

Rasch Model Analysis on the Development of Digital Learning Model Using MOOCs in Practical Courses at University

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ABSTRACT

This study aims to analyze the need for developing digital learning models using MOOCs in practical courses at universities using the Rasch Model. This research is part of Research and Development (R & D) research but is only limited to the needs analysis stage. The population taken in this study were all undergraduate students at IAIN Curup. The sampling technique used is probability sampling with a total sample of 69 students from 17 study programs. The method used for data collection is a questionnaire. The instrument used in this research is a questionnaire on the need for developing a digital learning model using MOOCs in practical courses at IAIN Curup. The results showed that the quality of the student response questionnaires to the digital learning model using MOOCs in this practical course was very good. The results of the analysis of the respondents and the questionnaire items showed that the majority of respondents agreed with all the questionnaire items given, which means they agreed to do the model development digital learning using MOOCs in practical courses. These results can be used to support the implication of learning MOOCs in practical courses.

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1. INTRODUCTION

The development of digital technology in the current Industry 4.0 era has influenced and brought changes to various aspects of human life, including education. Digital technology is currently the most influential thing in the education system in the world. This is due to the effectiveness, efficiency, and attractiveness (Putrawangsa & Hasanah, 2018). Information and communication technology have developed along with globalization so that the interaction and delivery of information can quickly. Education is one of the important things in the development of human resources. And for Indonesia, this is a challenge in improving the quality of education. Digital education is a concept/way of giving

lessons to students using multimedia media, including computers/notebooks, smartphones, videos, audio and visuals (Ngongo et al., 2019). The use of teaching aids and various traditional teaching methods have little effect on students' achievement. With the development of technology in education, students do not need to rely on books alone while in class (Hashim et al., 2018).

The Rasch model can provide a solution to the limitations of the classical model. According to the Rasch Model, the response probability of a particular item is a logistic function of the difference between the level of the measurable construct represented by the item and that of the person and is only a function of that difference (Hagell, 2014). The Rasch model approach can determine the reliability of research instruments without depending on the sample, unlike the classical model, where reliability depends on the sample. In contrast, reliability in a test does not always have to depend on the sample (Nur et al., 2020). Basically, Rasch analysis provides a template for converting ordinal level data to interval level, which increases the precision of the measurement, provided the size is unidimensional (Medvedev et al., 2016). According to Wright (1977) in Chan et al. (2014), using the Rasch model in test measurements has many benefits. First, the Rasch model can evaluate whether the item is fit and identify whether the item is biased. In Rasch modelling to detect bias, this is called DIF detection (differential item function or differential item function) (Soeharto & Rosmaiyadi, 2018). Second, the calibration of the goods is not affected by the sample's ability, meaning that it is free of samples. Third, the standard calibration error can be used to test the accuracy of each item. Fourth, the Rasch model can estimate the difficulty of items from various samples and convert them to a general scale. The Rasch model can also provide researchers with a richer interpretation of the data collected (Zamri & Nordin, 2013) and is useful for detecting the presence of students with inappropriate response patterns (Maulana et al., 2020).

In this case, the non-test technique is used. The development of questionnaires/questionnaires in an affective domain is the non-test method. The Rasch Model was used to analyze the collected data. Validity tests were collected from experts and limited trials using an instrument in this study (Asyhar et al., 2018). It is possible to use the Rasch model to determine if a questionnaire is correctly filled out by a respondent by looking at the instrument's quality, the respondent's ability, and the difficulty of the question (Risdiyanto et al., 2019). As a further benefit of using the Rasch model, it is possible to predict missing data using a systematic response pattern as well as generate standard error values for instruments that can improve calculation accuracy (Hermita et al., 2021). In order to determine the MNSQ Outfit, ZSTD Outfit, Point Measure Correlation, Item reliability, and Cronbach's Alpha, the Winstep software utilizes the Rasch model. Using the MNSQ outfit, you can check whether the data is appropriate for the model being used. Expected Mean Squared Value (one). If the outfit's mean-square value is greater than one, the instrument's variance exceeds the Rasch model's prediction. The instrument's variation is less than the Rasch model's predictions if the outfit value is less than 1 (Wahyuningsih, 2020).

Measuring is the act of assigning numerical values to indicate a student's proficiency in a particular area of study. When evaluating students, measurement is an important first step, especially when it comes to characterizing a wide range of attributes, such as student abilities. Measuring instruments can determine a person's position in the measured characteristics. Valid and accurate results can be obtained by using a high-quality measuring instrument when assessing students' abilities (Darmana et al., 2021). To appreciate the importance of the Rasch technique, we first need to think about what it means to measure a variable, such as a student's knowledge or a teacher's attitude. A researcher must define a single variable to be measured (Boone, 2016).

The Welding course will be used to develop the new learning system. The practical learning activities necessitate a solid theoretical foundation, so these courses are a good fit. The practicum will be nothing more than a series of trials and errors if the student does not grasp the theory. Prior to completing the practicum, students should have a firm grasp of the fundamentals of welding. Welding courses are a good choice because of Moodle's wide range of resources, including images, articles, and video demonstrations, which help develop the practical foundation (Suyetno, 2020).

There has been a rapid growth in MOOCs as one of the most recent educational innovations (Busri et al., 2019). Several MOOC providers (e.g. Coursera, Udacity and edX) associated with elite universities emerged in 2012, propelling MOOCs into the spotlight for the higher education community (Xiong & Suen, 2018). The scale of enrollment and participation in the MOOC course is the main thing that has attracted a lot of media attention (Jordan, 2014). To develop a clearer understanding of the acronym 'MOOC', several scholars have tried to explain this meaning by focusing on the words massive, open, online and course (Zhussupbekov, 2015). Massive in the sense that, in theory, there is no cap on the number of people who can register; Typically, the event is free to attend and open to the public. The term "online" refers to learning activities over the Internet. As a course, this means that it is organized around a set of learning objectives within a specific academic discipline (Toven-Lindsey et al., 2015). That's why MOOC is called an open online platform, enabling diverse learners worldwide to learn together (Rafiq et al., 2019). In other words, MOOC is global online learning that can accommodate students' capacity on a large scale (Ismail et al., 2018) and is usually free (Pilli & Admiraal, 2020). As far as delivering lecture videos, social forums, and tracking student progress are concerned, MOOC technology is limited in its ability to provide adequate evaluation and feedback on the more complex and often open-ended assignments that students complete.

University programs should be accessible to a wide range of students and provide opportunities for students to participate in collaborative and collaborative learning experiences by integrating MOOCs into the higher education system (Kumar & Al-samaraie, 2018). Studies show that MOOC is growing in popularity among students, finding MOOC's content to be more convenient and interesting. MOOCs allow students to study independently or increase their learning potential by collaborating and helping other students (Usman et al., 2017). MOOCs' online classes include short video tutorial presentations, simulations, and online laboratories as well as computer-based exams and online forums that allow discussion of course content among students, it was further added. (Mohamad et al., 2021). Based on the description above, this article will present the results of the analysis of the development of digital learning models using MOOCs in practical courses at IAIN Curup using the Rasch Model.

2. METHODS

This research is part of Research and Development (R & D) research but is only limited to the needs analysis stage. The population taken in this study were all undergraduate students at IAIN Curup. The sampling technique used is probability sampling with a total sample of 69 students from 17 study programs. The method used for data collection is a questionnaire. The instrument used in this research is a questionnaire on the need for developing a digital learning model using MOOCs in practical courses at IAIN Curup. This research was conducted at IAIN Curup, Rejang Lebong Regency, Bengkulu Province. In this study, the questionnaire was compiled using a modified Likert scale with 4 answer options, namely Strongly Agree, Agree, Disagree, and Strongly Disagree.

Table 1 Likert Scale Interpretation

Percentage	Interpretation
0%-25%	Very Not Good
26%-50%	Not good
51%-75%	Good
76%-100%	Very good

From the data from this interpretation, the research can be said to be successful and valid or very valid if the questionnaire data processing results in a score between 51% to 100% or is in the "Good" and "Very Good" criteria (Hayati et al., 2015).

3. FINDINGS AND DISCUSSION

The questionnaire used in this study is a questionnaire on the needs of college students with 4 answer choices. The number of statement items is 21 statement items. The assessment uses a Likert scale with the maximum score of the questionnaire items is 4, and the minimum is 1. The statement items used in the questionnaire are tested for validity and reliability to determine whether the instrument is suitable for use to obtain the data needed by researchers or not.

Figure 1. below shows summary statistics for the items/questions and individual respondents. The reliability of the item is recorded at a value of 0.90, which means that the value is in a very good stage with the item separation index is 3.07 which is also in a good stage. These results also show that the individual reliability of Cronbach's Alpha is recorded at a value of 0.84, which is more than the minimum value of 0.7. This indicates that the reliability of the item is modestly high. For the individual separation index was recorded at a value of 2.35. The condition of separating individuals into more than two strata may be caused by the low quality of the items for good individual separation.

Table 2 Summary of 69 Measured Person

	Total Score	Count	Measure	Model S.E.	Infit MNSQ	ZSTD	Outfit MNSQ	ZSTD
Mean	66.7	21.0	1.21	.34	1.04	-.12	1.02	-.18
Sem	1.0	.0	.11	.01	.07	.23	.08	.23
P.SD	8.2	.0	.89	.09	.58	1.86	.62	1.90
S.SD	8.2	.0	.89	.09	.58	1.87	.63	1.91
Max.	82.0	21.0	3.78	.73	2.71	4.58	3.42	5.47
Min.	40.0	21.0	-.98	.27	.19	-4.40	.18	-4.43
Real Model	RMSE	.39 TRUE SD	.80 SEPARATION		2.03		Person Reliability	.81
Model	RMSE	.35 TRUE SD	.82 SEPARATION		2.35		Person Reliability	.85
		S.E.	OF Person MEAN =	.11				

Person RAW SCORE-TO-MEASURE CORRELATION = .97
 Cronbach Alpha (KR-20) Person RAW SCORE "TEST" RELIABILITY = .84 SEM = 3.25
 Standardized (50 Item) Reliability = .93

Table 3 Summary of 21 Measured Item

	Total Score	Count	Measure	Model S.E.	Infit MNSQ	ZSTD	Outfit MNSQ	ZSTD
Mean	219.3	69.0	.00	.18	1.00	.06	1.02	.18
Sem	4.4	.0	.13	.00	.04	.23	.06	.32
P.SD	19.9	.0	.58	.02	.18	1.03	.27	1.44
S.SD	20.4	.0	.59	.02	.18	1.06	.28	1.48
Max.	246.0	69.0	1.27	.21	1.53	3.11	1.83	4.45
Min.	171.0	69.0	-.90	.15	.67	-1.89	.60	-2.03
Real Model	RMSE	.18 TRUE SD	.55 SEPARATION		2.99		Person Reliability	.90
Model	RMSE	.18 TRUE SD	.55 SEPARATION		3.07		Person Reliability	.90
		S.E.	OF Person MEAN =	.13				

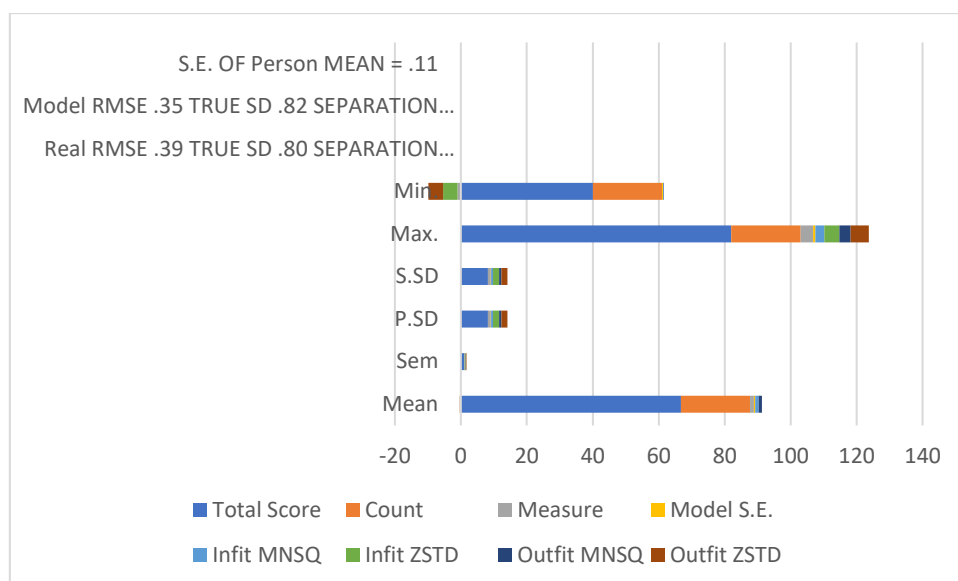


Figure 1 Summary of 69 Measured Person

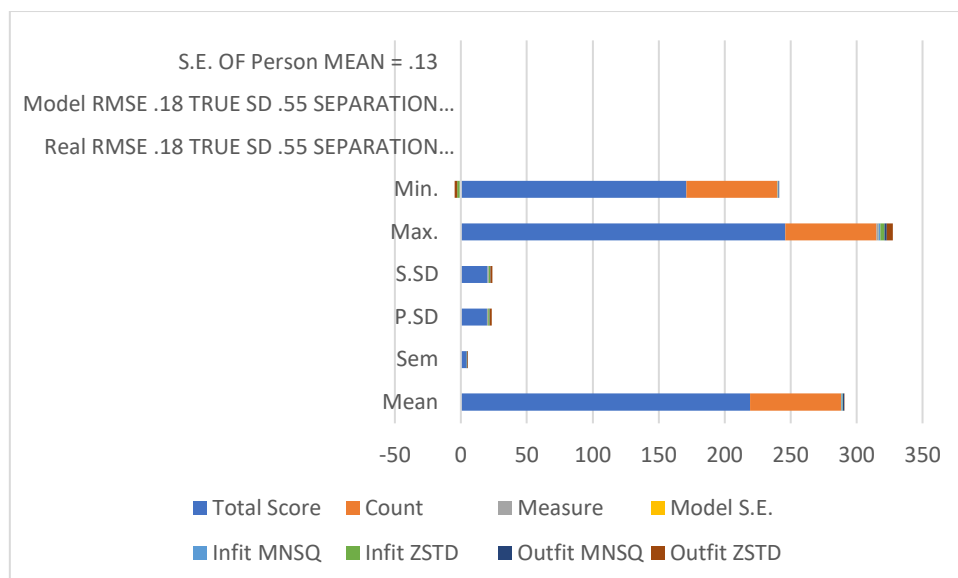


Figure 2 Summary of 21 Measured Item

Reliability is the extent to which the results of a measurement can be trusted. The reliability of the test instrument in this study is seen from the real item reliability because its value is more conservative than the item reliability model (Boone et al., 2014). From the analysis results of the Winstep program, the real item reliability value is 0.98, which is included in the special category. Through this high item reliability, it can be concluded that the test instrument developed already contains some more difficult and easier items, and the consistency of this conclusion can be expected. (Ramadan et al., 2019). Value of Person Reliability and Item Reliability: < 0.67: Weak 0.67 – 0.80: Enough 0.81 – 0.90: Good 0.91 – 0.94: Very good > 0.94: Exceptional From a high value of person reliability 0.54 and item reliability 0.80, it can be concluded that the consistency of the answers from the respondents is weak, but the quality of the items in the instrument is good (B. Sumintono, 2014).

Figure 2. below shows the distribution mapping of individual and question items showing that individual abilities and difficulty levels are plotted in the same logit. Figure 2. shows that the average value of individual abilities is at 1.21, which is slightly higher than the average value of items constrained by the Rasch Model, which is at 0.00. This shows that the average individual ability is

slightly higher than the item difficulty level. On the map on the right, 21 questions have varying degrees of validity, starting from P10, which is the most difficult item in the questionnaire, leading to P11 and P5, which has the lowest response item. Theoretically, with this question, no respondent will have the opportunity to answer the question correctly because they have a lower ability than the difficulty level of the question.



Figure 3 Item Difficulty Mapping and Individual ability

If you compare the average logit item with the logit person, it can be seen that the logit person is larger (+2.20 logit). This shows that the overall ability is only slightly higher than the difficulty of the question (Untary, Helverasari, Risdianto, 2020). If we compare the distances between MST on the Wright map above, it can be seen that the distribution for student abilities (on the left) is wider than the distribution on the item difficulty level (on the right). In the context of the difficulty level of the questions, this shows that the diversity items are not far apart; However, from the aspect of student abilities, it can be seen that the range of abilities is very wide.

Item analysis and Rasch modelling analysis, when combined, will provide complementary data. Item analysis analyzes the question as a whole, while Rasch modelling analysis is able to analyze the relationship between item items and respondents. In item analysis, respondents with the same score are considered to have the same ability, while in Rasch modelling, respondents with the same score can be seen as their level of ability. The analysis of the Rasch model can determine the person fit. Determination of person fit also uses the same criteria as item fit (Nuryanti et al., 2018).

To find out the level of difficulty of the questions more precisely on the logit scale, using an item measure, the results obtained areas in the table 4.

Table 4 Response Item Analysis

Entry Number	Total Score	Total Count	Measure	Model S.E.	Infit		Outfit		Ptmeasure-AI		Exact		Item
					MNSQ	ZSTD	MNSQ	ZSTD	CO RR.	EX P	OBS %	EXP %	
10	171	69	1.27	.15	1.53	3.11	1.83	4.45	.28	.56	33.3	44.5	P10
2	179	69	1.08	.15	1.28	1.77	1.59	3.28	.21	.55	42.0	45.1	P2
3	188	69	.87	.15	1.22	1.38	1.27	1.61	.36	.54	43.5	46.5	P3
4	206	69	.42	.16	.97	-.13	.99	-.02	.51	.51	49.3	50.0	P4
15	207	69	.40	.16	1.12	.75	1.10	.63	.53	.51	46.4	50.3	P15
19	213	69	.23	.17	.93	-.40	1.02	.19	.41	.50	62.3	51.9	P19
7	217	69	.12	.17	1.05	.32	1.04	.27	.45	.49	58.0	52.4	P7
18	218	69	.09	.17	.81	-1.14	.75	-1.45	.60	.48	62.3	52.5	P18
9	221	69	.01	.17	.90	-.55	.88	-.60	.44	.48	46.4	53.2	P9
16	222	69	-.02	.17	1.01	.14	1.07	.40	.45	.47	55.1	53.3	P16
20	222	69	-.02	.17	.92	-.41	1.00	.04	.48	.47	58.0	53.3	P20
13	223	69	-.06	.18	.92	-.43	.85	-.79	.62	.47	62.3	53.3	P13
17	224	69	-.09	.18	.99	-.01	.92	-.37	.57	.47	59.4	53.3	P17
1	225	69	-.12	.18	.84	-.91	.98	-.06	.47	.47	65.2	53.6	P1
8	226	69	-.15	.18	1.00	.06	.93	-.31	.54	.46	62.3	53.6	P8
14	231	69	-.31	.18	.92	-.38	.92	-.36	.58	.45	63.8	55.6	P14
6	238	69	-.56	.20	1.09	.51	1.16	.79	.44	.42	63.8	58.0	P6
12	240	69	-.64	.20	.67	-1.89	.60	-2.03	.63	.42	71.0	59.2	P12
21	243	69	-.77	.21	1.00	.05	.92	-.29	.44	.40	65.2	60.3	P21
5	245	69	-.85	.21	.96	-.16	.92	-.27	.49	.40	69.6	62.3	P5
11	246	69	-.90	.21	.91	-.40	.68	-1.43	.59	.39	73.9	63.7	P11
Mean	219.3	69.0	.00	.18	1.00	.1	.102	.2			57.8	53.6	
P.SD	19.9	.0	.58	.02	.18	1.0	.27	1.4			10.3	4.9	

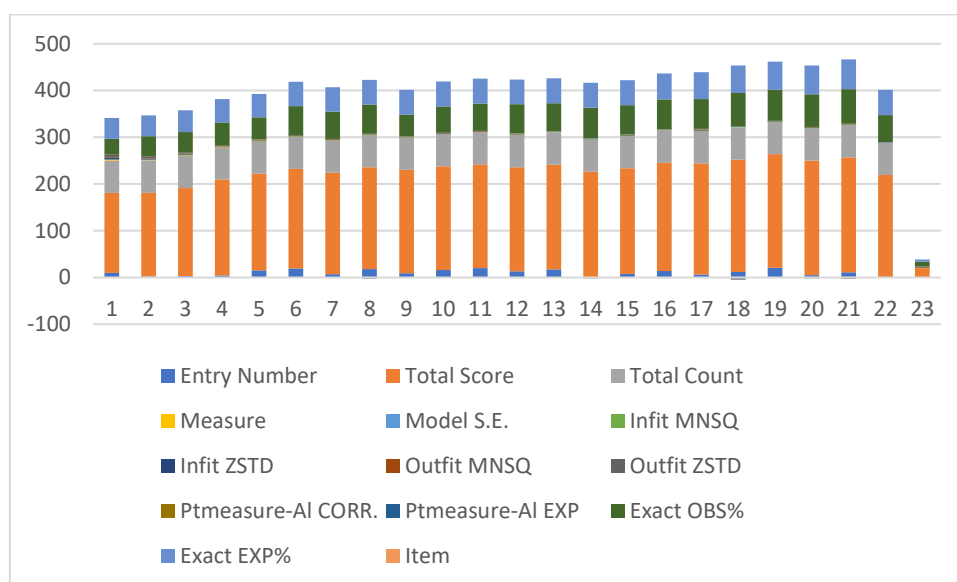


Figure 4 Response Item Analysis

Based on the results of the analysis of student responses using the help of the Winsteps program in table 4, it can be seen that the total count is all filled with 69 responses. This shows that all respondents answered all the items given. To find out the level of suitability of the question (item fit),

the meaning of which is in accordance with the ideal model of measurement. Select table 10. Item fit order. The table below shows that the item fit indicators for all questions are outfit means square ($0.5 < MNSQ < 1.5$), outfit Z-standars ($-2.0 < ZSTD < +2.0$), and point measure correlation. ($0.4 < Pt Measure corr < 0.85$), does not indicate any problem. In other words, all the questions given can be understood well by all respondents, there are no misconceptions (B. and W. Sumintono, 2015). To find out the aspect of the inappropriate response to the ideal model as shown in Figure 4 the person fit order table, as shown in the table 5.

Table 5. Misfit Person table

Entry Number	Total Score	Total Count	Measure	Model S.E.	Infit		Outfit		Ptmeasure-Al		Exact		Person
					MNS Q	ZSTD	MNS Q	ZSTD	CORR.	EX P	OBS %	EXP %	
26	40	21	-.98	.28	2.28	3.60	3.42	5.47	A-.72	.39	42.9	43.9	26
61	50	21	-.24	.27	2.71	4.58	2.84	4.78	B-.19	.43	14.3	41.3	61
28	70	21	-1.39	.33	2.71	3.84	2.60	3.63	C.46	.38	23.8	50.2	28
4	63	21	.74	.29	2.51	3.80	2.43	3.64	D.37	.41	14.3	46.4	04
41	68	21	1.19	.31	1.82	2.27	2.11	2.84	E.06	.39	38.1	50.0	41
47	63	21	.74	.29	2.02	2.82	1.99	2.74	F.26	.41	23.8	46.4	47
55	79	21	2.75	.49	1.53	1.18	1.91	1.64	G-.12	.27	71.4	76.8	55
1	82	21	3.78	.73	1.81	1.19	.86	.08	H.42	.19	95.2	90.7	01
16	75	21	2.01	.38	1.79	1.93	1.73	1.76	I.31	.33	81.0	63.7	16
31	75	21	2.01	.38	1.78	1.90	1.34	.96	J.53	.33	66.7	63.7	31
11	65	21	.91	.30	1.73	2.12	1.66	1.94	K.33	.41	33.3	47.6	11
42	66	21	1.00	.30	1.53	1.62	1.69	2.00	L.19	.40	38.1	48.2	42
24	76	21	2.17	.40	1.63	1.55	1.40	1.04	M.54	.32	76.2	67.7	24
54	62	21	.66	.29	1.46	1.50	1.41	1.34	N.50	.42	23.8	46.8	54
39	76	21	2.17	.40	1.44	1.16	1.13	.45	O.70	.32	81.0	67.7	39
60	56	21	.66	.27	1.43	1.49	1.39	1.35	P.58	.43	28.6	45.7	60
25	81	21	2.17	.61	1.39	.81	.78	.17	Q.49	.22	90.5	86.3	25
69	64	21	.19	.29	1.36	1.19	1.29	.98	R.52	.41	28.6	47.1	69
40	53	21	3.33	.27	1.35	1.27	1.32	1.16	S.45	.43	23.8	43.7	40
32	69	21	.82	.32	1.33	1.07	1.21	.73	T.48	.38	42.9	50.3	32
33	67	21	-.02	.31	1.30	1.02	1.24	.84	U.60	.40	38.1	49.2	33
49	55	21	1.29	.27	1.29	1.06	1.28	1.03	V.69	.43	23.8	45.1	49
43	67	21	1.09	.31	1.26	.90	1.16	.60	W.35	.40	38.1	49.2	43
18	71	21	1.50	.34	1.23	.78	1.17	.60	X.24	.37	42.9	51.0	18
62	65	21	.91	.30	1.18	.68	1.23	.81	Y.35	.41	42.9	47.6	62
57	50	21	-.24	.27	1.05	.26	1.22	.88	Z-.50	.43	38.1	41.3	57
15	80	21	3.01	.54	1.07	.30	.62	-.62	.67	.25	42.0	82.0	15
BETTER FITTING NOT SHOWN +-----+-----+													
14	77	21	2.34	.42	.78	-.48	.91	-.10	.24	.31	71.4	70.4	14
50	76	21	2.17	.40	.91	-.12	.73	-.65	.73	.32	76.2	67.7	50
63	77	21	2.34	.42	.78	-.50	.88	-.17	.26	.31	71.4	70.4	63
67	75	21	2.01	.38	.80	-.47	.67	-.88	.75	.33	71.4	63.7	67
12	72	21	1.62	.34	.79	-.60	.71	-.85	.77	.36	66.7	52.6	12
3	60	21	.50	.28	.76	-.85	.77	-.79	.32	.42	52.4	47.1	03
53	59	21	.42	.28	.75	-.87	.73	-.95	z.53	.42	52.4	47.0	53
35	61	21	.58	.28	.70	-1.08	.72	-.98	y.18	.42	71.4	47.1	35
48	65	21	.91	.30	.69	-1.06	.68	-1.11	x.44	.41	5.24	47.6	48

20	64	21	.82	.29	.67	-1.19	.68	-1.12	w.53	.41	5.24	47.1	20
2	67	21	1.09	.31	.67	-1.13	.60	-1.45	v.48	.40	76.2	49.2	02
64	59	21	.42	.28	.67	-1.27	.65	-1.34	u.49	.42	61.9	47.0	64
66	69	21	1.29	.32	.65	-1.19	.65	-1.19	t.63	.38	47.6	50.3	66
5	71	21	1.50	.34	.64	-1.18	.59	-1.38	s.65	.37	71.4	51.0	05
23	59	21	.42	.28	.61	-1.53	.64	-1.36	r.22	.42	66.7	47.0	23
19	67	21	1.29	.31	.62	-1.38	.63	-1.30	q.35	.40	57.1	49.2	19
38	71	21	1.50	.34	.59	-1.38	.62	-1.23	p.66	.37	52.4	51.0	38
56	73	21	1.74	.36	.61	-1.26	.60	-1.27	o.66	.35	76.2	57.6	56
37	65	21	.91	.30	.55	-1.76	.52	-1.88	n.75	.41	71.4	47.6	37
52	65	21	.91	.30	.54	-1.79	.55	-1.73	m.48	.41	71.4	47.6	52
45	60	21	.50	.28	.53	-1.93	.52	-1.99	l.59	.42	61.9	47.1	45
46	69	21	1.29	.32	.46	-2.07	.51	-1.83	k.28	.38	66.7	50.3	46
9	71	21	1.50	.34	.50	-1.83	.49	-1.83	j.67	.37	81.0	51.0	09
65	60	21	.50	.28	.47	-2.29	.47	-2.26	i.42	.42	61.9	47.1	65
30	65	21	.91	.30	.41	-2.52	.42	-2.41	h.48	.41	71.4	47.6	30
58	58	21	.34	.28	.40	-2.72	.41	-2.69	g.55	.43	76.2	46.5	58
21	64	21	.82	.29	.38	-2.70	.38	-2.71	f.14	.41	71.4	47.1	21
17	62	21	.66	.29	.36	-2.89	.37	-2.81	e.62	.42	71.4	46.8	17
44	56	21	.19	.27	.37	-2.98	.36	-3.02	d.53	.43	61.9	45.7	44
29	58	21	.34	.28	.32	-3.35	.31	-3.41	c.39	.43	76.2	46.5	29
6	63	21	.74	.29	.21	-4.10	.21	-4.07	b.00	.41	85.7	46.4	06
68	61	21	.58	.28	.19	-4.40	.18	-4.43	a.47	.42	85.7	4.1	68
Mea	66.7	21.0	1.21	.34	1.04	-.1	1.02	-.2			57.8	53.6	
n	8.2	.0	.89	.09	.58	1.9	.62	1.9			20.3	11.4	
P.SD													

The table above shows that the respondents who did not fit the most were respondents with codes 26 and 61. This indicates a tendency for inconsistent patterns in the two respondents to answer these questions. And it can be seen that all respondents have at least 1 value of the predetermined limit criteria as in the Misfit Person Table. And to see a complete suitability can be seen in the following Guttman matrix:

GUTTMAN SCALOGRAM OF RESPONSES:

```

Person |Item
| 1 21 1 1112 1 11 1
|151264817360987954320
|-----
1 +4444444444444444444424 01
13 +44443444444444444444334444 13
25 +44444444444444444444344442 25
15 +4444444444444444444434432 15
55 +43443442444444444444344 55
10 +444443344444444444443434 10
14 +434443444434444444443343 14
63 +4443344444444444444434343 63
22 +4444444444444444444423443333 22
24 +44444444444444444444244424422 24
39 +444444444444444444442444222 39
50 +4444444444444444444434344434232 50
16 +4444444444444444444432334 16
    
```

31 +44444443443444442124 31
67 +444444434444343434322 67
51 +443444344443334324432 51
56 +444444443434334332333 56
12 +444444444434343332223 12
5 +444444333333434433422 05
9 +4444443433333433343233 09
18 +444343443434223442334 18
36 +4444444333332434244332 36
38 +443344434444334333322 38
59 +443444234343442344233 59
8 +3444444333332434234423 08
28 +44444144144444442411 28
32 +444434244344333224413 32
46 +443333344343333343333 46
66 +4433443334334433443222 66
34 +333434343343433234243 34
41 +341443344224444234432 41
2 +44433334333333433341 02
19 +433433333444332343323 19
33 +444444432422433244231 33
43 +344343423443342433124 43
27 +344434223434242344322 27
42 +444412444432323243333 42
11 +434434243143431343431 11
30 +43334334333433323323 30
37 +44344333333343343212 37
48 +4343333343432433342223 48
52 +443333343433243332332 52
62 +423334443423344432132 62
7 +344424334333431334231 07
20 +3443333344244323323322 20
21 +333333343333333343233 21
69 +433444423422434342113 69
4 +444444141133414424241 04
6 +33333333333333333333 06
47 +324443414424342413214 47
17 +44333343333323332223 17
54 +344344434242314213331 54
35 +323433333433333322224 35
68 +333333333333333323332 68
3 +33233433244333223331 03
45 +333343334343332322231 45
65 +334343332323323332323 65
23 +2333343333323422333223 23
53 +443333432342223313322 53
64 +334343332343223313232 64
29 +3333333323322333223 29
58 +3333423333323332231 58
44 +33343333232232322332 44
60 +44434343132224114122 60

```

49 +444342123234233431111 49
40 +434331222224432411321 40
57 +222222223233233222324 57
61 +1421121431233434221441 61
26 +113111222121221222344 26
|-----
| 1 21 1 1112 1 11 1
|151264817360987954320

```

From the Guttman scalogram table, we can see the pattern of respondents' answers. We see that there is no similarity in the answers between 69 respondents. The pattern of respondents' answers varied, for respondent no. 26 has a very diverse and inconsistent pattern of answers in answering questions.

Based on the opinion of Peacock, Ervin, & Daly (2009) which states that individuals who have limited reasoning abilities will have difficulty understanding the statement items on the scale. As a result of misunderstanding the statement, their response patterns cannot be modelled. Second, respondents have certain strategies for responding to statement items, such as responses containing social propriety. On items considered sensitive, they will try to show that they are ideal individuals from a social perspective, but they will give honest responses on items that are not too sensitive (Aziz, 2013).

CONCLUSION

From the analysis that has been carried out based on the questionnaire response item analysis of student responses to the development of digital learning models using MOOCs in the practical courses at IAIN Curup used, it can be concluded that the quality of the questionnaire responses to students on digital learning models using MOOCs in this practical course is very good. And from the results of the analysis of the respondents and the items of the questionnaire show that the majority of respondents agree with all the questionnaire items given, indicating that the responses to the digital learning model using MOOCs in practical courses are in agreement. Likewise, research data that has been obtained and then entered into the program correctly is important because it can affect the validity and reliability of research results. The instrument used to collect data in this study has 21 statement items, all of which are valid. So it can be implied to find out the response to digital learning models using MOOCs in practical courses. The drawback of this research is that it only uses 1 type of instrument. For future research, it can be done with more varied instruments. So it can be implied to find out the response to digital learning models using MOOCs in practical courses. The drawback of this research is that it only uses 1 type of instrument. For future research, it can be done with more varied instruments. So it can be implied to know the response to digital learning models using MOOCs in practical courses. The drawback of this research is that it only uses 1 type of instrument. For future research, it can be done with more varied instruments.

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