

Need Analysis of Developing Digital Teaching Materials Based on MOOCs for Postgraduate Students

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Abstract: This study aims to determine the needs of IAIN Curup postgraduate students for digital teaching materials based on MOOCs. The research sample was 105 postgraduate students from 4 study programs, namely Islamic Education Guidance and Counseling, Islamic Family Law, Islamic Education Management, and Islamic Religious Education. The research instrument used is a student needs questionnaire IAIN Curup postgraduate towards digital teaching materials based on MOOCs. The data analysis technique used is descriptive statistical analysis. The results of this study are digital teaching materials based on MOOCs are urgently needed by postgraduate students of IAIN Curup. This is evidenced by the percentage gain from the results of filling out the needs analysis questionnaire for digital teaching materials based on MOOCs, which is 87.5%, which means that students strongly agree to the development. These results will have an impact on the use of technology in the development of teaching materials.

Keywords: Need Analysis, Digital Teaching Materials, MOOCs

1. Introduction

The development of media is now dominated by digital technology. In everyday life, students always interact with digital technology (Lilis, 2019). Indonesia also currently occupies the fifth position as a mobile internet user. The industrial revolution 4.0 which is a revolution that occurs throughout the world provides challenges as well as impacts for the younger generation and also the

world of education in Indonesia (Wening & Santosa, 2020). Therefore, the development of science and technology increasingly encourages renewal efforts in the use of technological results in the learning process (Pratita et al., 2021). One of them is the use of digital teaching materials. Digital teaching materials are unlimited and easily accessible learning resources and are part of electronic learning (Alperi, 2019; Faisal et al., 2020). Accessibility of content on digital teaching materials can support the learning process effectively and efficiently (Prastyo et al., 2021). Digital teaching materials can also improve students' ability to think creatively, solve problems, be critical, and be motivated. This can support the achievement of 21st century learning goals (Dewi et al., 2021). The provision of digital teaching materials can stimulate students to learn earlier before class takes place so that students feel confident in presenting answers and expressing their opinions (Wijayanti, 2018). The benefits of digital teaching materials support the statement that learning materials must be well designed to be attractive to students (Erwin et al., 2021).

One form of innovation from digital teaching materials is digital teaching materials based on Massive Open Online Courses (MOOCs). MOOCs are here as a new model of education and learning (Risdianto et al., 2021). MOOCs use the internet to deliver lectures at the world's most prestigious universities and educational institutions, creating a revolution that has thrived since 2012 (Busri et al., 2019; Chapman et al., 2016; Lian et al., 2021; Risdianto et al., 2021). MOOC is a platform where participants engage in the learning process by sharing course information among themselves through connection and collaboration (Zhussupbekov, 2015). MOOC is an online learning course with unlimited participants and can be accessed openly through the website (Ismail et al., 2018; Risdianto, 2021). MOOCs are built on the idea that "information is everywhere", expanding access to education (Pilli & Admiraal, 2020). MOOCs provide a wider potential for each individual to continuously equip themselves with new knowledge and skills (Rafiq et al., 2019). In principle, MOOCs describe Online Courses with a very large number of open enrollments, which provide not only administrative services but also in terms of content, design, access points, application methods and definition of success (Risdianto et al., 2021).

Based on the description above, it is important to develop digital teaching materials based on MOOCs. However, before doing the development needs analysis needs to be done. according to Utami & Atmojo (2021), analysis of teaching material needs is the main step for developing digital teaching materials.

Therefore, this research will analyze the need for digital teaching materials focused on postgraduate students at IAIN Curup.

2. Methods

This study aims to determine the needs of IAIN Curup postgraduate students for digital teaching materials based on MOOCs. The research sample was 105 postgraduate students from 4 study programs, namely Islamic Education Guidance and Counseling, Islamic Family Law, Islamic Education Management, and Islamic Religious Education. The research instrument used is a student needs questionnaire IAIN Curup postgraduate towards MOOCs-based digital teaching materials. The data analysis technique used is descriptive statistical analysis. Needs analysis is carried out on the data obtained in the form of percentages. The percentage is obtained based on a modified Likert scale calculation. With a Likert scale, the variables to be measured are translated into variable indicators. Furthermore, these indicators are used as guidelines in compiling items in the form of questions or statements. Instrument items are given a quantitative value as shown in table 1 below:

Table 1. Likert Scale Calculation

Evaluation	Scale Value
Strongly agree	4
Agree	3
Do not agree	2
Strongly Disagree	1

The questionnaire was tested for validity and reliability using SPSS with the following conditions:

1. Valid : if rcount is greater than rtable value (rcount>rtable)
2. Invalid : if rcount is less than rtable value (rcount < rtable)
3. Reliable if Cronbach's alpha value > 0.60
4. Not reliable if Cronbach's alpha value < 0.60

(Budiwibowo & Nurhalim, 2016)

Analysis of the results of the questionnaire was carried out quantitatively using the following formula.

$$p = \frac{n}{N} \times 100\%$$

where P is the percentage of the results of the questionnaire analysis, n is the total score of the assessment, and N is the maximum possible score. For the Likert scale, the score interpretation model can be seen in table 1.

Table 2. Likert Skala Scale Interpretation

Percentage (%)	Category
0% - 25%	Strongly Disagree
26% - 50%	Do not agree
51% - 75%	Agree
76% - 100%	Strongly agree

3. Results and Discussion

This study aims to determine the needs of IAIN Curup postgraduate students for digital teaching materials based on MOOCs. IAIN Curup is one of the state universities in Rejang Lebong Regency, Bengkulu Province.



Figure 1. IAIN Curup

The data in this study were obtained from 105 students from 4 postgraduate study programs who filled out a questionnaire on the need for digital teaching materials. Prior to further analysis, the questionnaire data was used to test the validity and reliability of the questionnaire used. The following is a table of validity test results.

Table 3. Validity Test Results

No Item	r-Calculate	r-Table	Category
1	0.762797		Valid
2	0.801679		Valid
3	0.708496		Valid
4	0.866224		Valid
5	0.873125		Valid
6	0.810917		Valid
7	0.742239		Valid
8	0.743108		Valid
9	0.707951		Valid
10	0.662494		Valid
11	0.7997	0.1918	Valid
12	0.780503		Valid
13	0.567506		Valid
14	0.820041		Valid
15	0.893381		Valid
16	0.858452		Valid
17	0.724218		Valid
18	0.77584		Valid
19	0.901644		Valid
20	0.868318		Valid
21	0.843927		Valid
22	0.781806		Valid

From the table above, it is known that all items contained in the questionnaire are valid because all of them have a t-count value greater than the t-table, which is 0.1918. The results of the reliability test can be seen in the following table.

Table 4. Reliability Statistics

Cronbach's Alpha	N of Items
0.969	22

The table above shows the results of the calculation of data reliability with 22 statement items using the Cronbach alpha method, a score of 0.969 is obtained.

The value obtained is greater than 0.60, then according to the rules of determining reliability, the questionnaire used in this study is said to be reliable.

After testing the validity and reliability of the questionnaire, data analysis was carried out to determine the needs of IAIN Curup postgraduate students for digital teaching materials based on MOOCs. To find out the percentage of needs development of based digital teaching materials MOOCs can be seen in table 5

Table 5. Percentage Level of Need MOOCs-Based Digital Teaching Materials

Respondent	Total Score (n)	Maximum Score (N)	Percentage $P = x \frac{n}{N} \%$	Category
105 IAIN Curup Graduate Students	8085	9240	87.5%	Strongly agree

Table 5 provides information that IAIN Curup postgraduate students strongly agree with the development of MOOCs-based digital teaching materials. This is indicated by the large percentage obtained by 87.5% of the maximum percentage of 100%. And according to the Likert scale interpretation table for data with a percentage of 76%-100% in the category of strongly agree.

There are several previous studies that are relevant to this research, one of which is research conducted by Yuliana & Atmojo (2021). In this study, data was obtained that teachers have not developed digital-based teaching materials to facilitate students' science learning so that the development of digital teaching materials is needed. Then the research conducted by Utami & Atmojo (2021) who obtained data that digital teaching materials were needed in supporting the success of learning and learning in elementary schools, especially science learning materials.

4. Conclusion

MOOCs-based digital teaching materials are urgently needed by IAIN Curup postgraduate students. This is evidenced by the percentage gain from the results of filling out the needs analysis questionnaire for digital teaching materials based on MOOCs, which is 87.5%, which means that students strongly agree to the development. The results of this study can be used as a basis for further research related to the development of digital teaching materials based on MOOCs for postgraduate students of IAIN Curup.

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