Self-Regulated Learning During the Covid-19 Pandemic

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Abstract

Along with the change in learning modes during the pandemic, which was originally face-to-face directly to online learning, where teacher control is decreasing, Self-Regulated Learning is a very important variable for students to have so that students can still learn even without teacher supervision. The purpose of this study was to describe the Self-Regulated Learning of 20 students who took the Learning and Learning course in the even semester of 2020/2021 FY. The method used in this research is that after participating in online learning through WhatsApp, Google Classroom, and Google Meet, at the end of the semester students are given a Self-Regulated Learning questionnaire through Google Forms and interviews. The research data were analyzed by descriptive statistical analysis. The results of the study found that the score of Self-Regulated Learning was 88.28% from what was expected, there were 85% of students in the very good category, and 15% in the sufficient category. The highest indicator is self-control at 91.25%. While the indicator score of the lowest Self-Regulated Learning is self-confidence of 83.75%. The conclusion of this research is that students' Self-Regulated Learning is already in the very good category but has not yet reached the highest score and there are still students in the fairly good category, so that it can still be increased to close to the expected 100%.

Keywords: Self-Regulated Learning, online learning, pandemic

A. Introduction

The Corona virus Desease (Covid-19) pandemic has had many impacts on all lines of life, including the education sector, especially in learning. The government's policy not to carry out face-to-face learning has caused a change in the learning mode from face-to-face or blended learning to full online learning.

This sudden change in learning mode without planning is quite confusing for both lecturers and students. Especially for those who have never carried out blended learning. Face-to-face is prohibited but learning must be carried out. The lecturers began to use various media to continue to carry out learning. Starting from using social media or using learning applications, such as using WhatsApp as a learning medium. It was deemed inadequate, other media such as Googleclassroom, Edmodo, Zoom Meeting, Googlemeet and others were used again.

The results of Napitupulu's research, even though learning has used many media, students are still not satisfied with online learning (Napitupulu, 2020). Based on research conducted by Napitupulu, students are dissatisfied with the Pembelajaran Jarak Jauh (PJJ) method that they are currently living and also dissatisfied with the ability of lecturers to deliver material to PJJ.

Research conducted by Utami & Cahyono stated that the difficulty of learning e-learning was 75%. From these learning difficulties, the lowest achievement value by students is the implementation of interactions, assignments and learning materials in online learning 73% and the highest indicators achieved by students are technical obstacles and disabilities in online learning by 77% (Utami & Cahyono, 2020).

In addition to the use of various online learning media facilities, Self-Regulated Learning is a very important factor for students' understanding of a lecture material during this pandemic. Learning through online media causes the intensity of face to face or face to face to be limited or completely lost. Students' opportunities to confirm their understanding are limited. If students do not independently try to find ways or other learning resources to increase understanding, students will be left behind in lectures.

According to Bandura (Hendriana et al, 2017), Self-Regulated Learning is the ability to monitor one's own behavior, and is the hard work of the human personality. The Self-Regulated Learning strategy includes activities: self-evaluating, organizing and transforming, setting goals and plans, seeking information, recording and monitoring, compiling the environment, looking for own consequences, repeating and remembering, seeking social assistance, and reviewing notes..

Montalvo and Maria (Hendriana et al, 2017) suggest several characteristics of individuals who have high Self-Regulated Learning soft skills, namely: a) using cognitive strategies: repetition, elaboration, and organization; b) planning, organizing, and directing mental processes to achieve personal goals (metacognition); c) display adaptive motivational beliefs and emotions; d) controlling time and trying to complete tasks, creating a pleasant learning environment, and seeking help when faced with difficulties; e) trying to participate in controlling and regulating academic assignments, climate and class structure; f) implementing discipline strategies, avoiding internal and external disturbances, maintaining concentration, effort, and motivation while completing tasks. According to Nurzaman (Hendriana et al, 2017), indicators of Self-Regulated Learning are divided into: 1) not dependent on others; 2) self-confidence; 3) apply discipline; 4) have a sense of responsibility; 5) have their own initiative; 6) self control.

There have been many studies that reveal the Self-Regulated Learning of each student (Ambiyar et al., 2020; Firdaus et al., 2021; Handayani & Ariyanti, 2020; Hidayat et al., 2020; Makur et al., 2021; Zahro et al., 2021). Ambiyar in his research found that there was no difference in Self-Regulated Learning from 1 class which was divided into 2 groups. Firdaus et al found that the SOLE learning model could increase students' independence. Handayani & Ariyanti found that the Self-Regulated Learning of class VII was at a very good level with an index in the range of 80%-100%. Hidayat et al found that out of 579 students (SMA and SMK) and college students in Jakarta, they had low Self-Regulated Learning with the lowest components being responsibility and learning initiative, and indicated that learners were not quite ready to learn online due to study habits and technology. less supportive. Makur et al found that as many as 18.82% of students had low Self-Regulated Learning while 81.18% had high Self-Regulated Learning.

Based on the results of some of these studies, it can be seen that the picture of student Self-Regulated Learning varies greatly depending on each condition. Based on the importance of Self-Regulated Learning, it is important to know the description of student Self-Regulated Learning during the pandemic which can then be used as a basis for making decisions related to policies in learning or as a basis for choosing an appropriate learning model. The purpose of this study was to obtain a description of student Self-Regulated Learning during the pandemic.

B. Methodology

1. Research Design

This study uses a descriptive research design that is to describe a variable independently without comparing it with other variables. Student Self-Regulated Learning variables are described independently and see what indicators are high or low. After students take online learning via WA group, Googleclassroom, and Gmeet, at the end of the semester students are given a Self-Regulated Learning questionnaire.

The subject of this research is the second semester students who take the Belajar dan Pembelajaran course totaling 20 people in the Mathematics Study Program, Faculty of Teacher Training and Education (Prodi Matematika Fakultas Keguruan dan Ilmu Pendidikan Universitas Sembilanbelas November Kolaka) in the 2020/2021 academic year. Data collection in this study was carried out at the end of the second semester, on June 29, 2021.

2. Instruments

The instruments used in this study were questionnaires and interview guidelines. The questionnaire used is a questionnaire developed by Nurzaman (Hendriana et al, 2017) using a Likert scale. For positive statements, a score of 5 was given to strongly agree, a score of 4 to Agree, a score of 3 to a doubtful answer, a score of 2 to a disagreed answer, and a score of 1 to a strongly disagreed answer. On the other hand, negative statements were given a score of 1 for strongly agree, 2 for Agree, 3 for doubtful, 4 for disagree, and 5 for strongly disagree. The questionnaire consists of 25 questions with indicators: 1) does not depend on other people (4 questions); 2) self-confidence (4 items); 3) apply discipline (4 items); 4) have a sense of responsibility (5 items); 5) have their own initiative (4 items); 6) self-control (4 items). The instrument was distributed to students online via Google Form.

The interview in this study was an unstructured interview, namely an interview whose questions depended on the results of the analysis of the questionnaire instrument with the aim of digging deeper information related to student responses to independent learning during the pandemic.

3. Technique of Data Analysis

The data in this study were analyzed by descriptive statistical analysis because this study does not intend to generalize, but only presents data through tables, calculates scores, calculates percentages, and categorizes (Sugiyono, 2009).

C. Findings and Discussion

1. Findings

To see how much student Self-Regulated Learning is and what statements get the best and the lowest responses, the data on the item scores are presented as shown in Table 1.

Table 1. Score Result Data for Each Item

item	Respondent																				Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
1	5	4	5	5	5	5	5	5	5	3	5	2	3	5	5	5	3	4	4	4	87
2	5	4	4	5	5	5	5	5	5	4	5	4	4	5	3	5	5	5	5	5	93
3	5	4	4	5	2	5	5	5	5	5	5	4	4	4	4	5	5	5	4	5	90
4	1	4	4	4	3	4	3	4	5	5	4	3	1	3	4	1	5	5	3	5	71
5	5	5	5	5	4	5	4	5	5	4	4	5	5	4	5	5	5	4	5	5	94
6	2	4	4	5	4	3	5	4	3	4	4	3	4	4	4	5	3	3	4	5	77
7	4	4	5	5	2	4	5	5	5	5	4	3	4	4	5	5	4	4	4	5	86
8	2	4	4	5	3	2	4	5	5	4	4	5	5	4	3	3	4	2	5	5	78
9	5	4	4	5	2	4	4	5	5	4	4	3	3	5	4	5	4	4	4	5	83
10	4	4	4	5	4	5	5	4	5	4	5	4	5	5	5	4	5	5	4	5	91
11	5	5	5	5	4	5	5	5	5	4	4	4	4	5	4	5	5	5	5	5	94
12	5	5	5	5	5	5	5	5	5	5	5	1	5	5	5	5	5	5	5	5	96
13	5	4	4	5	4	4	5	5	5	4	5	3	4	5	5	5	5	5	5	5	92
14	5	4	4	5	3	4	5	5	5	3	4	2	4	4	4	4	4	4	4	5	82
15	5	5	5	5	4	4	5	4	5	4	5	5	5	5	4	5	5	5	5	5	95

16	5	5	5	5	4	3	4	5	5	4	5	3	5	4	3	5	4	5	4	5	88
17	5	5	4	5	4	5	4	5	5	4	5	3	4	5	4	5	5	4	5	5	91
18	5	4	4	5	4	5	4	5	5	5	5	3	5	5	5	5	5	4	4	5	92
19	5	5	5	5	4	5	5	5	5	5	5	3	5	5	5	5	5	4	4	5	95
20	5	4	4	5	5	3	4	4	3	3	4	2	4	4	3	5	4	4	4	5	79
21	2	5	4	5	4	5	5	5	5	4	4	3	4	5	5	5	3	5	5	5	88
22	5	5	5	5	5	5	5	5	5	4	5	4	5	5	4	5	5	5	5	5	97
23	5	5	5	5	5	5	5	5	5	4	3	4	5	5	5	5	5	5	5	5	96
24	2	4	4	5	4	5	4	5	5	4	4	3	4	4	4	5	3	3	4	5	81
25	5	5	5	5	5	5	3	5	5	5	4	3	4	5	4	4	5	4	5	5	91

Total Score Gain	2207
Total Score Ideal	2500
Self-Regulated Learning Percentage	88,28%

Based on Table 1, it can be seen that the value of Self-Regulated Learning is 88.28% from the expected (expected result is 100%). In addition, it can be seen that the best independence statement score is item number 22 with a value of 97, namely a statement about the belief that learning activities carried out will have an impact on oneself which is a statement of self-control indicators. There is also the lowest statement score, item number 4 with a value of 71, which is a statement about improving learning achievement due to the encouragement of others which is a statement of indicators not depending on others.

To see which indicators are the best and the lowest, the results of the calculation of the Self-Regulated Learning questionnaire scores for each indicator are presented in Table 2 as follows.

Table 2. The Result of Calculation of the Self-Regulated Learning Questionnaire Score for Each Indicator

No	Indicator	Scor	Ideal Score	Average	Percentage	% Student Response				
						1	2	3	4	5
1	Don't depend on other people (1, 2, 3, 4)	341	400	85,25	85,25	3,75	2,5	11,25	28,75	53,75
2	Confidence (5, 6, 7, 8)	335	400	83,75	83,75	0	6,25	11,25	40	42,5
3	Apply discipline (9, 10, 11, 12,)	364	400	91	91	1,25	1,25	2,5	31,25	63,75
4	Have a sense of responsibility (13, 14, 15, 16, 17)	448	500	89,6	89,6	0	1	7	35	57
5	Have own initiative (18, 19, 20, 21)	354	400	88,5	88,5	0	2,5	10	30	57,5
6	Self control (22, 23, 24, 25)	365	400	91,25	91,25	0	1,25	7,5	25	66,25
	Total	2207	2500							
	Percent Self-Regulated Learning	88,28 %								

Based on Table 2, the results of the calculation of each indicator of Self-Regulated Learning, it was found that the indicator score did not depend on others by 85.25%, self-confidence 83.75 %, Applying discipline by 91%, Having a sense of responsibility by 89.6%, Having self-initiative by 89.6%, self-control by 91.25% than expected. Thus, the highest indicator of Self-Regulated Learning is self-control of 91.25%. While the indicator score of the lowest Self-Regulated Learning is self-confidence of 83.75%.

To find out the description of the Self-Regulated Learning of each respondent, the student's Self-Regulated Learning score will be consulted with the category criteria score with 5 criteria. The lowest score is 25x1=25 and the highest score is 25x5=125. The category score intervals are presented in Table 3 as follows.

Table 3. Category Criteria Score

No	Indeks	Description
1	$25 \leq x < 45$	not very good
2	$45 \leq x < 65$	not good
3	$65 \leq x < 85$	quite good
4	$85 \leq x < 105$	Good
5	$105 \leq x < 125$	Very good

Based on Table 3, Table 4 was compiled so that the Self-Regulated Learning category of each student was obtained as shown in Table 4 below.

Table 4. Category of Independent Learning for Each Student

Res	Total Score	Percentage	Index	Description
1	107	85,6	$105 \leq x < 125$	Very good
2	111	88,8	$105 \leq x < 125$	Very good
3	111	88,8	$105 \leq x < 125$	Very good
4	124	99,2	$105 \leq x < 125$	Very good
5	98	78,4	$65 \leq x < 85$	quite good
6	110	88	$105 \leq x < 125$	Very good
7	113	90,4	$105 \leq x < 125$	Very good
8	120	96	$105 \leq x < 125$	Very good
9	121	96,8	$105 \leq x < 125$	Very good
10	104	83,2	$65 \leq x < 85$	quite good
11	111	88,8	$105 \leq x < 125$	Very good
12	82	65,6	$65 \leq x < 85$	quite good
13	105	84	$105 \leq x < 125$	Very good
14	114	91,2	$105 \leq x < 125$	Very good
15	106	84,8	$105 \leq x < 125$	Very good
16	116	92,8	$105 \leq x < 125$	Very good
17	111	88,8	$105 \leq x < 125$	Very good
18	108	86,4	$105 \leq x < 125$	Very good
19	111	88,8	$105 \leq x < 125$	Very good
20	124	99,2	$105 \leq x < 125$	Very good

Based on Table 4, it can be seen that from 20 students there are 17 students (85%) whose Self-Regulated Learning is in the very good category and 3 students (15%) in the quite good category.

2. Discussion

The results found in this study are different from the research conducted by Hidayat et al which found that out of 579 students (SMA and SMK) and students in Jakarta, they had low Self-Regulated Learning and indicated that students were not quite ready to learn online due to their study habits. and unsupported technology. This can happen because this research was conducted at the beginning of the pandemic period, namely from May to June 2020, where students have not been able to adapt to online learning. In this study, the lowest component was self-confidence, while in Hidayat et al's research the lowest component was responsibility and learning initiative. It really depends on each individual person.

The results found in this study are the value of Self-Regulated Learning of 88.28% from the expected (expected result is 100%). This is due to the learning environment being online learning which has been running for approximately 1 year, causing students to adapt in overcoming online learning difficulties. This is in line with Hamilton & Joy's (2015) statement that personal factors, behavior, and environmental conditions change during learning and must be monitored. Such self-monitoring can lead to additional changes in student strategies, cognition, influence, and behavior that are components of independent learning.

The research sample used will also greatly affect the results of independent learning. The independence of learning in students is also of course higher than that of middle school age students. According to Hamilton & Joy (2015), students become more proficient self-regulators as a function of cognitive development and learning. This is in line with Meece's statement

(Hamilton & Joy, 2015) who noted that younger children equate learning with rereading material, while older students use notes and underlines more.

In addition, during Belajar dan Pembelajaran, students are directed to independently find materials whose themes have been determined. Then on a predetermined schedule, students will present their findings. This learning model will make students build their Self-Regulated Learning. This is in line with Hamilton & Joy's (2015) statement that improvements in independent learning involve cognitive development and learning. As children age, they are better able to cognitively engage in self-regulatory activities such as planning, goal setting, monitoring understanding, evaluating progress, and adjusting strategies as needed. But teaching is also important because students can learn to be better self-regulators.

Self-regulated learning should be taught in conjunction with academic subjects and not in isolation. Students benefit from seeing how they can use what they learn. Many self-regulation strategies are general and can be applied to different content, but their implementation will usually vary depending on the content area (Hamilton & Joy, 2015). Therefore, self-regulated learning must still be applied to each different subject/course. This is because each subject/course has a different purpose and strategy in studying it.

Although at a lower age level, a study conducted by Handayani & Ariyanti found that the Self-Regulated Learning of class VII was at a very good level with an index in the range of 80%-100%. Unfortunately, Handayani & Ariyanti's research did not discuss the findings.

This is most likely due to the fact that teachers have taught self-regulatory learning in learning as proposed by Schunk and Ertmer Hamilton & Joy's (2015), that many educational studies show that children, adolescents, and adults can be taught independent learning skills, which use these skills. these enhance learning, and those skills can sustain themselves over time and generalize to new learning settings.

In this study, the lowest component is self-confidence, but the statement that gets the lowest score of 71 is not a statement from the self-confidence indicator, but is a statement from other indicators, namely the indicator of not depending on others. While the highest statement, namely 97 in item number 22, is an indicator of self-control which is indeed an indicator that gets the highest response.

Viewed from the side of students who were consulted with 5 categories, this study found that there were 85% of students in the category of very good Self-Regulated Learning and 15% in the fairly good category. Not much different from the results found by Makur et al who categorize them into 2 categories, finding that as many as 18.82% of students have low Self-Regulated Learning while 81.18% have high independence..

D. Conclusion

Along with the change in learning modes during the pandemic, which was originally face-to-face directly to online learning, where teacher control is decreasing, learning independence is a very important variable for students to have so that students can still learn even without teacher supervision. Because of the importance of these variables, it is necessary to conduct research to obtain an overview of student learning independence.

After giving a learning independence questionnaire to students who took the Learning and Learning course on June 29, 2021, a learning independence score of 88.28% was obtained from the expected (expected result was 100%). There are 85% of students in the very good category and 15% in the moderate category.

Based on the results obtained, learning independence can still be improved, so that further research with a focus on increasing learning independence needs to be done. Considering that the subjects in this study were only students who took Learning and Learning courses, it is also necessary to conduct similar research in other subjects.

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