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Development of Content Learning System in Professional Education Subjects for Educational Institutions in Indonesia

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Abstract. Learning in the Industrial Revolution Era 4.0 has shifted the role of learning teachers to confirm teachers. This research aims to analyze the acceptability of e-learning products in Educational Basic Courses (MKDK) of Education Professions for students at the Educational Institution (LPTK) in Indonesia. In this study conducted by the Borg and Gall development method, and the testing process is carried out online. Analysis of product feasibility using online questionnaires to 40 respondents. The result is an instrument of development declared valid by experts, both in substance material, learning design and information technology (IT). Based on the questionnaire score analysis, e-learning products have a high acceptance score, which is 3.88. This figure means that MKDK e-learning products in the Educational Profession have high feasibility, so they can be implemented for online lectures for LPTK students in Indonesia.

Keywords: Acceptance, e-Learning, Platform, MKDK, Moodle

1. Introduction

Learning in the digital age has become a major factor in the shifting of human roles to artificial intelligence. Artificial intelligence, called smart applications, causes the role of analyst and data processing to take place super fast, beyond human capabilities. This capability is seen when we trace library data bases using digital search engines such as Google. The role of the teacher also shifted, from the main role to become a role as a support or encouragement. Teachers or educators will prioritize the inculcation of attitudes and characters, rather than the cognitive side which is increasingly eroded by the ability of artificial intelligence that has been increasingly widespread in various sectors of life.



Unfortunately, this application is still not optimal in the education sector, especially e-learning learning applications that can work well (1-4).

The ability of teachers and educators in creating and managing e-learning is still limited. During the Covid 19 pandemic, the demands of online learning increased rapidly. This is because the direct interaction between teacher and student cannot be done as it should. In July 2020 in Indonesia, during Covid 19, 9,561 madrassas (Islamic schools in Indonesia), 45,956 teachers, and more than 420 thousand madrasa students (Islamic schools) made use of madrasah e-learning services. This does not include public schools in Indonesia, which are far greater than madrasas. Public schools in 2017/2018, from elementary schools (SD) to senior high schools (SLTA), including Special Schools (SLN) in Indonesia reached 307,655 schools. This data is taken from the Basic Education Data of the Ministry of Education and Culture of the Republic of Indonesia, where 169,378 government schools and 138,277 non-government schools. The number of elementary schools in Indonesia reached 148,244 schools and 38,960 junior high schools. Whereas SLTA reaches 27,205 schools, consisting of 13,495 high schools and 13,710 vocational schools (7, 9)

With this large distribution of data, an adequate infrastructure readiness in the IT field is needed. One of them is the provision of online learning facilities by using e-learning for educational students who are prepared to become teachers after they graduate at university. This product also answers the challenges to the needs of the education world, especially the Educational Institution (LPTK) to improve the quality of its services through the network Adequate IT. Because through the available e-learning products, educational services in the form of a learning process, will have the same standard and are appropriate in its application. Students will get a learning process with the same quality standards and the best quality that is controlled. The problem is the limited availability of e-learning learning products, especially related to Professional Education courses for LPTK students in Indonesia.

Previous researchers have reviewed how the development of e-learning towards learning. Various learning applications have been implemented in Indonesia, such as ruangguru.com, rumahbelajar.com, quiper.com, zenius.com, which provide a variety of learning content for students in Indonesia. Interesting content has been developed, so many students are now beginning to turn to independent learning by subscribing to these learning sites. On the other hand, this learning service can be configured by itself on several application platforms, such as Edmodo, Cisco Webex, Google Class Room and Moodle. This platform has been widely circulated and can be used free of charge, so that the development of e-learning learning products is more dominantly determined by the quality or quality of the content of the learning to be provided (10-13).

Based on the data and the development of previous research, the consortium research team is interested in developing MKDK Education Professional e-learning products to be applied in learning for students of the Educational Institution (LPTK) in Indonesia. The urgency of this research is in line with current conditions, where the Covid 19 pandemic, has shifted the process of interaction in online learning due to social and physical restrictions that are applied throughout the world and Indonesia. It is hoped that this research will produce a learning product that can have the feasibility and acceptability to be used by every student teacher candidate in LPTK.

2. Methodology

Respondents and Data Collection

This research is divided into two parts, namely the development process which lasts approximately 10 months, from May 2019 to February 2020. The development process is carried out by creating CLS learning content, which is in accordance with product standards developed based on development instruments. The second process is testing of products that have been made. The testing process was conducted from March 2020 to May 2020. The testing process was carried out online, with respondents totaling 40 LPTK students, the second generation. Each student will be given an account as a participant in the form of a username and password, to be able to access lectures during this time period. After that, each of them will fill out a questionnaire prepared online to see how they respond as prospective teacher students at LPTK.

Product Development

The product development process uses the Moodle platform version 3.75. The development method used is the Borg and Gall method. As for this method there are 10 stages, as shown in figure 1 (5-6, 8).

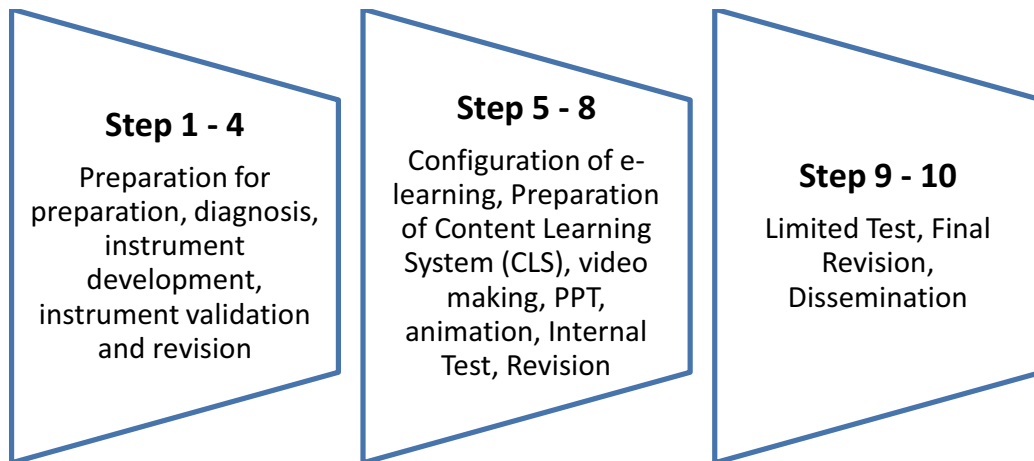


Figure 1. Scheme of e-learning Product Development Stages

Instrument

This research uses an instrument developed by the Consortium Research Team (KRUP T). The instrument developed was a modification of the instrument that had been developed by Sriadhi (<https://www.researchgate.net/publication/334586889>). This instrument will be applied for data collection and processing. Instrument modification can be seen in the following scheme:

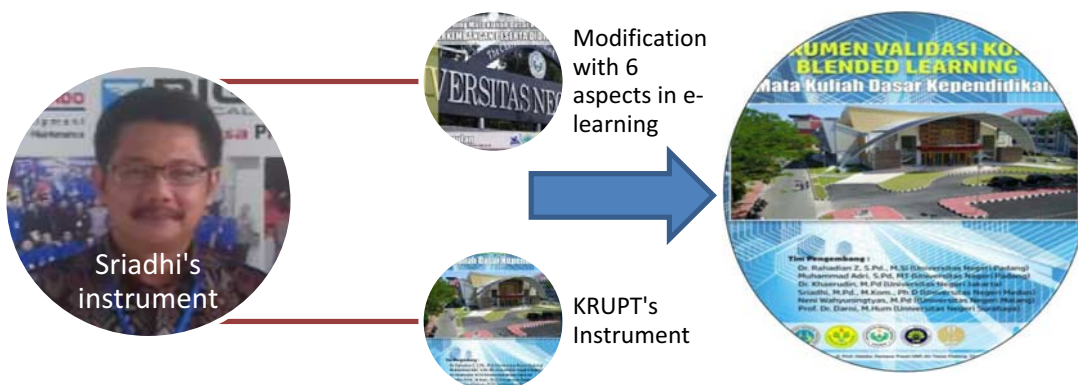


Figure 2. Schematic modification of the e-learning instrument development

Data Analysis and Interpretation

Data analysis uses the calculation and interpretation of e-learning product acceptances as developed by Sriadhi. These calculations and interpretations can be accessed at researchgate (<https://www.researchgate.net/publication/334586889>). Interpretation will result in the acceptance and feasibility assessment of the product. The score generated from the calculation will be interpreted based on the mean score interval which is formulated in 4 choices of acceptance as shown in table 1.

Table 1. Interpretation of Acceptance of e-learning products

No	Interval Mean Interpretation Score	Interpretation
1	1.00-2.49	Low Acceptability
2	2.50-3.32	Acceptance is sufficient
3	3.33-4.16	High Acceptability
4	4.17-5.00	Very High Acceptability

3. Results and Discussion

Educational Elearning Products on Professional Education Courses

MKDK Education Professional e-learning products have been successfully developed. This product was created using the Moodle 3.75 platform. This is because the moodle platform is stable and free, and is easy to use for both lecturers and students. For users, moodle is not complicated because the features used are familiar in everyday life, such as menu buttons, back buttons, activity buttons that can run well with just a click. For developers and lecturers, any content that will be added to e-learning is also not difficult to configure, because the needs and activities provided by Moodle are already relevant and in accordance with developer needs, such as attendance, assignments, systematic evaluation in the form of online recapitulation.

This e-learning product for Professional Education is configured at WebHosting Padang State University, <http://mooc.unp.ac.id/>. This product is run and configured on the Padang State University server, because the database management is in the MOOC. Access to the MOOC server, Massive Open Online Course of Padang State University, to the developer members, the consortium research team is given in full and can be done from the location of the development team members. There are five locations of the development team, namely in North Sumatra (Medan State University), Jakarta (Jakarta State University), Malang (Malang State University), Surabaya (Surabaya State University) and Padang (Padang State University).

The front view of the MKDK Education Professional e-learning product can be accessed at <http://mooc.unp.ac.id/course/view.php?id=3>, as shown in Figure 3. In Figure 3 the Padang State University logo is displayed on upper right, because the development of this material was carried out by the Consortium Team from Padang State University. However, this development is still being carried out by the KRUPPT consortium.



Figure 3. Display of MKDK e-learning products in the Educational Profession

At the beginning of this website you can see the Teaching Professional Lecturer Team from Padang State University, as shown in Figure 4. These lecturers will give lectures for 1 semester with 16 meetings. Parts of the content include, course descriptions, learning achievements, lesson plans, lecture contracts, learning outcomes, independent assignments, material descriptions, material summaries, discussions given to the group, and formative tests at the end of the meeting.



Figure 4. MKDK Lecturer Team in Educational Professions

In developing content, a consortium account is prepared, as shown in Figure 5. This account will hold various types of content, such as PPT (Power Point), PDF / JPG from uploaded material. The content successfully developed in this research has been validated by the Expert. Validated content is included in Google Drive and uploaded to a YouTube account, so the URL link can be linked to the e-learning created.

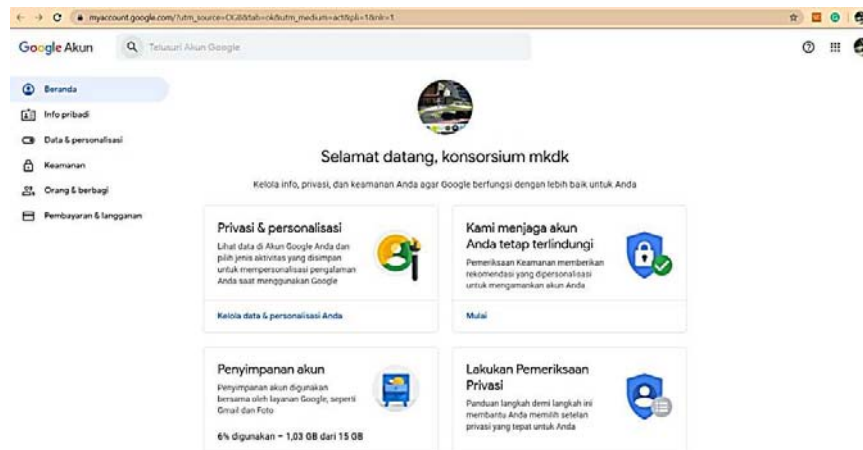


Figure 5. Gmail and Google Drive Consortium accounts

Online Questionnaire Results

Based on the analysis of 40 respondents, all aspects of development already have high acceptances. This is evident from the results of the measurement of the mean score given by respondents reaching 3.88. This value can be interpreted that e-learning products made are feasible and can be applied to Indonesian LPTK students.

In Figure 6, the distribution of responses from 40 respondents to MKDK e-learning products The educational profession varies greatly. However, all the data provided have a tendency that almost all aspects of e-learning analyzed have high acceptance and are appropriate to use. In the assessment given by the respondent, students received well the e-learning products made, for example from the aspect of e-learning design and facility, the level of acceptance reached a score of 3,815. Meanwhile, aspects of Learning Materials and e-Learning Subject reached a score of 4,127. In the aspect of learning guides and information given a score of 3,608. In the aspect of activity in e-learning, aspects of pedagogical effects, and evaluation in e-learning each gave a score of 3,731; 4,075; and 3,594.

In the aspect of material content or content (CLS) becomes dominant in MKDK Education Professional e-learning products. This shows that the quality aspect becomes an important point in the success of the product so that it has a high acceptability. Students will select the contents or content, then determine the appearance and other aspects. An aspect that also receives high attention from students is the pedagogical effect of e-learning. In this research it is evident that the appearance and activity, ranks lower than the quality of the content or the content and pedagogical effects felt by students when using this learning web application.

visualization of responses from students when testing online

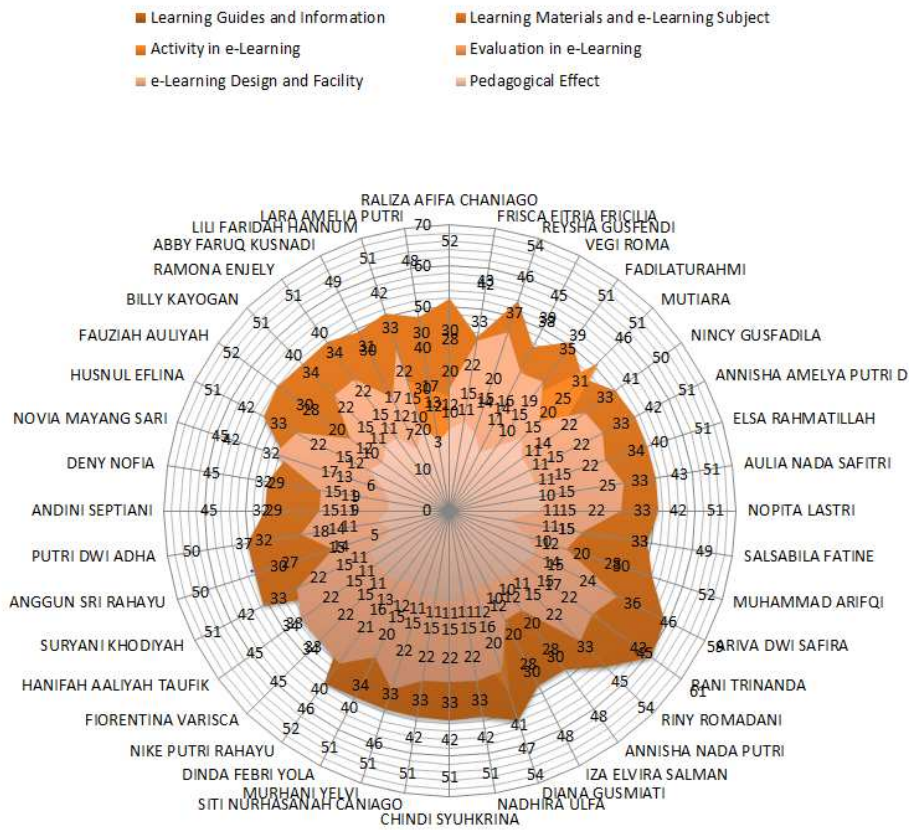


Figure 6. Visualization of responses from students when testing online

In Figure 7, the percentage of acceptances from the six aspects of e-learning that are examined can be interpreted more specifically. Learning Materials and e-Learning Subjects ranked highest, at 18%. The pedagogical aspect has a percentage of 18%, while the other 4 e-learning aspects each get the same percentage of 16%. From these results it can be seen that the substance of the content of the lecture material has the most decisive factor in the assessments given by respondents of the e-learning made. These results are in line with research that has been done by several previous experts.

The development of e-learning products is largely determined by the quality of the content or substance of the material being developed. Development of a Content Learning System (CLS) that supports learning achievement, will influence the success of the learning process. Thus, the better CLS development, the better the response given by students. The quality of CLS from this substance is the biggest determinant for the quality of e-learning products made.

MKDK Educational Profession

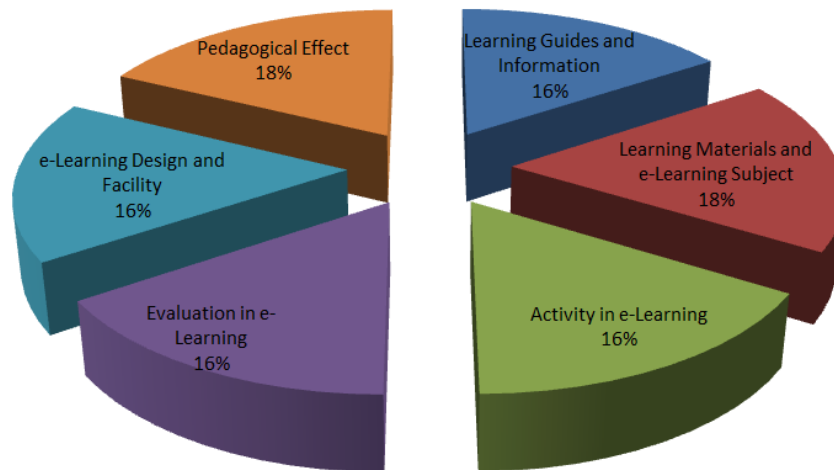


Figure 7. Percentage of MKDK elearning aspects in the Education Profession

From the results of the questionnaire and the visibility of the products made, it can be assessed that the MKDK e-learning product of the Education Professional Profession has been accepted and is suitable for use by prospective teacher students in MKDK. This is evidenced by the high acceptance score of the respondent and the interest of the respondent or student user in the quality of the content or pedagogic effects. Thus, this product can be implemented for online learning for every student teacher candidate in various corners of the region in Indonesia. However, further research related to aspects of direct interaction and the value of learning outcomes do need to be explored further. This is to see how the negative impact of online learning on education specifically and globally.

4. Conclusions

From this research it can be concluded that the MKDK Education Professional e-learning product has been successfully made by having a high acceptance, which is 3.88. This level of acceptance shows that MKDK e-learning products in the Education Professional Profession are indeed appropriate for use by LPTK students in Indonesia. This e-learning product can be applied with recommendations on the need to develop and adjust implementation in the field, such as adequate patterns of interaction, communication and availability of internet networks. This ideal condition will be the key to the success of online learning implementation using MKDK e-learning products for Moodle-based Professional Profession for LPTK students in Indonesia

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