken through a questionnaire obtained from 2 (two) aspects, that is (1) Assessment based on the specified performance indicators, and (2) Graduates have achieved the expected learning outcomes. These two aspects include 3 (three) statement items. The results obtained are as in Figure 5.

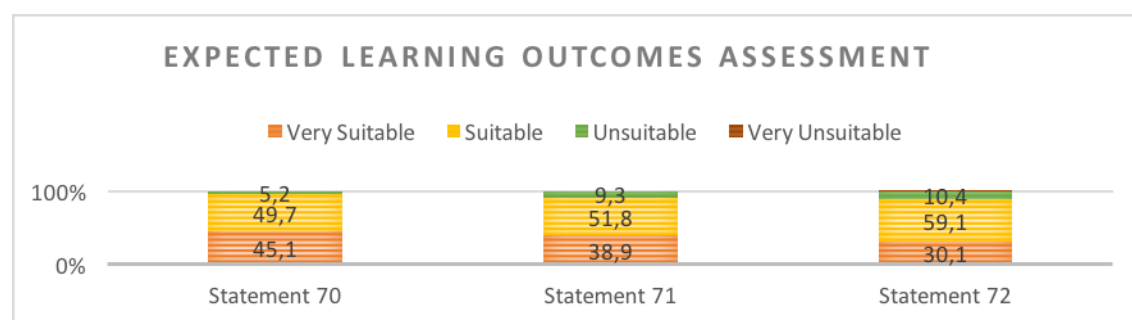


Figure 5. Alternative Graph of Respondents Answers for Public and Private Vocational High School of Expected Learning Outcomes Assessment Criteria

3.4. Continuous Improvement Criteria

For Data measured and analyzed on the Continuous Improvement criteria were captured through a questionnaire consisting of 2 (two) aspects, that is (1) the program was improved based on the results of the evaluation, and (2) the program was developed based on documented data. This criterion includes 3 (three) statement items. Data obtained as in Figure 6.

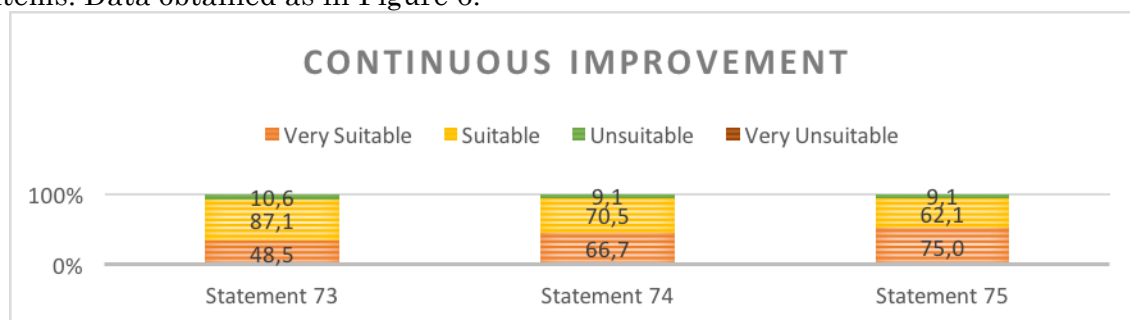


Figure 6. Alternative Graph of Respondents Answers for Public and Private Vocational High School of Continuous Improvement Criteria

4. Discussion

Research which is a form of evaluation of teaching and learning process, is there a conformity with the concept of the outcomes based education (OBE) model, so that this research can establish a learning approach to the curriculum currently used, whether it can still be continued or corrected, revised or restructured the curriculum.

By using 4 (four) criteria that is (1) Graduate Competency Orientation, (2) Learning Implementation, (3) Expected Learning Outcomes Assessment, and (4) Continuous Improvement, the data collection results can be described as follows:

4.1. Graduate Orientation Competency Criteria

The number of items in the questionnaire consisted of 32 statements with 4 (four) alternative answers with a score range of 1 (one) to 4 (four). With category restrictions, the results of the study can be described as shown in Figure 7.

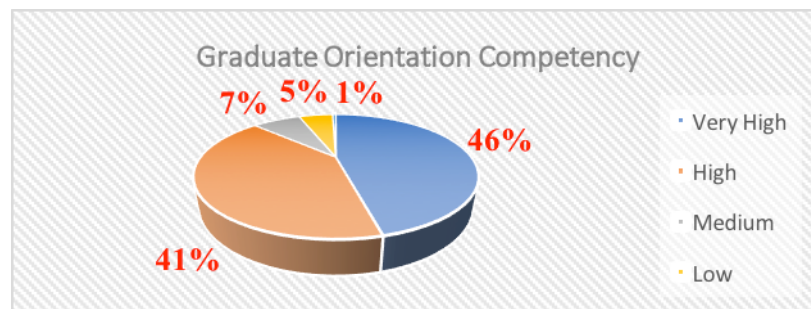


Figure 7. Graph Based on the Range Scores of Graduate Orientation Competency Criteria

Figure 7 can be explained that the highest frequency is in the category of "very high" with the acquisition of 89 respondents (46.1%), "high" obtained from 79 respondents (40.9%), "medium" obtained from 14 respondents (7.3 %), "low" category is obtained by 10 respondents (5.2%) and "very low" is obtained by 1 respondent (0.5%). Of the 193 responses obtained by the results of the categories "very high" and "high" that is 178 respondents (87%), which can be interpreted that the respondent believes that the Graduates Competency Orientation criteria meet the indicators of OBE model which is currently needed to fill in the formation of jobs in the machining and automotive industries at the Industrial 4.0.

4.2. Learning Implementation Criteria

The questionnaire for the Learning Implementation criteria consisted of 37 statements with 4 (four) alternative answers with a score of 1 to 4. With category restrictions, the results of the study can be described as shown in Figure 8

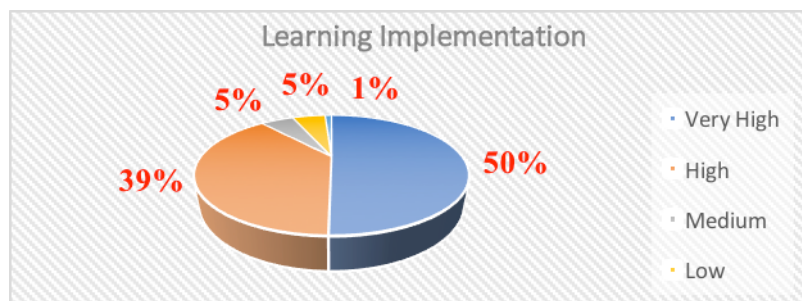


Figure 8. Graph Based on Range Scores of Learning Implementation Criteria

Figure 8, is described as follows: the highest frequency is the "very high" category with a frequency of 97 respondents (50.3%). "High" category with 74 respondents (38.3%). "Medium" category with a frequency of 10 respondents (5.2%), "low" category with a frequency of 10 respondents (5.2%) and "very low" with a frequency of 2 respondents (1.0%). Aggregat of Learning implementation criteria including the category "very high". This means that 171 of 193 respondents stated that the learning implementation had met the OBE indicators with assessments that were categorized as "very high" and "high". There are 6 (six) statements that received "very low" responses by 193 respondents, that is (1) The teacher understood well the curriculum structure and the interrelationships between subjects; (2) The teacher makes a learning plan in accordance with the applicable curriculum; (3) The learning plan is used by the teacher as a guide in the teaching and learning process; (4) Schools implement learning assessments that guarantee the competency of students in accordance with learning achievements; (5) Schools have a network of collaboration with graduate user institutions; and (6) Schools are developed in collaboration with the industrial world. This shows that the Teacher implemented the VHS Curriculum 2013 in accordance with the curriculum implementation guidelines that is by understanding the applicable curriculum, preparing the Learning Program Plan, using the Learning Program Plan as a guide to implementing the learning process and evaluating the learning process to monitor the absorption of learning and competencies possessed students as planned. The school also established a network of cooperation with the business world and the industrial world for the implementation of industrial practice programs, and the school built networking in preparing its graduates to directly enter the workforce.

4.3. *Expected Learning Outcomes Assessment Criteria*

The Expected Learning Outcomes Assessment Questionnaire consists of 3 statements with 4 (four) alternative answers with a score of 1 to 4. Referring to the category, the research data can be explained by Figure 9

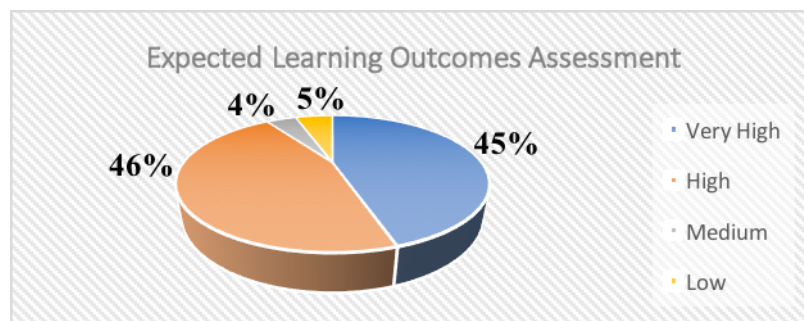


Figure 9. Graph Based on Range Scores of Expected Learning Outcomes Assessment Criteria

Figure 9 can be illustrated as follows: the category of "very high" with a frequency of 98 respondents (45.1%). "High" category with 88 respondents (45.6%). "Medium" category with a frequency of 8 respondents (4.1%), "low" category with a frequency of 10 respondents (5.2%) and none of the respondents chose "very low". The category of the Expected Learning Outcomes Assessment criteria as a whole was "very high". This means that of 193 respondents stated that the implementation of learning has met the indicators of outcome base education. There are 3 (three) statements that received "very appropriate" responses by 193 respondents, that is (1) Assessment of student learning outcomes based on established performance indicators. (2) Student performance appraisal uses methods that are appropriate with the assessment instruments in the industrial world. (3) Graduates are guaranteed in accordance with specified learning outcomes.

4.4. Continuous Improvement Criteria

The number of items in the questionnaire on the Continuous Improvement criteria consists of 3 (three) questions with 4 (four) alternative answers with a score range of 1 (one) to 4 (four). With category restrictions, the results of the study can be illustrated as shown in Figure 10.

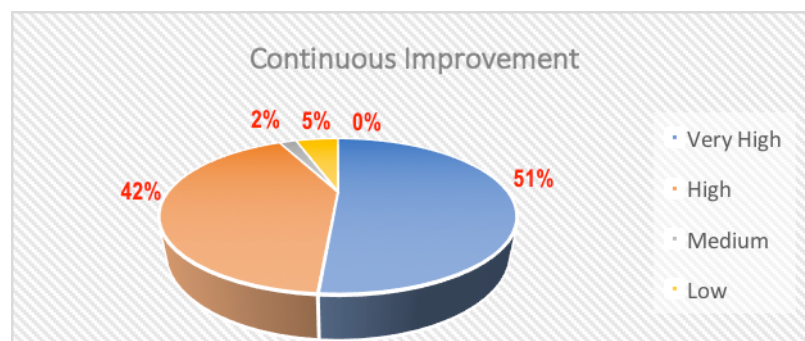


Figure 10. Graph Based on Range Scores of Continuous Improvement Criteria

The data obtained illustrates that the highest frequency is in the category of "very high" with the acquisition of 99 respondents (51.3%), "high" obtained by 80 respondents (41.5%), and "medium" obtained from 4 respondents (2.1 %). The "low" category was obtained by 10 respondents (5.2%), and "very low" none of the respondents voted. Achievement in terms of the criteria for Continuous Improvement can be concluded that the sustainability of the current VHS system is in accordance with the OBE concept and can continue to change due to the development of the industrial and business world at the Industry 4.0 era.

4.5. Aggregat Criteria

In total, 4 criteria consisted of 75 statements with 4 (four) alternative answers with a score range of 1 to 4. With category restrictions, the results of the study can be described as shown in Figure 11.

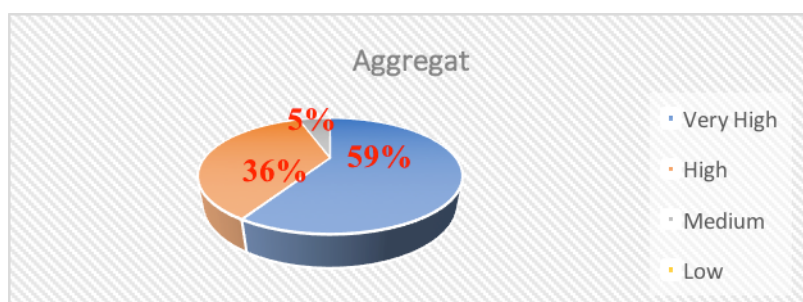


Figure 11. Graph Based on the Range Scores of Aggregat Criteria

The data obtained in Figure 11 illustrates that the highest frequency is in the "very high" category with the acquisition of 113 respondents (58.5%), "high" obtained by 70 respondents (36.3%), and "medium" obtained by 10 respondents (5.2%), "low" and "very low" none of the respondents voted.

low" none of the respondents voted. It can be concluded that the aggregate criteria stated that the VHS curriculum 2013 was in accordance the OBE indicators and the Industry 4.0 indicators for VHS in Indonesia.

5. Conclusions

5.1. Conclusion

The results of the research and discussion that have been presented, can be concluded as follows:

1. Graduate Competency Orientation Criteria, the data illustrates that the highest frequency in the "very high" category comes from 89 respondents (46.1%), "high" from 79 respondents (40.9%), "medium" from 14 respondents (7.3%), the "low" category of 10 respondents (5.2%) and "very low" of 1 respondent (0.5%). This means that 87% of respondents think that the competency of VHS using the VHS Curriculum 2013 is of the opinion that they are "very high" and "high" in accordance with the indicators of the OBE models that are currently needed to fill the formation of jobs in the machining and automotive industries at the Industrial 4.0.

2. Learning Implementation Criteria describe the results as follows: the category of "very high" with a frequency of 97 respondents (50.3%). "High" category with 74 respondents (38.3%). "Medium" category with a frequency of 10 respondents (5.2%), "low" category with a frequency of 10 respondents (5.2%) and "very low" with a frequency of 2 respondents (1.0%). It means that 88.6% (171 of 193 respondents) stated that the Learning Implementation criteria had met the OBE model indicator.

3. Expected Learning Outcomes Assessment Criteria are illustrated as follows: the "very high" category with a frequency of 98 respondents (45.1%). "High" category with 88 respondents (45.6%). "Medium" category with a frequency of 8 respondents (4.1%), "low" category with a frequency of 10 respondents (5.2%) and one of the respondents chose "very low". It means that 90.7% (186 of 193 respondents) stated that the expected learning outcomes evaluation criteria had met the OBE model indicator.

4. Continuous Improvement Criteria, the results of the study illustrate that the highest frequency is in the "very high" category with the acquisition of 99 respondents (51.3%), "high" 80 respondents (41.5%), and "medium" obtained from 4 respondents (2.1%). The "low" category was obtained by 10 respondents (5.2%), and "very low" none of the respondents voted. This means that 92.8% (179 of 193 respondents) are of the opinion that the criteria for improvement in the sustainability of the current vocational education system are in accordance with the OBE model and can continue to change due to the development of the industrial and business world at the Industrial 4.0.

5. Aggregat criteria, the outcomes based education (OBE) model obtained a description that the highest frequency is in the category of "very high" with the acquisition of 113 respondents (58.5%), "high" obtained by 70 respondents (36.3%), and "Medium" gained 10 respondents (5.2%), "low" and "very low" none of the respondents voted. The results of this study can be concluded that the VHS Curriculum 2013 is in accordance with the indicators of the OBE models and Industrial 4.0 for VHS in Indonesia.

5.2. Suggestions

1. Research on vocational high school curriculum 2013, this only covers the field of machining and automotive expertise, not as a whole vocational curriculum and not all elements of subjects. Therefore it is necessary to conduct a comprehensive review of the components contained in the curriculum and broader fields not only in the field of Engineering Technology.

2. Research which includes descriptive correlational research internal to this school, needs to be developed into research involving elements of users of vocational high school graduates who use the VHS Curriculum 2013.

3. The research area in urban areas, does not include other areas far from the location of the industrial world and the business world, so it is necessary to develop a wider and varied research area.

4. Ideally this research covers the entire population of types of skills and regions, both those managed by the government (State Vocational High Schools) and those managed by the public (Private Vocational High Schools) so that the relevance of curriculum implementation will be seen, conformity with current needs (Industry 4.0) and educational sustainability relevant (sustainability).

5.3. Limitations

This research has been tried as much as possible, but of course there are limitations in this study, that is:

1. The data sources of this study are teachers in machining and automotive. Not all teachers who teach participate. The limitations of the respondents certainly become part of the limitations of this study.

2. Time limitations and respondents who cannot be netted as much as possible

References

Allen, M.J. and Yen, W.M. 1979. *Introduction to Measurement Theory*. Belmont, CA: Wadsworth, Inc.

- Frechtling, J.A. 2007. *Logic Modeling Methods in Program Evaluation*. San Francisco, AA: John Wiley & Sons.
- B.K.Chung, *Outcome-based Education (OBE)*, 2009, Faculty of Engineering and Science, UTAR (<http://www.utar.edu.my/fes/file/OBE%20Presentation.pps>).
- Hamalik, Oemar. 2014, *Kurikulum dan Pembelajaran*, Jakarta: Bumi Aksara
- Kerlinger, F.N. 1986. *Asas-asas Penelitian Behavioral* (Terjemahan L.Rl. Simatupang). Yogyakarta: Gajahmada University Press.
- Mardapi, Djemari. 1991. *Kosep Dasar Teori Respons Butir Perkembangan dalam Bidang Pengukuran Pendidikan*. *Cakrawala Pendidikan* 3(X). 1-16.
- Mohammad Ayub Khan & Laurie Smith Law. 2018. *An Integrative Approach to Curriculum Development in Higher Education in the USA: A Theoretical Framework*. Halaman 12-15. Pada tanggal 06 maret
- Outcome-based education, Wikipedia, (http://en.wikipedia.org/wiki/Outcome-based_education).
- S. S. Chong, *Outcome-based Education (OBE)*, 2008, UTAR (<http://www.utar.edu.my/fes/file/OBE.pdf>).
- T. A. Grossman, *Shifting the Focus from Teaching to Learning: Learning Objectives for OR Course Design*, Masagung School of Management, University of San Francisco (<http://meetings.informs.org/TMSWorkshop/TMS04/presentations/Grossman.ppt>).
- TOWARDS EAC ACCREDITATION IN 2009 - Direct Assessment of Program Outcomes, Fakulti Kejuruteraan Elektrik, Universiti Teknologi Malaysia (<http://encon.fke.utm.my/OBE.ppt>).



What Do Teachers Think About Finger-Counting?

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Abstract

The aim of this study is to determine preschool, special education, elementary school teacher and mathematics teachers' views of finger-counting in mathematics teaching. The study was conducted with case study design. The sample of the study consisted of 34 teachers. Data were collected using an 8-item written form, and content analysis was performed. The findings of the study indicate that most participants use fingers as manipulatives in the teaching of numbers and counting but use them very little when teaching the four operations. Most participants state that finger-counting should be used at ages 4-8 / 4-11 while some state that there should not be any age limit. According to the participants, the advantages of finger-counting are that it is practical and accessible, facilitates retention and internalization, and makes the arithmetic more concrete while its disadvantages are that it restricts and slows down the execution of the four operations, prevents the development of mental arithmetic skills and turns into a habit. They state that students who insist on finger-counting have high anxiety, poor memory, and low self-confidence and achievement. Some participants encourage their students to perform mathematical calculations without using pen and paper to help them break the habit of finger-counting and also receive parental support during the process. The fact that students have different characteristics should be taken into account when addressing the use of finger-counting in mathematics teaching because the use of fingers in counting and calculation may be a necessity rather than a choice for some students.

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Keywords: Teachers' views, finger-counting, finger counting strategies

1. Introduction

Mathematics contains numerous abstract concepts, and manipulatives are often used in its teaching. Manipulatives facilitate the understanding and internalization of mathematical abstract concepts and the execution of arithmetic operational steps. Manipulatives varying according to mathematical subjects and concepts contain almost all physical objects such as beans, marbles, pattern blocks, beads, buttons, counting scales, matchstick, decimals, base blocks and fingers (Sternberg & Grigorenko, 2004; Mink, 2010).

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Fingers are physical manipulatives and are part of human body. Different counting strategies could be developed using fingers, and finger-counting has close neural connections in the brain. It has, therefore, attracted attention and become the subject of numerous studies in many areas such as education, educational psychology and educational neuroscience in recent years.

Ifrah (1985) regards fingers as the first counting and calculating machine of humanity, while Dantzig (2005) states that finger-counting either precedes or accompanies any counting technique. Finger-counting is a very old method used by all communities (Conant, 1896) because almost all children first use their fingers to count. In the early stages of development, children learn the basic principles of counting and arithmetic with the help of their fingers (Butterworth, 1999; Jordan, Hanich, & Uberti, 2003). Fingers play a key role in the development of the decimal system (Fuson, 1998; Richardson, 1916 as cited in Lindemann, Alipour & Fischer, 2011).

Recent research on brain imaging technologies shows that finger and number representations are found in proximal neural networks in the brain (Piazza et al., 2002; Kaufmann et al., 2008), indicating that the same or adjacent regions are active in the brain when fingers are used in general or when they are used to count (Butterworth, 1999). This explains why children intuitively use their fingers when counting.

Unlike mathematics educators, educational neuroscientists do not consider fingers to be different physical manipulatives from blocks, balls etc. Instead, they argue, based on the concept of embodied cognition, that finger-based representations are natural numerical representations that depend strongly on sensory-physical experience and are valid even when more abstract or conceptual representations are generated (Moeller et al., 2011). According to the theory of embodied cognition, cognitive and linguistic structures and processes - including basic patterns of thinking, information representation and methods of organizing and expressing information - are affected and limited by perceptual systems and bodily characteristics. Simply put, cognition depends on physical possibilities and limitations (Alibali & Nathan, 2012). Mathematics teaching in embodied cognition-based educational environments involves classroom activities that encourage students to play with objects and turn them into numerical sequences with their hands or whole bodies (Yalvaç, Soylu & Arıkan, 2011).

A series of the studies based on the theory of cognition and educational neuroscience focuses on finger gnosis and mathematical interaction. Research shows that finger gnosis and arithmetic are interrelated and that finger gnosis predicts math achievement (Noel, 2005; Penner-Wilger et al., 2007; Chinello et al. 2013; Newman, 2016). Finger gnosis is defined as the ability to sensually distinguish between fingers and to mentally represent bodily representations. During a finger gnosis test, the participant puts both hands palm down on a flat surface (e.g. table). An object (e.g. box) is placed between his/her hands and eyes so that he/she cannot see his hands. The experimenter then touches the participant's

fingers on one hand and asks him/her to indicate which finger he/she touched by moving the corresponding finger on the other hand. Alternatively, the experimenter may ask the participant to tell the name of the finger that he/she touched (Authors, 2018).

The literature contains many finger-counting methods, the most common of which are classical finger-counting, finger knuckles counting and Chisanbop. In the classical finger-counting method, each finger amounts to 1 and goes up to 10, and sometimes a number is kept in mind and the second number is added or subtracted. In the finger knuckles counting method (Pabsay) (Mutlu, 2018), numbers are counted rhythmically using finger knuckles to perform the four operations (Figure 1). In Chisanbop, the right thumb is valued as 5, right fingers each as 1, the left thumb as 50 and left fingers each as 10 (Figure 2). In this way, numbers up to 99 can be represented to do arithmetic calculations (Mutlu, 2018).



Figure 1. Finger Knuckles Counting Method (PabSay)



Figure 2. Chisanbop Method

Fingers are essentially well-associated manipulatives with internal representations. They are part of the body and can be manipulated just like number scales or fraction models. Fingers enhance memory and understanding and allow physical interaction with numbers (Glenberg et al., 2004). Fingers, when properly used, are a natural and already existing toolkit for modeling and reflecting digital information (Guha, 2006; Andres et al., 2008). The experimental studies confirm the positive effect of finger-counting in mathematics teaching. Gracia-Bafalluy and Noel (2008) state that finger-counting education improves mathematics performance while Stegeman and Grunke (2014) report that Chisanbop not only increases numerical, arithmetic, and problem-solving skills but also improves second-year students' attitudes towards mathematics. Guha (2006) states,

based on teachers' views, that the Knuccount is an effective tool in counting and calculating. Moeller et al. (2011) report that finger-based representations improve children's ability to use symbolic figures and develop their numerical and numerical skills while Wasner et al. (2015) state that finger-counting is effective in teaching basic counting principles such as quantity, order numbers, cardinal numbers and 1-1 counting. There are, on the other hand, some studies that focus on encouraging students to abandon finger-counting. For example, Albayrak (2010) states that using concrete objects such as beans and buttons instead of fingers is better for students when they do basic arithmetic.

The number of studies on finger-counting has increased significantly over the last two decades. Educational psychology and neuroscience studies emphasize the importance of finger-counting in counting and calculating, while educators are cautious about it as they believe that it causes students to do arithmetic more slowly, turns into a habit and delays the improvement of mental arithmetic skills (Albayrak, 2010; Moeller et al., 2011; Stegemann & Grünke, 2014). It is, however, necessary to determine whether educators' views of finger-counting differ by age, branch and personal characteristics. Within this context, the aim of the study is to determine preschool, special education, elementary school teacher and mathematics teachers' views of the use of finger-counting in mathematics teaching.

2. Method

Case study, which is a qualitative approach, was used in the study. The case study is one of the types of systematic design that includes steps such as gathering information, organizing the collected information, interpreting and reaching the findings of research (Merriam, 2013). The opinions of pre-school, special education, class and mathematics teachers about the finger counting method in mathematics teaching were obtained.

2.1. Participant characteristics

Appropriate identification of research participants is critical to the science and practice of psychology, particularly for generalizing the findings, making comparisons across replications, and using the evidence in research syntheses and secondary data analyses. If humans participated in the study, report the eligibility and exclusion criteria, including any restrictions based on demographic characteristics.

Participants were selected using maximum variation sampling, which is a purposeful sampling method used to make sure that the widest possible variety of subjects are represented in order to capture different themes. The maximum variation was the sampling of choice as the study is based on the premise that people's views of "finger-counting" differ by age and that it can be discovered by selecting teachers from different levels (preschool, special education, elementary school teacher and mathematics). The sample consisted of 34 teachers who voluntarily participated in the study. To ensure

confidentiality, preschool teachers were coded as P1, P2, P3 etc., special education teachers as S1, S2, S3 etc., elementary school teacher as C1, C2, C3 etc. and mathematics teachers as M1, M2, M3 etc. Table 1 shows the characteristics of the participants.

Table 1. Characteristics of participants

Code	Gender	Branch	Degree	Term of Employment (Years)
C1	Female	Elementary School Teacher	Bachelor's	8-12
C2	Female	Elementary School Teacher	Bachelor's	0-4
C3	Male	Elementary School Teacher	Bachelor's	0-4
C4	Male	Elementary School Teacher	Bachelor's	>12
C5	Female	Elementary School Teacher	Bachelor's	>12
C6	Female	Elementary School Teacher	Bachelor's	5-8
C7	Female	Elementary School Teacher	Bachelor's	0-4
C8	Male	Elementary School Teacher	Bachelor's	0-4
C9	Male	Elementary School Teacher	Bachelor's	>12
C10	Female	Elementary School Teacher	Bachelor's	0-4
C11	Male	Elementary School Teacher	Bachelor's	0-4
C12	Male	Elementary School Teacher	Master's	5-8
C13	Male	Elementary School Teacher	Bachelor's	5-8
C14	Male	Elementary School Teacher	Master's	>12
C15	Female	Elementary School Teacher	Bachelor's	8-12
S1	Female	Special Education	Bachelor's	0-4
S2	Female	Special Education	Bachelor's	0-4
S3	Female	Special Education	Bachelor's	0-4
S4	Female	Special Education	Bachelor's	5-8
S5	Male	Special Education	Bachelor's	0-4
S6	Male	Special Education	Bachelor's	5-8
S7	Female	Special Education	Bachelor's	>12
M1	Female	Mathematics	Bachelor's	0-4
M2	Male	Mathematics	Bachelor's	0-4
M3	Female	Mathematics	Bachelor's	0-4
M4	Female	Mathematics	Bachelor's	0-4
M5	Male	Mathematics	Bachelor's	8-12
M6	Male	Mathematics	Bachelor's	5-8
P1	Female	Preschool	Bachelor's	8-12
P2	Female	Preschool	Bachelor's	8-12
P3	Female	Preschool	Bachelor's	5-8
P4	Female	Preschool	Bachelor's	0-4
P5	Female	Preschool	Bachelor's	0-4
P6	Female	Preschool	Master's	>12

The most important data collection technique in a case study is eliciting information on views. A written form was used to elicit information on how participants experience, make sense of and explain the phenomenon of finger-counting. The form consisted of 8 open-

ended questions (items) developed based on the literature review. The items were also assessed by an educational specialist who has conducted studies on dyscalculia. It was concluded that the items had sufficient content validity to investigate the phenomenon of finger-counting. Moreover, a Turkish language specialist assessed the items and found them sufficient in terms of clarity and wording. Afterwards, a pilot study was conducted with two teachers using the form, which was then finalized as the main form based on the two teachers' feedback on clarity, wording, relevance and comprehension.

2.2. Data analysis

Data were analyzed using descriptive analysis, which is a qualitative data analysis method. The items in the form were the themes of the study. The participants' responses to the items were separately analyzed by three researchers, who compared their findings and developed common codes and categories later on. The first author was consulted in case of disagreement, and the researchers reached a consensus. Data analysis reliability was calculated using $[(\text{Consensus} / (\text{Consensus} + \text{Disagreement})) * 100]$ (Miles & Huberman, 2014). The reliability was found to be $[(85 / (85 + 6)) * 100 = 95\%]$

2.3. Credibility and transferability

For credibility, codes, categories and themes were presented to some participants for confirmation after data analysis. They were asked to read them and asked whether they would like to reword, add or remove any of them. Data analysis was finalized following their feedback. The researchers paid particular attention to consensus at every stage of the research (choosing a design, developing a written form, collecting and analyzing data, interpreting results). For transferability, teachers from different branches were gathered to investigate finger-counting. In other words, a wide variety of participants were gathered using maximum variation sampling in order to capture different views and opinions about finger-counting. Direct quotes were used to provide an accurate and coherent picture of participants' views, and the findings and researchers' interpretation were presented in the findings section.

3. Results

This section presents, first, the general findings, and then, the fourteen conceptual categories.

Table 2. Participants' views of finger-counting

Category	Subcategory	Code	Participants	f
Do you use finger-counting when teaching numbers to students?	No, I do not.		C8, C9, C13, P1, M2, M3, M4, M6	8
	Yes, I do.	Getting students to count from 1 to 10 using fingers with games and songs	C2, C1, C11, C14, S1, S2, S3, S5, S6, S7, P2, P4, P5, P6	14
		Getting students to add or subtract one rhythmically using fingers	C3, C4, C5, C6, C7, C10, C12, C15, S4, M1, M3, M5, P3	13
		Getting students to count multiples of any number from 1 to 9	C5	1
	Total			36

C8, C9, C13, P1, M2, M4 and M6 stated that they did not use finger-counting when teaching numbers. Half of the rest of the participants justified their responses under the code of “Getting students to count from 1 to 10 using fingers with games and songs,” meaning that they used finger-counting to teach numbers. Most of these participants were special education and preschool teachers. The other half justified their responses under the code of “Getting students to add or subtract one rhythmically using fingers,” meaning that they used finger-counting when teaching numbers. Most of these participants were elementary school teachers and mathematics teachers. C5 justified her response under the codes of “Getting students to add or subtract one rhythmically using fingers” and “Getting students to count multiples of any number from 1 to 9,” meaning that she uses finger-counting when teaching numbers. The responses of C5, M3, C14 and S5 are as follows:

I don't use finger-counting when teaching numbers, but I use it with students who have difficulty in doing basic arithmetic and I get them to do addition and subtraction (M5).

Yes, I do. I ask the student how many fingers are open to get him to count the opened fingers (S5).

Yes, I do. I get the student to count from the thumb to the tenth finger (C14).

Yes, I do. I get the student to count up or down or count the multiples of a given number (C5).

Table 3. Participants' views of using finger-counting when teaching addition and subtraction

Category	Code	Participants	f
How do you use finger-counting when teaching addition and subtraction?	Getting students to open as many fingers as the number and add it to or subtract it from the other number	C5, C6, C10, C14, S3, S7, P2, P3, P5	9

Getting students to keep in mind the greater one of the given numbers and to count it up or down by opening or closing their fingers	C2, C4, C7, C9, C11, C12, S4, S5, S6	9
Total		18

18 participants stated that they allowed their students to use finger-counting for addition and subtraction. Half of these participants justified their responses under the code of “Getting students to open as many fingers as the number and add it to or subtract it from the other number” while the other half justified their responses under the code of “Getting students to keep in mind the greater one of the given numbers and to count it up or down by opening or closing their fingers.” The responses of S7, C2 and C4 are as follows:

I get them to open as many fingers as the number and add it to the other number. Again, I get them to count down as many numbers as the opened fingers (S7).

I get them to keep the greater number in mind and count up as many fingers as the small number to add or get them to count down as many fingers as the small number to subtract (C2).

I get them to keep the greater number in mind and count as many fingers as the small number and add it to or subtract it from the greater number (C4).

Table 4. Participants' views of using finger-counting when teaching multiplication and division

Category	Code	Participants	f
How do you use finger-counting when teaching multiplication and division?	Getting students to open as many fingers as one of the multipliers and rhythmically count the other multiplier as many as the opened fingers (Multiplication)	C1, C2, C4, C5, C6, C7, C14, S5	8
	I teach them to multiply by 9 (Multiplication)	C6	1
	I teach multiplication for numbers after 5. (Multiplication)	C9	1
	I get students to count rhythmically from 3 to 12 for 12:3. (Division)	C2, C14	2
	Total		12

12 participants stated that they used finger-counting when teaching addition and subtraction. Most of them stated that they taught multiplication by getting their students to open as many fingers as one of the multipliers and rhythmically counting the other multiplier as many as the opened fingers. C2 and C14 said that they got their students to count rhythmically from 3 to 12 for 12:3. C6 said that she taught how to multiply by 9 while C9 stated that he taught multiplication for numbers following 5. Direct quotes from C2, C6, C9 and C14 are as follows:

Since we get them to use their fingers to count rhythmically, we get them to use their fingers to multiply and divide as well. For example, I teach them to multiply by getting them to count 5 fingers by twos ($2 \times 5=10$) or teach them to divide by getting them to count by twos until 10 ($10 : 2=5$) (C2).

I teach multiplication, so it is also related to division. I get them to count the multiples of 5 with 6 fingers and get them to count rhythmically from 3 to 12 for $12:3$ (C14).

Yes. I group them and teach them to multiply by 9 (C6)

I use fingers to multiply the numbers following 5 (C9).

Table 5. Participants' negative views of finger-counting

Category	Subcategory	Code	Participants	f
Do you think that finger-counting has a negative effect on students learning mathematics?		Limited number of fingers negatively affects calculations.	C1, C13, P1	3
	Finger-counting is limited in terms of calculations	They have a hard time using finger-counting and adapting to a new method as the number of steps increases and as multiplication and division problems become more complicated.	C3, M4	2
	Finger-counting prevents doing arithmetic mentally	If it is not supported with materials, it affects negatively and reduces mental processes.	C12,	1
		As students become older, they use finger-counting more than doing arithmetic mentally because they find the former easier.	C4, C10	2
	Finger-counting turns into a habit	Students should prefer to do arithmetic mentally; otherwise they need concrete examples in every mathematical operation they have to perform.	C5, C8	2
		Finger-counting turns into a habit and students use it even in the easiest operations.	C2, C11, S5, S6, M2	5
	Finger-counting slows down the operations	If finger-counting is excessively used, students become dependent on it as it prevents them from doing arithmetic fast.	C7, C9, M1, M3, M5	5
Total				20

20 participants responded the question “Do you think that finger-counting has a negative effect on students learning mathematics?” 5 participants stated that finger-counting limited the mathematical operations while 3 participants stated that it prevented students from doing arithmetic mentally. According to 7 participants, finger-counting turned into a habit while 5 argued that it slowed down the operations. Most of the participants with negative views of finger-counting were elementary school teachers and

mathematics teachers, and they mostly made statements under the codes of “Finger-counting turns into a habit, and students use their fingers even in the easiest operations” and “If finger-counting is excessively used, students become dependent on it as it prevents them from doing arithmetic fast.” Direct quotes from C11, C2, C12, C10, C13 and M4 are as follows:

The finger-counting method can be used for students to understand the subject. But I am against turning it into a habit. Those who turn it into a habit may use it in every problem, which may prevent them from doing arithmetic mentally (C11).

Yes, I’m afraid it does. Students who turn it into a habit use it even in the easiest operations. For example, they cannot calculate and say “ $6 + 1 = 7$ ” or “ $5 + 5 = 10$ ” mentally but instead use their fingers (C2)

It has a negative effect if it is not used with some other materials. Using finger-counting all the time reduces and deadens the mental arithmetic skills (C12).

I find it negative because there are students who prefer using finger-counting to doing arithmetic mentally more and more as they get older (C10).

It may affect the image of limitless world of mathematics negatively because we have a limited number of fingers (C13).

I think that it has disadvantages because students use finger-counting to do arithmetic even with one and two digit numbers. However, they have difficulty in using finger-counting and don’t know what to do when the number of operational steps increases and when multiplication and division problems become more complicated, and they have a hard time adapting to a new method too (M4).

Table 6. Participants’ views of finger-counting

Category	Subcategory	Code	Participants	f
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Does finger-counting have any advantages?		It has an advantage only for first-year students or in the early days to make a subject matter more concrete and understandable.	C4, C8, C9, C11, C12, C13, S6, M1, M4, M5, M6	11
	Finger-counting makes the arithmetic more concrete	It facilitates learning by touching.	C2, C10, S1, S2, S4, S5, S7, P3	8
		It turns the abstract into the concrete resulting in meaningful learning.	C5, C7	2
		It makes counting practical.	C1, C15, M3, P1	4
	Finger-counting is practical	It is a tool that students always have with them when they need it.	C3, C6, S3, M2, P2, P5, P6	7
	Finger-counting enhances retention	I think it is more permanent.	C14, S5, P4	3
	Finger-counting results in embodied cognition	They can internalize a subject more easily as they use their own body when they learn it.	P5	1
Total				36

All participants gave positive answers to the question “Do you think that finger-counting has a positive effect on students learning mathematics?” 21 participants made statements under the category of “Finger-counting makes the arithmetic more concrete.” 10 of the remaining participants emphasized the practicality aspect while 3 highlighted the high retention aspect of finger-counting. P5 made explanations regarding the embodied cognition aspect of the method. Direct quotes from P11, S1, C15, S5 and P5 are as follows:

I don't think it has disadvantages. Of course, it has advantages. It has worked for all my students so far. Since it involves gestures, it has a positive effect on learning retention (C14).

It definitely has advantages in special education. Since there is little to keep in mind, finger-counting both makes the arithmetic more concrete and more permanent (S5).

Students can internalize a subject more easily as they use their own body when they learn, and they can use it whenever they need it. So, I find it useful (P5).

I think the method is useful for middle school students until they develop arithmetic skills. I think it speeds up mathematical operations until they develop the necessary skills to do arithmetic mentally (M3).

Our students tend to forget quickly because they are special. So, it is an indispensable method. They want to see and touch. Taking out their fingers and counting by touching helps them learn the operation better (S4).

I think it has advantages. It makes counting practical (C15).

It affects learning in the early days positively because it makes what is learnt more concrete (C12).

Table 7. Participants' views of finger-counting in terms of students' ages

Category	Code	Participants			f
		For students 4-8 years of age	For students 4-11 years of age	For students 4 years of age and older	
What should the age limit be for using finger-counting for mathematical operations? Why?	Until students understand the logic behind arithmetic operations	S6, S3			2
	No age limit for special education students			S3, S4, S6, S7	4
	Since every student has different thinking skills, there should be no age limit.			C11, P3	2
	Abstract thinking begins.	C13, S1, P6	C1, C5		5
	There is a risk of it being permanent.	C2, P2			2
	It is impractical and a waste of time.	C7, S2, M3	M4		4
	It prevents the transition to doing arithmetic mentally.	C3, C4, C8, M3, P5	C9, C10, P4		8
	Its use might cause peer prejudice.	S5			1
	Others (age limit defined but no explanation made)	C6, C12, C14, C15, M6, P1	M1, M5		8
Total					37

30 participants stated that the age limit for using finger-counting for mathematical operations should be 4-8 or 4-11 years. 8 of these participants provided no explanation for their responses while others justified their responses under the codes of “Abstract thinking begins,” “It prevents the transition to doing arithmetic mentally,” “It is impractical and a waste of time” and “There is a risk of it being permanent.” S3, S4, S6, S7, C11, and P3, on the other hand, stated that there should be no age limit and justified their responses under

the codes of “No age limit for special education students,” “Since each student has different thinking skills, there should be no age limit.” and “Until students understand the logic behind arithmetic operations.” Unlike other participants, S3 and S6 stated that there should be an age limit based on different criteria and justified their responses under the codes of “Until students understand the logic behind arithmetic operations” and “No age limit for special education students.” Direct quotes from S3, S5, C2, M3, C11 and P6 are as follows:

Once the students have grasped the logic behind addition or other operations and practiced enough, they should be gradually discouraged from using finger-counting. It is not possible to determine any age limit for students who require special education (S3).

As I have mentioned in the previous question, there should be an age limit before students turn it into a habit because otherwise it could cause peer prejudice (S5).

It can be used in first- and second-grades but should be abandoned in third-grade. Otherwise, it could turn into something permanent (C2).

It should definitely be abandoned before middle school. Not only does it prevent the development of mental arithmetic skills, but it is also a waste of time (M3).

There should be no age limit because every student has different thinking skills. Those who cannot think abstractly can use it (C11).

The limit should be second grade because students above second grade can do arithmetic mentally (P6).

Table 8. Participants’ views of the general characteristics of students who insist on using finger-counting

Category	Subcategory	Code	Participants	f
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The general characteristics of students who insist on finger-counting	Self-confidence	They are afraid of making mistakes.	C13,	1
		They never take risks (Lack of self-confidence)	C4, P3,	2
		They doubt about their solutions.	C10, M2,	2
	Memory problem	They have low perception	C9,	1
		They have high visual memory	C8, P4,	2
		They are distracted	C6, S4, S5,	3
		They are forgetful	S4, S5, C14	3
	Learning difficulties	They have low achievement and little interest in classes	C1, C2	2
		They cannot or do not want to think fast	P1, P4	2
		They have low capacity of doing arithmetic mentally	C3, C11, C12	3
		They have difficulty making interpretations and solving problems.	M5	1
		They lack high-level thinking skills	M1, M5	2
		They are slow learners	C2	1
	Anxiety	They are overexcited (They panic when they have to solve questions quickly)	C5, M4, C8	3
	Habit	They are accustomed to the convenience of finger-counting	C11, M3, M4	3
	Age	They are younger than grade age	C10	1
	Total			32

Participants were asked about the general characteristics of students who insist on using finger-counting. They mostly made explanations under the categories of “Self-confidence,” “Memory problem,” “Learning difficulties,” “Anxiety,” “Habit” and “Age.” C10 made explanations under the categories of “Self-confidence” and “Age,” C11 under the categories of “Learning difficulties” and “Habit” and M4 under the categories of “Anxiety” and “Habit.” Direct quotes from C10, C11, M4 and other participants are as follows:

Those who are not sure about their operational steps and younger than the grade age insist on using finger counting (C10).

As I have mentioned before, it should not turn into a habit. The students who insist on using finger-counting cannot usually do arithmetic mentally (C11).

My fifth graders still count fingers. For most of them, it is a habit. Generally, those that are excited can't do arithmetic mentally. So, they need to use finger-counting (M4).

They forget easily and are easily distracted (S4).

Those who are slow learners and readers, generally have little interest in lessons and low academic achievement (C2)

Those who are accustomed to the convenience of finger-counting do not do arithmetic or think or reason mentally (M3).

Those who do not want to think or who always try to think concretely as they have high visual memory prefer using finger counting (P4).

They are afraid of making mistakes (C13).

Those who are in competition and have to do arithmetic fast use it (C8).

Table 9. Participants' views of getting students to abandon finger-counting

Category	Subcategory	Code	Participants	f
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Methods used to get students to abandon finger-counting	Positive	I insist that my special education students use finger-counting instead of getting them to abandon using it.	S5	1	
		I do not make my students abandon finger-counting because I do not find it dangerous.	C15,	1	
	No method	There is no time during class to get students to abandon finger-counting.	M3,	1	
		Others	I do not have a method.	C1, C4, C5, C7, C12, S1, S2, S3, S6, M1, M2, M5, M6 P1, P2, P3, P4, P5, P6	19
	Different Materials	I use different materials	C3,S5	2	
		I get them to count objects with their eyes.	C8,	1	
		I get students to play kendoku with one-digit numbers.	C10	1	
	Method		I get students to do arithmetic mentally with one-digit numbers.	C2, C9, C10, C11, C14, M4	6
		Simple Operations	I receive parental support to get students to do arithmetic mentally at home and at school often.	C6, S4	2
		Operations with large numbers	I get students to do arithmetic mentally with numbers that are larger and cannot be counted with fingers.	C13, M4	2
	Total			36	

Participants were asked “Are there any methods that you use to get your students to abandon finger-counting?” More than half of the participants stated that they did not use any method to get their students to abandon finger-counting. Only C15 stated that she did not use any method because she did not find finger-counting bad for students. S5 made explanations under the codes of “I insist that my special education students use finger-counting instead of getting them to abandon it” and “I use different materials” while M3 made explanations under the code of “There is no time during class to get students to

abandon finger-count.” The methods that the other participants stated that they used were under the subcategories of “Different Materials,” “Simple Operations” and “Operations with large numbers.” Under the subcategory of “Simple Operations,” most of the participants justified their responses under the codes of “I get students to do arithmetic mentally with one-digit numbers.” and “I receive parental support to get students to do arithmetic mentally at home and at school often.” The methods that C10 stated that she used were under the codes of “I get students to play kendoku with one digit numbers” and “I get students to do arithmetic mentally with one-digit numbers.” Direct quotes from C15, S5, M3, C10, C8 and S4 under the codes are as follows:

I don't see finger-counting as something bad. I don't force my students to do arithmetic mentally. They can use finger-counting as long as they can find the solution. What is important to me is that they grasp the logic of mathematics (C15).

Students who still use finger-counting have less knowledge of mathematics than their grade level peers, and therefore, there is no time during class to get them to abandon it (M3).

My students are special education students, so, I get them to use finger-counting to ensure learning retention and to prevent forgetfulness. However, numbers should be made concrete using a variety of materials and other students should be discouraged from using finger-counting (S5).

I give my students a couple of small numbers and ask them to reach a solution (like the show “countdown”) by playing kendoku (C10).

I ask my students to count with their eyes the images that I project on the smart board to get them to abandon finger-counting, and help them to get used to it so that they won't need their fingers after a certain point (C8).

I get my students to practice all the time and teach them how to do arithmetic mentally. Parental support is a must in this process (S4).

4. Discussion and conclusion

Many elementary school teachers confirm that students almost instinctively use their fingers for counting and calculation (Stegemann & Grünke, 2014). The majority of participants stated that they used fingers when teaching counting numbers. Guha (2006) reported that 9 out of 10 preschool teachers taught their students finger-counting. Of our participants, only four mathematics, three elementary school teachers, and one preschool teachers stated that they did not use finger-counting when teaching numbers. Primary school mathematics teachers' students are older, which might be the reason for why they do not use finger-counting when teaching mathematics. This might also be due to the fact

that students do not feel the need to use finger-counting or that teachers are of the opinion that finger-counting is insufficient for this age group.

The majority of participants who stated that they used fingers when teaching counting also stated that they did not use finger-counting for the four operations (addition, subtraction, multiplication and division). The main difference between the two situations might be due to the fact that participants do not know much about the counting methods (PabSay, Chisanbop, etc.) or that some are of the opinion that finger-counting is a limited method of doing arithmetic.

According to the participants, the advantages of finger-counting are that it is easy to use and within reach, facilitates retention and internalization, and makes the arithmetic more concrete. Bender and Beller (2012) state that finger representations support the internalization of numerical knowledge. Research shows that fingers are much more effective, accessible and practical than other concrete instruments and that they help improve math skills (Glenberg et al., 2004; Andres et al., 2008; Gracia-Bafalluy & Noel, 2008). On the other hand, the participants reported some disadvantages of finger-counting. They stated that it prevented students from doing arithmetic mentally, turned into a habit and slowed down arithmetic calculations. The disadvantages of finger-counting have led some researchers to conduct studies on encouraging students to abandon it. For example, Albayrak (2010) recommends concrete objects be used to discourage students to use finger-counting. It is, however, noteworthy that preschool and special education teachers emphasize the positive rather than the negative aspects of finger-counting.

Research on mathematics education suggests that students be encouraged to abandon finger-counting at the end of the first grade or at the beginning of the second grade so that they could develop mental number representations (Moeller et al., 2011). Similarly, most of our participants stated that finger-counting should be limited to students 4-8 or 4-11 years of age and justified their reasoning based on the conceptions that “Abstract thinking begins,” “There is a risk of it being permanent,” “It is impractical” and “It prevents the transition from concrete to abstract thinking.” On the other hand, some participants, the most of whom were special education teachers, were of the opinion that there should be no age limit for finger-counting, arguing that it should be used “until students understand the logic behind arithmetic operations” or because “every student has different thinking skills.” In fact, the use of finger-counting for arithmetic calculations may indicate that mental processes are not developed enough to function without external/concrete support. This, however, does not mean that it is not worth getting the support of finger-counting strategies (Bender & Beller, 2011). On the contrary, it might be a sign that affective and cognitive factors, which form the basis of students' finger-counting needs, should be identified to perform long-term alternative educational interventions or to encourage students to use different finger-counting strategies.

The participants reported that students who insisted on using finger-counting had low self-confidence and achievement, poor memory and high anxiety. Beller and Bender (2011) also argue that fingers are, among other things, a very useful set of tools that eases the burden of working memory and enables students to perform better in complex numerical tasks. Some students; however, use finger-counting to perform basic arithmetic because they have turned it into a habit or are afraid of making mistakes. Some other students count by touching or matching objects since they fear that they will not be able to count otherwise (Brias and Siegerler, 1984 as cited in Albayrak, 2010).

Most participants stated that they did not have any method to encourage their students to abandon finger-counting. Unlike other participants, two participants (a class and a special education teacher) stated that they did not feel the need to use any methods to get their students to abandon finger-counting because they found it useful. Some other participants stated that they received parental support and got their students to perform arithmetic operations mentally so that they could abandon finger-counting. The participants' differing views of finger-counting actually reflect scientists' differing opinions about the phenomenon. On the one hand, neurocognitive research and embodied cognition theory argue that fingers are more useful manipulatives than other objects as the former make significant contributions to numerical comprehension. On the other hand, research on mathematics education suggests that finger-counting strategies should be limited to a certain age period.

Finger-counting is a normal and healthy intermediate stage in the development of complex problem-solving skills rather than a debilitating habit that should be given up immediately or suppressed by parents and teachers at all costs (Stegemann & Grünke, 2014). Students with different characteristics are at the center of the discussion of finger-counting in mathematics teaching because it may be a necessity rather than a choice for some students. Therefore, students' characteristics should be determined before they are encouraged to abandon finger-counting. Moreover, the limitation of finger-counting can be overcome by using different strategies (PabSay, Chisanbop etc.). Finger-counting should, therefore, be seen as a transition process rather than an obstacle to the development of mental arithmetic skills because people abandon finger-counting strategies once they develop cognitive and affective skills.

References

- Albayrak, M. (2010). An experimental study on preventing first graders from finger counting in basic calculations. In *Electronic Journal of Research in Educational Psychology* 8 (3), 1131–1150.
- Alibali, M. W., & Nathan, M. J. (2012). Embodiment in mathematics teaching and learning: evidence from learners' and teachers' gestures. *Journal of the Learning Sciences*, 21(2), 247-286.
- Andres, M., Seron, X., & Olivier, E. (2007). Contribution of hand motor circuits to counting. *Journal of Cognitive Neuroscience*, 19(4), 563–576.

- Bender, A. & Beller, S. (2011). Fingers as a tool for counting - naturally fixed or culturally flexible? In *Frontiers in psychology*, 2, 256. DOI: 10.3389/fpsyg.2011.00256.
- Bender, A. & Beller, S. (2012). Nature and culture of finger counting: Diversity and representational effects of an embodied cognitive tool. *Cognition*, 124 (2), 156-182. <https://doi.org/10.1016/j.cognition.2012.05.005>.
- Butterworth, B. (1999). *What Counts: How the Brain is Hardwired for Math*. New York: The Free Press.
- Chinello, F., Pacchierotti, C., Tsagarakis, N. G., & Prattichizzo, D. (2016). Design of a wearable skin stretch cutaneous device for the upper limb, in *Proceedings of the IEEE Haptics Symposium*, (Philadelphia, PA: IEEE Xplore), 14–20. doi:10.1109/HAPTICS.2016.7463149
- Conant, L.L. (1896). *The Number Concept.--Its Origin and Development*. London: Macmillan & Co.
- Creswell, John W. (2014). *Research Design. Qualitative, Quantitative and Mixed Methods Approaches*. Fourth ed. Lincoln: Sage Publications
- Dantzig, T. (2005). *Number The Language of Science*. Edited by Joseph Mazur. New York: Pi Press
- Fuson, K.C. (1988). *Children's counting and concepts of number*. New York: Springer.
- Gracia-Bafalluy, M., & Noel, M. P. (2008). Does finger training increase young children's numerical performance?. *Cortex*, 44(4), 368-375.
- Glenberg, A. M., Gutierrez, T., Levin, J.R., Japuntich, S., & Kaschak, M. P. (2004). Activity and Imagined Activity Can Enhance Young Children's Reading Comprehension. *Journal of Educational Psychology*, 96(3), 424-436. DOI: 10.1037/0022-0663.96.3.424
- Guha, S. (2006). Using mathematics strategies in early childhood education as a basis for culturally responsive teaching in India. *International Journal of Early Years Education*, 14(1), 15-34, DOI: 10.1080/09669760500446374
- Ifrah, G. (2012). *Rakamların Evrensel Tarihi*. K.Dinçer (çev), Alfa Basım Yayın Dağıtım:İstanbul.
- Jordan, N., Hanich, L. B., & Uberti, H. Z. (2003). Mathematical thinking and learning difficulties. In A. J. Baroody & A. Dowker (eds.), *Development of arithmetic concepts and skills* (pp. 361-384). Mahwah, NJ: Lawrence Erlbaum
- Kaufmann, L., Vogel, S., Wood, G., Kremser, C., Schocke, M., Zimmerhackl, L.B., & Koten, JW (2008). A developmental fMRI study of non-symbolic numerical and spatial processing. *Cortex*, 44, 376–85.
- Lindemann, O., Alipour, A., & Fischer, M. H. (2011). Finger counting habits in middle eastern and western individuals: an online survey. *Journal of Cross-Cultural Psychology*, 42(4), 566-578.
- Merriam, S.B. (2013). *Qualitative Research: Nitel Araştırma* (Çev. Ed.: Selahattin Turan). Ankara:Nobel Yayıncılık.
- Miles, M.B., Huberman, A.M., & Saldana, J. (2014). *Qualitative Data Analysis* (3rd ed.). Thousand Oaks, CA: Sage Publications.
- Moeller, K., Martignon, L., Wessolowski, S., Engel, J., & Nuerk, H. C. (2011). Effects of finger counting on numerical development the opposing views of neurocognition and mathematics education. *Frontiers in Psychology*, 2(November), 1–5. <https://doi.org/10.3389/fpsyg.2011.00328>
- Mink, D. V. (2010). *Strategies for teaching mathematics*. Shell education: Huntington Beach.
- Mutlu, Y., & Soylu, F. (2018). Eğitsel sinirbilim ve bedenlenmiş biliş perspektifinden matematik öğrenme güçlüğü yaşayan öğrencilerde parmakla sayma. Adem İşcan (ed). *Eğitim Bilimlerinde Örnek Araştırmalar*. Ankara: Nobel.

- Mutlu, Y. (2018). Matematik Öğrenme Güçlüğü Bağlamında Parmakla Sayma. Paper presented at the 1st International Congress on New Horizons in Education and Social Sciences (ICES-2018), İstanbul, Turkey.
- Newman, S. (2016). Does finger sense predict addition performance? *Cognitive Processing*, 17, 139–146. <https://doi.org/10.1007/s10339-016-0756-7>
- Noel, M. P. (2005). Finger gnosis: a predictor of numerical abilities in children? *Child Neuropsychology*, 11, 413–430.
- Penner-Wilger, M., & Anderson, M. L. (2013). The relation between finger gnosis and mathematical ability: why redeployment of neural circuits best explains the finding. *Frontiers in Psychology*, 4(December), 877. <https://doi.org/10.3389/fpsyg.2013.00877>
- Piazza, C.C., Patel, M.R., Santana, C.M., Goh, H, Delia M & Lancaster, B.M. (2002). An evaluation of simultaneous sequential presentation of preferred and non-preferred food to treat food selectivity. *Journal of Applied Behavior Analysis*. 35:259–270. [PMC free article] [PubMed]
- Stegemann, K.C. & Grünke, M. (2014). Revisiting an old methodology for teaching counting, computation, and place value: the effectiveness of the finger calculation method for at-risk children. *Learning Disabilities: A Contemporary Journal*, 12(2), 191-213.
- Sternberg, R. J., & Grigorenko, E. L. (2004). Successful intelligence in the classroom. *Theory into Practice*, 43, 274-280. doi:10.1207/s15430421tip4304_5.
- Yalvaç, B., Soyly, F., & Arıkan, A. (2011). Bedenlenmiş biliş ve eğitim. *Ethos: Felsefe ve Toplumsal Bilimlerde Diyaloglar*, 4(1), 1-20.
- Wasner, M., Moeller, K., Fischer, M.H., & Nuerk, H.C. (2015): Related but not the same. Ordinality, cardinality and 1-to-1 correspondence in finger-based numerical representations. In *Journal of Cognitive Psychology* 27 (4), pp. 426–441. DOI: 10.1080/20445911.2014.964719.

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Long vowels versus diphthongs in North American English: Which one is easy to recognize and hear?

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Abstract

The aim of this presentation is to measure to what extent long vowels are confused with diphthongs by Turkish English majors. A diphthong is made of two components. By definition and sound structure, diphthongs are a combination of two separate vowel sounds that, when uttered, the first vowel glides onto the second vowel forming a single syllable, as heard in /aɪ, aʊ, eɪ, oʊ, ɔɪ/. By nature, diphthongs happen to be long vowels. Long vowels, on the other hand, do not include two vowels that do not glide, as in /ɑ:, i:, u:, ju:, ɔ:, ɜ:/. No vowel sound has a fixed length and many other factors affect length, such as the voiced consonant sound directly after a vowel sound will affect its length (voicing), reduction and intonation. It is said that to hear vowel sounds within words is easier than it is to hear the sound alone. Long vowels are generally said to be the easiest vowels for non-native English speakers to distinguish and hear correctly. This assumption will be tested with 30 instructors of English language education who are enrolled for MA degree at a foundation university in Ankara. The perception of long vowels vs diphthongs in written words and the audition of them in oral forms were measured within two separate applications of a pre-test and a post-test. It was discovered that the Turkish English instructors perceived the diphthongs (86, 3%) better than long vowels (73,3%). It was deduced that the main cause of learning difficulty behind the diphthongs and long vowels, apart from L1 intervention, was the fact that Turkish learners of English suffer from a psycho-orthographic trauma created by the spelling of the diphthongs and long vowels by means of several letters.

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Keywords: Long vowel, diphthong, gliding, monophthong, vowel length, checked vowels

1. Introduction

The present study investigates the perception of English long vowels and diphthongs by 30 Turkish English instructors. The perception of North American English (henceforth, NAE) long vowels and diphthongs has never been an easy task for Turkish English teachers and students. It is said that to hear vowel sounds within words is easier

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than it is to hear the sound alone. Long vowels are generally said to be the easiest vowels for non-native English speakers to distinguish and pronounce correctly. Most theories of L1 speech perception postulate that non-native learners establish speech to sound categories based on the distribution of acoustic properties in their native language (Maye, Werker & Gerken, 2002). The perception of vowel height, backness, frontness, roundedness, unroundedness, and length are mostly triggered by the L1.

L1 phonological system operates as a filter that accommodates linguistic input to its structure. Best's Perceptual Assimilation Model (Best 1995, and Best & Tyler 2007) emphasizes native language / second language perceptual similarity as a predictor of difficulties in the discrimination of non-native contrasts. Cross language speech perception models such as PAM (Best 1995, 1999) and L2 learning models such as SLM (Flege 1995; Flege, Bohn, & Jang, S., 1997.) are also encountered in the investigation of sound perception.

1.1. The diphthongs and long vowels in spelling

Discuss Vowels sounds of English are represented by the letters a, i, e, u, and o. "y" is a vowel when it sounds as /ɪ / such as in the words bit, city, kin, it, sit, etc." Also, "y" is form a letter is a consonant when it sounds as /j/ such as in the words yeast /ji:st/ and yield /ji:ld/. The most common letter in the English language is the letter **e**. The vowels **a**, **o**, **i** and **u** are also among the top five most used letters in English. These vowels are used in the spelling of long vowels and diphthongs in English.

The following chart represents the frequency of English letters in NAE:

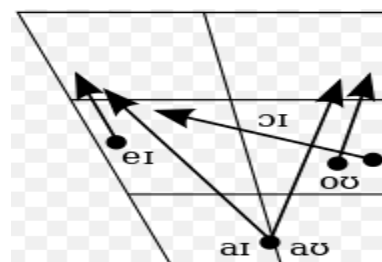
Letter ↕	Relative frequency in the English language ↕	
e	12.702%	
a	8.167%	
o	7.507%	
i	6.966%	
u	2.758%	

Adapted from Mička ("Letter frequency (English)". Algoritmy.net.)

The phonemic vowel chart of English language, as given below, houses 12 vowel phonemes whose place, point and manner of articulation can be demonstrated as follows:

	FRONT	CENTER	BACK
HIGH	i:		u:
	ɪ		ʊ
MID	e:	ə	oʊ
	ɛ	ʌ	ɔ
LOW	æ		ɑ

NAE vowel chart:
Demirezen (2017:263)



NAE diphthong chart: Adapted from
(<https://www.google.com.tr/search?q=>)

1.2. The sound structure of long vowels and diphthongs

After Vowels are also one of the hardest parts of English when it comes to pronunciation there just seem to be so many ways to articulate them. A vowel sound is created when air flows smoothly, without interruption, through the throat (pharyngeal and laryngeal cavities) and mouth (oral cavity). In their articulation, there is no blockage while air stream coming out of the mouth. Different vowel sounds are produced as a speaker changes shape and placement of articulators in the parts of the throat and mouth. The pronunciation of each vowel is determined by the position of the vowel in a syllable, and by the letters that follow or come before or after it. Vowel sounds can be short, long, or silent. Most vowels have two pronunciations, a long sound and a short sound. In NAE, <r> in or /ɔ:ɹ/ is always pronounced while in BrE it is not pronounced after vowels.

1.3. The sound structure of long vowels and diphthongs

A long vowel is a single vowel sound which gets lengthened during its articulation. Therefore, in phonology, vowel length is the perceived duration of a vowel sound. Some dictionaries use the diacritical mark to demonstrate a long vowel and it is called a macron (¯). In NAE Long vowel sounds are /eɪ/, /i:/, /aɪ/, /ɑ:/, /oʊ/, /ju:/, /u:/, /ɜ:/, /ɔ:/, and /ɔɹ/.

1.4. The nature of diphthongs

As opposed to long vowels, diphthongs are vowels that change throughout their pronunciation. They start as one vowel and end as another. In the International Phonetics Alphabet (henceforth, IPA), diphthongs are transcribed with two different symbols, whereas the short part of diphthongs called monophthongs are transcribed with just one symbol. The term diphthong literally means 'two voices' or 'two sounds'. The vowel sound of each diphthong is composed of two different kinds of vowel sounds in syllables; therefore, a diphthong happens to be two vowels, which are completely two

different vowels occurring in the same syllable whose vowel quality changes within a syllable. Two vowel sounds which consist of a movement or glide from one vowel to another are called diphthongs. In terms of length, diphthongs resemble long vowels. In most diphthongs, the first component is much longer and stronger than the second component. The process of moving from one vowel sound to another is called gliding, and thus another name for diphthong is the term gliding vowel. Therefore, a diphthong is also known as a compound vowel, a complex vowel, and a moving vowel. For example, in the word time /t'aɪm/, while /a/ receives the primary stress, the /ɪ/ vowel glides to become a noticeable /ɪ/. As the gliding incident happens, /ɪ/ gets weakened by losing its loudness with an audible decrease in its articulation. A sound change that turns a single vowel into a diphthong is called diphthongization. As a result, the /ɪ/ component of the diphthong /aɪ/ is shorter and quieter. Thus, the second component of a diphthong is just extended version of the first component. So, these dual vowels are called diphthongs, which merge together during the articulation and heard as a single long vowel. That's why long vowels are generally confused with long vowels.

1.5. Differences in quality between long and short vowels

In terms of length, diphthongs look like vowels. The distinct differences in quality between long and short vowels depend on the tongue shape, tongue position, and the lip position. The length is demonstrated by the length mark is represented by the two dots, as in beat /bi:t/, bird /bɜ:ɪ/, boil /bɔɪl/, boat /boʊt/, board /bɔ:ɪd/, card /kɑ:ɪd/, coat /koʊt/, cool /ku:l/, fool /fu:l/, hard /hɑ:ɪd/, hoarse /hɔ:ɪs/, needle /ni:dl/, noon /nu:n/, post /poʊst/, seat /si:t/, and toilet /'tɔɪlɪt/. The "short" vowel sounds cannot occur at the end of a syllable in English. They must be followed by a consonant. In linguistics, they are also called "checked" vowels.

1.6. Long vowels of north American English: /a:, i:, u:, ju:, ɔ:, ɜ:/

The long vowel frequencies can be singled out as following in NAE; the frequencies go in line with <https://cmloegcmluin.wordpress.com/2012/>: “The phoneme frequency of some of the long vowels Relative Frequencies of English Phonemes by cmloegcmluin who correlated the Carnegie Mellon University Pronouncing Dictionary with Adam Kilgariff's unlemmatized frequency list for the British National Corpus by using the former as a phonemic lexicon and the latter as a sample set, weighting the phonemes by the totals of the relative frequencies of each of the words they appear in. The data did use an American accent.”

Long vowel	Frequency %
/i:/	3.61%

/u:/	1.93%
/ɑ:/	1.45%
/ju:/	????
/ɜ:/	????
/ɔ:/	1.18%

The following vocabulary items demonstrate the existence of long vowels in NAE:

/i:/ able /'eɪbəl/ beat /bi:t/, bee /bi:/, breathe /bri:ð/, deal /di:l/, eat /i:t/, feel /fi:l/, fleece /fli:s/, field /fi:ld/, free /fri:/, heal /hi:l/, key /ki:/, leave /li:v/, meat /mi:t/, need /ni:d/, needle /ni:dl/, seat /si:t/, sheep /ʃi:p/, sleep /sli:p/, seize /si:z/

/ju:/ beauty /'bju:Di/, cute /'kju:t/, cue /'kju:/, cube /'kju:b/, evacuate /ɪ'vækju:ert/, feud /'fju:d/, fume /'fju:m/, fuel /'fju:əl, fju:l/, fume /'fju:m/, fusion /'fju:ʒən/, huge /hju:dʒ/, mute /mju:t/, mule /mju:l/, you /ju:/, new /nju:/, music /'mju:zɪk/, use /ju:z/, union /'ju:njən/, uniform /'ju:nə'fɔ:m/, unique /ju:'nik/, use /ju:s/, unicorn /'ju:nə'kɔ:n/, youth /ju:θ/, value /'vælju:/

/ɔ:/ abroad /ə'brɔ:d/, afford /ə'fɔ:d/, always /'ɔ:lweɪz/, autumn /'ɔ:Dəm/, August /'ɔ:gəst/, author /'ɔ:θə/, born /'bɔ:n/, board /'bɔ:d/, cloth /klɔ:θ/, force /'fɔ:s/, hoarse /'hɔ:s/, launch /'lɔ:ntʃ, 'ləntʃ/, lawn /'lɔ:n/, more /'mɔ:/, north /'nɔ:θ/, recall /ɪ'kɔ:l/, roar /'rɔ:/, or /'ɔ:/, soar /'sɔ:/, score /'skɔ:/, shawl /'ʃɔ:l/, store /'stɔ:/, story /'stɔ:ɪ/, warm /'wɔ:m/,

/u:/ boo /'bu:/, coo /'ku:/, blue /'blu:/, bruise /'bru:z/, canoe /kə'nu:/, coup /'ku:/, coupon /'ku:pən/, cuckoo /'ku:ku:/, cruise /kru:z/, food /fu:d/, flue /flu:/, flute /flu:t/, igloo /'ɪglu:/, guru /'gu:ru:/, juice /dʒu:s/, loose /lu:s/, loop /'lu:p/, rue /ru:/, stupid /'stu:pɪd/, Lulu /'lu:lu:/, lose /'lu:z/, proof /'pru:f/, route /'ru:t/, rule /'ru:l/, rude /ru:d/, shampoo /ʃæm'pu:/, stool /'stu:l/, suit /'su:t/, through /'θru:/, tulip /'tu:lɪp/, tune /'tu:n/, tooth /tu:θ/, view /'vyu:/, who /'hu:/, zoo /'zu:/

/ɑ:/ alarm /ə'lɑ:m/, arm /ɑ:m/, calm /'kɑ:m/, card /'kɑ:d/, carpark /kɑ:rpɑ:ɪk/, document /'dɒ:kjəmənt/, hard /'hɑ:d/, coupon /'ku:pən/, farm /fɑ:m/, father /'fɑ:ðə/, guard /gɑ:d/, harm /'hɑ:m/, harmonica /hɑ:ɪ'mɑ:nɪkə/, modern /'mɑ:dən/, remark /ɪ'mɑ:ɪk/, psalm /'sɑ:m/, plaza /'plɑ:zə/, rocket /'rɒ:kɪt/, robbery /'rɒ:bəri/, robot /'rɒtə:t/

/ɜ:/ bird /'bɜ:/, concern /kən'sɜ:n/, burn /'bɜ:n/, burden /'bɜ:dn/, burst /'bɜ:st/, church /'tʃɜ:rtʃ/, curve /'kɜ:v/, curtain /'kɜ:ɪn/, curtail /kɜ:ɪ'teɪl/, early /'ɜ:li/, earn /'ɜ:n/, journey /'dʒɜ:ni/, learn /lɜ:n/, occur /ə'kɜ:/, person /'pɜ:nsən/, prefer /pɪ'fɜ:/, turn /'tɜ:n/, research /'ɪ:sɜ:rtʃ/, work /'wɜ:k/, were /'wɜ:/, worm /'wɜ:m/

Diphthongs of North American English: /aɪ/, /aʊ/, /eɪ/, /oʊ/, /ɔɪ/

In British English (BrE, RP), there are 8 diphthongs whose list (RP) can be given as follows:

/eɪ/ as in 'take'	/eə/ as in 'care'
/aɪ/ as in 'buy'	/əʊ/ as in 'go'
/ɔɪ/ as in 'boy'	/ʊə/ as in 'poor'
/ɪə/ as in 'fear'	/aʊ/ as in 'cow'

Ranging from 6 to 8, there are conflicting opinions about exactly how many English diphthong sounds exist in English. As it is apparent, the BrE /eə, ɪə, ʊə/ diphthongs do not exist in NAE. In this research, five diphthongs of NAE, which are /aɪ, aʊ, eɪ, oʊ, ɔɪ/, will be taken under scrutiny. The frequency calculations of NAE are given below in line with <https://cmloegcmluin.wordpress.com/2012> given below:

Diphthongs	Frequency %
/eɪ /	1.79%
/aɪ /	1.50%
/oʊ /	1.25%
/aʊ /	0.50%
/ɔɪ /	0.10%

For the calculations, cmloegcmluin had stated that “My methodology was messy. CMU’s Pronouncing Dictionary conflated schwa with the near-open central vowel, and had several noticeable errors. The BNC list had multiple entries different parts of speech of words, and formatting issues prevented me from using any words with accents or apostrophes, including common contractions (though I found that the counts were so unreasonably low for these entries, that Kilgarrieff must have split all of them up already except for the ones in the spoken ‘demog’ component). I believe my manual error checking on the top few hundred words (accounting for 47 million of the 81 million total word usage instances) helped significantly” (<https://cmloegcmluin.wordpress.com/2012/11/10/relative-frequencies-of-english-phonemes>).

The following vocabulary items represent the existence of diphthongs in NAE:

/eɪ/ ache /'erk/, ape /'erp/, bake /berk/, cake /'keɪk/, date /'dert/, explain /ɪk'spleɪn/, gate /'gert/, hate /'hert/, lake /'leɪk/, make /'merk/, mayday /'meɪdeɪ/, mayonnaise /'meɪəneɪz/,

painstaking /'peɪnz,teɪkɪŋ/, play /pleɪ/, rain /ɹeɪn/, remain /ɹeɪ'meɪn/, take /'teɪk/, tailor /'teɪlə/, weight /weɪt/

/aɪ/ ice /aɪs/, bite /baɪt/, dime /daɪm/, drive /draɪv/, eye /aɪ/, eyesight /'aɪsaɪt/, fine /faɪn/, flight /flaɪt/, tie /taɪ/, time /taɪm/, climb /klaɪm/, guidelines /'gaɪdlɑɪnz/, highlight /'haɪlaɪt/, pipeline /'paɪplɑɪn/, price /praɪs/, sideline /'saɪdlaɪn/, sight /saɪt/, sign /saɪn/, signify /'sɪɡnə'faɪ/, tight /taɪt/

/aʊ/ around /ə'raʊnd/, arouse /ə'raʊz/, brown /braʊn/, ground /graʊnd/, out /aʊt/, plow /plaʊ/, house /haʊs/, housebound /'haʊsbaʊnd/, mouth /maʊθ/, out /aʊt/, plow /plaʊ/, house /haʊs/, housebound /'haʊsbaʊnd/, mouse /maʊs/, mouth /maʊθ/

/oʊ/ boat /'boʊt/, blow /'bloʊ/, boatshow /'boʊtʃoʊ/, bone /'boʊn/, coast /koʊst/, cold /'koʊld/, coat /'koʊt/, though /'ðoʊ/, go /'goʊ/, gold /'goʊld/, home /'hoʊm/, hope /'hoʊp/, oat /'oʊt/, own /'oʊn/, overcoat /'oʊvə'koʊt/, overdose /'oʊvə'doʊz/, overflow /'oʊvə'floʊ/, postpone /pəʊs'poʊn/, propose /pə'poʊz/, roadshow /'roʊtʃoʊ/, roast /roʊst/, slowpoke /'sloʊpəʊk/, snow /'snoʊ/, toast /'toʊst/, tobacco /tə'bækoʊ/, zone /'zoʊn/

/ɔɪ/ annoy /ə'noɪ/, avoid /ə'vɔɪd/, boil /'boɪl/, coin /'kɔɪn/, oil /'ɔɪl/, point /'pɔɪnt/, choice /'tʃɔɪs/, boy /'boɪ/, oyster /'ɔɪstə/, Detroit /'dɪtɔɪt/, enjoy /ɪn'dʒɔɪ/, employ /ɪm'plɔɪ/, joy /dʒɔɪ/, joint /dʒɔɪnt/, noisy /'noɪzi/, join /'dʒɔɪn/, spoil /spɔɪl/, toy /'tɔɪ/, Toyota /tɔɪ'joʊtə/, turmoil /'tɜ:ɹɔɪl/, voyage /'vɔɪɹɪdʒ/

1.7. Review of literature

According to Tsiga (2013: 17), “In English, especially the pronunciation of vowels is problematic.” Very few studies have been conducted to identify the difficulties of perception English long vowels and diphthongs. A recent research made by Demirezen (2017) identified the /ɑ:/ phoneme of English as recognition and articulation difficulty for Turkish learners of English. He worked with a group of ELT participants (N=39) who had an ELT background. After the application of a pre-test on problem causing vowels to Turks, he created exercise samples in a period of three hours. Two weeks later, he gave the participants the pre-test as a post-test and found out that they had a recognition hardship with a rate of 48,72%. Also, the [ɔ:] and [oʊ] sounds had been singled out by Demirezen (2005) and Hişmanoğlu (2007) as problem-causing sounds for Turks. Demircioğlu (2013) indicated that some of the 8 English diphthongs are problematic for Turkish learners of English.

A recent study that investigated the interference of L1 in the acquisition of vowels is conducted by Nikolova (2010) in which she deals with the differences in the phonological systems of Arabic and English and their effect on the acquisition of vowels by EFL learners from Saudi Arabia. Another study that examined the perception and production of Standard Southern British English (SSBE) vowels by Syrian Arabic EFL learners was conducted by Albark (2012).

The mispronunciations of English vowels were investigated by many researchers. Many of the faulty articulations stem from the defective perception of point, place, and manner of articulations by the non-native speakers of English. For example, the Polish learners of English incorrectly pronounce the vowel /ɜ:/, whose place of articulation in Polish is not the same with English. This long vowel “is articulated with the center of the tongue raised between close-mid to a mid-position, no firm contact being made between the tongue and upper molars; the lips are neutrally spread” (Cruttenden, 2008:130). He also adds that “the quality of /ɜ:/ often coincides with that of /ɔ:/, the difference between the two being only one of length” (Cruttenden, 2008:130).

Mispronunciation of incorrect pronunciation of /ɔ:/ can be perceived in the speeches of Polish speakers of English, due to the reasons of different place and manner of articulations. /ɔ:/ is described as a long vowel which is “articulated with medium lip-rounding; the back of the tongue is raised between the open-mid and close-mid positions, no contact being made between the tongue and the upper molars” (Cruttenden, 2008:130).

Similarly, Czech speakers of English mispronounce the diphthong /əʊ/ in BrE and /oʊ/ in NAE. It is a glide beginning “at a central position, between close-mid and open-mid, and moves in the direction of /ʊ/, there being a slight closing movement of the lower jaw; the lips are neutral for the first element, but have a tendency to round on the second 24 element. The starting-point may have a tongue position similar to that described for /ɜ:/” (Cruttenden, 2008:140).

In the light of the aforementioned information, the perceptibility of long vowels and diphthongs is explored by the following research questions:

1. Is there a meaningful difference between the pre-test and post-test?
2. What is the general overall success rate of all participants?
3. What is the success rate of questions from 1 to 12 (long vowels)?
4. What is the success rate of questions from 13 to 22 (diphthongs)?
5. What is the success rate of success for each vowel?
6. Do the students need a treatment?

2. Method

2.1. Setting and Participants

Present study examined the perception of English long vowels and diphthongs by 30 Turkish English instructors. 30 MA instructors who enrolled to an MA course called ELT 507 Educational phonology and intonation analysis of English took place as participants at a foundation university in Ankara in 2018. Of the 30 Turkish English instructors, 25

of them were females while 5 of them were males. Their age range changed from 24 to 36. This research was conducted in the course of the teaching period of the aforementioned course.

2.2. Measures

The data for this study were collected using a multiple-choice test with five alternatives. The first goal of this research was to explore perceptions of the participants on the long vowels and diphthongs of English language. A committee of three experts examined the test items and made the required modifications. After getting a unanimous consent of the committee, a pre-test of 24 items that included 12 items for long vowels and 12 items diphthongs was administered to the participants. While the participants worked on the questions to answer, no auditory input was given to them. They just saw each question with five alternatives on pages and answered them.

After the administration of the pre-test, the test results were submitted to 21 software package. By analyzing the pre-test results, a three-hour intense teaching and exercising process took place. In terms of exercises, broad transcriptions gathered from Longman Dictionary of American English (2008) and Longman Dictionary of Contemporary Dictionary English (2012) and practiced in class. In addition, Baker's book (2000) *Ship or Sheep-An Intermediate Pronunciation Course* and Baker and Goldstein's book (2008) *Pronunciation pairs: An introduction to the sounds of English* were reviewed and their exercises were practiced in class

Adequate imitations, repetitions, and reinforcement giving took place in class. In addition, certain spelling rules were reviewed, exemplified by using many vocabulary items whose grammatical category shifts were demonstrated in classroom practices. All of the questions asked by the participants were analyzed, exemplified and answered in class. After waiting 15 day, the pre-test was administrated again as the post test

2.3. Data Collection Instruments and Data Analysis

The data obtained from the post-test was entered into the SPSS 21 software package.

3. Results and Discussion

The collected data from pre-test and post-tests were analyzed by SPSS 21. According to data analysis, the general findings in line with the research questions are presented below.

3.1. Is there a meaningful difference between the pre-test and post-test?

In order to find out whether there is a statistically significant difference between pre-test and post-test scores of the participants' a Paired Samples T-Test was conducted assuming that the case for this sample group requires parametric tests in use. Accordingly, there was a statistically significant difference between pre-test scores ($M=5.636$, $SD=.12$), and post-test scores ($M=7.924$, $SD=.13$) $t(29) = 6.036$, $p = .000$ as can be seen in the table 1 below:

Table 1: Paired Samples T- Test

Paired Samples Test									
Paired Differences							t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Difference				
					Lower	Upper			
Pair 1	post_overall pre_overall	-.22879	.20761	.03790	.15127	.30631	6,036	29	.000

As mentioned, the mean score of the post-test is **%79** and pre-tests' is **% 56**. Therefore, the percentage of ascent is **% 23**.

3.2. What is the general overall success rate of all participants?

For the sake of understanding the participants' success rate on identification of long vowels and diphthongs, pre-test and post-tests, descriptive statistics were used for identifying the mean score for valid cases. First of all, Table 2 shows, the mean score of pre-test is 5.636 out of 10 ($SD = .12$). According to that it can be said that the participants' success rate is **% 56** for the pre-test. On the other hand, the mean score of post-test is 7.924 out of 10 ($SD = .13$). Namely, the participants' success in post-test can be regarded as **% 79**. As mentioned, it can be concluded that participants' post-test scores are higher than their pre-test scores. In terms of overall success rate, the mean is 6.705 out of 10 ($SD = .07$), namely the percentage of overall success is **% 67**.

Table 2: Descriptive statistics for pre-test and post-test results

Descriptive Statistics						
	N	Min	Max	M	SD	%
pretest	30	0	6	5.636	.12	56
posttest	30	3	8	7.924	.13	79
overall	30	5	8	6.705	.07	67
Valid (listwise)	N 30					

Table 3: Descriptive statistics including all the items in ascending order

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	%
item 5	30	,00	1,00	,1667	,37905	16
item 8	30	,00	1,00	,1667	,37905	16
item 18	30	,00	1,00	,2000	,40684	20
item 9	30	,00	1,00	,4333	,50401	43
item 11	30	,00	1,00	,5000	,50855	50
item 17	30	,00	1,00	,5667	,50401	56
item 12	30	,00	1,00	,7000	,46609	70
item 6	30	,00	1,00	,7333	,44978	73
item 3	30	,00	1,00	,9000	,30513	90
item 7	30	,00	1,00	,9000	,30513	90
item 13	30	,00	1,00	,9333	,25371	93
item 16	30	,00	1,00	,9333	,25371	93
item 1	30	,00	1,00	,9667	,18257	96
item 2	30	1,00	1,00	1,0000	,00000	100
item 4	30	1,00	1,00	1,0000	,00000	100
item 10	30	1,00	1,00	1,0000	,00000	100
item 14	30	1,00	1,00	1,0000	,00000	100
item 15	30	1,00	1,00	1,0000	,00000	100
item 19	30	1,00	1,00	1,0000	,00000	100
item 20	30	1,00	1,00	1,0000	,00000	100
item 21	30	1,00	1,00	1,0000	,00000	100
item 22	30	1,00	1,00	1,0000	,00000	100
Valid (listwise)	N 30					

Table 3 includes all the sentences in ascending order. The highest score belongs to items 2, 4, 10, 14, 15, 19, 20, 21, 22 and the lowest scores belong to Item 5. The other items also demonstrated in the table

3.3. What is the success rate of questions from 1 to 12?

Table 4 Descriptive Statistics

	N	Minimu m	Maximu m	Mean	Std. Deviation	%
item5	30	,00	1,00	,1667	,37905	16
item8	30	,00	1,00	,1667	,37905	16
item 9	30	,00	1,00	,4333	,50401	43
İtem 11	30	,00	1,00	,5000	,50855	50
item12	30	,00	1,00	,7000	,46609	70
item6	30	,00	1,00	,7333	,44978	73
item3	30	,00	1,00	,9000	,30513	90
item7	30	,00	1,00	,9000	,30513	90
item1	30	,00	1,00	,9667	,18257	96
item2	30	1,00	1,00	1,0000	,00000	100
item4	30	1,00	1,00	1,0000	,00000	100
item10	30	1,00	1,00	1,0000	,00000	100
Valid N (listwise)	30					

The table 4 displays the post-test scores of the long vowels. As one can understand, the higher score belongs to Item 10, 4, 2 and the lower score belongs to Item 5.

Table 5 Descriptive Statistics

	N	Minimu m	Maximu m	Mean	Std. Deviation	%
item8	30	,00	1,00	,1000	,30513	10
item5	30	,00	1,00	,1667	,37905	16
item9	30	,00	1,00	,1667	,37905	16
item6	30	,00	1,00	,2667	,44978	26
item11	30	,00	1,00	,3000	,46609	30
item12	30	,00	1,00	,5000	,50855	50
item3	30	,00	1,00	,5667	,50401	56
item7	30	,00	1,00	,6667	,47946	66
item10	30	,00	1,00	,7667	,43018	76
item1	30	,00	1,00	,8667	,34575	86
item2	30	,00	1,00	,9000	,30513	90
item4	30	,00	1,00	,9667	,18257	96

Valid N (listwise)	30
-----------------------	----

The table 5 displays the pre-test scores of the topic sentence at the beginning in ascending order. As one can understand, the higher score belongs to Item 4 and the lower score belongs to Item 8. One can conclude that all the scores increased.

3.4. What is the success rate of questions from 13 to 22

For

Table 6 Descriptive Statistics						
	N	Minimu m	Maximu m	Mean	Std. Deviation	%
item18	30	,00	1,00	,2000	,40684	20
item17	30	,00	1,00	,5667	,50401	56
item13	30	,00	1,00	,9333	,25371	93
item16	30	,00	1,00	,9333	,25371	93
item14	30	1,00	1,00	1,0000	,00000	100
item15	30	1,00	1,00	1,0000	,00000	100
item19	30	1,00	1,00	1,0000	,00000	100
item20	30	1,00	1,00	1,0000	,00000	100
item21	30	1,00	1,00	1,0000	,00000	100
item22	30	1,00	1,00	1,0000	,00000	100
Valid N (listwise)	30					

The table 6 displays the post-test scores of the diphthongs. As one can understand, the highest score belongs to Item 22, 21, 20, 19, 15, 14 and the lowest score belongs to Item 18.

Table 7 Descriptive Statistics						
	N	Minimu m	Maximu m	Mean	Std. Deviation	%
pre18	30	,00	1,00	,1333	,34575	13
pre17	30	,00	1,00	,1667	,37905	16
pre13	30	,00	1,00	,5667	,50401	56
pre21	30	,00	1,00	,5667	,50401	56
pre16	30	,00	1,00	,6333	,49013	63
pre22	30	,00	1,00	,7333	,44978	73
pre14	30	,00	1,00	,7333	,44978	73
pre15	30	,00	1,00	,8333	,37905	83
pre20	30	,00	1,00	,8667	,34575	86
pre19	30	,00	1,00	,9333	,25371	93

Valid N
(listwise) 30

Table 7 displays the pre-test scores of the diphthongs in ascending order. As one can understand, the highest score belongs to Item 19 and the lowest score belongs to Item 18. One can conclude that all the scores increased.

3.5. What is the success rate of success for each vowel?

Table 8 Descriptive Statistics

	N	Minimu m	Maximu m	Mean	Std. Deviation	%
/ju:/	30	,50	1,00	,9833	,09129	98
/u:/	30	,50	1,00	,9500	,15256	95
/a:/	30	,00	1,00	,4500	,24033	45
/ɜ:/	30	,00	1,00	,5333	,26042	53
/ɔ:/	30	,50	1,00	,7167	,25200	71
/i:/	30	,00	1,00	,6000	,33218	60
/aɪ/	30	,50	1,00	,9667	,12685	96
/eɪ/	30	,50	1,00	,9667	,12685	96
/oʊ/	30	,00	1,00	,3833	,36397	38
/aʊ/	30	1,00	1,00	1,0000	,00000	100
/ɔɪ/	30	1,00	1,00	1,0000	,00000	100
Valid N (listwise)	30					

Table 8 displays the scores of each vowel in variable order. As one can understand, the highest score belongs to /aʊ/ and /ɔɪ/ and the lowest score belongs to /a:/. One can conclude that all the scores increased.0

3.6. Do the participants need a treatment?

According to the findings of the present study, even though the participants' post-test scores were higher than their pre-test scores, a treatment should be conducted by taking the sampling context into consideration as the sample group consisted of the Turkish English lecturers who enrolled in a Foreign Language Teaching program for Master's Degree.

In addition, there are some items which have low scores such as Items 8, 9, 5, and 18. They can be the focal point for remedial treatment, too. Besides, further research can be done on the reasons why the participants had low scores on these specific items.

4. Discussion and findings

After the application of the post-test, the overall success on the perception of long vowels and diphthongs can be stated as follows:

Phoneme	Perception%
/aʊ/	100
/ɔɪ/	100
/jʊ:/	98
/aɪ/	96
/eɪ/	96
/u:/	95
/ɔ:/	71
/i:/	60
/ɜ:/	53
/ɑ:/	45
/oʊ/	38

It must be noted that /i:, oʊ, ɑ:, ɜ:/ phonemes happen to be the most confusable long vowels and diphthongs to Turkish English lecturers. “While /ɑ:/ phoneme does not sound too much foreign to Turks, the /æ/ phoneme does not exist in Turkish vowel inventory at all, and therefore the students feel a bit strange in hearing and using it in their speech” (Demirezen 2017: 261). Up until now, the difficulty of the /ɑ:/ phoneme was measured as 48% in an earlier research by Demirezen (2017: 262).

A three-hour practice and exercising on long vowels and consonants does not seem to be sufficient enough for the perceptual maturity. Therefore, the participants must undergo a treatment perhaps three hours more on the perception of long vowels and diphthongs.

The following figures indicate the perception of diphthongs as 86%.

Diphthongs	Perception rank order %
/aʊ/	100
/ɔɪ/	100
/aɪ/	96
/eɪ/	96
/oʊ/	38

Similarly, the overall perception percentage of long vowels is 73,3.

Long	Perception
------	------------

vowels	rank order %
/ju:/	98
/u:/	95
/ɔ:/	71
/i:/	60
/ɜ:/	53
/ɑ:/	45

Apparently, the success rate like **73,3** % on long vowels demonstrate that they are not perceived satisfactorily by Turkish English lecturers.

As a diphthong /oʊ/ exposes a specific articulation difficulty for Turkish learners of English because they neglect or overlook at the fact that /oʊ/ and /ɑ:/ phonemes require a specific backward movement of the dorsum muscles of the tongue, as indicated by figure 1:

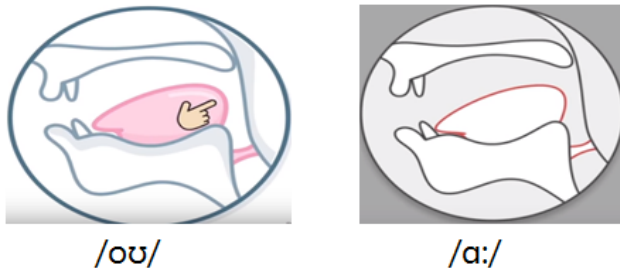


Figure 1: Articulatory position of dorsum for /oʊ/ and /ɑ:/ phonemes of English. Adapted from: <https://www.youtube.com/watch?v=7EdRAfOMfnU>

In Turkish, there is no /oʊ/ diphthong whose /ʊ/ part of it has been never heard and therefore not properly noticed by Turks. Moreover, /oʊ/ is spelled by several letters in English orthography:

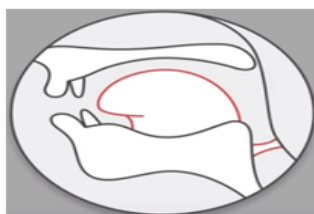
Letter(s)	Examples
o	as in <i>bone</i> , <i>gold</i> , <i>joke</i> , <i>home</i> , <i>hope</i> , <i>most</i> , <i>rope</i> , <i>post</i> , <i>told</i> , <i>vote</i> ,
oa	as in <i>boat</i> , <i>boast</i> , <i>coat</i> , <i>goat</i> , <i>road</i> , <i>soap</i> , <i>toast</i> ,
ow	as in <i>blow</i> , <i>crow</i> , <i>flow</i> , <i>grow</i> , <i>snow</i> , <i>slow</i> ,
oe	as in <i>foe</i> , <i>toe</i> , <i>Joe</i>

The multi-representation of the /oʊ/ diphthong by different letters creates a **psycho-orthographic trauma** to Turkish learners of English and leads them not to notice it clearly.

In fact, the long vowel /ɑ:/ exists in Turkish, as in *aza* /ɑ:zɑ:/(member), *asa* /ɑ:sɑ:/(baton), *dava* /dɑ:vɑ:/(lawsuit), and *vaha* /vɑ:hɑ/(oasis), its spelling in English must have distracted the participants since it is spelled by the a bunch of letters:

<u>Letter(s)</u>	<u>Examples</u>
a	as in <i>barn</i> , <i>car</i> , <i>carpark</i> , <i>cart</i> , <i>card</i> , <i>carp</i> , <i>clock</i> , <i>far</i> , <i>father</i> , <i>hard</i> , <i>watch</i> ,
o	as in <i>apologize</i> , <i>apostle</i> , <i>cop</i> , <i>box</i> <i>biology</i> , <i>job</i> , <i>got</i> <i>John</i> , <i>top</i> , <i>stop</i>
ea	as in <i>heart</i> , <i>hearth</i>

Likewise, the long vowel /i:/ requires a tongue position just in the middle of the oral cavity in which the tongue must be stand just in the middle of the mouth and glide to the front of the mouth, as indicated by figure 2; even though there is long /i:/ phoneme in Turkish, as in *emin* /emi:n/(sure), *emir* /emi:t/ (emir), *metin* /meti:n/ (gritty), and *veli* /veli:/(patron), the participants got distracted over the Turkish- English articulatory similarity on /i:/.



/i:/

Figure 2: Articulatory position of the tongue for /i:/ phoneme of English. Adapted from: (<https://www.youtube.com/watch?v=7EdRAfOMfnU>)

Again, the long vowel /i:/ is the represented by a bunch of letters in spelling, which distracts attention of Turks who cannot pay due attention to the recognition and production of /i:/. Letter(s) Examples

e	as in <i>be</i> , <i>equal</i> , <i>evening</i> , <i>he</i> , <i>she</i> , <i>Peter</i> , <i>Edith</i> , <i>me</i> ,
ee	as in <i>bee</i> , <i>beer</i> , <i>cheese</i> , <i>coffee</i> , <i>deep</i> , <i>eel</i> , <i>feed</i> , <i>feel</i> , <i>leek</i> , <i>need</i> , <i>peel</i> , <i>sheep</i> , <i>three</i>
ea <i>tea</i>	as in <i>bean</i> , <i>cheap</i> , <i>dean</i> , <i>deal</i> , <i>eat</i> , <i>easy</i> , <i>leak</i> , <i>leaf</i> , <i>leave</i> , <i>meal</i> , <i>peace</i> , <i>seal</i> ,
ie	as in <i>belief</i> , <i>believe</i> , <i>hygiene</i> , <i>movie</i> , <i>piece</i> , <i>relief</i> , <i>sieve</i>
i	as in <i>machine</i> , <i>pique</i> , <i>pistachio</i> , <i>pizza</i> , <i>police</i> , <i>ski</i> , <i>taxi</i> , <i>visa</i> , <i>automobile</i>
io	as in <i>portfolio</i> , <i>polio</i> , <i>radio</i> , <i>pistachio</i> , <i>Pinnocchio</i> , <i>ratio</i>
ia	as in <i>amnesia</i> , <i>aviator</i> , <i>cafeteria</i> , <i>piano</i> , <i>pizzeria</i> , <i>Romania</i> ,
ei	as in <i>deceive</i> , <i>either</i> , <i>perceive</i> , <i>receive</i> , <i>seize</i> , <i>weird</i> , <i>weirdo</i>
ey	as in <i>attorney</i> , <i>hey</i> , <i>heyday</i> , <i>honey</i> , <i>key</i> , <i>money</i> , <i>prey</i> , <i>trey</i>
y	as in <i>airy</i> , <i>bury</i> , <i>carry</i> , <i>early</i> , <i>funny</i> , <i>only</i> , <i>mostly</i> , <i>ready</i> , <i>sunny</i> , <i>very</i> ,

As for the /ɜ:/ sound, during the articulation process while the dorsum is raised a bit up towards the dorsum, the apex should be elevated to the alveolar ridge and never touch there, as indicated by figure 3; there is an /ɜ:/ sound in Turkish, but we never curve the tip of the tongue towards upper alveolar ridge and back of the tongue up to uvula, which must have forced the participants attention.



/ɜ:/

Figure 3: Articulatory position of the tongue for /ɜ:/ sound of English. Adapted from: <https://www.youtube.com/watch?v=7EdRAfOMfnU>

In English, /ɜ:/ is spelled many different ways; it is also accepted as a reflex of the /ɪ / phoneme; that is why it is called as a /ɪ /-controlled sound.

Letter(s) Examples

er as in *certain, concern, determine, her, person, personal, personnel, prefer, were*

ir as in *bird, birth, birch, circle, dirt, first, flirt, girl, girdle, girder, girth, third, sir*

ur as in *burden, burn, bury, curtain, hurdle, hurt, occur, nurse, purse, turn, Thursday, urn,*

or as in *word, work, world, worst, worth*

ear as in *earn, earl, earnest, earth, heard, learn, pearl*

5. Conclusions

You The current study had as a primary aim the question of how NAE long vowels and diphthongs are perceived by Turkish English instructors. Further research is needed to improve the perception rate of NAE long vowels and diphthongs by the Turkish English instructors who perceived the long vowels by a rate 73,3 % while they perceived the diphthongs by a rate of 86 % after a three-hour concentrated study. Apparently, in order to improve the recognition levels of / i:, ʊ, ɑ:, ɜ:/, a three-hour more study is required to mature the participants' perceptual skills.

In terms of perception and articulation of vowels, no discussion of English vowels is complete unless it includes long vowels and diphthongs, which are confusable. Turkish English instructors perceive the diphthongs (86,3%) better than long vowels (73,3%). Apart from L1 intervention, the main cause of inadequate perception both behind the diphthongs and long vowels is the fact that Turkish learners of English suffer from a psycho-orthographic trauma created by the varied spelling of them by means of several letters.

6. Limitations to the research

As with the majority of studies, the design of the current research is subject to limitations. Therefore, the statistical results reported herein should be considered in the

light of some limitations, such as number of the participants (30 instructors of English language education), the period of instruction, and a questionnaire with 22 items. So, it must be borne in mind that no study is completely flawless or inclusive of all possible aspects.

References

- American Albark, R. (2012). The perception and production of SSBE vowels by Syrian Arabic learners: The Foreign Language Model. Unpublished PhD Thesis, University of York, UK.
- Baker, A. (2000). *Ship or Sheep: An intermediate pronunciation course*. New edition
- Baker, A. & Goldstein S. (2008). *Pronunciation pairs: An introduction to the sounds of English*. Cambridge: Cambridge University Press.
- Best, C. (1995). A direct realist view of cross-language speech perception. In W. Strange (Ed.), *Speech perception and linguistic experience: Issues in cross-language research*. Baltimore: York Press, 171–204.
- Best, C. & Tyler, M. (2007). Nonnative and second-language speech perception: Commonalities and complementarities. In O.-S. Bohn, & M. J. Munro (Eds.), *Language experience in second language speech learning: In honor of James Emil Flege*. Amsterdam: John Benjamins, 13–34.
- Cruttenden, A. (2008). *Gimson's Pronunciation of English* [7th edition]. London: Hodder Education.
- Maye, J., Werker, J., & Gerken, L. A. (2002). Infant sensitivity to distributional information can affect phonetic discrimination. *Cognition*, 82, B101–B111.
- Demircioglu, M. D. (2013). The pronunciation problems for Turkish learners in articulating of the diphthongs in English learning. *Procedia-Social and Behavioral Sciences*, Vol. 106, 2983-2992.
- Demirezen, M. (2005). The /ɔ:/ and /ow / contrast: Curing a fossilized pronunciation error of Turkish teacher trainees of the English language,” Çankaya University, *Journal of Arts and Sciences*, Vol. 1, Number 3, May 2005, 71-84.
- Demirezen, M. (2017). /æ/ versus /a/: Vowel fossilization in the pronunciation of Turkish English majors: Rehabilitation 1. *Journal of Language and Linguistic Studies*, 13(2), 260-284.
- Flege, J. E. (1995). Second language speech learning: Theory, findings, and problems. In Winifred Strange (Ed.). *Speech Perception and Linguistic Experience: Issues in Cross language Research*. Timonium, MD: York Press, 233-277.
- Flege, J. E., Bohn, O. S. & Jang, S. (1997). Effects of experience on non-native speakers' production and perception of English vowels. *Journal of Phonetics*, 25(4), 437-470.
- Demirezen, M. (2007). The [ɔ:] and [oʊ] Contrast as a Fossilized Pronunciation Error of Turkish Learners of English and Solutions to the Problem. *Journal of Language and Linguistic Studies*, Volume 3, Issue 1, 98 – 115.
- Longman Dictionary of American English (2008). Pearson.
- Longman Dictionary of Contemporary Dictionary English (2012). Pearson
- Mička, P. "Letter frequency (English)". *Algoritmy.net*.
- Nikolova, A. (2012). L1 interference in the perception and production of English vowels by Arabic speakers. Unpublished PhD Thesis, Alliant International University, San Diego, USA.

Zsiga, E. C. (2013). Sounds of language: An introduction to phonetics and phonology. Wiley & Blackwell.

<https://www.youtube.com/watch?v=7EdRAfOMfnU>

<https://www.google.com.tr/search?q=The+chart+of+North+American+english+diphthongs&>

Appendix A. Questionnaire

FIND OUT THE INDICATED VOWEL PHONEMES IN THE FOLLOWING WORDS

In which of the following words is there an /ju:/ phoneme?

1. a) behavior b) bureaucracy c) **beautiful** d) bulletin e) bulldozer
2. a) unjustified b) unknowingly c) unlicensed d) uninterested e) **universe**

In which of the following words is there an /u:/ phoneme?

3. a) **enthusiasm** b) etiquette c) eruption d) equator e) equality
4. a) attraction b) **attitude** c) attentive d) attendance e) authentic

In which of the following words is there an /ɑ:/ phoneme?

5. a) phonetics b) phlegmatic c) philanthropy d) photogenic
e) **photography** 6. a) hysteria
b) hypocrite c) hypertension d) **hypothesis** e) hypnosis

In which of the following words is there an /ɜ:/ phoneme?

7. a) **commercial** b) commission c) communal d) commentary e) committed 8. a) encounter
b) **encourage** c) endeavor d) endanger e) endurance

In which of the following words is there an /ɔ:/ phoneme?

9. a) auxiliary b) available c) auditorium d) opposition e) **authority**
10. a) perfume b) perfectionist c) perception d) **performance** e) permission

In which of the following words is there an /i:/ phoneme?

11. a) assumption b) **associate** c) astonished d) assimilate e) assistance
12. a) automatic b) automation c) **automobile** d) automotive e) audiovisual

In which of the following words is there an /aɪ/ phoneme?

13. a) **enterprise** b) entertain c) enumerate d) entailment e) instalment
14. a) assemble b) aspiration c) assimilate d) asparagus e) **assignment**

In which of the following words is there an /eɪ/ phoneme?

15. a) **integrate** b) intellect c) intensify d) intentional e) intellectual
16. a) evidence b) example c) **examination** d) existence e) experience

In which of the following words is there an /oʊ/ phoneme?

17. a) environment b) epilogue c) entrepreneur d) interpreted e) **envelope**
18. a) assumption b) astonishing c) astronaut d) **associate** e) astrology

In which of the following words is there an /au/ phoneme?

19. a) surrender **b) surrounding** c) surveyor d) surprising e) survivor 20. **a) allowance** b) alcoholic c) alphabet d) allegory e) alternative

In which of the following words is there an /ɔɪ/ phoneme?

21. a) empower b) emotion **c) employer** d) empower e) emergent
22. a) enormous b) enlighten c) environment d) enlighten e) **enjoyable**

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The Role of Translator in Intercultural Communication

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Abstract

Translation/interpretation has always been central to intercultural communication. Lack of knowledge of another culture may cause confusion, misunderstanding or even offense during communication process and it also makes the conclusion of international or bilateral agreements difficult or impossible. To the extent that without communication there can be no negotiation, communication is obviously integral to the success of the mission. It is necessary for a translator or an interpreter to realize the importance of having a cultural background when taking part of this kind of negotiations, which can affect thousands of people. Therefore, this paper aims to offer a closer analysis of the translation profession from the point of view of intercultural communication.

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Keywords: translation; translator; interpreter; intercultural communicator

1. Introduction

In a variety of fields like scientific domain, academic research, business, management, education, health, culture, politics, diplomacy, development etc. the importance of intercultural communication cannot be denied. With the help of travel, international media and internet, communication among people becomes easy. In order not to isolate the rest of the world and to survive in such a kind of environment everybody needs to interact with each other. Therefore, intercultural communication is a *must* for every people. The position of translation in intercultural communication is fundamental. It is necessary for both international business and social relations. The purpose of translation is transmitting of the ideas and events through time and space to make something understood, to accomplish, to prove. The world that is increasingly interlinked and translation fulfils a role by breaking down language barriers. From the professional point of view, translators play a role as intercultural communication experts, mediators, and the bridge between people,

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cultures, and opinions. In order to understand the role of translating or interpreting as a profession, it is needed to start with an exact definition of the profession. Then, the differences between translator and interpreter should be clarified by explaining their responsibilities. Also, from the perspective of intercultural communication, possible reasons behind inaccurate translations will be covered to shed light on to communication interruptions with some examples.

1.1. *Who is a translator?*

noun

The definition of a translator is a person who helps people who speak different languages to communicate or who takes something (such as a speech or a book) in one language and who puts it into a different language for people to understand. (<https://www.yourdictionary.com>.)

The above dictionary definition of *translator* is provided by <https://www.yourdictionary.com>. However, this definition is not enough to explain who exactly a translator is. Translator is not only the one who translates words from one language to another. Becoming a translator does not mean mastering at least two languages because in order to become valuable translators, mastering vocabulary and the grammar of languages are not enough to bring people coming from different cultural backgrounds. In the following, from the perspective of different translators having different linguistic and cultural backgrounds, the profession of translating is tried to be explained (<https://theopenmic.co/what-does-it-mean-to-be-a-translator>):

Being a translator means removing a language barrier and, as much as possible, bridging a cultural gap between people. (Julia Thorton)

It means seeing the world through different eyes. As a translator, I work with people from all over the world. All of them have a different interpretation about life and other things. So, have more than two eyes while being a translator. (Sherif Abuzid)

Translator is a nobleman or noblewoman who translates the source language into target language. Also, he or she is a political researcher. Presidents or classy politicians speak through translator. Translation is a critical job, and your classy translation may save the world. (Qasem Mafi)

I understand that language is a living thing. So, new phrases and cultural references are constantly being added as the time passes so translators need to embrace the culture of the languages they are dealing with and also the current events, as those have a major impact on the way people communicate. So, to me, translation means it's not just conveying meaning from one language to another, they re-create. It's

architecture of words building bridges that connect people and cultures from around the world. (Sirajul Islam)

Translation brings together lots of things that I love: storytelling, communication, learning (to name a few). Being a translator is bringing information, stories and culture from different parts of the world to people who might never have the chance of learning a second (or third) language. It means facilitating communication in small (individuals) and big scale (corporations). And I learn something new every day! Either new words, or instructions to use a new equipment! (Mariana Alves Passos).

It can be understood from the above explanations that a translator is a mediator between two different languages two different cultures. A translator is also an expert in intercultural communication, whose task is to create a bridge and aid others to cross cultural and linguistic boundaries. Therefore, a translator should have the mastery of fields like translation, interpretation, work organisation, procurement of services, and management of intercultural communication processes. Translations indeed represent the place where cultures, previously separated, come together and establish ongoing relations. So, it is quite obvious why translations have become so important and the translator is not just the person who translate words, but the one who can find the best way to transpose the main ideas, so that the intended audience gets them right. He/She should also take into consideration the social and political background, within which the translation takes place.

The purpose of translation is to serve as a substitute for the original, making it intelligible for people who cannot read the language in which it was written. This heavy responsibility creates a burden on the translator. Awareness of history is an essential requirement for the translator of a work coming from a totally different country culture. Knowledge of a foreign language with its vocabulary and grammar is not enough to make one competent as a translator. It is essential to have a thorough knowledge of his/her own culture and own language and be aware of the source-language culture before attempting to build any bridge between them.

In order to understand the responsibilities of a translator/interpreter during communication process, there is a need to explain the differences between translator and interpreter. Both are closely related, and quite similar to each other, yet they are also very different. They both basically translate from one language into another; however, there are several differences too.

Most people know that translation involves retaining the original meaning of the source text, and not a literal translation. The words used are often different, but they convey the same meaning. Surprisingly, people think of interpretation as a word for word translation – but that is not the case. An interpretation is often a paraphrased version of the original message. The followings are the similarities between these two professionals:

- They are both linguists.
- They both translate a message from one language to another.
- Both professionals have thorough knowledge of the two languages they work with. This includes fluency, sentence structure, grammar, idioms, slang, and more.
- They both have an in-depth knowledge of the culture, customs, traditions, and so on of both the languages they work with.
- They both require professional qualifications.
- Neither interpretation nor translation is a word to word translation.
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When the above items are examined, a translator and an interpreter have lots of features in common. However, there are also differences between these two professionals. The biggest difference between the two professionals is that the interpreter's role involves working with spoken communication, while a translator's role involves working with writing – websites, scripts, legal, technical or medical documents, manuals, and so on. Interpreting is all about translating something that is said, and translation is about translating something that is written. An interpreter is often required to translate back and forth; that is, from and into a particular language. However, translators usually only translate into a specific language – they don't have to translate from that language back into the original source language.

Interpreters are required to translate on the spot; at conferences, meetings, TV coverage signing for hearing impaired individuals, diplomatic mediations between nations, voice or video calls and so on. They have to listen very carefully to what the person is saying, retain it, and immediately translate it into the target language. A translation can be delivered long after the creation of the source text. So a translator gets much more time to perform the translation, and can be more thorough and precise, and deliver high quality work. Therefore, interpreters have to rely on their learning, knowledge and experience because they have to translate immediately. They don't have the convenience of any reference materials but translators have more time to search online, use dictionaries, style guides, glossaries, or even take the help of others to deliver an accurate translation. For example, when they have completed translating a document, they often pass it on to an editor, who will check the document for accuracy but no such process happens in interpretation.

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lower because the emphasis is on conveying the message without altering the meaning in any way. Sometimes, it is not really necessary to translate the entire speech so, they have the liberty to leave out certain parts. A translator on the other hand, must translate the source document entirely; they do not have the freedom to choose what to translate and what not to.

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Both translation and interpretation are sensitive processes. Therefore, it is very important to choose the right words and to convey them in an appropriate language otherwise this may cause some translation errors. In the following section, some examples including translation errors are determined by BBC Culture.

1.2. History's Biggest Translation Errors

The most recent changes in technology affect the field of interpretation. It brings individuals more like a reality where language is never again an obstacle. This innovation gives an impression about future where there are no linguistic boundaries. BBC Culture investigates the biggest mistranslations of the past including a nineteenth Century astronomer discovering indications of intelligent life on Mars and a US president stating a sexual desire for a whole country.

Life on Mars

At the point when Italian astronomer Giovanni Virginio Schiaparelli started mapping Mars in 1877, he accidentally dislodged a whole sci-fi oeuvre. The chief of Milan's Brera Observatory named dull and light regions on the planet's surface 'oceans' and 'mainlands' – describing what he thought were channels with the Italian word 'canali'. Lamentably, his fellows deciphered that as 'trenches', propelling a theory that they had been made by intelligent lifeforms on Mars.

US astronomer Percival Lowell mapped many them somewhere in the range of 1894 and 1895, persuaded that the canals were genuine (Lowell, 1911). Over the accompanying two decades he distributed three books on Mars with representations showing what he thought were artificial structures used for conveying water by an amazing race of engineers. H. G. Wells influenced by Lowell's theory published his own book about intelligent Martians. In *The War of the Worlds*, which originally showed up in serialized structure in 1897, H. G. Wells characterized an attack of Earth by destructive Martians and realized a science fiction subgenre (Wells, 1897). *A Princess of Mars*, a novel by Edgar

Rice Burroughs published in 1911, likewise carries a perishing Martian civilisation into the cutting edge, utilizing Schiaparelli's names for highlights on the planet (Burroughs, 1911).

While the trenches used for carrying water were a result of language and a zealous creative mind, astronomers currently affirm that there are no channels on the surface of Mars. As indicated by Nasa, "The network of crisscrossing lines covering the surface of Mars was only a product of the human tendency to see patterns, even when patterns do not exist. When looking at a faint group of dark smudges, the eye tends to connect them with straight lines." (Aerospace Scholars, 2009).

Pole position

Jimmy Carter realized how to get a crowd to pay interest. In a speech given during his 1977 visit to Poland, he seemed to state sexual desire for the Communist country or that is the thing that his translator said. It turned out Carter had said he wanted to know about the Polish individuals' 'desires for the future'.

His interpreter additionally translated "I left the United States at the beginning of today" into "I left the United States, never to return". As per Time magazine, even his innocent statement that Carter was glad to be in Poland turned into the case that "he was glad to grasp Poland's private parts".

It isn't astonishing that the President utilized a different interpreter when he gave a toast at a state feast later in a similar trip. In the wake of conveying his first line, Carter stopped to be translated but the interpreter remained quiet. After a different line, he was again met by quiet. The explanation was that the new interpreter couldn't comprehend the President's English and had concluded that the best way was to stay silent. At the point when Carter's excursion finished, he had become the punchline for some a Polish joke.

Keep digging

In 1956 at a reception at the Polish embassy in Moscow, Soviet leader Nikita Khrushchev was deciphered as saying "We will bury you" to Western ambassadors. The expression showed up in magazine covers and newspaper headlines causing relations cooling between the Soviet Union and the West.

However, Khrushchev's words were nearer to signifying "Whether you like it or not, history is on our side. We will dig you in". He was showing that Communism would outlive capitalism, which would decimate itself from inside, alluding to an entry in Karl Marx's Communist Manifesto that contended "What the bourgeoisie therefore produces, above all, are its own grave-diggers." (Marx, 1990). While not the most quieting phrase he could have expressed, it was not the sabre-rattling threat that excited enemies of Communists and raised the dream of a nuclear attack in the minds of Americans. Khrushchev himself decontaminated his announcement – in spite of the fact that not for quite a long while. "I once said 'We will bury you', and I got into trouble with it", he said in 1963 during a speech

in Yugoslavia, “Of course we will not bury you with a shovel. Your own working class will bury you.”

Diplomatic immunity

Mistranslations during negotiations have regularly demonstrated disputable. Disarray over the French word 'demander', signifying 'to ask', exacerbated talks among Paris and Washington in 1830. After a secretary made an interpretation of a message sent to the White House that started "le gouvernement français demande" as "the French government requests", the US President disagreed with what he comprehended as a lot of requests. At the point when the mistake was redressed, arrangements went on.

A few specialists have been blamed for misusing contrasts in language for their own closures. A composed understanding named as The Treaty of Waitangi, between the British Crown and the Māori individuals in New Zealand was marked by 500 innate boss in 1840 (<https://nzhistory.govt.nz/politics/treaty/the-treaty-in-brief>). However, clashing accentuations in the English and Māori adaptations have caused discusses, with a blurb asserting 'The Treaty is a fake' highlighting in the Māori fight development.

Taking the long view

In 1972 during Richard Nixon's visit to China, Chinese head administrator Zhou Enlai broadly said it was 'too soon to tell' about the impacts of the French Revolution. He was adulated for his savvy words, acknowledged as reflecting Chinese way of thinking. In any case, he was really alluding to the May 1968 occasions in France. It was to a greater extent a misconception than a mistranslation, one frequently rehashed expression may have been strengthened by racial generalizations.

As expressed by the resigned US ambassador Charles W Freeman Jr., during the memorable excursion Nixon's translator misjudged remark was “one of those advantageous false impressions that never gets rectified.” Freeman stated: “I can't clarify the disarray about Zhou's remark barring from the perspective which it helpfully supported a generalization (as common with all generalizations, incompletely discerning) about Chinese authorities as far-sighted people who think in longer terms than their Western partners”.

As mentioned above, translation errors can have many causes. Whatever the reason, translation errors are inexcusable, especially in the case of diplomatic relations and human health. In the following section, the reasons for translation errors in general are categorized.

2. The Reasons for Translation Errors

Written and oral translation services have caused significant problems throughout history. Translation errors have led to economic and diplomatic crises, and sometimes have led innocent people to serve years in prison. A man who was sentenced to 21 years in prison for murder in Italy was released when he was found to be innocent.

“According to Italian press reports, Angelo Massaro, now 51, was found guilty of a 1995 murder in Taranto, in the southern Puglia region, and sentenced to 24 years in prison. Although Massaro denied the accusation, he was convicted of “informing” an informer and “evidence” of tapping. However, after 21 years, Massaro’s imprisonment of the phone that led to the imprisonment appeared to be misinterpreted. Speaking in dialect specific to the region of Puglia Massaro said his wife in the phone call “a burden” carries, but Massaro’s “burdens” used in the meaning of “muers” word “muert” (dead) was recorded. Massaro was released 21 years later at the time of the murder, proving that he was in a medical facility for the treatment of drug addiction.”

2.1. Inexperienced Interpreters

Although not very common, inexperienced translators are prone to error. If inexperienced interpreters are involved in interpreting, then many mistakes are inevitable and they may cause a big crisis. As an example, in 2012, two interpreters’ crisis created a crisis during an important symposium due to the lack of legal terminology. At the symposium organized by Turkish Academy of Justice, the public prosecutor Felice Casson shared his experiences with judges and prosecutors. During the presentation of Italian Senator Casson, simultaneous translation was abandoned when two interpreters had difficulty in translation. https://www.youtube.com/watch?time_continue=11&v=XPUyvYnE2go&feature=emb_title.

2.2. Lack of editorial supervision in written translations

Translation errors are often encountered in oral translations, but mistakes are also made in written translations. Although some of these errors are minimized nowadays, one of the most important reasons for errors in written translations is the lack of editorial supervision. Editors’ check for errors made the last time files are delivered. It reviews dozens of factors, especially spelling mistakes. Usually, files that need to be delivered quickly will be overridden by the editor control. Therefore, mistakes are inevitable.

2.3. Inaccurate Terminology

In technical, medical, legal and academic terminology, texts can be translated perfectly according to the experience and knowledge capacity of the translator. For example, it is impossible to translate the text accurately if you do not have enough knowledge of medical issues. Therefore, texts and projects should be directed to interpreters in the fields they specialize.

2.4. *Pressure on Interpreters*

Interpreting is an area that needs not only knowledge but also talent. On the one hand, interpreter tries to understand what is spoken, and on the other hand, he passes it on. All translation takes place in a few seconds. Therefore, an interpreter has to have a cache memory that can extract the words that are stored in the deepest within 400-500 milliseconds.

In such a kind of race against time, the participation of diplomats and professors as speakers in verbal translations increases the tension in the environment. Interpreters are exposed to lots of words, terms and expressions so; the interpreter needs to be talented and knowledgeable, as well as self-confident.

2.5. *Avoiding Translation*

One of the most recent translation problems is not related to translation error itself; it is interpreter's "preference not to translate". Sometimes interpreters either soften or skip the whole subject while interpreting to avoid damaging diplomatic relations or inclining cultural and social misunderstandings. These events are mentioned translation/interpretation errors in the news on TV. However, it is more a matter of choice. For example, translation errors that are important in diplomatic relations made in recent interviews between the U.S. and Turkey and these errors are labelled as a scandal in the news in Turkey.

President Tayyip Erdogan and US President Donald Trump held a joint press conference (<https://www.sozcu.com.tr/2017/dunya/erdogan-ve-trumpin-basin-toplantisina-ceviri-hatasi-damga-vurdu-1854422>). During the conference Erdogan said:

"Terör örgütleriyle ilkeli ve kararlı mücadele konusunda geçmişte yaşanan hataları telafi edecek adımların devamının geleceğini ümit ediyoruz."

Despite Erdoğan's words, which were clearly stated, the interpretation of these words was diametrically opposed. The interpreter translated Erdoğan's words:

"And we know that, in terms of keeping up with the principled and committed fight against the terrorist organizations all around the world, we will not repeat the mistakes of the past and we will continue down this path together."

This caused an image of Erdoğan "as if he accepted a mistake". This was not the only mistake at the press conference. Another statement of Erdoğan was:

“YPG ve PYD terör örgütlerinin hangi ülke olursa olsun muhatap alınması bu konuda küresel düzeyde olan mutabakata kesinlikle uygun değildir.”

However, the interpreter skipped the expression “terrorist organizations” that Erdoğan used for PYD-YPG and passed on these organizations only by their names:

“Taking YPG and PYD in the region - taking them into consideration in the region, it will never be accepted, and it is going to be against a global agreement that we have reached.”

The reason behind the errors of interpreter was not exactly known. According to the statements of the authorities, a copy of the text that Erdoğan had read from the paper was in the translator. The fact that the interpreter performed the translation very quickly without any misfire also reinforces the possibility that the text has already been prepared. There were three main scenarios asserted in the lobbies related to this scandal for translation: According to the first scenario, Erdoğan's speech was translated incorrectly into English by Turkish translators. The second possibility is that Erdoğan's speech was translated simultaneously and the translator misunderstood the words. Last but not least, Erdoğan's words were deliberately distorted by the White House translator.

3. Conclusions

The progress of modern social life, new development in international relations and formation of so-called "intercultural communication" requires abandoning many of the traditional stereotypes and methods of translation. Intercultural communication with a highlight on specific cultural background knowledge has commenced to play an utmost role shaping broad-minded translators, well-aware of ethnic, cultural and other peculiarities of given language. The notion of intercultural communication is defined by Council of Europe (2001) as “the ability to communicate effectively in cross-cultural situations and to relate appropriately in a variety of cultural contexts”.

In this regard, the term of ‘intercultural communication’ has a primordial significance within growing tendencies of globalization and international cooperation in different spheres, where the translator is required to receive a proper training not only in the sphere of foreign languages but also in the intercultural communication. Thus, according to the “White Paper on Intercultural Communication” by the Council of Europe (2001), the intercultural communication is understood as “a process that comprises an open and respectful exchange of views between individuals and groups with different ethnic, cultural, religious and linguistic backgrounds and heritage, on the basis of mutual understanding and respect. It requires the freedom and ability to express oneself, as well as the willingness and capacity to listen to the views of others.” Intercultural

communication plays an essential role in such fields as political, social, cultural and economic integration and the cohesion of culturally diverse societies. It is aimed at developing a deeper understanding of diverse perspectives, visions of the world and practices; enhancing integration and co-operation, as well as fostering equality and tolerance.

The prerequisites of an effective intercultural communication cannot be limited to a merely good command of an international language. Still, apart from the linguistic factor, such notions as equal dignity and mutual respect, gender equality, the universal values of human rights, democracy and the rule of the law comprise a set of conditions, necessary for a fruitful intercultural communication. It should not be overlooked that there are a lot of barriers to intercultural communication. Some of these are the outcomes of the difficulty in communicating in several languages. But others concern the domain of politics: racism, xenophobia, intolerance and all other forms of hate speech confront to the very idea of dialogue and create structural barriers, hindering the communication.

It is evident that the interpreters play a vital role as cultural mediators between people who need to communicate but do not speak the same language. The role of interpretation as an intercultural communication is like a bridge, which demands that interpreters not only master exquisite language techniques, but also rich and generous knowledge of different cultural backgrounds. The important functions of intercultural awareness during intercultural communication were always kept in mind. Therefore, it can be concluded that the interpreter/translator needs to strengthen the sensitivity not only to linguistic differences but also to cultural differences, so that misunderstandings can be effectively reduced, and intercultural communication can be successfully achieved.

References

- Aerospace Scholars. (2009). *An Educational Outreach Program*, NASA's Johnson Space Center, Texas.
- BBC Culture. (n.d.). *The Greatest Mistranslations Ever*.
<http://www.bbc.com/culture/story/20150202>.
- Burroughs, E. R. (1911). *A Princess of Mars*, All-story Magazine, USA.
- Council of Europe (2001). Common European Framework of Reference for Languages: *Learning, Teaching, Assessment*, Strasbourg.
- Lowell, P. (1911): *Mars and its Canals*. 3th edition. The Macmillan Company, New-York.
- Marx, K. (1990). *Capital, Volume I*. Fowkes, Ben (trans.). London: Penguin Books.
- Memleket Haberleri2. (2017, March 14). *Sempozyumda Tercüme Krizi*.
https://www.youtube.com/watch?time_continue=11&v=XPUyvYnE2go&feature=embtitle.
- Ministry for Culture and Heritage. (2017, May 17). *The Treaty in brief*,
<https://nzhistory.govt.nz/politics/treaty/the-treaty-in-brief>

Sözcü Gazetesi. (2017, May 17) *Erdoğan ve Trump Basın Toplantısında Çeviri Hataları*. <https://www.sozcu.com.tr/2017/dunya/erdogan-ve-trumpin-basin-toplantisina-ceviri-hatasi-damga-vurdu-1854422>.

The Openmic. (2017, September 30). *What does it mean to be a translator?* <https://theopenmic.co/what-does-it-mean-to-be-a-translator>.

Wells, H.G. (1897). *The War of the Worlds*, Pearson's Magazine, Britain.

Your Dictionary.(n.d.). *Definition of the word translator*. <https://www.yourdictionary.com>.



The Role of Translator in Intercultural Communication

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Abstract

Translation/interpretation has always been central to intercultural communication. Lack of knowledge of another culture may cause confusion, misunderstanding or even offense during communication process and it also makes the conclusion of international or bilateral agreements difficult or impossible. To the extent that without communication there can be no negotiation, communication is obviously integral to the success of the mission. It is necessary for a translator or an interpreter to realize the importance of having a cultural background when taking part of this kind of negotiations, which can affect thousands of people. Therefore, this paper aims to offer a closer analysis of the translation profession from the point of view of intercultural communication.

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Keywords: translation; translator; interpreter; intercultural communicator

1. Introduction

In a variety of fields like scientific domain, academic research, business, management, education, health, culture, politics, diplomacy, development etc. the importance of intercultural communication cannot be denied. With the help of travel, international media and internet, communication among people becomes easy. In order not to isolate the rest of the world and to survive in such a kind of environment everybody needs to interact with each other. Therefore, intercultural communication is a *must* for every people. The position of translation in intercultural communication is fundamental. It is necessary for both international business and social relations. The purpose of translation is transmitting of the ideas and events through time and space to make something understood, to accomplish, to prove. The world that is increasingly interlinked and translation fulfils a role by breaking down language barriers. From the professional point of view, translators play a role as intercultural communication experts, mediators, and the bridge between people,

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cultures, and opinions. In order to understand the role of translating or interpreting as a profession, it is needed to start with an exact definition of the profession. Then, the differences between translator and interpreter should be clarified by explaining their responsibilities. Also, from the perspective of intercultural communication, possible reasons behind inaccurate translations will be covered to shed light on to communication interruptions with some examples.

1.1. *Who is a translator?*

noun

The definition of a translator is a person who helps people who speak different languages to communicate or who takes something (such as a speech or a book) in one language and who puts it into a different language for people to understand. (<https://www.yourdictionary.com>.)

The above dictionary definition of *translator* is provided by <https://www.yourdictionary.com>. However, this definition is not enough to explain who exactly a translator is. Translator is not only the one who translates words from one language to another. Becoming a translator does not mean mastering at least two languages because in order to become valuable translators, mastering vocabulary and the grammar of languages are not enough to bring people coming from different cultural backgrounds. In the following, from the perspective of different translators having different linguistic and cultural backgrounds, the profession of translating is tried to be explained (<https://theopenmic.co/what-does-it-mean-to-be-a-translator>):

Being a translator means removing a language barrier and, as much as possible, bridging a cultural gap between people. (Julia Thorton)

It means seeing the world through different eyes. As a translator, I work with people from all over the world. All of them have a different interpretation about life and other things. So, have more than two eyes while being a translator. (Sherif Abuzid)

Translator is a nobleman or noblewoman who translates the source language into target language. Also, he or she is a political researcher. Presidents or classy politicians speak through translator. Translation is a critical job, and your classy translation may save the world. (Qasem Mafi)

I understand that language is a living thing. So, new phrases and cultural references are constantly being added as the time passes so translators need to embrace the culture of the languages they are dealing with and also the current events, as those have a major impact on the way people communicate. So, to me, translation means it's not just conveying meaning from one language to another, they re-create. It's

architecture of words building bridges that connect people and cultures from around the world. (Sirajul Islam)

Translation brings together lots of things that I love: storytelling, communication, learning (to name a few). Being a translator is bringing information, stories and culture from different parts of the world to people who might never have the chance of learning a second (or third) language. It means facilitating communication in small (individuals) and big scale (corporations). And I learn something new every day! Either new words, or instructions to use a new equipment! (Mariana Alves Passos).

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Life on Mars

At the point when Italian astronomer Giovanni Virginio Schiaparelli started mapping Mars in 1877, he accidentally dislodged a whole sci-fi oeuvre. The chief of Milan's Brera Observatory named dull and light regions on the planet's surface 'oceans' and 'mainlands' – describing what he thought were channels with the Italian word 'canali'. Lamentably, his fellows deciphered that as 'trenches', propelling a theory that they had been made by intelligent lifeforms on Mars.

US astronomer Percival Lowell mapped many them somewhere in the range of 1894 and 1895, persuaded that the canals were genuine (Lowell, 1911). Over the accompanying two decades he distributed three books on Mars with representations showing what he thought were artificial structures used for conveying water by an amazing race of engineers. H. G. Wells influenced by Lowell's theory published his own book about intelligent Martians. In *The War of the Worlds*, which originally showed up in serialized structure in 1897, H. G. Wells characterized an attack of Earth by destructive Martians and realized a science fiction subgenre (Wells, 1897). *A Princess of Mars*, a novel by Edgar

Rice Burroughs published in 1911, likewise carries a perishing Martian civilisation into the cutting edge, utilizing Schiaparelli's names for highlights on the planet (Burroughs, 1911).

While the trenches used for carrying water were a result of language and a zealous creative mind, astronomers currently affirm that there are no channels on the surface of Mars. As indicated by Nasa, "The network of crisscrossing lines covering the surface of Mars was only a product of the human tendency to see patterns, even when patterns do not exist. When looking at a faint group of dark smudges, the eye tends to connect them with straight lines." (Aerospace Scholars, 2009).

Pole position

Jimmy Carter realized how to get a crowd to pay interest. In a speech given during his 1977 visit to Poland, he seemed to state sexual desire for the Communist country or that is the thing that his translator said. It turned out Carter had said he wanted to know about the Polish individuals' 'desires for the future'.

His interpreter additionally translated "I left the United States at the beginning of today" into "I left the United States, never to return". As per Time magazine, even his innocent statement that Carter was glad to be in Poland turned into the case that "he was glad to grasp Poland's private parts".

It isn't astonishing that the President utilized a different interpreter when he gave a toast at a state feast later in a similar trip. In the wake of conveying his first line, Carter stopped to be translated but the interpreter remained quiet. After a different line, he was again met by quiet. The explanation was that the new interpreter couldn't comprehend the President's English and had concluded that the best way was to stay silent. At the point when Carter's excursion finished, he had become the punchline for some a Polish joke.

Keep digging

In 1956 at a reception at the Polish embassy in Moscow, Soviet leader Nikita Khrushchev was deciphered as saying "We will bury you" to Western ambassadors. The expression showed up in magazine covers and newspaper headlines causing relations cooling between the Soviet Union and the West.

However, Khrushchev's words were nearer to signifying "Whether you like it or not, history is on our side. We will dig you in". He was showing that Communism would outlive capitalism, which would decimate itself from inside, alluding to an entry in Karl Marx's Communist Manifesto that contended "What the bourgeoisie therefore produces, above all, are its own grave-diggers." (Marx, 1990). While not the most quieting phrase he could have expressed, it was not the sabre-rattling threat that excited enemies of Communists and raised the dream of a nuclear attack in the minds of Americans. Khrushchev himself decontaminated his announcement – in spite of the fact that not for quite a long while. "I once said 'We will bury you', and I got into trouble with it", he said in 1963 during a speech

in Yugoslavia, “Of course we will not bury you with a shovel. Your own working class will bury you.”

Diplomatic immunity

Mistranslations during negotiations have regularly demonstrated disputable. Disarray over the French word 'demander', signifying 'to ask', exacerbated talks among Paris and Washington in 1830. After a secretary made an interpretation of a message sent to the White House that started "le gouvernement français demande" as "the French government requests", the US President disagreed with what he comprehended as a lot of requests. At the point when the mistake was redressed, arrangements went on.

A few specialists have been blamed for misusing contrasts in language for their own closures. A composed understanding named as The Treaty of Waitangi, between the British Crown and the Māori individuals in New Zealand was marked by 500 innate boss in 1840 (<https://nzhistory.govt.nz/politics/treaty/the-treaty-in-brief>). However, clashing accentuations in the English and Māori adaptations have caused discusses, with a blurb asserting 'The Treaty is a fake' highlighting in the Māori fight development.

Taking the long view

In 1972 during Richard Nixon's visit to China, Chinese head administrator Zhou Enlai broadly said it was 'too soon to tell' about the impacts of the French Revolution. He was adulated for his savvy words, acknowledged as reflecting Chinese way of thinking. In any case, he was really alluding to the May 1968 occasions in France. It was to a greater extent a misconception than a mistranslation, one frequently rehashed expression may have been strengthened by racial generalizations.

As expressed by the resigned US ambassador Charles W Freeman Jr., during the memorable excursion Nixon's translator misjudged remark was “one of those advantageous false impressions that never gets rectified.” Freeman stated: “I can't clarify the disarray about Zhou's remark barring from the perspective which it helpfully supported a generalization (as common with all generalizations, incompletely discerning) about Chinese authorities as far-sighted people who think in longer terms than their Western partners”.

As mentioned above, translation errors can have many causes. Whatever the reason, translation errors are inexcusable, especially in the case of diplomatic relations and human health. In the following section, the reasons for translation errors in general are categorized.

2. The Reasons for Translation Errors

Written and oral translation services have caused significant problems throughout history. Translation errors have led to economic and diplomatic crises, and sometimes have led innocent people to serve years in prison. A man who was sentenced to 21 years in prison for murder in Italy was released when he was found to be innocent.

“According to Italian press reports, Angelo Massaro, now 51, was found guilty of a 1995 murder in Taranto, in the southern Puglia region, and sentenced to 24 years in prison. Although Massaro denied the accusation, he was convicted of “informing” an informer and “evidence” of tapping. However, after 21 years, Massaro’s imprisonment of the phone that led to the imprisonment appeared to be misinterpreted. Speaking in dialect specific to the region of Puglia Massaro said his wife in the phone call “a burden” carries, but Massaro’s “burdens” used in the meaning of “muers” word “muert” (dead) was recorded. Massaro was released 21 years later at the time of the murder, proving that he was in a medical facility for the treatment of drug addiction.”

2.1. Inexperienced Interpreters

Although not very common, inexperienced translators are prone to error. If inexperienced interpreters are involved in interpreting, then many mistakes are inevitable and they may cause a big crisis. As an example, in 2012, two interpreters’ crisis created a crisis during an important symposium due to the lack of legal terminology. At the symposium organized by Turkish Academy of Justice, the public prosecutor Felice Casson shared his experiences with judges and prosecutors. During the presentation of Italian Senator Casson, simultaneous translation was abandoned when two interpreters had difficulty in translation. https://www.youtube.com/watch?time_continue=11&v=XPUyvYnE2go&feature=emb_title.

2.2. Lack of editorial supervision in written translations

Translation errors are often encountered in oral translations, but mistakes are also made in written translations. Although some of these errors are minimized nowadays, one of the most important reasons for errors in written translations is the lack of editorial supervision. Editors’ check for errors made the last time files are delivered. It reviews dozens of factors, especially spelling mistakes. Usually, files that need to be delivered quickly will be overridden by the editor control. Therefore, mistakes are inevitable.

2.3. Inaccurate Terminology

In technical, medical, legal and academic terminology, texts can be translated perfectly according to the experience and knowledge capacity of the translator. For example, it is impossible to translate the text accurately if you do not have enough knowledge of medical issues. Therefore, texts and projects should be directed to interpreters in the fields they specialize.

2.4. *Pressure on Interpreters*

Interpreting is an area that needs not only knowledge but also talent. On the one hand, interpreter tries to understand what is spoken, and on the other hand, he passes it on. All translation takes place in a few seconds. Therefore, an interpreter has to have a cache memory that can extract the words that are stored in the deepest within 400-500 milliseconds.

In such a kind of race against time, the participation of diplomats and professors as speakers in verbal translations increases the tension in the environment. Interpreters are exposed to lots of words, terms and expressions so; the interpreter needs to be talented and knowledgeable, as well as self-confident.

2.5. *Avoiding Translation*

One of the most recent translation problems is not related to translation error itself; it is interpreter's "preference not to translate". Sometimes interpreters either soften or skip the whole subject while interpreting to avoid damaging diplomatic relations or inclining cultural and social misunderstandings. These events are mentioned translation/interpretation errors in the news on TV. However, it is more a matter of choice. For example, translation errors that are important in diplomatic relations made in recent interviews between the U.S. and Turkey and these errors are labelled as a scandal in the news in Turkey.

President Tayyip Erdogan and US President Donald Trump held a joint press conference (<https://www.sozcu.com.tr/2017/dunya/erdogan-ve-trumpin-basin-toplantisina-ceviri-hatasi-damga-vurdu-1854422>). During the conference Erdogan said:

"Terör örgütleriyle ilkeli ve kararlı mücadele konusunda geçmişte yaşanan hataları telafi edecek adımların devamının geleceğini ümit ediyoruz."

Despite Erdoğan's words, which were clearly stated, the interpretation of these words was diametrically opposed. The interpreter translated Erdoğan's words:

"And we know that, in terms of keeping up with the principled and committed fight against the terrorist organizations all around the world, we will not repeat the mistakes of the past and we will continue down this path together."

This caused an image of Erdoğan "as if he accepted a mistake". This was not the only mistake at the press conference. Another statement of Erdoğan was:

“YPG ve PYD terör örgütlerinin hangi ülke olursa olsun muhatap alınması bu konuda küresel düzeyde olan mutabakata kesinlikle uygun değildir.”

However, the interpreter skipped the expression “terrorist organizations” that Erdoğan used for PYD-YPG and passed on these organizations only by their names:

“Taking YPG and PYD in the region - taking them into consideration in the region, it will never be accepted, and it is going to be against a global agreement that we have reached.”

The reason behind the errors of interpreter was not exactly known. According to the statements of the authorities, a copy of the text that Erdoğan had read from the paper was in the translator. The fact that the interpreter performed the translation very quickly without any misfire also reinforces the possibility that the text has already been prepared. There were three main scenarios asserted in the lobbies related to this scandal for translation: According to the first scenario, Erdoğan's speech was translated incorrectly into English by Turkish translators. The second possibility is that Erdoğan's speech was translated simultaneously and the translator misunderstood the words. Last but not least, Erdoğan's words were deliberately distorted by the White House translator.

3. Conclusions

The progress of modern social life, new development in international relations and formation of so-called "intercultural communication" requires abandoning many of the traditional stereotypes and methods of translation. Intercultural communication with a highlight on specific cultural background knowledge has commenced to play an utmost role shaping broad-minded translators, well-aware of ethnic, cultural and other peculiarities of given language. The notion of intercultural communication is defined by Council of Europe (2001) as “the ability to communicate effectively in cross-cultural situations and to relate appropriately in a variety of cultural contexts”.

In this regard, the term of ‘intercultural communication’ has a primordial significance within growing tendencies of globalization and international cooperation in different spheres, where the translator is required to receive a proper training not only in the sphere of foreign languages but also in the intercultural communication. Thus, according to the “White Paper on Intercultural Communication” by the Council of Europe (2001), the intercultural communication is understood as “a process that comprises an open and respectful exchange of views between individuals and groups with different ethnic, cultural, religious and linguistic backgrounds and heritage, on the basis of mutual understanding and respect. It requires the freedom and ability to express oneself, as well as the willingness and capacity to listen to the views of others.” Intercultural

communication plays an essential role in such fields as political, social, cultural and economic integration and the cohesion of culturally diverse societies. It is aimed at developing a deeper understanding of diverse perspectives, visions of the world and practices; enhancing integration and co-operation, as well as fostering equality and tolerance.

The prerequisites of an effective intercultural communication cannot be limited to a merely good command of an international language. Still, apart from the linguistic factor, such notions as equal dignity and mutual respect, gender equality, the universal values of human rights, democracy and the rule of the law comprise a set of conditions, necessary for a fruitful intercultural communication. It should not be overlooked that there are a lot of barriers to intercultural communication. Some of these are the outcomes of the difficulty in communicating in several languages. But others concern the domain of politics: racism, xenophobia, intolerance and all other forms of hate speech confront to the very idea of dialogue and create structural barriers, hindering the communication.

It is evident that the interpreters play a vital role as cultural mediators between people who need to communicate but do not speak the same language. The role of interpretation as an intercultural communication is like a bridge, which demands that interpreters not only master exquisite language techniques, but also rich and generous knowledge of different cultural backgrounds. The important functions of intercultural awareness during intercultural communication were always kept in mind. Therefore, it can be concluded that the interpreter/translator needs to strengthen the sensitivity not only to linguistic differences but also to cultural differences, so that misunderstandings can be effectively reduced, and intercultural communication can be successfully achieved.

References

- Aerospace Scholars. (2009). *An Educational Outreach Program*, NASA's Johnson Space Center, Texas.
- BBC Culture. (n.d.). *The Greatest Mistranslations Ever*.
<http://www.bbc.com/culture/story/20150202>.
- Burroughs, E. R. (1911). *A Princess of Mars*, All-story Magazine, USA.
- Council of Europe (2001). Common European Framework of Reference for Languages: *Learning, Teaching, Assessment*, Strasbourg.
- Lowell, P. (1911): *Mars and its Canals*. 3th edition. The Macmillan Company, New-York.
- Marx, K. (1990). *Capital, Volume I*. Fowkes, Ben (trans.). London: Penguin Books.
- Memleket Haberleri2. (2017, March 14). *Sempozyumda Tercüme Krizi*.
https://www.youtube.com/watch?time_continue=11&v=XPUyvYnE2go&feature=embtitle.
- Ministry for Culture and Heritage. (2017, May 17). *The Treaty in brief*,
<https://nzhistory.govt.nz/politics/treaty/the-treaty-in-brief>

Sözcü Gazetesi. (2017, May 17) *Erdoğan ve Trump Basın Toplantısında Çeviri Hataları*. <https://www.sozcu.com.tr/2017/dunya/erdogan-ve-trumpin-basin-toplantisina-ceviri-hatasi-damga-vurdu-1854422>.

The Openmic. (2017, September 30). *What does it mean to be a translator?* <https://theopenmic.co/what-does-it-mean-to-be-a-translator>.

Wells, H.G. (1897). *The War of the Worlds*, Pearson's Magazine, Britain.

Your Dictionary.(n.d.). *Definition of the word translator*. <https://www.yourdictionary.com>.



Towards the acquisition of digital instructional resources for effective teaching in the 21st century classroom in Public Secondary Schools in Cross River State

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Abstract

The study was on the influence of acquisition of digital instructional resources on the teaching effectiveness of mathematics teachers in public senior secondary schools in Cross River State. To achieve this, a hypothesis was drawn from the stated research question to guide the study. Literature review was carried out according to the variable in the study and the survey design was used for the study. Two sets of structured questionnaires, titled; 'Teacher Effectiveness Questionnaire' (TEQ) and 'Digital Instructional Resource Evaluation Test Questionnaire' (DIRCETQ) were designed by the researcher. Data were analysed using the Analysis of Variance (ANOVA) statistic. The hypothesis was tested at .05 levels of significance. The results of the findings was that acquisition of digital instruction resources has no significant influence on mathematics teachers' effectiveness in public senior secondary schools in Cross River State. Based on the findings, it was recommended among other things that basic training on the needed skills and knowledge on how best they can deploy and utilize these resources in the classroom.

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Keywords: Teachers' Teaching effectiveness, Digital instructional resources ; Resource acquisition

1. Introduction

The Digitalization and resources acquisition for effective teaching and learning has recently become a tropical area of concern both educators and students in recent times, this is because it global educational concerns have actually shifted to e- teaching and e-learning as sure way of reengaging and reactivating the falling standards in our school systems. Academic gains and successes should be on key variables as hindering the

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impact of digitalization of Nigeria secondary schools and all such necessary digital tools to actualize a sound educational system must be provided even in the midst of other issues like; search skills, epileptic power supply, expensive hardware and software facilities and the huge amount of money involved providing alternative power supply system.

Yusuf (2005) found that ICT provides a variety of tools to support and facilitate teachers' professional competence and teaching effectiveness. Digital innovations transforms teaching and makes the teacher more effective, efficient and also increase their interest in the teaching profession. Access to Digital resources and having the right skills to use them can allows the teacher organize and structure his work plan, promote re-thinking and revision of the curriculum content and instructional strategies. It also allows him to place more emphasis on individualized instruction with emphasis on carrying out personal projects and assignment in Science. It allows the teachers the opportunity to handle higher concepts in the Science with his/her students. What percentage of teachers can acquire these resources for both private and school use remain a point of discourse or if they are eventually provided, can these be used effectively by teachers in the classroom at this point of emerging technologies. Funds is required to acquire modern Digital resources (computer, servers, scanners, photocopiers, computer software, e-journals, etc.) for teacher's use in any given school system, no matter the level. Most of these facilities are very capital intensive and can only be purchased from developed countries with funding equally dependent on some of these foreign supporting partners. When the inputs from supporting countries depreciate due to variation in fiscal and money policies of nations and if there are both internal and external shakeups in the economy, some of the funds are often diverted, leaving the schools and teachers worse off.

2. Review of Literature

Already in the literature banks for current and future researchers are both empirical and non-empirical studies relating to the topic under consideration.

Using a sample size of 22 respondents in a 40-sized respondent population in the study of the effects of constraints to acquisition of digital resources in academic Libraries in Southern Nigeria, Christopher (2013) reported that gift and purchase were the best means of resource acquisition in the libraries 54.5% with lack of funds as the major acquisition problems amounting to 54.5%. In a related study involving students and faculty members of library science department at the Covenant University Library, Opeola (2013) noted that the university have several computers and internet connection for use by both students and staff, but highlighted that the lowest digital usage of educational resources was in the area of electronics database. The faculty respondents with the highest frequency of 40 (representing 80%) used the internet to update

knowledge, while the highest student respondents of 177 (76.7%) used the internet to complete projects. Electronic databases could not be individually acquired by students and faculty staff members of the faculty, couple with the needed training of library staff as well as students on the use of computer software.

Further, Krubu and Osawaru's (2011) identified Digital resources and their utilization at John Harris Benson Idahosa University as search engine, internet, CD-ROM, Online database, World Wide Web. These facilities are used to acquire, store, process, retrieve and disseminate information. Insufficient funding was one of the major findings from a study carried out on the problems militating against the application of Digital resources in Nigeria secondary schools up to other higher institutions of learning owned and operated by both public and private authorities; this is responsible for up to 33.3% of the problems facing schools. The funding problem is closely followed by the epileptic power supply of 29.2%, lack of search skills of 12.5%, automation at infancy level 10.4%, and technical know-how of 8.3 %

Kruba & Osawaru, (2011) found out that only a few public libraries in South South Nigeria are computerized and do make effective use of the internet. He added that the institutions are not adequately funded as computers are not available and the libraries lacking developed man power due largely to insufficient funds to acquire and activate the facilities where they exist. He identified availability of computers, internet, CD-ROM, e-mails, Microfilm, Microfiche, Videotapes and slid projectors as facilities available in few schools but concluded that the facilities are used mostly for exhibitions and technical training during workshops and seminars. In addition, Ojedekun, Ayoku and Okafor, (2015) asserted that many teachers do have the knowledge on the use of e-mail and word processing and skills in general computer operation but lack the knowledge of search engine utilization, web-site development and designing and also do not possess the needed skills of accessing specialized websites for critical information that help influence their effectiveness. Specialized Science site cannot be accessed by these teachers for meaningful information reporting and programming, the authors concluded. Keith, (2000) reported that cost is a major challenge in most states against the acquisition of ICTs, both in terms of hardware and software and also in knowledge acquisition in secondary schools in Nigeria just as in many other societies. Initial attempts to introduce computer-based technologies into secondary for effective teaching were hampered by cost constraints on information processing and lack of connectivity. Even though these challenges have been addressed in developed societies, where private ownership of internet services have dominated the ownership of most these services, developing countries are still seriously battling with these challenges

Collaborating further, to assess the utilization level of digital facilities among Universities lecturers in Nigeria with focus on Cross River and Akwa Ibom States, Akuegwu, Ntukidem and Ntukidem (2011) undertook a study involving 400 lecturers -

with a population t- test and independent t-test separately, tested and analysed the data. The result showed that there was low access to Digital resources for both the teachers and students use and that the situation cannot guarantee a quality instructional process to take place in the two states. The researchers however maintained that there was ICT availability in the area of internet connected desktops computers and instructional cyber cafes. Lecturers' utilization of ICT was very low especially among the university lecturers.

Also, Okon and Jacob (2002) conducted a study on the use of Digital resources in selected schools in Nigeria, the authors found that 161.3% of the respondents professed to use computers in their teaching and research works, showing that the extent of computer use was very high, but the findings further indicated that the usage was more in statistical analysis than in teaching. This in effect implies that even though ICT utilization was found to have existed in most schools, it has been of more benefits to areas like research than in the actual teaching and learning of Science Okon and Jacob concludes. In a similar study on ICT utilization among teachers, Ramboll, (2004) reported that while the level of integrating ICT in teaching has increased greatly, considerable variations still exist between schools in the areas of accessibility. He noted that while most schools in the urban may have basic ICT infrastructural facilities, such as computers, internet access and projectors to use, schools in the rural areas have very little or nothing in this direction.

In their contribution, Ntukidem and Ashi (2009) discovered that persons with visual impairment have variously benefitted from the use of electronic devices such as screen readers, which the blind or low vision computer users use to listen to textual materials that appear on their computer screens. They added that the more popular screen for readers are Windots and Job Access with Speech for Windows (JASW), both of which pass information to Braille display or speech synthesizer. Emmanuel and Sife, (2008) concluded that when funding is poor to secondary schools, Digital resources acquisition may not necessarily remain the priority of the authority as other conflicting needs of the school may always be considered. Teacher needs computer and information literacy skills to effectively use and move with the rapidly changing and growing information resources. The knowing of keyboard and mouse operations are not enough to make the teacher effective in the utilization of electronic information resources. ICT literacy involves the efficient and effective use of information sources to obtain the required information. This will in turn enhance capacity and developments in our educational advancements.

2.1. Purpose of the study

The main purpose of this study is to establish the influence of digital resources on teaching effectiveness of Science teachers in secondary school teachers in Cross River State. Specifically, the study seeks to determine:

The influence of Digital resources acquisition on the teaching effectiveness of Science teachers in public secondary schools in Cross River State

2.2. Research Questions

The following are formulated as a research question to guide the researcher in the investigations.

How does acquisition of digital resources by science teachers influence their teaching effectiveness in public secondary schools in Cross River State.

2.3. Statement of hypothesis

The following hypotheses are tested in the study:

There is no significant influence of digital resource acquisition on teachers' teaching effectiveness in senior secondary school Science.

3. Method

This section describes the method and procedures used in the study under the following;

The survey inferential design was used and the research area being Cross River State, Nigeria. The study population is made up of 375 public senior secondary school Science teachers in the state. A census of Science teachers in public senior secondary schools in Cross River State was adopted. All the Science teachers (both professionals and non-professionals) in the sampled schools were used for the study. Using the random sampling technique, each of the 375 Science teachers involved in the study were further evaluated by four students on their teaching effectiveness. The sample consisted 375 teachers and 1,500 students from the public senior secondary schools in Cross River State. Of the 375 teachers, 150 were female and 225 were male teachers. 263 were trained Science teachers while 112 were not professionally trained in Science, but were science incline and could teach the subject due to the shortage of Science teachers in their schools as arranged by the schools.

On instrumentation, two instruments were used for data collection (from teachers and students respectively). The first questionnaire titled "Digital Evaluative Test Questionnaire" (DETQ) was administered to teachers to evaluate their digital skills of teachers and related variables while the second instrument titled "Teaching Effectiveness Questionnaire" (TEQ) was administered to students to assess their teachers' teaching effectiveness in Science. On the other hand, the TEQ contained 35 items that measured teaching effectiveness in Science. These instruments were vetted and double-barrelled and ambiguous items were reframed, while additional items were

introduced to take care of the various dimensions of teaching effectiveness. The views of these experts were used to modify and review some of the items in the instrument. Reliability was conducted on the instruments and found reliable for the study with an approximate index of 0.070 and above

3.1. Hypothesis testing

It There is no significant influence of acquisition of Digital resources on Science teachers' effectiveness in secondary schools. The independent variable is acquisition of digital resources while the dependent variable is teaching effectiveness which had five sub-variables and the overall teaching effectiveness. Acquisition of Digital resources were classified into three groups based on the scores of teacher's acquisition of Digital resources. Teachers that scored above the mean were classified as high level acquisition of Digital resources, those that scored within the mean were classified as average level acquisition of Digital resources and those that score below the mean were classified as low level acquisition of Digital resources. Based on this classification, 160 teachers were classified as low in their acquisition of Digital resources, 27 teachers was classified as average in their acquisition of Digital resources and 188 teachers were classified as high in their acquisition of Digital resources.

The means and standard deviations of these categories for their teaching effectiveness indices were first computed and compared using the One-Way Analysis of Variance (ANOVA). Thus, the hypothesis was tested on each of the five sub-variables of knowledge of subject matter, ability to motivate students, communication skills, teaching method, and method of evaluation. The group size, mean and standard deviations are shown in Table 1, while the actual result of ANOVA is shown in Table 2. The result of the analysis presented in Table 11 on page 72 showed the summary of the descriptive statistics of the influence of acquisition of Digital resources on teacher's effectiveness. The result revealed that teachers' average perception in the acquisition of Digital resources had the highest mean teacher's effectiveness in terms of knowledge of subject matter (\bar{X} = 19.37), followed by teachers who were low in the acquisition of Digital resources (\bar{X} = 19.13) and lastly by teachers who were high in the acquisition of Digital resources (\bar{X} = 18.77).

When teachers' effectiveness in terms of ability to motivate students was considered, teachers who were average in the acquisition of Digital resources had the highest mean teachers effectiveness in terms of ability to motivate students (\bar{X} = 19.56), followed by teachers who were low in the acquisition of Digital resources (\bar{X} = 19.44) and lastly by teachers who were high in the acquisition of Digital resources (\bar{X} = 19.13). When teachers' effectiveness in terms of communication skills was considered, teachers who were average in the acquisition of Digital resources had the highest mean of teacher effectiveness in terms of communication skills (\bar{X} = 19.37), followed by teachers who

were low in acquisition of Digital resources (\bar{X} =19.14) and lastly by teachers who were high in the acquisition of Digital resources (\bar{X} =18.78).

TABLE 1
Summary of the descriptive statistics of influence of acquisition of Digital resources

Teaching effectiveness	Influence of acquisition of Digital resources	N	Mean	SD
Knowledge of subject matter	Low	160	19.13	3.38
	Average	27	19.37	2.94
	High	188	18.77	3.14
	Total	375	18.96	3.23
Ability to motivate students	Low	160	19.44	3.07
	Average	27	19.56	3.36
	High	188	19.13	3.34
	Total	375	19.29	3.23
Communication skills	Low	160	19.14	3.40
	Average	27	19.37	2.94
	High	188	18.77	3.11
	Total	375	18.97	3.22
Teaching method	Low	160	19.14	3.41
	Average	27	19.37	2.94
	High	188	18.81	3.14
	Total	375	18.99	3.24
Method of evaluation	Low	160	19.12	3.38
	Average	27	19.37	2.94
	High	188	18.77	3.14
	Total	375	18.96	3.23
Overall teaching effectiveness	Low	160	96.71	16.78
	Average	27	97.33	12.12
	High	188	94.52	12.76
	Total	375	95.66	14.58

When teachers' effectiveness in terms of teaching method was considered, teachers who were average in the acquisition of Digital resources had the highest mean teachers' effectiveness (\bar{X} =19.37), followed by teachers who were low in the acquisition of Digital resources (\bar{X} =19.14) and lastly by teachers who high in the acquisition of Digital resources (\bar{X} =18.81). When teachers' effectiveness in terms of method of evaluation was considered, teachers who were average in the acquisition of Digital resources had the highest mean teachers' effectiveness in terms of method of evaluation (\bar{X} =19.37), followed by teachers who were low in the acquisition of Digital resources (\bar{X} =19.12) and lastly by teachers who were high in the acquisition of Digital resources (\bar{X} =18.77). When the overall teachers' effectiveness was considered, teachers who were average in the acquisition of Digital resources had the highest mean overall teachers effectiveness (\bar{X} =97.33), followed by teachers who were low in the acquisition of Digital resources (\bar{X} =96.71) and lastly by teachers who were high in the accessibility of Digital resources (\bar{X} =94.52). To test this hypothesis a One-Way Analysis of Variance was used. The result of the analysis is presented in Table 12. The result of the analysis presented in Table 12 shows that there is no significant influence of acquisition of Digital resources on teachers effectiveness in terms of knowledge of subject matter ($F = .755$; $p > .05$); ability to motivate students ($F = .510$; $p > .05$); communication skills ($F = .753$; $p > .05$); teaching method ($F = .651$; $p > .05$); method of evaluation ($F = .757$; $p > .05$); and overall teacher effectiveness ($F = .1164$; $p > .05$). The null hypothesis was retained.

TABLE 2
Analysis of variance of influence of acquisition of Digital resources on teachers' effectiveness

Teaching effectiveness	Source of variation	Sum of squares	Df	Mean Square	f-value	Sig
KSM	Between Groups	15.783	2	7.891	.755	.471
	Within Groups	3885.981	372	10.446		
	Total	3901.764	374			
AMS	Between Groups	10.637	2	5.318	.510	.601
	Within Groups	3881.097	372	10.433		
	Total	3891.733	374			
CS	Between Groups	15.649	2	7.824	.753	.472
	Within Groups	3866.360	372	10.393		
	Total	3882.009	374			
TM	Between Groups	13.697	2	6.848	.651	.522
	Within Groups	3916.037	372	10.527		
	Total	3929.733	374			
MOE	Between Groups	15.817	2	7.909	.757	.470

	Within Groups	3887.372	372	10.450		
	Total	3903.189	374			
OTE	Between Groups	494.515	2	247.258	1.164	.314
	Within Groups	79054.109	372	212.511		
	Total	79548.624	374			

Significant at .05 level; critical $F = 3.17$; $df = 2, 372$

Where: KSM= Knowledge of the subject matter, AMS= Ability to motivate students, CS= Communication skills, TM= Teaching methods, MOE= Method of evaluation and OTE= Overall teaching effectiveness. This is because the calculated F-ratios of .755, .510, .753, .651, .757 and 1.164 were found to be less than the critical F. ratio of 3.02 given .05 levels of significant and with 2 and 372 degrees of freedom. This finding implies that acquisition of Digital resources does not significantly influence teachers' effectiveness in terms of knowledge of subject matter, ability to motivate students, communication skills, teaching method, method of evaluation and overall teachers' effectiveness.

4. Discussion

Acquisition of Digital resources and Science teachers' effectiveness in secondary schools. The findings of this hypothesis showed that there is no significant influence of ICT-facilities acquisition on the teaching effectiveness of Science teachers in public secondary schools in Cross River State. Consequently, the null hypothesis was retained and the alternate rejected. Acquiring Digital resources by teachers may be due to the desire to own the facilities and most times teachers finds it difficult to acquire them due to lack of sufficient income and incentives. They may have to either rely on the school facilities, acquire the facilities they cannot put to use or may not even have the resources to acquire them at all. The result therefore shows a situation where mere acquisition of Digital resources cannot guarantee an influence on teaching effectiveness Science teachers.

Affirming the position of the fourth hypothesis result, Opeola (2013) noted that both teachers and students can acquire Digital resources for use, but that most teachers had no technical capacity to apply the needed skills and man- power in operating the electronics database for students, thus rendering them ineffective in using the facilities for pedagogical purposes. Additionally, the findings of this hypothesis collaborated Kuba and Osawaru (2011), who saw Digital resources acquisition as a variable that cannot works independent of other fundamental ICT- related fundamentals like inadequate searching skills, epileptic power supply, expensive hardware, hardware tools and generator maintenance cost as major constraints towards effective teaching and not

Digital resources acquisition which according to the author is more of economic than an academic challenge.

The result of the hypothesis confirmed the views of Dirisu, B. M. (2009), who jointly asserted that most teachers' knowledge of ICT usage is usually limited to e-mailing and word processing skills. They affirmed that most secondary school teachers lack the knowledge of search engine utilization, web-site design and development and names and addresses of useful databases which are to serve as links to critical information to the advantage of the teacher and applies to Science teachers as well. To them acquisition of Digital resources can most times be viewed as assets rather than a resource for educational advancement and classroom instructional material. Furthermore, These findings supported the views of Ramboll (2004), who asserted that in most cases, Digital resources are deployed to other areas like research and e-business instead of academic concerns or for the teaching and learning of Science in secondary schools. To the author, Digital resources acquisition by teachers has little or nothing to do with teacher effectiveness. The author added that Digital resources are often more accessible in urban schools than in rural schools and this situation has not change teachers' teaching effectiveness in Science for the better in the urban schools.

On the contrary, the findings of the study did not conform with the views of Akuegwu, Ntukidem and Ntukidem (2011), who believed that the in-ability of teachers to acquire Digital resources has the tendency of limiting their facilities application for pedagogical purposes and hampering on their teaching effectiveness. In the same vain, the findings do not agree with the views of Ashi and Ntukidem (2009), whose position on Digital resources acquisition and teacher effectiveness deviates from the result of this hypothesis especially as it affects the visually impaired. The authors believed that when such Digital resources like screen readers are used with computers by the visually impaired teachers, their level of effectiveness among others will always change. Again, the result of this hypothesis deviates from that of Emmanuel and Sife (2008), who in their study reported that Digital resources acquisition does not influence teacher effectiveness in a significant way. They noted that teachers need Digital resources, e.g. computers and general information literacy skills to effectively use and move with the rapidly changing and growing information resources. From the reviews under this hypothesis, the researcher wish to add that acquisition of Digital resources by Science teachers is necessary and justifiable as it makes the teachers disposed to modern tools with which they can use to enhance their teaching effectiveness if properly deployed. Teachers should be exposed to the operational skills and given the guide lines on how these facilities can be used in their various areas of specialization and teaching to avoid abuse and misapplication.

5. Conclusions

Based on the findings obtained it can be concluded as follows: Digital instructional resources acquisition have no significant influence on Mathematics teachers' effectiveness in secondary schools in Cross River State.

6. REcommendations

From the findings it is recommended that for the acquisition of digital instructional resources to be impactful, teachers need to be motivated with other incentives, allowances and grants by the both the school, government and foreign partners to enable them acquire these essential facilities (both hardware and software) and be given the needed technical training and exposure on their utilization. This when done would assist teachers in both private and public with the ultimate result being that teachers' effectiveness would be influenced positively.

References

- Akuegwu, B. A., Ntukidem, E. P. Ntukidem, P. J. & Jaja, G. (2011). Information and Communication Technology facilities utilization for quality instructional services delivery among Universities lecturers in Nigeria. *Journal of Higher Education in Africa* 3(1): 33-53.
- Christopher, O. O. (2013). Effects of constraints to acquisition of ICT resources in academic libraries in Southern Nigeria. A study of UNILAG and KDL main libraries. *African Journal* 10(1):1-2.
- Dirisu, B. M. (2009). The availability and utilization of ICTs in College of Education (COE) Minna, a survey of information technologist: *International Journal of Information and Communication Technology* 6(2), 149-153.
- Emmanuel, G. & Sife, A. S. (2008). Challenges of managing information and communication technology for education. Experiences from Sokoine National Agriculture and Development using Information and Communication Technology (ICT), 4(3):137-142.
- Keith, M. L. (2000). New technology and knowledge acquisition and use in developing countries. *A Journal of comparative and International Education* 30(3): 313-321
- Krubu, D. E. & Osawaru, K. E. (2011). The impact of Information and Communication Technology (ICT) in Nigeria University libraries. Available at: www.digiatcommons.un.edu/cgi/viewcontent.cgi?article614context=libphc. Accessed on 2nd July, 2016.
- Ndukwe, O. (2006). Furthering the digital revolution in Nigeria in an era of technology convergence. *Vanguard Newspaper*, Monday 16 January, 2014
- Ntukidem, E. P. & Ashi, M. M. (2009). Assistive technology gateway to independence of persons with visual impairment. *The exceptional child*, 11(2): 345-353
- Ojedekun A. A & Okafor V. N. (2015). Information and Technology Skill Acquisition and Competencies of Libraries. Implications for digital and electronic environment in Nigeria Universities Libraries. Retrieved from: [www.meraldinsihgt.com/dvi/abs/8th July, 2016](http://www.meraldinsihgt.com/dvi/abs/8th%20July%202016).

- Okon, A. & Jacob, E. (2002). The use of information technology by academics in selected Universities in Nigeria. *Global journal of mathematics science*. 2(1): 57-63
- Opeola, E. L. (2013). The use of ICT in academic libraries in Nigeria. A case study of Covenant University Library. Available at www.eprint.convenanatuniversity.edu.ng. Accessed on 2nd July, 2016.
- Ramboll, P. L. (2004). Studies in the context of e-learning initiative; Virtual modes of European Universities. Draft final report to the European Union Commission, Copenhagen: DF Education and culture.
- Yusuf, M. O. (2005). Integrating ICTs in Nigeria tertiary education. *The African symposium. An online Journal of African research network*. 5(2): 43-50

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University Students' Views about Genetically Modified Organisms: A Case Study

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Abstract

Today, Genetically Modified Organism (GMO) is a popular socio-scientific issue and views on this issue directly shape people's behaviors. This study aims to investigate university students' views about GMOs. A total of 200 university students from different faculties of a state university participated in the study. For data collection purposes face-to-face interviews developed by the researchers were conducted with the participant students. The convenience sampling technique and the maximum variation sampling technique were systematically used together to determine the participants of the study. The study was designed as a holistic single-case study. The data were analyzed using descriptive analysis and the content analysis. NVivo12 software, a qualitative analysis software, was used to organize the data and the results of the analyses were presented via frequencies and percentages. Quotes from the themes were also included. The results revealed that the university students' sources of information regarding the issue were mainly news, social media, and the school courses. It was nonetheless found out that they did not rely on news and social media. They indicated many food products with GMOs were plants in particular. However, they are confused about situations like growing the aforementioned products in periods different than seasonal periods and using hormones and additives with modifying genetics. In accordance with the content analysis the views of the participants were collected under five different themes: Genetically Modified Products, Purposes of GMO Use, GMO's differences from other products, advantages of GMOs, and damages of GMOs.

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Keywords: Genetically modified organisms (GMO); products; university students; views

1. Introduction

The term Biotechnology was first defined by Karl Ereky in 1919 as “all production procedures performed with the help of living organisms” (Fári & Kralovánszky 2006; Hosseini, 2019). Nonetheless, it is not actually a new science. For thousands of years, human beings have been practicing this science such as the production of food like wine, yogurt, or cheese, the domestication of plants and animals, and the production of medicine (Harzevili, 2018; Choudhury, Kumar & Sandeep 2017). Over the past century, there have

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been enormous developments in genomics and recombinant DNA technologies, which lead to a change in the definition of biotechnology. Modern biotechnology is defined today as a multidisciplinary science that changes living creatures and their products, or enables new production, to solve direct or indirect problems of human beings (FAO, 2004; Raju, 2016; Gahlawat, Duhan, Salar, Siwach, Kumar, & Kaur, 2018). It is today possible with recombinant DNA technology, to create changes in the genetic material (DNA) of organisms which do not appear with natural recombination/fertilization (WHO, 2016; FAO, 2016). The current characteristics can be changed by playing with the gene sequences in the genetic material and the organism can be equipped with new characteristics by adding new genes, as a result of these changes. The organisms formed are called as a genetically modified organism (GMO) or transgenic organism, and their products are called genetically modified (GM) or transgene (Zhang, Wohlhueter, & Zhang, 2016).

These genetically modified microorganisms obtained through recombinant DNA Technologies, and products prepared by plants and animals are used in many fields today. The most common fields of usage are agriculture and livestock practices and medicine applications.

The reasons like increasing population, decrease in cultivable areas and long periods of time depending on the generation of livestock practices in traditional agriculture have more directed scientists to studies on GMOs. The economic effect of GM products is increasing exponentially. Furthermore, the cost of products has also decreased due to GM plants that are resistant to weeds and pests (Brookes & Barfoot, 2014; James, 2013). Another advantage of GM products is producing GM plants that are supported by vitamins A, C, or E or by changing protein and carbohydrates. GM plants are also known to have a therapeutic effect. Eatable vaccines can be obtained with GM plants and the immune system can be stimulated (Nicolia, Manzo, Veronesi & Rosellini, 2014). In addition to the benefits of biotechnological GMO production on food for people's future with the help of controlled and smart technologies, it may have some potential damages and risks. For example, GM products cause some concerns regarding the continuation of biodiversity and human health since it may create allergen and toxic effects.

The enormous advances in biotechnology also underline the need to raise public awareness in the social, ethical, and economic fields where the effect of biotechnology is observed, to investigate the advantages and disadvantages of the use of GM products, a genetic engineering practice. Studies are particularly needed to inform school-age children and young people. Objectives determined regarding the issue in formal education play a crucial role to equip students with a scientific perspective (Sinan, 2015). Therefore, biotechnology topics are becoming more and more common in the national education program in many countries (Steele & Aubusson, 2004). Studies on GMO mostly focus on individuals' knowledge and attitudes regarding GMOs (e.g., Balemen, 2009; Çiçekçi, 2008; Dawson, 2007; Gillian, 2009; Gürkan, & Kahraman, 2018; Öcal, 2012; Jiménez- Salas, Campos- Góngora, González- Martínez, Tijerina- Sáenz, Escamilla- Méndez & Ramírez- López, 2017; López Montesinos, Pérez, Fuentes, Luna-Espinoza, & Cuevas, 2016; Yüce & Yalçın, 2012). As a result, it was found that knowledge and attitudes of individuals whose information sources are based on formal education are significantly improved (Gürkan &

Kahraman, 2018; Yüce & Yalçın, 2012). Studies also show that students have some difficulties in expressing GMO concepts (Sıcaker & Öz Aydın, 2015), which are among the factors affecting negatively students' perspectives. In order to prevent this situation, education programs, textbooks, and methods used while teaching the GMO concept should be considered. In fact, Çıngıl Barış, and Kırbaşlar (2015) investigated the biotechnology concepts in middle and high school textbooks and the sufficiency of those books and found striking deficiencies in the books. Altun, Çelik, and Elçin (2011) studied the effect of guide materials regarding biotechnology and molecular biology on student achievement and reported that the use of materials is effective to learn the concept. Demirci and Yüce (2018) applied a lab-supported education program to teach Biotechnology and Genetic Engineering Topics and increased students' achievement and attitudes, and ensured the permanence of learning. However, most of the studies have a result-oriented perspective with a quantitative approach. Researchers stated that qualitative analysis of the cases investigated may not cover the entire picture; therefore, qualitative studies can deepen the understanding (Christensen, Burke Johnson, & Turner, 2015).

This study aimed to explore the views of university students, who were the prospective teachers, scientists, administrators, politicians, and most importantly parents, with a qualitative approach. The results of this study are thought to have a supportive effect on future studies made on GMOs and the development of curriculum and textbooks, in particular.

2. Method

2.1. Design of the Study

This study investigated university students' views about GMOs and utilized the case study design, a qualitative research design. In case studies, the categories of events and behaviors are discovered by nature (Yin, 1984; Hancock & Algozzine, 2006). This study addressed all aspects of the issue through the interviews (Merriam, 1998). The study used the holistic single-case study design where a single analysis unit is considered, whose frameworks are set forth by Yin (1984) (Yıldırım & Şimşek, 2013).

2.2. Participants

The sampling technique of convenience sampling, a purposeful sampling technique, and the maximum variation sampling technique were used together. The convenience sampling was used to accelerate the study and to make the study more practical (Yıldırım & Şimşek, 2013) and the maximum diversity sampling was used to reveal different perspectives regarding the issue (Patton, 2014). The participants were 200 university students from a state university. Information about the participants was presented in Table 1.

Table 1. Demographic information about participants

Faculty			Grade Level			Gender		
	f	%		f	%			
Faculty of Dentistry	3	1.5%	1	3	1.5%			
			2	-	-	Female	2	1.0%
			3	-	-	Male	1	0.5%
			4	-	-			
			Other	-	-			
Faculty of Pharmacy	4	2.0%	1	-	-			
			2	-	-	Female	1	0.5%
			3	1	0.5%	Male	3	1.5%
			4	3	1.5%			
			Other	-	-			
Faculty of Letters	20	10.0%	1	5	2.5%			
			2	3	1.5%	Female	18	9.0%
			3	-	-	Male	2	1.0%
			4	10	5.0%			
			Other	2	1%			
Faculty of Education	53	26.5%	1	9	4.5%			
			2	14	7.0%	Female	49	24.5%
			3	10	5.0%	Male	4	2.0%
			4	19	9.5%			
			Other	1	0.5%			
Faculty of Science	23	11.5%	1	3	1,5%			
			2	3	1,5%	Female	16	8.0%
			3	9	4,5%	Male	7	3.5%
			4	6	3,0%			
			Other	2	1,0%			
Faculty of Law	7	3.5%	1	2	1,0%			
			2	3	1,5%	Female	3	1.5%
			3	1	0.5%	Male	4	2.0%
			4	1	0.5%			
			Other	-	-			
Faculty of Economics and Administrative Sciences	30	15.0%	1	11	5.5%			
			2	3	1.5%	Female	24	12.0%
			3	6	3.0%	Male	6	3.0%
			4	5	2.5%			
			Other	5	2.5%			

Faculty of Engineering	31	15.5%	1	2	1.0%	Female	12	6.0%
			2	12	6.0%			
			3	3	1.5%			
			4	12	6.0%			
			Other	2	1.0%			
Faculty of Health Sciences	18	9.0%	1	8	4.0%	Female	14	7.0%
			2	4	2.0%			
			3	6	3.0%			
			4	-	-			
			Other	-	-			
Faculty of Sport Science	3	1.5%	1	-	-	Female	1	0.5%
			2	1	0.5%			
			3	2	1.0%			
			4	-	-			
			Other	-	-			
Faculty of Medicine	8	4.0%	1	-	-	Female	6	3.0%
			2	2	1.0%			
			3	2	1.0%			
			4	2	1.0%			
			Other	2	1.0%			
Total	200	100%	1	43	21.5%	Female	146	73.0%
			2	45	22.5%			
			3	40	20.0%			
			4	58	29.0%			
			Other	14	7.0%			

As Table 1 indicates, the 200 university students were from 11 different faculties: Faculty of Dentistry, Faculty of Pharmacy, Faculty of Letters, Faculty of Education, Faculty of Science, Faculty of Law, Faculty of Economics and Administrative Sciences, Faculty of Engineering, Faculty of Health Sciences, Faculty of Sport Science, and Faculty of Medicine. Of the participants, 146 (73.0%) were females and 54 (27.0%) were males. The distribution of the participants was: 43 (21.5%) are first-grade, 45 (22.5%) are second-grade, 40 (20.0%) are third-grade, 58 (29.0%) are fourth-grade, and 14 (7.0%) are at different grade levels (5th- 6th-, and extended etc.).

2.3. Data Collection Tools

The data of the study were collected using the interview questions formed through the review of the current literature and the Exchange of ideas with the experts. The reason for choosing the interview technique was to make an in-depth investigation of the knowledge and experience of the university students and to reveal their perspectives regarding the

issue (Best & Kahn, 2017). Opinions of two field experts and one assessment and evaluation expert were consulted while preparing the interview form. The criteria of determining the experts were: a) Conducting studies on GMOs (field experts), and b) having expertise in qualitative studies (the expert of the assessment and evaluation). These experts were consulted throughout the study.

Some examples of the interview questions posed to the participants are as follows:

- Where did you hear about genetically modified organisms? Do you trust these sources?
- Do you think that genetically modified organisms are necessary?
- How does a genetically modified product differ from genetically not modified products?

2.4. Data Collection

The data of the study were collected via face-to-face interviews. The participants took part in the interviews on a voluntary basis. They were informed about the fundamental points like the topic and the average duration of the interview. The confidentiality of the data was further underlined. It was also emphasized that the participants have the chance to end the interview at any time they wish. During the interviews, a voice recorder was used following the permission of the participants. The interviews lasted between 7–12 minutes.

2.5. Data Analysis

Descriptive and content analyses were used together to analyze the data obtained in the interviews. Content analysis is an initiative aiming for the basic consistency and sense-making of a voluminous qualitative material (Patton, 2014). In the data analysis, the recordings were first transcribed and codes like P1, P2, P3, ... were assigned to each participant. Later, the students' views were analyzed using NVivo software, and themes and categories were created. To demonstrate the results clearly, the data were digitized and the results were presented in tables using percentages and frequencies. All views were included in the study without any frequency limitation. Yıldırım and Şimşek (2011) stated that excerpts should be included to determine whether the views accurately represent the themes.

To provide the reliability of coding, three different experts, of whom one is one of the researchers of this study, coded the data separately. The consistency of the coding was calculated using the formula by Miles and Huberman (1994) as "Agreement / (Agreement + Disagreement) x 100" and it was calculated as .89, which is considered as sufficient according to Miles and Huberman (1994).

The model figure regarding the views about GMOs is depicted in Figure 1.

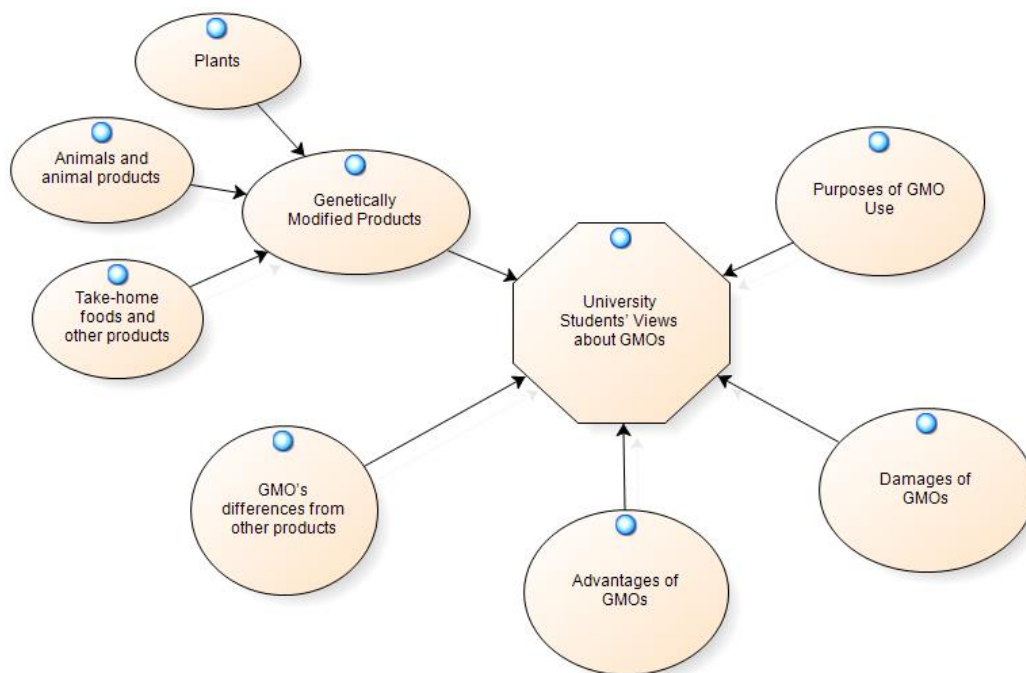


Figure 1. University Students' Views about GMOs

The analysis made revealed five different themes: Genetically Modified Products, Purposes of GMO Use, GMO's differences from other products, Advantages of GMOs, and Damages of GMOs. The codes of the views of the university students about GMOs are detailed in the findings section.

3. Results

Results on the distribution of the university students' sources of information about GMOs are presented in Table 2.

Table 2. University students' sources of information about GMOs and their trust levels in these sources.

Source of information			Trust levels		
	*f	%		f	%
News	153	76.5%	Yes	16	8.0%
			Partially	23	11.5%
			No	114	57.0%
Social media	56	28.0%	Yes	17	8.5%
			Partially	22	11.0%
			No	27	13.5%
School and course	54	27.0%	Yes	41	20.5%
			Partially	10	5.0%
			No	3	1.5%
Family and group of friends	17	8.5%	Yes	1	0.5%
			Partially	4	2.0%
			No	12	6.0%
Have no idea	11	5.5%	Yes	-	-
			Partially	-	-
			No	-	-
Scientific journals	9	4.5%	Yes	9	4.5%
			Partially	-	-
			No	-	-

*Students were able to indicate more than one source.

As Table 2 indicated, the sources with the highest frequencies were News (f=153, 76.5%), Social Media (f = 56, 28.0%), and Lessons and Schools (f = 54, 27.0%). Some students who indicated that they have no knowledge regarding GMOs were also identified. It is however seen that the university students' trust levels in the sources of News and Social Media, which are the main sources, were quite low. However, it is also seen that the university students who acquire knowledge regarding GMOs in the formal learning process have a higher level of trust in sources of information.

The following is an excerpt of one of the students regarding the issue:

P17: I heard about GMOs from lessons and on news. I trust them because the lessons on GMOs were scientific but I do not trust the news.

The university students' perspectives about GM products are presented in Table 3.

Table 3. University students' examples of GM Products

Categories	f	Examples of GM Products	f
Plants	393	Tomato	91
		Corn	51
		Watermelon	42
		Strawberry	32
		Eggplant	28
		Soybean	24
		Banana	13
		Rice	10
		Apple	9
		Orange	8
		Sugar beet	7
		Pepper	6
		Plum	6
		Wheat	5
		White mulberry	5
		Melon	5
		Peach	5
		Cucumber	4
		Sour cherry	4
		Lemon	3
		Grapefruit	2
		Green squash	2
		Potato	2
		Grape	1
		Apricot	1
Animals and animal products	58	Chicken	19
		Milk and milk products	12
		Egg	11
		Cattle	7
		Butter	5
Take-home foods and other products	89	Sheep	4
		Canned foods	34
		Packaged products	23
		Margarine	9
		Beverages	8

Meds	6
Cosmetics	4
Chocolate	2
Chewing gum	2
Hamburger	1

Table 3 includes university students' examples of GM products. The content analysis made indicated that there are three different categories: Plants, Animals, and Animal Products, and Take-home foods and other products. The highest frequencies for each category were tomato (f=91), corn (f=51), and watermelon (f=42) in the Plants theme; chicken (f=19), milk and milk products (f=12), and egg (f=11) in the Animal and Animal Products; and canned foods (f=34), packaged products (f=23), and margarine (f=9).

A quote from the interview with one of the participants is as follows:

P103: GMOs are applied to many plants such as tomato, cucumber, and eggplant to increase efficiency. I also think that the canned food we buy from markets includes GMOs.

The university students' views about the purposes of GMO use are presented in Table 4.

Table 4. University students' views about the purposes of GMO use

	Codes	f	%
Purposes of GMO use	To produce more products in a shorter time	39	19.5%
	Growing long-lasting products	27	13.5%
	Producing hormonal foods	17	8.5%
	Producing off-season vegetables and fruits	12	6.0%
	Creating new products by grafting	10	5.0%
	To give resistance to species	9	4.5%
	Make products look more beautiful	7	3.5%

As Table 4 shows, the university students mainly indicated “producing more products in a shorter time” (f=39, 19.5%), “growing long-lasting products” (f=27, 13.5%), and producing hormonal foods (f=17, 8.5%) as the purposes of GMO use.

An excerpt from the interview with one of the participants is as follows: P71: Growing and harvesting processes that take a long time are completed with GMOs in a shorter time.

The university students' views about the differences between GM products and other products were presented in Table 5.

Table 5. University students' views about the differences between GM products and other products

	Codes	f	%
Differences between GM products and other products	No decay and deterioration	52	26.0%
	Difference appearance	45	22.5%
	Different smell	28	14.0%
	Different taste	26	13.0%
	Production outside the season	14	7.0%
	Contains preservatives and colorants	11	5.5%
	No cores	7	3.5%
	Indication on the product label	5	2.5%

As Table 5 shows, the university students primarily listed these points among the differences between GM products and other products: “No decay or deterioration” (f=52, 26.0%), “different appearance” (f=45, 22.5%), and “different smell” (f=28, 14.0%).

An excerpt from the interview with one of the participants is as follows:

P23: Vegetables and fruits with GMOs are bigger and brighter. It does not smell at all. It doesn't taste good.

The university students' views about the advantages of GMOs were listed in Table 6.

Table 6. University students' views about the advantages of GMOs

	Codes	f	%
Advantages of GMOs	Longer shelf life	62	31.0%
	More production	29	14.5%
	Faster production	23	11.5%
	Cheaper prices	18	9.0%
	Supporting development	8	4.0%
	Use in treatments	7	3.5%
	Help to prevent hunger	7	3.5%
	Improving the quality of products	5	2.5%
	Aesthetically adds beauty	2	1.0%

As Table 6 shows, the university students mainly listed “longer shelf life” (f=62, 31.0%), “more production” (f=29, 14.5%), and “faster production” (f=23, 11.5%) among the advantages of GMOs.

An excerpt from the interview with one of the participants is as follows:

P186: With GMOs, the shelf life of products gets longer. Therefore, more products are obtained at a lower cost.

The university students' views about the damages of GMO use are presented in Table 7.

Table 7. University students' views about the damages of GMO use

	Codes	f	%
Damages of GMO Use	Harmful to health	182	91.0%
	Decreased nutritional value	36	18.0%
	Not natural	25	12.5%
	Damage to the ecosystem	16	8.0%

As Table 7 shows, the university students mainly pointed out “harmful to health” (f=182, 91.0%), “decreased nutritional value” (f=36, 18.0%), and “being not natural” (f=25, 12.5%) as the damages of GMO use.

A quote from the interview with one of the participants is as follows:

P42: It is very harmful to human health. I know that it causes cancer.

4. Discussion

This study investigated university students' views about GMOs. The results obtained revealed that the university students know GMOs mostly from the news (76.5%), social media (28%), and lessons and school (27%). The percentage of the students who stated that they do not have any knowledge regarding GMOs was found to be 5.5%.

The results showed that the information regarding GMOs was mostly gathered from the news and social media. A similar result by Öztürk and Erabdan (2019) was reported stating that science teachers use social media to follow the trends in socio-scientific issues and to teach them to their students. Similarly, media, as one of the main sources of information for people about GMOs, a socio-scientific issue, (Rzymiski & Królczyk, 2016) is a functional communication tool. Furthermore, media is also an educational tool (Arslan, 2004). Mass media has the potential to directly affect and shape individuals' views on GMOs. However, it was also stated that university students do not trust their main sources of information. In the same vein, Jurkiewicz, Zagórski, Bujak, Lachowski, and Florek-Luszczkiet (2014) studied secondary school students in Poland and found that 64.1% of the students studied thought that media reports on GMOs are unreliable. Öcal (2012) examined science teachers' level of awareness in Biotechnology (Genetics Engineering) and put forward that teachers gain knowledge mostly from media communication tools such as the internet, TV, newspaper, and magazine. Similarly, Türker, Koçak, Aydın, İstanbulluoğlu, Yıldırım, Türk and Kılıç (2013) reported that only 13.6% of the information nursery students acquire regarding GMOs was from scientific books, and 54.9% of the information was from radio, magazine, newspaper, the internet, or TV. Tanır (2005) studied with freshmen preservice science teachers and found that their source of information was written and visual media rather than the school; however, they consider these sources unreliable, which might be explained with the late integration of biotechnology topics into the curricula in Turkey. Nevertheless, the media's general stance regarding GMOs (Bubela & Caulfield, 2004), which mainly emphasizes the negativities rather than reflecting the information objectively, clarifies that the views about GMOs are expressed more negatively.

The university students mainly indicated “producing more products in a shorter time” ($f=39$, 19.5%), “growing long-lasting products” ($f=27$, 13.5%), and producing hormonal foods ($f=17$, 8.5%) as the purposes of GMO use. When the students' responses were further examined, it was determined that their information on the purposes of GMO use is partially true; yet, they mostly focus on food production and quality but they do not put enough emphasis on health-related practices in their views. It is also found that they confuse hormone applications and GMO practices, which might stem from the university students' insufficient level of information regarding GMOs. In fact, studies on GMOs revealed that deficiencies in GMO definitions are observed in students who continue their education at university (Çiçekçi, 2008; Türker et al., 2013) as well as secondary education students (Dawson, 2007).

The university students' views about the GM organisms and products they use individually were collected under their different categories: Plants, animals and animal

products, and take-home foods and other products. Tomato, corn, and watermelon were among the responses with the highest frequencies in the GM plants category. Similarly, Türker et al., (2013) in their study stated that 32.4% of nursing students correctly identified the most cultivated GM plant like corn and cotton, while tomato and pepper were the leading products among GM products. Hallman et al. (2013) reported that in the United States, 59% of consumers know that soybeans are sold as GM and that of the consumers, 56%, 55%, and 50% thought that tomatoes, wheat, and corn, respectively, were not labeled as GM, despite the mandatory labeling policy in the USA.

They also indicated a watermelon grown in cages to give a square shape as a GMO. They, moreover, expressed GMOs as the grafting of a branch belonging to a blackberry called a grafting pen, by grafting it into the white lip called the rootstock. As an example of GM animals, chickens had the highest frequency, which is thought to be related to obtaining chicken breeds with high meat yield and rapid development as a result of breeding and selection today. The university students considered these breeding practices as GM chickens. The students also considered the long shelf life of cans due to GMOs, which is, in fact, because of the additives in cans. However, the production and import of foods involving GMOs are forbidden in Turkey, according to the regulation published in Turkey in 2014. However, as a result of analysis performed against gene contamination, it is reported that if GMOs are detected in products at 0.9% or below, this product will be considered as a GMO contaminant. It was concluded that if the genes detected as contaminants in products with GMO contamination are approved by the Biosafety Board, the products can be used in line with the purpose of approval (Yılmaz, 2014). Therefore, the examples set by university students as GM products in Turkey are, in fact, not GM products.

The university students' views about the differences between GM products between other products involves many misconceptions and knowledge deficiency. Genetics has been used to obtain higher productivity, large showy plants and animals by means of classical breeding practices for thousands of years in agriculture. Today, breeding studies have started to be carried out by using the advantages of biotechnology in shorter periods by considering the results of very long generations with classical crosses. In this study, the university students mistakenly thought that when they consume GM products, they are able to realize this with their sense organs. For example, the fact that an agricultural product looks beautiful in shape, has no crooked shape, has excellent taste and smell, or looks large from normal and has a long-lasting shelf life and does not decay easily, causes students to believe that the genetics of these products have been altered. Studies showed that products having eco-label on it has a psychological advantage over GM-label products (Sörqvist, Marsh, Holmgren, Hulme, Haga, & Seager, 2016). Since there is no GM production and import in Turkey, it is seen that students experience concept confusion about plants that are made of polyploid, plant growth regulator or hybrid plants with classical breeding.

The university students mainly listed “longer shelf life”, “more production”, and “faster production” among the advantages of GMOs. Furthermore, the university students stated that the fast and over-production will solve hunger problems of the age, cause a decrease

in prices, and support the development of countries. Jiménez- Salas, et al., (2017) in their study stated that the participants consider GMOs as an effective way to prevent hunger in the world. Similarly, Črne-Hladnik, Peklaj, Košmelj, Hladnik, and Javornik (2009) reported that their participants find the use of GM corn plants useful.

The university students were concerned about the fact that the use of GM products can pose many health problems in both the short and long term, cause a decrease in nutrition values, vitamins in particular, and damage to the ecosystem. In particular, they said that they have learned from the media that GM products cause cancer. Bawa and Anilakumar (2013) stated that the transferred genes can have a toxic or allergic effect. Sanchis (2011) found that some people who consumed corn with insect resistance genes had allergic reactions. Herodotou, Kyzaa, Nicolaidoua, Hadjichambis, Kafouris, and Terzian (2012) in their study found that students are of the opinion that GMOs and GM products have some negative effects on environment and health. Jurkiewicz Zagórski et al., (2014) found that 57.4% of students studying in Poland do not find studies on GMOs reliable and think that they have negative effects on health. Aleksejeva (2014) concluded that 40.9% of students believe that their genes will also change after consumption of GM tomatoes. Mohapatra, Priyadarshini, and Biswas (2010) investigated teachers' knowledge and attitudes about GMOs and found that the vast majority of teachers found GMOs mistrustful for the environment. They also indicated that pesticide proteins in GMOs might have some indirect effects such as bioaccumulation on those who consume those products.

5. Conclusions

It is realized that the university students have some knowledge deficiencies and concept confusions stemming from their sources of information, and display an intense negative attitude regarding GMOs. GMOs and biotechnology do not only affect one or multiple disciplines but also have social, economic and ecological effects in medicine, law, ethics, and other fields; therefore, they have the potential to direct the future's world. For this reason, it is suggested to update curricula to equip students with direct and scientific knowledge regarding the issue and to integrate the related objectives in curricula. Media tools are quite effective to inform people about GMOs, as emphasized in this study. Presenting informative visuals, videos, and public service ads about GMOs in cooperation with scientists are thought to be effective to raise awareness among people regarding GMOs.

References

- Aleksejeva I. (2014). Latvian consumers' knowledge about genetically modified organisms. *Management of Organizations: Systematic Research*, 71, 7–16. <http://dx.doi.org/10.7220/MOSR.2335.8750.2014.71.1>
- Altun, A., Çelik, S., & Elçin, A. E. (2011). Genetik mühendisliği, biyoteknoloji ve moleküler biyolojiyle ilgili rehber materyallerin öğrenci başarısına etkisi. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, 40(40), 21-32.
- Balemen, N. (2009). *Biyoloji öğretmen adaylarının nanobiyoteknoloji konularındaki bilgi seviyelerinin belirlenmesi ve nanobiyoteknoloji öğretim yöntem ve seviyelerinin araştırılması*. Gazi Üniversitesi, Eğitim Bilimleri Enstitüsü (Unpublished master's thesis).
- Bawa, A. S., & Anilakumar, K. R. (2013). Genetically modified foods: safety, risks and public concerns—a Review. *Journal of food science and technology*, 50(6), 1035-1046. <https://doi.org/10.1007/s13197-012-0899-1>
- Best, J. W., & Kahn, J. V. (2017). *Eğitimde araştırma yöntemleri* (Çev. M. Durmuşçelebi). Konya: Dizgi Ofset.
- Brookes, G., Barfoot, P. (2014). Economic impact of GM crops: the global income and production effects, 1996–2012. *GM Crops Food*, 5(1): 65–75. <https://doi.org/10.4161/gmcr.28098>
- Bubela, T. M., & Caulfield, T. A. (2004). Do the print media “hype” genetic research? A comparison of newspaper stories and peer-reviewed research papers. *The Canadian Medical Association Journal*, 170, 1399–1407. <https://doi.org/10.1503/cmaj.1030762>
- Choudhury, A. R., & Kumar, N., & Sandeep, K. (2017). Biotechnological potential of stem cells. *International Journal of Stem Cell Research & Therapy*, 3(1), 212-219. <https://doi.org/10.15406/jsrt.2017.03.00090>
- Christensen, L. B., Johnson, B., & Turner, L. A. (2015). *Araştırma yöntemleri: Desen ve analiz*. Anı: Ankara.
- Çiçekçi, O. (2008). *İlköğretim Okullarında Görevli Öğretmenlerin Transgenik (GMO) Konusundaki Bilgilerinin ve Görüşlerinin Belirlenmesi*, Yüksek Lisans Tezi, Gazi Üniversitesi Eğitim Bilimleri Enstitüsü, Ankara.
- Çingil Barış, Ç., & Kırbaşlar, F. G. (2015). A study of certain biology and biotechnology concepts in secondary school and high school course books in terms of scientific competency. *Procedia-Social and Behavioral Sciences*, 174, 420-426. <http://doi: 10.1016/j.sbspro.2015.01.684>
- Črne-Hladnik, H., Peklaj, C., Košmelj, K. & Hladnik, A. (2009). Assessment of Slovene Secondary School Students' Attitudes to Biotechnology in terms of Usefulness, Moral Acceptability and Risk Perception. *Public Understanding of Science*, 18(6), 747-758. <https://doi.org/10.1177/0963662509337361>
- Dawson, V. (2007). An exploration of high school (12–17year old) students' understandings of, and attitudes towards biotechnology processes. *Research in Science Education*, 37(1), 59-73. <http://doi: 10.1007/s11165-006-9016-7>
- Demirci, M., & Yüce, Z. (2018). Biyoteknoloji ve genetik mühendisliği konusunun öğretiminde 8. Sınıf öğrencileri için dersin deneysel planlanması. *Sakarya Üniversitesi Eğitim Fakültesi Dergisi*, 35, 87-108.

- Fári, M. G., & Kralovánszky, U. P. (2006). The founding father of biotechnology: Károly (Karl) Ereky. *International Journal of Horticultural Science*, 12(1), 9-12.
- Food and Agriculture Organization of the United Nations (FAO). (2004). *The State of Food and Agriculture* FAO: Rome, Italy.
- Food and Agriculture Organization of the United Nations (FAO). (2016). <http://www.fao.org/docrep/005/y2772e/y2772e04.htm>.
- Gahlawat, S. K., Duhan, J. S., Salar, R. K., Siwach, P., Kumar, S., & Kaur, P. (2018). *Advances in Animal Biotechnology and its Applications*. Springer. <https://doi.org/10.1007/978-981-10-4702-2>
- Gilbert, N. (2013). A hard look at GM crops. *Nature*, 497 (7447), 24-26.
- Gürkan, G., & Kahraman, S. (2018). Fen bilgisi öğretmen adaylarının biyoteknoloji ve genetik mühendisliği bilgi düzeyleri. *Karaelmas Eğitim Bilimleri Dergisi*, 6(1).
- Hallman, W. K., Cuite, C. L., Morin, X. K. (2013). Public perceptions of labeling genetically modified foods. Working Paper 2013–01. Rutgers School of Environmental and Biological Sciences. http://humeco.rutgers.edu/documents_pdf/news/GMlabelingperceptions.pdf.
- Hancock, R.D. & Algozzine, B. (2006). *Doing case study research*. New York: Teachers College Press.
- Harzevili, F. D. (2018). Microbial biotechnology: An introduction. In: *Microbial Biotechnology* (16-23). CRC Press.
- Herodotou, C., Kyza, E. A., Nicolaidou, I., Hadjichambis, A., Kafouris, D., & Terzian, F. (2012). The development and validation of the GMO AS, an instrument measuring secondary school students' attitudes towards genetically modified organisms. *International Journal of Science Education, Part B*, 2(2), 131-147. <https://doi.org/10.1080/09500693.2011.637580>
- Hosseini, M. (2019). A Perspective on Bio processing for Biofuels, Bio-Based Chemicals, and Bioproducts. In: *Advanced Bioprocessing for Alternative Fuels, Bio based Chemicals, and Bioproducts* (1-11). Wood head Publishing.
- James, C (2013). Global Status of Commercialized Biotech/GM Crops: 2013, ISAAA Brief No.46.
- Jiménez- Salas, Z., Campos- Góngora, E., González- Martínez, B. E., Tijerina- Sáenz, A., Escamilla- Méndez, A. D., & Ramírez- López, E. (2017). Basic- education Mexican teachers' knowledge of biotechnology and attitudes about the consumption of genetically modified foods. *Biochemistry and Molecular Biology Education*, 45(5), 396-402. <https://doi.org/10.1002/bmb.21058>
- Jurkiewicz A, Zagórski J, Bujak F, Lachowski S, & Florek-Luszczki M. (2014). Emotional attitudes of young people completing secondary schools towards genetic modification of organisms GMO) and genetically modified foods (GMF). *Annals of Agricultural and Environmental Medicine*, 21:205–11.
- López Montesinos, O. A., Pérez, E. F., Fuentes, E. E. S., Luna-Espinoza, I., & Cuevas, F. A. (2016). Perceptions and attitudes of the Mexican urban population towards genetically modified organisms. *British Food Journal*, 118(12), 2873-2892. <https://doi.org/10.1108/BFJ-06-2016-0247>
- Merriam, S. B. (1988). *Case study research in education: A qualitative approach*. San Francisco, CA, US: Jossey-Bass.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded Sourcebook*. (2nd ed). Thousand Oaks, CA: Sage.
- Mohapatra, A. K., Priyadarshini, D., & Biswas, A. (2010). Genetically modified food: Knowledge and attitude of teachers and students. *Journal of Science Education and Technology*, 19(5), 489-497. <https://doi.org/10.1007/s10956-010-9215-x>

- Nicolia, A. Manzo, A. Veronesi, & F. Rosellini, D. (2014). An overview of the last 10 years of genetically engineered crop safety research, *Critical Reviews in Biotechnology*, 34 (1) 77–88. <https://doi.org/10.3109/07388551.2013.823595>
- Öcal, E. (2012). *İlköğretim fen bilgisi öğretmenlerinin biyoteknoloji (genetik mühendisliği) farkındalık düzeyleri*, İnönü Üniversitesi (Unpublished master's thesis).
- Öztürk, N., & Erabdan H. (2019). The perception of science teachers on socio-scientific issues and teaching them. *International Online Journal of Education and Teaching (IOJET)*, 6(4). 960–982. <http://iojet.org/index.php/IOJET/article/view/706>
- Patton, M. Q. (2014). *Nitel araştırma ve değerlendirme yöntemleri*. M. Bütün, & S. B. Demir, (Ed.). Ankara: A Pegem Akademi.
- Raju, P. (2016). World history of modern biotechnology and its applications. *Biotechnology: An Indian journal*, 12(11), 107.
- Rzymiski, P., & Królczyk, A. (2016). Attitudes toward genetically modified organisms in Poland: to GMO or not to GMO? *Food Security*, 8(3), 689–697. <https://doi.org/10.1007/s12571-016-0572-z>
- Sanchis, V. (2011). From microbial sprays to insect-resistant transgenic plants: history of the biopesticide *Bacillus thuringiensis*. A review, *Agronomy for Sustainable Development*, 31(1) 217–231. <https://doi.org/10.1051/agro/2010027>
- Sıcaker, A., & Aydın, S. Ö. (2015). Ortaöğretim biyoteknoloji ve gen mühendisliği kavramlarının öğrenciler tarafından değerlendirilmesi. *Ondokuz Mayıs Üniversitesi Eğitim Fakültesi Dergisi*, 34(2), 51–67. <https://doi.org/10.7822/omuefd.34.2.4>
- Sinan, O. (2015). Öğrencilerin biyoteknoloji ile ilgili bilgi ve tutumların farklı değişkenlere göre incelenmesi. *YYÜ Eğitim Fakültesi Dergisi*. XII: I, 183–201.
- Sörqvist, P., Marsh, J. E., Holmgren, M., Hulme, R., Haga, A., & Seager, P. B. (2016). Effects of labeling a product eco-friendly and genetically modified: A cross-cultural comparison for estimates of taste, willingness to pay and health consequences. *Food Quality and Preference*, 50, 65–70. <https://doi.org/10.1016/j.foodqual.2016.01.007>
- Steele, F., & Aubusson, P. (2004). The challenge in teaching biotechnology. *Research in Science Education*, 34, 365–387. <https://doi.org/10.1007/s11165-004-0842-1>
- Tanır, S. (2005). Çukurova Üniversitesi Birinci Sınıf Fen Grubu Öğrencilerinin Biyoteknoloji ve Genetik Mühendisliği Konusundaki Bilgilerinin Değerlendirilmesi. Gazi Üniversitesi, Eğitim Bilimleri Enstitüsü. (Unpublished master's thesis)
- Thomson, J. A., Shepherd, D.N., & Mignouna, H. D. (2010). Developments in agricultural biotechnology in Sub-Saharan Africa. *Agricultural Biological Forum*, 13, 314–319.
- Türker, T., Koçak, N., Aydın, I., İstanbulluoğlu, H., Yıldran, N., Türk, Y. Z., & Kılıç, S. (2013). Determination of knowledge, attitude, behavior about genetically modified organisms in nursing school students. *Gülhane Tıp Dergisi*, 55, 297–304. <https://doi.org/10.5455/gulhane.33326>
- World Health Organization, (2016) http://www.who.int/foodsafety/areas_work/food-technology/faq-genetically-modified-food/en/.
- Yıldırım, A., & Şimşek, H. (2013). *Sosyal bilimlerde nitel araştırma yöntemleri*. Ankara: Seçkin.
- Yılmaz, F. (2014). http://tarim.kalkinma.gov.tr/wp-content/uploads/2015/01/Bitkisel_Uretimde_Genetigi_Degistirilmis_Organizmalar_ve_Urunleri_ile_Biyoguvencilik.pdf
- Yin, R. (1984). *Case study research: design and methods*. (3). California: Sage Publications.

- Yüce, Z. & Yalçın, N. (2012). *Fen bilgisi öğretmen adaylarının biyoteknoloji konusundaki bilgi düzeyleri*. X. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi. http://kongre.niGMe.edu.tr/xufbmek/dosyalar/tam_metin/pdf/2261-16_05_2012_10_53_15.pdf
- Zhang, C., Wohlhueter, R., & Zhang, H. (2016). Genetically modified foods: A critical review of their promise and problems. *Food Science and Human Wellness*, 5(3), 116-123. <https://doi.org/10.1016/j.fshw.2016.04.002>

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