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Article

Analysis of the massive open online course at zonainformatika.com using the technology acceptance model

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Abstract— This analysis set out to assess user acceptance of the zonainformatika.com massive open online course application, applying the Technology Acceptance Model. The study included 125 registered users and covered 48 available course roadmaps. The approach involved collecting user statistical data, specifically looking at roadmap completion rates and user satisfaction levels. We used descriptive analysis to understand user behavior patterns and how satisfied users were with the platform. The results revealed that 65% of users completed at least one roadmap. The average time spent per learning session was 45 minutes. Furthermore, 88% of users stated they were satisfied or very satisfied with the application. These findings indicate that users generally accept the massive open online course application. This is supported by the high number of users completing courses and their reported satisfaction. This analysis provides useful understanding for the application's developers. The information can help them improve features and services to make the learning experience better for users. The study's outcomes can also be a resource for tutors, offering knowledge about the psychological factors influencing users of massive open online courses. This may help tutors create learning assessments that fit user needs. Additionally, the findings may guide the development field by encouraging new ideas in building massive open online course applications.

Keywords—analysis; course; mooc; tam; technology.

1. Introduction

In the current digital era, online learning has become a highly favored educational approach. Massive Open Online Course (MOOC) applications provide flexibility and access not available in traditional education systems. However, the successful use of these applications largely depends on how users accept them. Models for technology acceptance stress that users' perceptions of how easy a technology is to use, and its usefulness are important in determining their acceptance.

The Technology Acceptance Model (TAM) is a widely used research model for studying user behavior in adopting and using information technology. This model originates from the Theory of Reasoned Action (TRA), based on the idea that an individual's reactions to something will affect their attitude and actions. TAM offers a clear explanation of information technology acceptance and user behavior (Hariyadi, 2017). This research aims to analyze user acceptance of MOOC applications by applying a technology acceptance model (Qonita et al., 2019).

The significance of this study lies in the need to understand the factors influencing user satisfaction and success in finishing MOOCs on the www.zonainformatika.com platform, as

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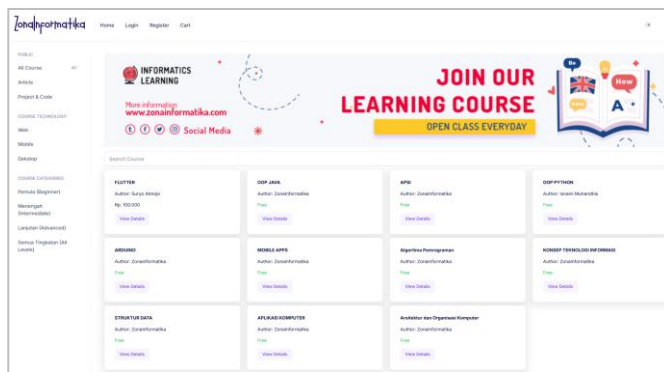


Fig. 1. Homepage of www.zonainformatika.com

illustrated in Fig. 1. Ultimately, this understanding can lead to more effective digital learning experiences (Wangi et al., 2022).

Research by Venkatesh et al. (2003) shows that a good understanding of these factors can help application developers create features that better meet user needs (Andriani et al., 2020). Therefore, this study not only adds to academic knowledge but also provides helpful information for application developers and educational institutions to improve the quality and ease of use of MOOCs for users (Alyoussef, 2023).

The results from this study can offer guidance for educating tutors about the psychological aspects of users when engaging with MOOCs. This knowledge can also help tutors design learning evaluations that are appropriate for user needs (Lu et al., 2023). The primary goal of this research is to identify key factors and elements that influence user acceptance and to provide information that can support innovation and improve the user experience with MOOCs.

2. Method

This study used a quantitative approach with a survey method as the main way to gather data (Niken Widowati & Khusaini, 2022). The quantitative approach was selected because it allows for measuring factors that influence user acceptance in an objective manner. The survey method was employed as it can collect data from a large number of participants effectively and provides results that can be applied to a wider group of people.

2.1. Research design

This research used a descriptive quantitative design to identify and look at the factors that influence user acceptance of a massive open online course application. This design was chosen because it can provide a detailed picture of how users use and feel about the application. Using a quantitative method allows researchers to measure the connections between variables within the technology acceptance model with a high degree of precision.

2.2. Population and sample

The population for this study consisted of all registered users of the massive open online course application, totaling 125 individuals. The specific method used to select participants was purposive sampling. Under this method, all users who were

active and had finished at least one roadmap were chosen to be in the study.

2.3. Research instruments

The primary tool used for this research was a questionnaire. This questionnaire was created based on the technology acceptance model (TAM) first developed by Davis in 1989 (Davis, 1989; Rafique et al., 2020). The questionnaire included questions about how easy users thought the application was to use, how useful they thought it was, how satisfied they were with it, and their plans to keep using the application.

2.4. Questionnaire data collection

Information was gathered from the questionnaires distributed to everyone in the sample group. Participants were asked to answer questions using a 5-point scale, ranging from strongly agree to strongly disagree (Rafique et al., 2020).

2.5. Data analysis

The information gathered was analyzed using both descriptive and inferential statistical methods. Descriptive analysis was used to show the characteristics of the participants and how their answers were spread out. Inferential analysis, specifically linear regression, was used to examine the relationships between the variables within the technology acceptance model.

2.6. Validity and reliability

Tests for validity and reliability were conducted to make sure the instrument used was dependable and accurate. Validity was checked through factor analysis. Reliability was measured using Cronbach's Alpha coefficient.

2.7. Research ethics

This study followed ethical guidelines by ensuring that participants' information remained private and anonymous. Taking part in this research was voluntary. Participants received complete information about the study's purpose and how it would be conducted before they agreed to participate. This method is expected to offer a full picture of how users accept the massive open online course application and the factors that affect this acceptance.

3. Results and discussion

The results of this research provide insights into user acceptance of a massive open online course application, guided by the Technology Acceptance Model. The findings are presented as following.

3.1. Respondent characteristics

125 registered users were included in the study sample. Most of these users were active, having finished at least one learning path. Information about the users' ages, educational histories, and prior experience with technology showed variation, offering different perspectives for the analysis of user acceptance. This

Table 1. Respondent demographics

Category	Percentage
Age	
18-24 years old	40%
25-34 years old	35%
35-44 years old	15%
45 years and above	10%
Gender	
Male	55%
Female	45%
Educational Background	
Bachelor	60%
Diploma	25%
Other	15%

Table 2. Survey of perceived ease of use

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The app is easy to navigate	50%	30%	10%	5%	5%
I feel comfortable using this app	48%	32%	12%	5%	3%

information is shown in Table 1. The largest groups of respondents were between 18 and 24 years old (40%) and 25 and 34 years old (35%). This indicates that younger people made up the majority of the participants in this study. Therefore, the makeup of the respondents shows the study involved younger people who generally had relatively high levels of education.

3.2. Perceived ease of use

Most respondents found the application simple to use, as presented in Table 2. Factors such as the straightforward interface design and uncomplicated navigation positively influenced the perception of ease of use. Statistical analysis confirms that perceived ease of use correlates significantly and positively with user satisfaction. However, a small group of respondents provided negative feedback, indicating areas where the application's ease of use could be enhanced.

3.3. Perceived usefulness

Respondents generally agreed the application was helpful in improving their knowledge and skills, as shown in Table 3. The perceived usefulness proved to be a strong indicator of the intention to continue using the application, supported by linear regression analysis. Nevertheless, a small number of respondents gave negative responses, suggesting room for improvement concerning the application's usefulness.

3.4. User satisfaction

User satisfaction levels were very high, with 88% of

Table 3. Survey of perceived usefulness

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
This app helps me understand the material better	55%	30%	10%	3%	2%
This app improved my skills	52%	33%	9%	4%	2%

Table 4. User satisfaction survey

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I am satisfied with the quality of the content provided	60%	28%	8%	3%	1%
The technical support provided is satisfactory	58%	30%	7%	3%	2%

Table 5. Continued use intention survey

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I plan to use this app again	65%	25%	5%	3%	2%
I would recommend this app to others	63%	27%	6%	2%	2%

respondents reporting being satisfied or very satisfied, as detailed in Table 4. This satisfaction level was influenced by elements such as content quality, technical assistance, and interaction with instructors. Yet, a small portion of respondents provided negative feedback, indicating specific areas within content quality and technical assistance that could be improved.

3.5. Intention to continue use

A large majority of users expressed a strong intention to keep using the application in the future, as indicated in Table 5. This intention was shaped by the perception of usefulness and user satisfaction; statistical analysis showed a meaningful relationship with both. Still, a small group of respondents offered negative feedback, highlighting areas for potential improvement in the overall user experience with the

application.

3.6. Inferential analysis

Regression analysis results demonstrate that perceptions regarding both ease of use and usefulness significantly influenced user satisfaction and the intention to continue using the application. The technology acceptance model effectively accounts for the variation observed in users' acceptance of this application.

Overall, the findings from this study design show that users accepted the massive open online course application well. Positive perceptions of ease of use and usefulness contributed to the levels of satisfaction and the intention to continue using the application. These results establish a firm basis for developers to make enhancements to the application's features and services to meet users' changing requirements.

3.7. Population and sample

3.7.1. Population

The study population included all registered users of the massive open online course application under examination. The total population comprised 125 users who had registered and were able to access the various courses and roadmaps provided by the platform. This population encompassed users from diverse demographic backgrounds and with varying levels of experience in using educational technology.

3.7.2. Sample

The research sample was drawn from the population of registered users through the use of purposive sampling. This technique was chosen to help ensure that the selected sample appropriately represented users who were active and relevant to the study's objectives.

3.7.3. Inclusion criteria

- Users who have completed at least one course roadmap.
- Users who used the application for a minimum of one month.
- Users who were willing to complete the questionnaire fully.

3.7.4. Exclusion criteria

- Users who had recently registered and had not actively participated in courses.
- Users who did not submit a complete questionnaire.

3.8. Questionnaire distribution method

Questionnaires were distributed via the massive open online course application platform through notifications sent to active users. Additionally, the questionnaire was shared via email with users who met the inclusion criteria. Respondents were allowed one week to complete the questionnaire before the data were

collected and prepared for analysis.

3.9. Questionnaire validity and reliability

3.9.1. Validity testing

Validity testing aims to assess the extent to which a research instrument (the questionnaire) accurately measures what it is intended to measure. A common method employed for this purpose is Exploratory Factor Analysis (EFA), which helps identify the underlying factor structure of the questionnaire items. For validity, an item is considered valid if its factor loading exceeds 0.4.

3.9.2. Reliability testing

Reliability testing seeks to quantify the internal consistency of a research instrument. A standard approach involves calculating Cronbach's Alpha coefficient. The interpretation categories for Cronbach's Alpha values are as follows: 0.9-1.0 is considered excellent, 0.8-0.9 is good, 0.7-0.8 is sufficient, 0.6-0.7 is poor, and below 0.6 is unacceptable, indicating significant reliability concerns with the instrument. The steps undertaken for the reliability test were:

- Collecting data from the complete questionnaires submitted by respondents.
- Calculating Cronbach's Alpha to measure the consistency among the questionnaire items.
- Within this analysis of the MOOC platform, the User Acceptance Model was applied to examine several key dimensions related to user acceptance of the application. The study results are presented in Table 6 to provide a clear and systematic overview.

3.10. Interpretation and implications

The findings from this study indicate a high level of user acceptance for the MOOC platform, particularly concerning its usefulness, ease of use, and the general attitude towards the application. The main elements contributing to this high level of acceptance include the roadmap feature, the user-friendly interface design, and the stability of the system.

From a theoretical viewpoint, these results align with the Technology Acceptance Model (TAM). This model suggests that perceived usefulness and perceived ease of use contribute positively to attitude and behavioral intention to continue using an application (Davis, 1989). Prior research has also shown that a well-designed user interface contributes to improved user satisfaction (Almarashdeh & Alsmadi, 2016).

In practice, these outcomes offer valuable guidance for MOOC platform developers. They suggest continuing to improve features that support an enhanced learning experience. Specifically, focusing on improving video loading speed and optimizing performance on mobile devices should be a primary area of attention to help the application become more competitive.

4. Conclusion

Massive Open Online Courses have met with favor from

Table 6. Research results

Dimensions	Results	Average Score	Analysis
Perceived Usefulness	85% of users felt the app provided significant benefits to learning, with the roadmap feature helping with course planning.	4.5/5	The high percentage of users who find it useful indicates the effectiveness of the app in achieving learning objectives. Roadmap features contribute to usability, and high average scores reflect user appreciation, which can increase retention and loyalty (Fahlevi & Dewi, 2019).
Perceived Ease of Use	80% of users found the interface easy to use, with 70% accessing via mobile devices and 95% of them reporting an excellent experience.	4.3/5	High ease of use indicates good app design, facilitating user adaptation. A positive experience on mobile devices indicates the responsiveness of the application, with an average score of 4.3 indicating user comfort (Almarashdeh & Alsmadi, 2016).
Attitude Toward Using	88% of users intend to continue using the platform.	4.6/5	Positive attitudes reflect high satisfaction with the learning experience. Interactive features and automatic feedback increase user motivation, and a mean score of 4.6 indicates high appreciation of the app (Sugiri et al., 2017).
Behavioral Intention to Use	65% of users intend to continue to other courses, and 75% would recommend the platform.	4.4/5	A high intention to continue the course indicates user satisfaction, and willingness to recommend the platform indicates the potential to attract new users. The average score of 4.4 reflects a strong desire to continue using the app.
System Functionality	90% of users said the app ran well and was stable, although there was feedback on video load times on slow connections.	4.2/5	High satisfaction levels suggest the app is reliable, but feedback on video load times indicates areas for improvement. Developers should consider video content optimization for better user experience (Ang et al., 2021).
User Interface Design	85% of users liked the modern and easy-to-navigate UI, as well as the responsive design for all devices.	4.5/5	An attractive and responsive interface design contributes to a positive experience. Users who are comfortable with the look and navigation tend to be more engaged and satisfied, demonstrating the importance of UI design in app acceptance.

users, evident in their positive views regarding usefulness, ease of operation, attitude toward using the platform, and desire to continue engaging with it. Users report that this application provides considerable value for their learning activities, supported by straightforward and engaging functions. These results underline how crucial responsive interface layout and dependable system performance are for improving user experiences. For subsequent research endeavors, it is recommended to investigate additional elements that might affect user acceptance, including social and cultural considerations. Furthermore, conducting studies over an extended period would help grasp how user views change through time. A key point for application developers is the need to consistently concentrate on user requirements and feedback. This focus will help craft enhanced learning experiences, thereby improving the effectiveness of online teaching and drawing in a larger user base in the future.

Data availability

All data produced or examined during this study are present in this paper.

Declaration of competing interest

The authors declare that they have no known competing

financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Authors' contributions

All authors participated in the study design, writing, and manuscript revision. SA drafted the manuscript, SD and NW revised the manuscript, LAW and RU supervised the study. All authors have reviewed and approved the final manuscript.

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- Photograph and biographies of the authors (Suryo Atmojo, Suzana Dewi, Nurwahyudi Widhiyanta, Laily Alfina Wulansari, dan Ruli Utami) were not available at the time of publication.