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Preliminary study on the development of blended learning (BLM) model: based on needs analysis and learning independence

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Abstract. The purpose of this study was to analyze the needs and independence of learning in the development of the Blended Learning Model (BLM). The research method uses survey methods. Data collection was carried out using questionnaires and interviews with 87 students, ten lecturers and one person in the ICT department. Data analysis was carried out with descriptive analysis and content analysis. The results of the research in the four stages of needs analysis were obtained, namely: 1) initiation, the selection of compulsory courses in BLM development; 2) identification, identifying selected course material; 3) targets, users of BLM courses, namely students, lecturers at team teaching and ICT head departments; 4) fulfillment of needs, development of BLM based on the characteristics and availability of available facilities. Analysis of student learning independence is in the sufficient category, which shows that there are still various difficulties in the formation of student learning independence due to limited learning resources, lecturers use one learning source more, conventional approaches dominate the way of delivering material, and rarely using connections internet directly in the lecture process. Besides, other difficulties are limited time in developing interesting learning media and by the characteristics of the subject and characteristics of students.

1. Introduction

The gap in access to education in Indonesia is still uneven. Meanwhile, in the current era of the 4.0 industrial revolution, access to quality education is needed evenly so that the acceleration of national development can be carried out and comprehensively [1]. One effort to overcome the gap in access to education services in various regions in Indonesia is by utilizing developments in the field of information and communication technology (ICT). The role of ICT in education is expected to improve the quality and access to education [2] through the distance education (PJJ) system [3]. The learning model that can represent PJJ is a blended learning model (BLM) [4].



The BLM is a learning model that combines face-to-face and online learning [5][6]. BLM provides an alternative learning model that can improve the quality of learning in universities [7]. BLM benefits as a model that can give the students learning experience and independence to achieve the expected competencies [8].



Figure 1. Display of one online course process

Learning objectives will be easily achieved if the BLM design is based on good planning, so that results are effective, efficient and on target. One essential proper planning is to make plans based on student needs and independent analysis. Analysis of student needs and independence is needed in preparation, developing up to the improvement stage of a learning program.

The purpose of this study was to analyze the needs and independence of students' learning that would be carried out on a course in developing elementary learning media.

2. Methodology

This research method is a survey method. The survey was conducted to obtain accurate data about blended learning based learning [9]. Strengths and weaknesses based on survey results can be used as input in developing blended learning based learning models. The survey was also conducted to determine the use of ICT in several universities and the study of the level of student independence in ICT-based learning. Participants involved were 5th-semester students at one private university 2017/2018 academic year totaling 87 people. Data was collected through questionnaires (20 questions) to students. The interviews were conducted with ten team teaching lecturers and one person from ICT head department. Data analysis was carried out using descriptive analysis and content analysis of questionnaires and interviews that had been conducted.

3. Result and Discussion

Based on questionnaires that have been conducted, the results are obtained in Table 1 below:

Table 1. The character of student learning independence

No.	Category	Student Independence Level Percentage										Average	
		Based on Each Indicator (%)											
		The indicator-											
		1	2	3	4	5	6	7	8	9	10	11	
1.	Very good	10	11	18	14	15	3	20	23	14	2	21	14
2.	Good	34	33	24	15	23	33	24	47	33	25	15	28
3.	Good enough	39	45	46	16	41	32	44	20	49	64	62	42
4.	Poor	14	8	7	55	20	31	13	10	2	3	1	15
5.	Very poor	2	2	5	0	1	0	0	0	1	5	1	2

Table 1, shows as many as 14% of students with independence characteristics in the very good category and 28% in the good category. However, there are still many students in the category of good enough, which is 42%. Also, 15% are in the poor category and 2% are in the very poor category. It can be concluded that student learning independence is categorized as good or medium.

Some problems regarding student independence are faced with the limitations of learning resources [10]; lecturers use one learning source more, the occasional lecture approach to discussion dominates the way to deliver material, and rarely uses the direct internet connection in the lecture process. Based on the lecturers' point of view, the difficulties faced by the lecturers are the limited time in developing interesting learning media [11] and by the characteristics of the subject and the characteristics of students. While information from the head of the ICT department obtained data that to date most of the lecturers have not utilized the internet network in the lecture process [12]. Also the university website has not facilitated daring's features for lecturers and students alike.

Meanwhile, based on the results of the interview to find out the needs analysis, the results are obtained in Figure 1 below:

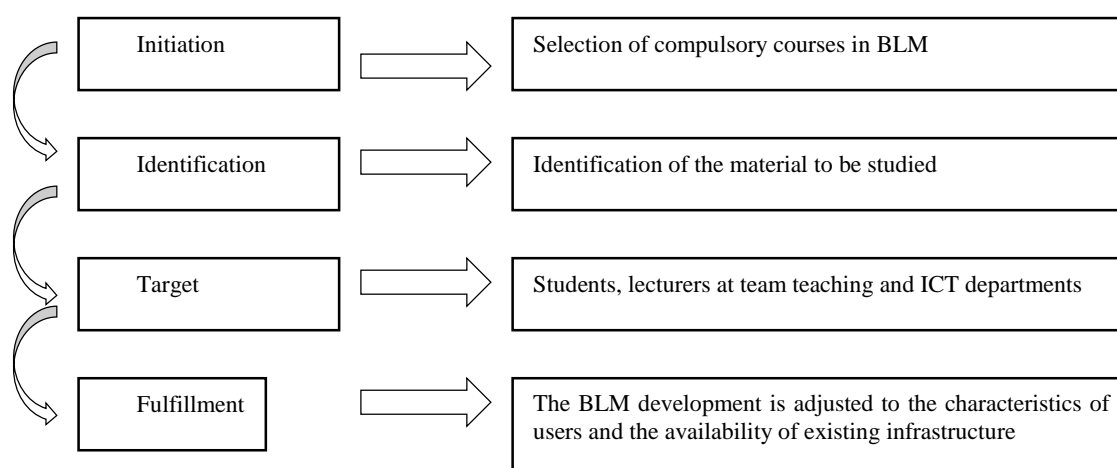


Figure 2. Results of analysis of BLM development needs

In Figure 2, the results at the initiation stage were carried out by pre-trial development in the subject of developing elementary instructional media through BLM. The aim is to find out the effectiveness of the learning to be carried out, to understand what needs to be developed. The subject of elementary learning media development is one of the compulsory subjects in the elementary school teacher education study program.

At the identification stage which is the selection of learning materials, students are expected to be able to understand, explain, design, use and evaluate learning media in classroom learning activities. For this reason, this course is supported by the following material: 1). understanding learning media; 2) function and role of learning media; 3) grouping of learning media; 4) simple media (advantages and limitations); 5) selection of learning media; 6) use of learning media; 7) development of visual-based learning media, audio-visual, computers, multimedia; 8) evaluation of learning media.

At the target stage, the targets of BLM's development were students who were taking elementary learning media development courses, team teaching lecturers, and the ICT head department. The target of BLM development in the subject of elementary learning media development is to improve the learning process that is varied and interesting through the use of ICTs, developing teaching materials or materials that are adapted to the characteristics of the subject and characteristics of students, and developing a learning management system (LMS) for online learning.

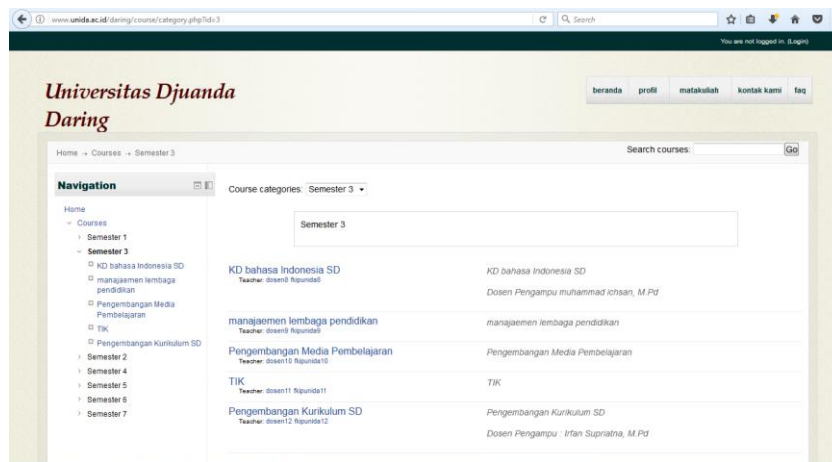


Figure 3. Display of developing LMS at BLM

In Figure 3, the LMS display that will be developed at BLM is tailored to the needs and independence of students who are expected to meet the learning objectives and competencies to be achieved [13][14][15].

At the fulfillment stage of the request, the goal of the objectives starts with the planning, implementation, until the evaluation stage is systemic and systematic. Increased knowledge, attitudes, and skills possessed by students must be balanced with global skills without having to leave the characteristics of students. He possesses comprehensive skills and follows current developments in science and technology; it is hoped that students can participate in building the nation with these abilities.

4. Conclusion

The conclusion of the initial study of BLM development on needs analysis consists of four stages of analysis, namely: 1) initiation: selection of compulsory courses in BLM development; 2) identification: identifying selected course material; 3) targets: users of BLM courses, namely students, lecturers at team teaching and ICT head departments; 4) fulfillment of needs: development of BLM based on the characteristics and availability of available facilities. Analysis of student learning independence is in the sufficient category, which shows that there are still various difficulties in the formation of student learning independence due to limited learning resources, lecturers use one learning source more, conventional approaches dominate the way of delivering material, and rarely using connections internet directly in the lecture process. Also, other difficulties are limited time in developing interesting learning media and by the characteristics of the subject and characteristics of students.

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