Prisma Sains: Jurnal Pengkajian Ilmu dan Pembelajaran Matematika dan IPA IKIP Mataram
http://ojs.ikipmataram.ac.id/index.php/prismasains/index
e-mail: prismasains.pkpsm@gmail.com

December 2021. Vol. 9, No. 2
p-ISSN: 2338-4530
e-ISSN: 2540-7899
pp. 413-419

Self-regulated in a Blended Learning: Case Study on Educational Doctoral Candidates

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Received: November 2021; Revised: December 2021; Published: December 2021

Abstract

This study investigates the use of self-regulated in blended learning by students in doctoral education courses to complete advanced statistics lectures. Self-regulated in blended learning is described in four phases according to Zimmerman, namely planning, monitoring, evaluation, and reinforcing. The participants consisted of five students from 5 different disciplines, and were willing to share their learning experiences. Research data obtained by interview method and analyzed qualitatively. Validation uses two strategies, namely member checking and peer debriefing. Member checking is done after the data is formulated into themes, then the researcher will bring it back to the participants to find out their accuracy. Peer debriefing was conducted by colleagues to review and ask critical questions about this research. Colleagues have at least a doctoral degree. The results show that planning for the completion of student assignments begins with (1) setting goals and planning strategies with (a) planning time for completing assignments; (b) Cooperation with peers online and off-line; and (c) planning for technical issues; (2) Regularly calculate their scores every week after being given feedback on the results of the lecturer's assessment, and save the feedback results from completed assignments; (3) using assignment assessment rubrics, using lecturer feedback, and grades, to measure progress in lectures; (4) the strategies they have designed and implemented have succeeded in making success in doing the task.

Keywords: self-regulated learning; blended learning; case study

How to Cite: Yanti, F., Walid, A., Habibi, H., & Thohir, M. (2021). Self-regulated in a Blended Learning: Case Study On Educational Doctoral candidates. *Prisma Sains : Jurnal Pengkajian Ilmu dan Pembelajaran Matematika dan IPA IKIP Mataram, 9*(2), 413-419. doi:https://doi.org/10.33394/j-ps.v9i2.4410

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INTRODUCTION

One of the lectures in the doctoral education program that uses blended learning is advanced statistics. The desired learning achievement is that students must master the ability to analyze research data with descriptive and inferential advanced statistics. Watt and Parker (2020) explain the benefits of studying statistics including being able to help researchers describe their findings related to various phenomena to make them easier to understand, facilitate decision making with the appropriate level of confidence, facilitate determining sample size in a population and its effects, facilitate modeling of field problems and makes it easier to make hypotheses. Learning advanced statistics has its own challenges and is not easy to understand, especially for the applied level (Romero & Ventura, 2020, Du, et al., 2000).

Students who take advanced statistics courses are given group presentation assignments and independent assignments. Group presentation assignments are carried out alternately at each meeting. Meanwhile, independent assignments are given at the end of each lecture 10 times in one semester, and must be submitted by students one day before the lecture the following week. Lecturers provide a system of reducing marks by 30% if students are late in submitting. Based on the assessment system, in completing advanced statistics lecture assignments, students must have good self-regulation. Winne and Marzouk (2019) and Jansen, et al. (2019) stated that self-regulation itself is a description of students' ability to monitor, control, and direct aspects of their cognitive and affective processes in each learning process. Self-regulation includes several cognitive aspects, including: planning, monitoring, evaluating, and reinforcing (reinforming).

Based on the results of the average time for student self-assessment, it was found that not all doctoral candidates were able to submit their independent assignments on time. There are some students who are 2-4 times late in collecting, so they experience a reduction in grades. This reduction in value ultimately affects the passing grade in advanced statistics courses. Students who collect on time can get a very satisfactory passing grade, while those who are late get a pass grade that is sufficient to satisfy.

Doctoral candidates who take advanced statistics courses come from different scientific concentrations, including Science education, Educational Technology, English Education, Mathematics Education, and Educational Administration. This scientific background also affects the implementation of advanced statistics lectures. The results of an interview with one student, obtained information that those who are exact, it will be easier to follow advanced statistics lectures than others.

According to Ririen (2019), initial knowledge partially has a significant effect on learning achievement. This shows that students who come from the exact department are easier to study statistics than those who do not. Based on these problems, a research was conducted on self-regulated in a blended learning in doctoral candidates for education at Bengkulu University in completing independent assignments in advanced statistics courses. The problem focuses on how students of the education doctoral program use self-regulated in a blended learning, namely: planning, monitoring, evaluating, and reinforcing to complete independent tasks for advanced statistics lectures through blended learning.

This study aims to investigate doctoral candidates in education using self-regulated in blended learning to complete advanced statistics lectures. The results of the study are expected to be able to provide information about effective self-regulated patterns in a blended learning to attend lectures and complete independent assignments in advanced statistics courses so that students can graduate with very satisfactory predicates.

METHOD

This research is qualitative to describe the self-regulation process of doctoral students in blended learning. Research data obtained by interview method (Tracy, 2019). Data analysis was carried out by qualitative content analysis. Validation uses two strategies, namely member checking and peer debriefing (Hayashi et al., 2019). Member checking is done after the data is formulated into themes, then the researcher brings it back to the participants to find out whether the themes are accurate or in accordance with the participants. Peer debriefing was conducted by colleagues to review and ask critical questions about this research. Colleagues at least have a doctorate.

This study used a small group of students as informants (Seal, et al., 1994). The research subjects consisted of five students of the education doctoral study program who took advanced statistics courses. Students are selected based on scientific concentration. Each scientific concentration is represented by a student. The scientific concentrations of students

selected in this study were mathematics education, educational administration, educational technology, natural science education, and English education.

Data collection techniques used interview sheets in the form of open questions to explore respondents' information freely. The researcher interviewed each of them after the advanced statistics lecture was finished. In each interview, the researcher asked the students to explain how they completed the assignments for the previous week, what strategies were used, the challenges, and what supported them. Researchers also asked students to describe their thoughts and feelings while studying online. This is to evaluate performance in lectures. All interviews were recorded and transcribed. After the advanced statistics course was completed, and grades were submitted, the course lecturer was interviewed about what he observed in each student's use of self-regulation strategies. The interviews were recorded, transcribed, and used primarily to analyze the triangulation of student interviews and observation of activeness in class discussions. The research procedure is in the Figure 1.

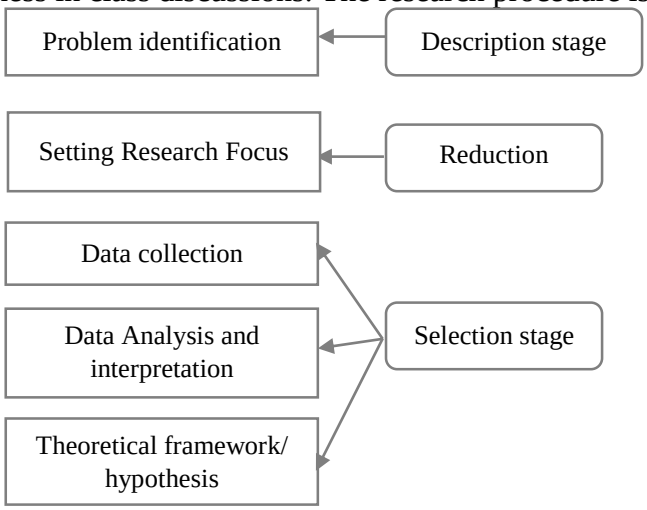

Figure 1. The Research Procedure

RESULTS AND DISCUSSION

Profile of the Lecture Process

This study aims to investigate the doctoral program students using self-regulated in a blended learning to complete independent tasks in advanced statistics lectures through blended learning. According to Hrastinski (2019) blended learning is learning by combining offline and online. In online lectures, students use the zoom application as a learning medium. Every meeting, students are asked to make group presentations on the material that has been set in the lecture contract in turns (Han and Ellis, 2019; Law, et al., 2019; Serrano, et al, 2019).

Students show several strategies that are used to be successful in doing advanced statistics lecture assignments which are carried out in a blended manner. Using Zimmerman and Schunk (2001) social cognitive framework of planning, monitoring, evaluation, and reinforcement, we summarize these strategies, and then describe each in greater detail.

Planning

Goal Setting and Strategic Planning

According to Zimmerman and Schunk (2001) SRL starts from the thinking phase which includes goal setting and strategic planning, carried out mostly on the basis of self-efficacy beliefs. In interviews and observing their learning activities, the five students mentioned the need for careful time management, task completion targets, and supportive learning resources to complete assignments. However, students convey several unique strategies that are adapted

to blended-based learning: (a) plan time for completing assignments; (b) Cooperation with peers online and off-line; and (c) planning for technical issues (Halverson and Graham, 2019; Suartama, et al., 2019).

S, E, and N reported the need to attend face-to-face lectures for each offline lecture schedule:

"…During lectures, there are more opportunities to ask questions without network barriers, and more time to discuss with lecturers after finishing studies"

Meanwhile, for the presentation of material that they did not understand, S explained:
"Offline lectures can support the deepening of material that has not been fully absorbed during online lectures".

Based on the verification of the attendance of each student, it shows that these three students enter online and offline lectures regularly. Interviews and discussion transcripts also revealed that four out of five students developed a weekly plan to complete statistical assignments, at least 4 days before the assignment collection dealline. Meanwhile, one student made a plan to complete a statistical task, one day before the deadline for submitting assignments

S explained:
"I need to make a plan for completing the task because the tasks given every week are getting heavier, sometimes they start working four days before the deadline, but they are not finished"

Most of the students allocated the first day to start working on assignments by reviewing the material in lectures, deepening the material through searching content on google then printing it and learning the steps of data processing through youtube. Then the next day they started working on the assignment. In the following days, they discussed both online and offline with their colleagues if there was a difficult task to solve.

SK reports a fairly strict routine:
"I started on Wednesday beginning by rereading all the previous material, which was related to the assignment given… Thursday I spend about twelve hours getting started on assignments. Thursday I discussed with friends offline to check the tasks that must be done. ... if the result of the discussion" is that my assignment is not answered correctly, then Friday I will fix it and then discuss it again with friends online. Saturday morning I was able to submit assignments to the link provided. Saturday is the assignment deadline"

Based on the pattern of submitting student assignments, it shows that, most students submit assignments at the last time, about 1-2 hours before the link is closed. On thursday or friday there are also students who send assignments, but, oftentimes, these students resubmit assignments as improvements before the link is closed.

In the interview, the five students mentioned the need to plan for technical problems that are inevitable in blended learning, especially when online, such as: network disturbances, difficulties in operating statistical software, and in N's case, difficulties in getting reference sources online. This student describes various planning strategies specifically designed to address this technical problem. N mentioned the need to find a location that has a good network, and start working on assignments early because he will need more time than his friends in looking for references. E and S devised a solution to this technical problem by setting the time to start working on the task earlier. As S explained:
"I had a discussion with E and exchanged understanding about advanced statistical concepts and how to operate statistical software as a tool for processing data".

Gathering teaching materials

In the performance phase of the SRL cycle, students must focus on the task and optimize their performance (Zimmerman, 2011). They do this by starting systematic activities and rearranging their teaching materials to improve learning. All the students described the strategy. These students found unique ways to organize online activities in blended learning: they took notes on the given teaching materials, underlined, and highlighted important points in the teaching materials. They also collect relevant material through sites on google. All students reported that they printed all the readings and assignments given by the lecturer. In one of her interviews, M talked about the need to do this, especially if she wants to get straight to work.

Monitoring

Zimmerman (2011) defines monitoring as a student-initiated effort to record events or outcomes. All students report monitoring and strategies. They regularly calculate their grades every week after being given feedback on the results of lecturers' assessments, and save the feedback results from completed assignments (Schunk and Zimmerman, 2011). Students reported several variations of this assignment strategy, however: students also collected reading material, studied material, started working, and discussed with friends both online and offline.

All students reported extra care in completing and submitting advanced statistics assignments. S, E, and N found it helpful to be able to submit assignments repeatedly through the link, before the link was closed. SK and M suggest prospective students who study online to confirm to the relevant lecturers that they have submitted assignments. This is done if one day they are deemed to have not submitted, they have confirmation evidence. S and E said that after submitting an assignment, they always rechecked the answers and saw if the assignment was successfully submitted. M actively participates in online and offline lectures every week, according to schedule. M reports that she is never late in submitting assignments. The results of monitoring the assignment collection link, show that M is never late, and the average score obtained every week is very satisfactory. Interviews with M show that she has collected reading material, studied material, started working, and discussed with friends both online and offline. Discussions with friends are also considered effective by M. Through that step, M was able to complete all her tasks.

Evaluating

Evaluation is done to assess goals to see progress. The five students reported that to evaluate the learning process, they used assignment assessment rubrics, the use of lecturer feedback, and grades, to measure progress in lectures. Blended lectures seem to encourage a unique evaluation strategy: using lecturer feedback to assess learning outcomes, and discussing with colleagues about lack of work assignments.

During conventional offline lectures in general, students rarely receive feedback about the results of their work. Blended-based learning can give students time to discuss with their classmates in online discussions. Several students commented on how they used the results of discussions with their friends to make judgments about the assignments they had done. The support of a varied learning environment can improve students' learning abilities after using the blended learning model (Shehla, 2015).

Reinforcing

Strengthening is done to see the causal relationship between the goals and the results obtained, in order to prepare the next strategy. SRL strategy is more effectively used in achieving better academic achievement (Suhandoko & Hsu, 2020). All students reported that setting goals was important. The five students have a goal to be able to pass the advanced

statistics course. They do not place value expectations with a “very satisfactory” grade on their goals. E said that:
"I believe that the value I will get is in accordance with my efforts towards mastering advanced statistical concepts".

Goal setting is considered important, and the need to develop learning strategies for task completion. Based on the final grades of advanced statistics lectures, the five students received grades with a grade of "very satisfactory". This means that the strategies they have designed and implemented have succeeded in making success in doing the task.

CONCLUSION

The conclusions of this study are: planning for the completion of student assignments begins with setting goals and planning strategies with (a) planning time for completing assignments; (b) Cooperation with peers online and off-line; and (c) planning for technical issues. Furthermore, by composing the teaching materials given by the lecturer to them, notes are then made, underlined, and highlighted the important points in the teaching materials. They also collect relevant material through sites on Google. All students reported that they printed all the readings and assignments given by the lecturer. Monitoring the completion of student assignments by regularly calculating their grades every week after being given feedback on the results of the lecturer's assessment, and storing the feedback results from completed assignments. Students reported several variations of this assignment strategy, however: students also collected reading material, studied material, started working, and discussed with friends both online and offline. Evaluation of task completion is carried out using assignment assessment rubrics, use of lecturer feedback, and grades, to measure progress in lectures. Blended lectures seem to encourage a unique evaluation strategy: using lecturer feedback to assess learning outcomes, and discussing with colleagues about lack of work assignments. Reinforcing in goal setting is considered important and the need to develop learning strategies for task completion. Based on the final grades of advanced statistics lectures, the five students received grades with a grade of "very satisfactory". This means that the strategies they have designed and implemented have succeeded in making success in doing the task.

RECOMMENDATION

For other researchers, other studies can be done by exploring a more varied sample, based on habits, culture, gender, and so on, to obtain more varied information.

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