

Identification of student difficulties in learning educational digital psychology using the Project-based learning model

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Abstract: Digital psychology or also known as cyperpsychology is a relatively new branch of science in applied psychology. Digital psychology studies the interaction between individuals using technology, the impact of technology on individual habits, the attempt to develop technology according to the need, and how technology can impact individual psychology. Technology that has now become part of learning can certainly impact students' habits and psychology. Universitas Jambi biology education study program students who are trained to become future teachers must be prepared to deal with this. Therefore, students are also trained in educational digital psychology courses. In order to ensure an optimal learning experience for students, lecturers must identify the learning difficulties they encounter. This study aims to identify learning difficulties encountered by students in educational digital psychology courses using a project-based learning model. This research is a descriptive study conducted from May to June 2024. The study population was all students of the Biology Education study program who enrolled in educational digital psychology course totaling 111 people, while the research sample amounted to 72 people. The results showed that 54.2% of students encountered difficulties in learning educational digital psychology using the project-based learning model, with the following causes: not finding appropriate learning resources (58.3%), not being able to find appropriate learning resources (48.6%), time constraints (47.2%), not understanding the learning resources found (43.1), and not being interested in the project-based learning model (23.6%). It is concluded that most students experience difficulties in learning educational digital psychology using the project-based learning model with the highest percentage of not finding appropriate resources, followed by not being able to find appropriate learning resources, time constraints, not being able to understand the learning resources found, and not being interested in the project-based learning model.

Keywords: learning difficulties, project-based learning, digital psychology

1. Introduction

Educational digital psychology is a compulsory course in the Universitas Jambi biology education study program. This course consists of two credits and is taken by students in the second semester. Digital psychology is a relatively new branch of science in the family of applied psychology. Digital psychology is concerned with studying and assessing how interactions between individuals using technology, how technology can impact individual habits, efforts to develop technology according to needs, and how a person's psychology can be impacted by technology (Kirwan, 2016). Nowadays, technology has become part of learning. (Palmer, 2016) revealed that learning has changed with the ease of accessing technology and the internet to search for answers, find ways to do things, and communicate with experts. (Kovatcheva, 2003) stated that the virtual world or the internet has many positive and negative impacts. As a program that trains graduates who are ready to become educators, the Biology Education study program must provide students with the knowledge of digital psychology so that they can understand the behavior of their students later. This educational digital psychology course studies how to apply psychology in understanding human behavior in the digital era, so that every future teacher can understand the digital world and be able to implement digital parenting to students in order to optimize the benefits of the digital environment and reduce its negative impact.

In order for digital psychology learning to run optimally, lecturers must identify the difficulties experienced by students in learning. This is supported by the results of research (Zidan, 2023) International statistics showed that there are 30% of people with learning difficulties, including men and women. Understanding student learning

difficulties is an important step that can be taken by lecturers so that students can learn better. (Department of Education and Training State of Victoria, 2022).

Due to the topic of digital psychology which is close to students' daily lives, digital psychology learning in the Universitas Jambi biology education study program uses a project-based learning model. Project-based learning requires students to create a product that can solve problems that occur in their daily lives. Through project-based learning, students are given the opportunity to work with professional experts in their fields to enrich and support the knowledge that is gained in class and how that knowledge is applied in the real world. Project-based learning has a framework that can be used as a guide in learning so that it can increase student involvement in learning, encourage students to make their own choices, support collaborative learning, and can improve student academic achievement (Condcliffe et al., 2017; Levine & Mosier, 2014; Wakesa & Ongunya, 2016). Project-based learning can improve critical thinking skills (Wang, 2022), creative thinking skills (Chen et al., 2022); (Ummah et al., 2019); (Yamin et al., 2020)communication skills (Muljo et al., 2021), and collaboration (Ibrahim & Rashid, 2022).

Several problems can occur in the implementation of educational digital psychology learning using project-based learning, including learning difficulties experienced by students. Therefore, it is important to carry out research to find out whether students experience difficulties in learning educational digital psychology using a project-based learning model, to identify learning difficulties experienced by students, and to find out students' opinions about the application of problem-based learning models in other courses.

2. Research Methods

This research is a descriptive study that aims to identify student learning difficulties in educational digital psychology courses using the project-based learning model. The research was conducted from May to June 2024. The research was conducted at Universitas Jambi biology education study program. The instrument in this study is a closed questionnaire that has been tested for validity. The questionnaire used consists of seven questions to identify student learning difficulties with the answer options "yes" and "no". In addition, one open question was added to find out if there were other causes of learning difficulties experienced by students.

The population of this study were 111 students of Universitas Jambi biology education study program who were enrolled in educational digital psychology courses. The sample of this study was 72 students. data analysis was carried out by calculating the percentage of students who answered "yes" and "no". Data processing was carried out using the help of the Ms. Excel program.

3. Results and Discussion

Research Results

Based on the data analysis that has been done, it is known that more than half of the sample has difficulty in learning educational digital psychology using the project-based learning model (Fig.1), the research results are presented in table 1.

Table 1. Percentage of student answers to each question

Question Item Number	Answer (%)	
	Yes	No
1	54,2	45,8
2	47,2	52,8
3	48,6	51,4
4	58,3	41,7

5	43,1	56,9
6	23,6	76,4
7	76,4	23,6

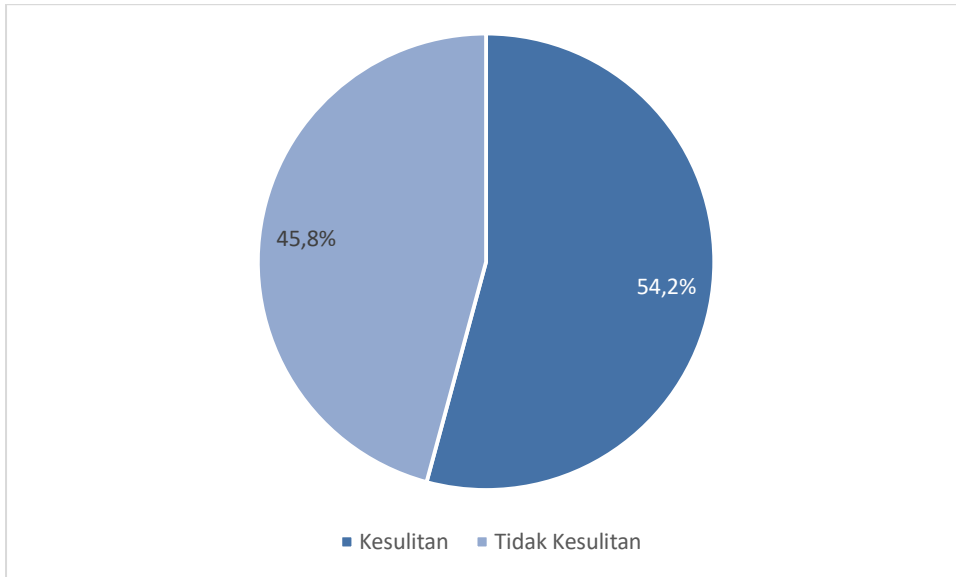


Figure 1. Ratio of students who encounter difficulties in learning educational digital psychology using the project-based learning model.

The causes of difficulties experienced by students include time constraints, inability to find adequate learning resources, not understanding the learning resources found, and there are still some students who are not interested in the project-based learning model. The causes of student learning difficulties and the percentage of students who experience them are presented in Figure 2.

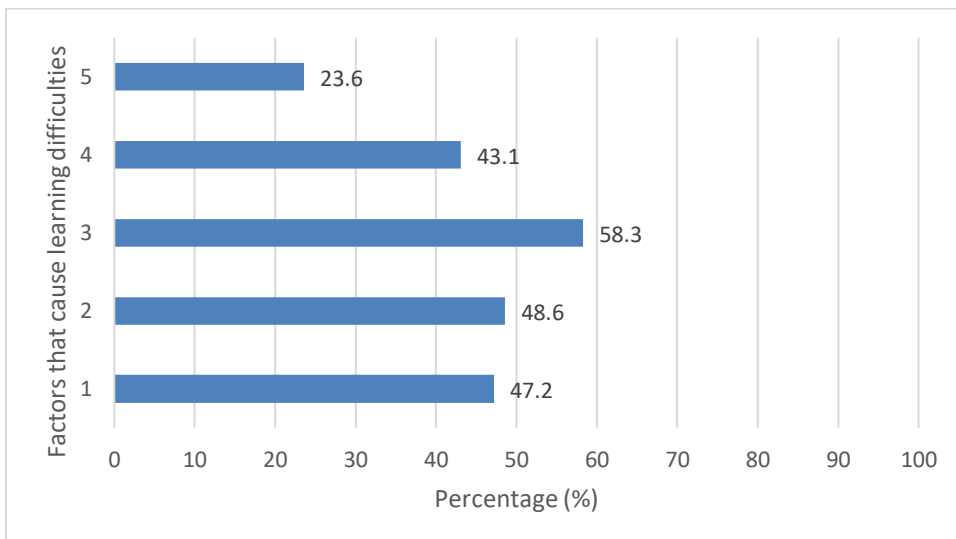


Figure 2. Causes of student difficulties in educational digital psychology courses with project-based learning models: 1. time constraints; 2. not being able to find appropriate learning resources; 3. not finding appropriate learning resources; 4. not understanding the learning resources found; 5. not interested in the project-based learning model.

The results of data analysis also show that most students agree if the project-based learning model is implemented in other courses. The results of data analysis can be seen in Figure 3.

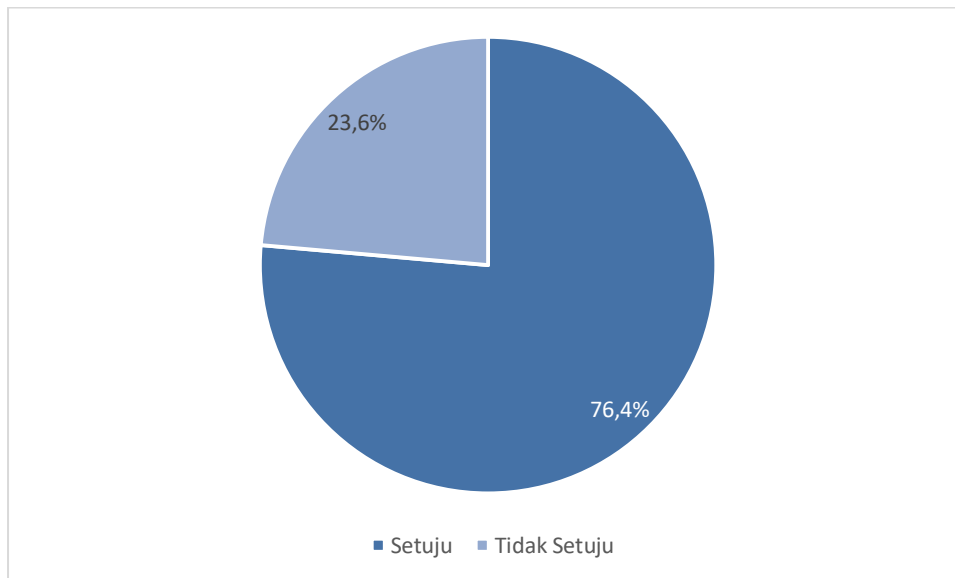


Figure 3. Ratio of students who agree with the implementation of project-based learning model in other courses.

Discussion

Based on the results of data analysis presented in Table 1, it is known that more than half of the research sample experienced learning difficulties in educational digital psychology courses using the project-based learning model. The percentage of students who encountered difficulties was 54.2%, greater than students who did not encounter difficulties (45.8%). As facilitators, lecturers must try to find solutions to overcome learning difficulties experienced by students. Lecturers must understand how students learn to plan effective learning (Westwood, 2004). The understanding of the learning process can help lecturers to identify learning difficulties encountered by students. By knowing students' learning difficulties, lecturers can consider the effective ways to prevent problems in learning and motivate students to learn (Penso, 2002).

Figure 2 shows the difficulties encountered by students in learning educational digital psychology using the project-based learning model. 58.3% of students declared that they experienced learning difficulties because they did not find appropriate learning resources. This is due to the limited references related to educational digital psychology material available in Indonesian. The lack of references in Indonesian makes it difficult for students to get the learning resources they need. This is because English is not the daily language used by students so that their command of English is relatively low (Hermayawati, 2010; Sormin, 2018). Research conducted by (Mastuti, 2011) revealed that students realize the importance of reading English literature, but this statement is not supported by student reading behavior. In line with research (Dogruer et al., 2011) which shows that 27% of students feel that they are not good enough in accessing websites specifically designed for learning English. Some ways that lecturers can empower students to read English literature are giving reading assignments, providing feedback, and conducting various group learning activities so that difficulties in reading literature can be solved with their groupmates.

In second place, the learning difficulty encountered by students is not being able to find appropriate learning resources. A total of 48.6% of students declared that they had difficulty in finding appropriate learning resources. This percentage can be said to be quite high since in this digital era students can access various relevant learning resources on the internet. However, in reality there are still 32% of students who feel that they have not participated well enough in class and exercise applications on the internet, 32% of students feel that they are not good enough in using the internet to find and download e-books, 30% are not good enough in following educational journals on the internet, 29% are not good enough in accessing online library websites, 24% feel not good enough in getting information related to topics learned in class and searching for articles or other publications.

The next cause of learning difficulties experienced by students is time constraints. (Almulla, 2020) stated that the implementation of the project-based learning model does require time and increases the duties of teachers and students. Both project planning and implementation require a long time (Kwietniewski et al., 2017). To overcome this, lecturers are required to guide students in time management. Based on research conducted by (Hou et al., 2007) the pattern of time management and interactive behavior of students in project-based learning is known. Students collect and share information gradually, then proceed with interactive behavior in the middle stage. The project-based learning model is actually a solution that can be given in training students' time management skills. The stage of designing a project timeline aims to train students' time management, self-management, and cooperation skills (SEAQIL's Team, 2020). (Santoso et al., 2021) stated that project-based learning can improve students' time management skills. Research by (Zahwa Amalia et al., 2023) revealed several challenges in implementing project-based learning including difficulty finding theories and previous research related to the project being worked on, time management, and overlapping with other course assignments. Some strategies that can be applied to overcome these challenges are collaborating with friends, dividing the project into several small parts, and setting project goals and schedules. The shortcomings of project-based learning including time management can also be overcome by making more thorough preparations (SEAQIL's Team, 2020).

In the next order, not understanding the learning resources found is the cause of learning difficulties encountered by students. In line with the research results (Penso, 2002) which shows that learning content is also one of the causes of learning difficulties experienced by students. (Wulandari et al., 2021) explained that the factors inhibiting learning difficulties include limited concepts, delivery of the wrong concepts, and very minimal concept implementation. Lecturers must strive to optimize the implementation of the project-based learning model, because based on the findings of (Filippatou & Kaldi, 2010) project-based learning can benefit students with learning difficulties in terms of academic performance, motivation, and engagement in learning.

The least cause of difficulty encountered by students was disinterest in the project-based learning model (23.6%). This means that out of 72 students, there are 17 people who are not interested in learning by using the project-based learning model. This is probably caused by students' internal factors, such as lack of interest and motivation. Lecturers must be creative in designing learning that can stimulate students' interest and motivation to learn.

Despite there are still students who are not interested in the project-based learning model, 76.4% of students recommend the implementation of the project-based learning model in other courses. The implementation of the project-based learning model in a number of courses is expected to improve the skills needed by students in the 21st century. Several studies have shown that project-based learning can improve students' critical thinking and problem-solving skills, creative thinking skills, communication, and collaboration (Hindriyanto et al., 2019); Hussein, 2021); Ibrahim & Rashid, 2022; Kurniawati et al., 2019; Muljo et al., 2021; Rasyid & Khoirunnisa, 2021; Ummah et al., 2019; Wang, 2022).

Conclusion

Based on the results and discussion, it is concluded that most students experience difficulties in learning digital psychology using the project-based learning model. The main causes are not finding appropriate learning resources, not being able to find appropriate learning resources, time constraints, not understanding the learning resources found, and not being interested in the project-based learning model. Most students agree that the project-based learning model should be implemented in other courses.

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