



Analysis of Student Learning Difficulties in Online Learning in Applied Computer Application Courses

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ABSTRACT

This study aims to analyze the difficulties students face studying the Applied Computer Applications subject online. This type of research is quantitative descriptive research. The subjects of this study were third-semester students of the D3 Fashion Design Study Program. Data were collected through questionnaires and documentation from 29 respondents, and the analysis used descriptive method. The results showed that students experienced several difficulties, which were classified into internal and external, including technical, adaptation difficulties and lecturer unpreparedness. To overcome these, it is necessary to develop innovative learning strategies to support student adaptation to online learning. In addition, lecturers need to improve their ICT skills, so they can various online learning media according to students' technical difficulties.

Keywords: Learning Difficulties, Applied Computer Applications, Online Learning.

1. INTRODUCTION

COVID-19 is a virus whose transmission is very fast, and it is difficult to know who has been infected. Almost all countries worldwide have been affected by this pandemic, including Indonesia. COVID-19 was declared a pandemic outbreak by the World Health Organization (WHO) on March 12 2020 [1]. In response, many countries, including Indonesia, implemented policies to impose lockdown statuses and other anticipations to prevent the spread of the virus. The virus outbreak has significantly impacted several aspects of people's lives, including economic, social, cultural and even educational sectors. Almost all levels of education in Indonesia was currently experiencing an online system to eliminate physical meeting in learning due to the pandemic.

At the time, the government issued a policy from the Minister of Education and Culture No. 4 of 2020 concerning preventing COVID-19 in academic units. To follow up on the letter, the Chancellor of Makassar State University also addressed the entire internal academic community regarding calls for the prevention of COVID-19. One of the appeals in the policy contains how the implementation of lectures that were previously carried out face-to-face or face-to-face is now being replaced with a remote learning system.

Online learning is very different from normal one. Online learning is an alternate solution to continue teaching and learning activities during the pandemic. The online and conventional approach have differences; students in traditional learning are required to attend class, study learning material, submit assignments and complete group projects physically. Meanwhile, the teacher still has to design the curriculum, maximize the quality of learning, answer class questions, motivate students to learn and assess assignments. Despite these basic similarities, there are many differences between the two methods. Conventionally, classroom instruction is known to be teacher centred and requires passive learning by students, whereas online education is often student centred and requires active learning. According to [2], online learning is done through various applications, including Zoom, google classroom, google meet, LMS, WhatsApp, and others. Based on the previous description, online learning is learning remotely using tools and media from the internet and supporting devices such as cell phones, laptops or computers.

The Applied Computer Application is a scientific and skill development subject for students in the D3 Fashion Design Study Program, PKK Department, Faculty of Engineering, UNM. Applied computer application are theoretical and practical subject wherein this course

requires expertise in designing and making fashion patterns using computer application such as Adobe Photoshop and CAD System RP-DGS [3]. This subject requires both learning tools and media that support student mastery of the subject. To improve students' conceptual abilities and skills in the subject, the practical work directly was done in a computer laboratory. However, the limitations of online learning lead to both internal and external student learning difficulties.

Based on initial observations, students need to understand both material and practice in the applied computer subject. Many students still need to learn how to operate applications such as Adobe Photoshop and CAD Systems, especially when done online. Other obstacles to online learning are technical problems, such as difficulty getting a stable network and sufficient internet quota. In fact, the learning devices should be available so that the students can do more practice to finish the exercises and assignments. These learning difficulties must be addressed immediately so they do not occur continuously because they can affect student learning outcomes. Therefore, researchers consider it necessary to examine more deeply the difficulties experienced by students. This study aims to analyze the learning difficulties faced by students of the Diploma 3 Dressmaking Study Program, PKK Department, Faculty of Engineering UNM, in doing online Applied Using Computer Application subject.

2. LITERATURE REVIEW

Learning shows activities carried out by someone consciously and intentionally, leading to behaviour change through observing, reading, imitating, trying something, listening and following specific directions [4]. Conversely, even though someone is said to be learning, if his physical and mental activity is low while doing the activity, it should not be consider that he is carrying out learning activities [5].

Learning is a process of communication or interaction carried out by lecturers to students to convey particular messages. These interactions require particular aids called learning media. According to the Law of the Republic of Indonesia Number 20 of 2003 concerning the national education system, learning is a teacher's interaction with students and resources in a learning environment. The method is considered to be online if the teaching and learning process utilizes the internet network [6]. This online learning is carried out so that the world of education can continue to run during a pandemic which requires physical distancing. The concept of online learning has the same concept as the concept of e-learning. According to [7], Online learning or E-learning is one of the newest learning models in the world of education that can overcome space limitations which have been a weakness of conventional models [8]. This

will be grouping simultaneous learning settings into two categories, namely learning that occurs in the same space and time (live-synchronous learning) or known as face-to-face and learning that appears at the same time, but in different rooms from one another (virtual synchronous learning).

Learning difficulty is a condition in which the learning process is characterized by certain obstacles to achieving the outcomes [9]. Learning difficulties can also be referred to as learning disability, a disorder in individuals who experience difficulties in effectively carrying out the process [10]. The same thing was also stated by [11] that learning difficulties are the gap between the expected academic achievement and the academic achievement obtained, which is characterized by certain obstacles in achieving learning outcomes. Based on the understanding of several experts, it can be concluded that learning difficulties are an obstacle or a problematic condition in the learning process. [12] stated the difficulties faced by students during online learning, including (1) facilities and infrastructure, (2) unstable internet network, (3) difficulty focusing during the online learning process, (4) limited quota credit, (5) Complicated application, and (6) Too many tasks.

System and Application Management Open Knowledge (Syam-Ok) is an online learning platform at Makassar State University. The Syam-Ok application provides opportunities for lecturers and students to interact directly and simultaneously online. Students can study independently using the material provided and doing assignments according to available time.

The Applied Computer Application is a scientific and skill development subject for students in the D3 Fashion Design Study Program, PKK Department, Faculty of Engineering, UNM. Applied computer application are theoretical and practical subject wherein this requires expertise in designing and making fashion patterns using the Adobe Photoshop and CAD System RP-DGS [3]. An applied computer applications is not a subject with material that is easy to convey, even in face-to-face learning. So extra work is needed to be able to share it via Syam-Ok.

3. RESEARCH METHOD

This research is a quantitative descriptive study that aims to analyze the factors that cause student learning difficulties in the Applied Computer Applications through online learning. The subjects of this study were 29 students in the third semester of the D3 Fashion Design Study Program. Data collection was carried out by utilizing questionnaires, interviews and documentation. The research instrument in the form of a questionnaire was used to capture student perception data

given to respondents online via the Google form with 25 questions.

The interview guide is in the form of structured questions to conduct students' responses by asking directly to respondents about how students' learning difficulties are described during online learning. Then the data is supplemented and strengthened with value documents to see the level of student learning success. The data analysis used is a descriptive statistical technique which aims to describe or give an overview of the data that has been obtained.

4. RESULTS AND DISCUSSION

Based on the results of processing research data regarding students' difficulties in learning Applied Computer Application subject which are carried out online, then the data is described as follows:

4.1. Student Learning Difficulty Results

4.1.1. Internal factors

Based on the results of the difficulty questionnaire from the internal condition factor, the most prominent thing to show is the need for more motivation and enthusiasm of students to take part in online learning. It happens as they feel that online-based applied computer application courses are challenging and tiresome. 7% of respondents said they strongly agreed, 45% of respondents agreed, 41% said they strongly agreed, and remain 7% was strongly disagreed.

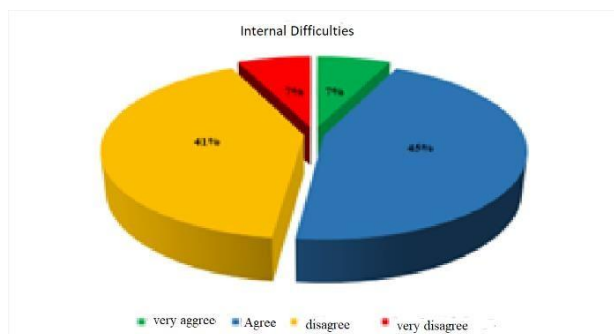


Figure 1. The results of the difficulty questionnaire from internal factors.

Based on the study's results, it was shown that the internal factors influencing the learning difficulties of D3 Fashion Design students were students' focus and motivation in doing the subject, and difficulties in discussing with effective lecturers. The difficulties occur due to influence from within the students themselves, namely their motivation and enthusiasm for online learning. The cause can determine whether or not it is good to achieve goals so that the greater the motivation, the greater the learning success [13]. This is in line with research conducted by [14], which states that the factors

that cause learning difficulties are internal factors in the form of motivational factors within students.

4.1.2. External Factors

Learning difficulties originating from external factors are grouped into three parts: technical problems, student adaptation difficulties and lecturer unpreparedness.

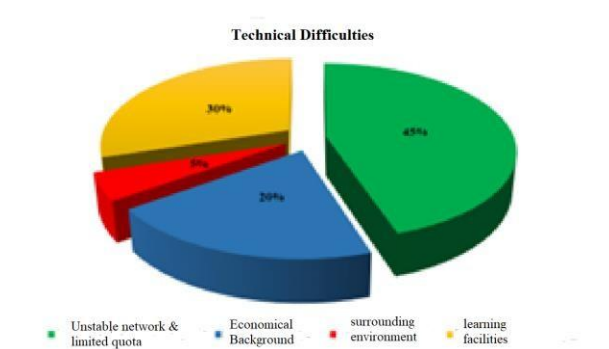


Figure 2. The results of the technical difficulty questionnaire.

Based on the figure 2, the most prominent difficulty for technical difficulties is the internet signal was weak when they took part in online learning. 40% of respondents said technical problems stemmed from the vulnerable network and limited internet quota, 20% felt the difficulties stemmed from economic factors, 30% from inadequate learning facilities and 5% from lack of support from the surrounding environment.

Therefore, External factors that affect the learning difficulties of D3 fashion dressmaking students in online learning during the Covid-19 pandemic are network and quota difficulties, economic difficulties and the surrounding environment. According to [15], the conditions for implementing online learning are the existence of an internet network, both a local area network (LAN) and a wide area network (WAN). The surrounding environment can also affect student learning difficulties. This is supported by research conducted by Zamrud [16], who found that if the surrounding environment is not conducive, the learning process will be disrupted. In addition, the research findings of Hendrastomo indicate that the availability of internet access is crucial in e-learning, as well as in the Applied Computer Applications course, where the characteristics of this learning process always utilize and depend on the internet network. In general, the internet access speed in Indonesia is relatively slow, the availability of internet networks is still limited, and the cost of accessing the internet is relatively expensive, thus becoming barriers to e-learning [17].

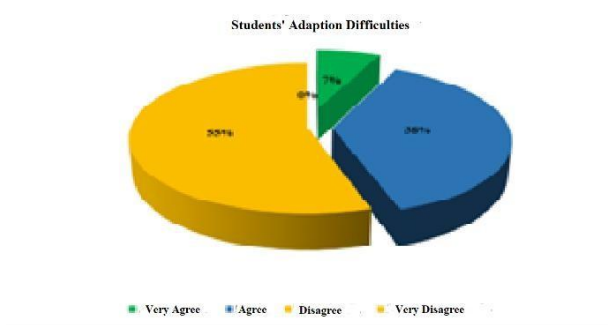


Figure 3. Results of the Student Adaptation Difficulty Questionnaire.

Based on Figure 3, information is obtained about student difficulties in adapting for computer application subject online, with respondents choosing the category of strongly agree with a percentage of 7%, the category of agreeing with a rate of 38%, the category of disagreeing with a percentage of 55%, and the category of strongly disagreeing with a percentage of 0%. These results show that online learning using the Syam-ok application is less effective for Applied Computer Application Courses.

Based on the data obtained, it is difficult for students to adapt when learning online in the subject. This requires expertise in designing and making clothing patterns that must stay in students' memories [3]. Applied fashion computer applications are divided into two materials: creating using the Adobe Photoshop application and making dress patterns using the CAD system application.

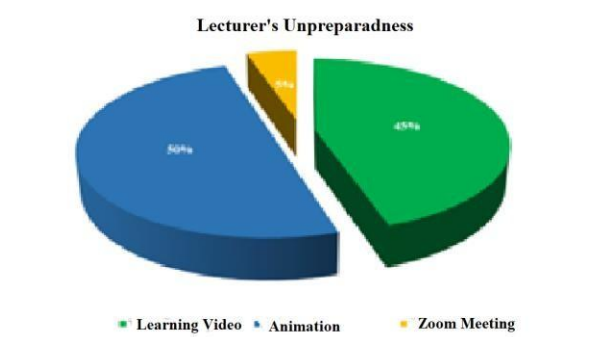


Figure 4. The Chart of Lecturer's Unpreparedness.

Based on the diagram above, students expect lecturers to be able to use more diverse applications or media. 50% expect additional learning videos, 45% request a Google Meet and 5% expect learning animations to be added. Students hope lecturers add learning and tutorial videos accompanied by meetings at each to make it easier to understand lecture material. Moreover, the Applied Computer Applications subject involves designing patterns using digital/computer techniques.

Based on the research data that has been done, students have more difficulty to understand material using the CAD system because the application is more complicated, especially when done online, compared to the one using Adobe Photoshop. Therefore, students need

more learning videos and video tutorials in making patterns using the RP-DGS CAD System. This is supported by research conducted by Jusmiana & Herianto, which shows that the use of audio-visual media (video) has an impact on students' learning outcomes. The use of video tutorials in online learning becomes a solution to support the learning process. With the presence of video tutorials, students can have a better understanding of the taught material because they still receive explanations from the instructor [18]. Furthermore, video as a tutorial media tool is currently effective in learning [19].

5. CONCLUSION

Based on the results of the discussion above, it can be seen that the difficulties faced by D3 Fashion Design Study Program students in the Applied Computer Applications subject are: (1) Internal factors, namely the lack of student focus and motivation; (2) External factors, which include technical difficulties, namely the problem of limited internet quota and devices, economic difficulties and the surrounding environment. (3) student adaptation difficulties, which include unfavourable home conditions, not being used to online lectures, more online assignments, difficulty dividing time and using the Adobe Photoshop and CAD System applications as learning is carried out online, (4) lecturers' unpreparedness, which includes explanations are still lacking and the limited form of the material provided.

After paying attention to the difficulties faced by students during online learning in the Applied Computer Applications subject, several suggestions can be put forward that can be used as solution to overcome these learning difficulties, including (1) the lecturer approaches students to further increase student motivation and enthusiasm in learning online, (2) it is necessary to hold some cooperation with cellular providers to guarantee for the provision of internet networks and saving quotas for students because it turns out that there are still students who do not get the saving quotas provided by the government, (3) lecturers must take a better approach in terms of delivery of learning. Lecturers must create an atmosphere that makes students feel comfortable while participating in online learning, not just delivering material and assignments, (4) lecturers must be able to provide sufficient explanations and be understandable to students. The delivery of material must also be more varied and even use other applications as learning media which are considered to be able to improve the quality of online learning because applied computer application courses are practical courses using applications that are not easy for students to operate if only explained by providing PDF material.

AUTHOR CONTRIBUTIONS

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