Revealing the Students’ Self-Regulated Learning Levels During the Covid-19 Outbreak: a Single Case Study in Jakarta

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Abstract
This study aims to identify the level, describe and analyze the self-regulated learning of class XI students during the COVID-19 pandemic at SMAN 63 Jakarta. The research method used quantitative descriptive with a survey design. The technique of collecting data through the MSLQ Likert learning strategies subscales by Pintrich 1991 with a total technic sampling. The results showed that the self-regulated learning conducted by XI students during the covid-19 pandemic is in the moderate category with an empirical mean of 54.29 and a standard deviation of 6.933. The conclusion of this research is all of the students in class XI who tend to have the ability to manage resource management strategies are in the medium category. All indicators of resource management strategy were time management and learning environment (52.7%), effort regulation (67.3%), peer learning (62.4%), and help seeking (53.7%).

Keywords
Learning resources; Self-management; Self-regulated learning, Covid-19 outbreak
INTRODUCTION

At the beginning of 2020, the world was in full swing with the outbreak of the coronavirus (Covid-19). This virus has infected almost all countries in the world. Coronavirus Disease (Covid-19) is a new type of disease that has never been identified by humans before (Lee, 2020). This virus causes various symptoms ranging from mild symptoms such as runny nose, cough and if the symptoms refer to getting more severe it will cause death (Yunus & Rezki, 2020). The impact of the outbreak of this virus requires workers from all sectors to be carried out indirectly or Work from Home.

The Work from Home policy is also felt in the education sector. The Indonesian Ministry of Education issued a new regulation regarding distance learning policy through the circular letter number 4 of 2020 which contains one of the policies to enforce the learning process from home through distance learning or online learning. The government issued this policy to minimize the spread of COVID-19 cases in Indonesia. This rule applies from early childhood to university level. Distance learning activities are a form of learning whose implementation occurs indirectly among teachers and students by utilizing learning media according to their needs so that learning objectives can be achieved (Simanjuntak & Kismartini, 2020). The distance learning process should think about various preparations. Prepare various facilities and infrastructure that can help students continue to carry out activity study from home. In these conditions, teachers must change and prepare strategies for learning methods. As said by Sari et al. (2021) that the use of appropriate teaching method strategies will affect student activity in learning.

The success of online learning must pay attention to various factors, one important factor is students. Dabbagh (2007) identify students in online learning as follows. First, the spirit of learning. Strong and high enthusiasm for learning in students when online learning takes place for success during independent learning. Second, literacy of technology, students’ understanding of the use of technological tools that support online learning activities. Third, the ability to communicate interpersonally. Students must have the ability to communicate interpersonally in order to build relationships and communication between other students. Fourth, collaborate. Students must be able to adapt interactions and collaborate between teachers and other students because in online or distance learning the needs and success of learning adapt to the abilities of each student, and Skills for independent study. Independent learning skills are needed by students because in the learning process, students independently determine the success of learning. When learning independently, motivation is needed to support the success of online learning.

Independent learning or self-regulated learning is of course within the scope of learning. The relationship between self-regulated learning and educational technology is in the learning process. Educational technology helps in preparing, evaluating curriculum, reviewing, determining both the strategy and application of media supporting the learning process according to scientific, logical, systematic and rational (Kristanto, 2016). The curriculum in Indonesia is currently implementing the independent learning curriculum in the 202/2022 academic year designed to be more simplified, one of which is the assessment carried out directly at continuous assessment, which previously in the 2013 curriculum used an authentic assessment (Sugiri & Priatmoko, 2020). The 2013 curriculum is designed to strengthen the overall competence of students in terms of knowledge, skills, and attitudes. The components of each subject will contain knowledge, attitudes and skills competencies (Palupi, 2018).

Before the 2013 curriculum was implemented, the previous curriculum concept focused on teachers who were more active in learning and this concept changed to the student-centered 2013 curriculum. The 2013 curriculum requires students to actively learn individually, changing the views of students who previously only received the knowledge provided by the teacher to become independent learning needs (Wangid, 2018). In a student-centred learning process, students get the opportunity to build their own knowledge according to their respective characteristics so that they gain a deep understanding and ultimately can improve the quality of students so that the learning objectives that have been prepared can be achieved perfectly (Wangid, 2018).

Online learning during the Covid-19 pandemic requires students to be the main center to increase motivation and enthusiasm for learning, for example based on such research conducted by Megawanti et al. (2020) that students have difficulty concentrating on learning when learning from home due to different environmental
conditions from the classroom atmosphere. The condition of the home environment experienced by most students is considered less conducive, so it is difficult to understand the subject matter. Based on initial observations and interviews with one of the key informants that also acts as an Indonesian language teacher at SMAN 63 Jakarta said that during online learning not all students are involved in learning activities, this proves that students' motivation and interest in learning are lost.

Learning patterns that change suddenly cause students to experience a decrease in learning motivation, such as only entering online classes depending on the subject, sleeping during learning, being late in collecting assignments, and so on (Widiatmoko & Herlina, 2023). The learning process with students as the center will run well if students carry out activities that support successful learning such as discussing with peers, noting important things, being able to work together in groups, able to think critically, completing assignments well, and so on (Sofia, 2016).

Student-centered learning requires various appropriate strategies so that learning can produce effective and meaningful learning outcomes (Sutikno, 2016). Less than optimal learning strategies from the start will affect the decline in learning achievement (Wardana et al., 2019). The success of learning can be seen from the independence of learning that students have. Students who are able to take responsibility for assignments without burdening others are students who have good learning independence (Khumaerah, 2015). One of the factors that can influence students' academic achievement is self-regulated learning. In self-regulated learning, the learning process is controlled by the students themselves. Students should have the ability and effort to define their learning goals, able to direct, control themselves and monitor their cognition (Reni et al., 2017)

Previous research that has been done by Cheng (2011), he proves the effectiveness of the use of self-regulated learning in direct learning is very influential on the success of the academic achievement of students. Self-regulated learning in learning assist students in determining learning objectives. Every student has different strategies and abilities for that a teacher should help students achieve learning goals, direct them to face challenges and help students who have difficulty achieving their learning goals by setting strategies and encouraging them to take new steps to realize learning goals, they.

Research conducted by Cleary (2008) suggests that students with upper secondary level need strategies in learning that support students to be more active and build reflective thinking skills to achieve goals and achieve academic success. Academic grades in high school students are very important because they are related to the continuation of students to pursue vocational and post-secondary education. The implementation of self-regulated learning provides promising results to improve the function of academic values and student regulation at the secondary school level. Moreover, another research by Jayanti et al. (2020) assumes that students who have the ability to learn independently can control cognitive, affective, and psychomotor aspects to achieve planned activities in order to stay in line with learning objectives and gain knowledge during the covid-19 pandemic.

Such research conducted by Hidayat et al. (2020) also shows the difference that students have a rather low level of self-regulated learning during the covid-19 pandemic because students are not used to doing online learning. Limited space and time as well as unsupported internet connections cause students to lose motivation and intention to learn. Everyone has different abilities to achieve their learning goals. The high level of learning independence possessed by students pays more attention to the targets that have been set, while the low learning independence possessed by students tends not to prioritize targets and are more flexible (Sutisna, 2017).

Based on the preliminary identification students at class XI showed a good self-regulated learning strategy. Another reason researchers choose high school students as research subjects is because they are at their development process of being an adolescence, they easily experience changes both in terms of psychology and begin to determine their identity in achieving their goals, one of which is through education (Cahyani et al., 2020). In class XI, it is necessary to have an awareness of independent learning because currently learning is done online and students are required to be active in the learning process. Therefore, this research is important because researchers are trying to find out what kind of self-regulated learning is in student learning during the Covid-19 pandemic. This is different from previous research because the researchers not only reveal the high and low ability of self-reg-
ulated learning in students, but also reveal various learning strategies used by students during the online learning period at the high school.

METHOD

The quantitative research method used by the researcher is survey research. According to Sugiyono (2018), survey research method is a quantitative research method carried out on large and small populations, but the data studied are data from samples taken from the population, so that relative events are found, distribution, and the relationships between sociological and psychological variables. This study uses quantitative research methods. Descriptive research can also be interpreted as people’s understanding of something (Purwanto, 2016). Presentation of descriptive research is usually in the form of frequency and percentage, cross tabulation, various forms of graphs and charts on categorical data.

This research was conducted during April 20-29, 2021, at SMAN 63 Jakarta. In determining the characteristics of the research subjects, they are class XI students, both majoring in science and social studies, attending SMAN 63 Jakarta, conducting online learning during the covid-19 pandemic.

According to Purwanto (2016) said that the population is a group from the results of research conducted and will be generalized. The total population in class XI SMAN 63 Jakarta is 205 subjects. Sugiyono (2018) said that the sample is part and the number of characteristics possessed by the population. Sugiyono (2018) said that the sample is part and the number of characteristics possessed by the population. What has been learned from the sample, the conclusions will be applicable to the population. Researchers used the entire population of 205 students from a total of six classes with two majors of specialization, namely 3 (three) science and 3 (three) social studies as research samples. Research that uses a sample of the entire population is a census sample technique or total sampling. Total sampling technique is a sampling technique if the researcher uses the entire population to be used as a research sample (Sugiyono, 2018).

The instrument used in this study is the adoption scale of The Motivated Strategies for Learning Questionnaire (Pintrich et al., 1991) the learning strategies subscales section with

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<th>Score Interval</th>
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<tr>
<td>(μ+1.0σ)≤X</td>
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<td>(μ-1.0σ)≤X&lt;(μ+1.0σ)</td>
<td>Currently</td>
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<td>X&lt;(μ-1.0σσ)</td>
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Likert five categories, there are Never (N), Rarely (R), Sometimes (S), Often (O), Every Time (ET) which have been translated into instrument according to the purpose of this study. The criteria used in this study used categorization based on the normal distribution. According to Azwar (2012) the classification of subjects into three categorizations as follows.

RESULT AND DISCUSSION

This section will be divided into two sub-sections. First, it will elucidate the descriptive results of the research, and second will be the discussion of the results.

A. Descriptive Result

The results of the research data collection are described through descriptive statistical analysis. Azwar (2012) states that descriptive analysis aims to provide a description of the research subject based on variable data obtained from the group of subjects studied. Descriptive statistical analysis is used to analyze data by describing or describing the data collected as they are without intending to make conclusions that apply to the public or generalizations (Sugiyono, 2018).

The results showed that the description of self-regulated learning of class XI students during the covid pandemic at SMAN 63 Jakarta with a subject of 205 people was in the medium category with a percentage of 80.98% with the empirical mean obtains a value of 151.42 which when put into the theoretical mean, it is in the medium category, namely the range 107 X < 169.

Based on learning strategies subscales divided into two dimensions, namely cognitive and metacognitive and resource management strategies. In the high category there are 37 people with a percentage of 17.5% and in the low category there are 5 people with a percentage of 2.5%. The empirical mean on the cognitive and metacognitive dimensions obtains a value of 97.13 which, when placed in the theoretical mean, is in the medium category with a percent-
By dimension resource management strategies, in the high category and low category there is no number of respondents. The empirical mean on the dimensions of resource management strategies obtained a value of 54.29 which, when placed in the theoretical mean size, is in the medium category with a percentage of 100%, which is the range 37 X < 59 presented in the table below.

Based on descriptive analysis, the dimension of resource management strategies shows that class XI students tend to have the ability to manage various resources to help the learning process. The indicators contained in the dimensions of resource management strategies are time and management environment, effort regulation, peer learning, and help seeking.

The results of descriptive analysis on time and study management environment indicators are in the high category of 47.3% with a total of 97 respondents. Meanwhile, for the medium category, it was 52.7% with a total of 124 respondents. In the low category there is no number of respondents. The empirical mean on the time and study environment management indicator gets a value of 25.24 which, when placed in the size of the theoretical mean, is in the medium category, namely the range 16 X < 26 presented in the table below as follows.

The results of the descriptive analysis on the effort regulation indicators that are in the high category by 31.7% with a total of 65 respondents. Meanwhile, for the medium category, it was 62.4% with 128 respondents. In the low category of 5.9% with a total of 12 respondents. The empirical mean on the peer learning indicator gets a value of 12.96 which, when placed in the size of the theoretical mean, is in the medium category.

Table 2 Overview of self-regulated learning based on the MSLQ scale

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Table 3 Overview of descriptive analysis of cognitive and metacognitive dimensions

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Table 4 Overview of dimensional descriptive analysis resource management strategies

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which is the range $X < 15$ presented in the table below as follows.

The results of the descriptive analysis on the help seeking indicator which are in the high category are 39% with a total of 80 respondents. Meanwhile, for the medium category, it was 53.7% with a total of 110 respondents. In the low category of 7.3% with a total of 11 respondents. The empirical mean on the help seeking indicator gets a value of 6.24 which when placed in the theoretical mean size, it is in the medium category, which is a range of $5X < 7$.

### B. Discussion

The area of educational technology plays an important role in this research. The design area is the first area or domain in educational technology that includes the application of various theories, principles, and procedures in carrying out program preparation or designing a learning activity carried out systematically (Warsita, 2013). According to Seels and Richey (as has been cited in Warsita, 2013) the design area in educational technology includes four scopes of theory and practice, namely (1) learning system design, (2) message design, (3) learning strategies, (4) student characteristics. The design area has the goal of creating strategies and products, for example products in the design area are curriculum, syllabus, lesson plans, modules and so on (Pambudi et al., 2017). Based on the scope of the educational technology design area, in the learning strategy section and student characteristics affect the learning process. Learning strategies include situations and learning components which in their application pay attention to the situation, material, or type of learning carried out (Warsita, 2013). Characteristics of students include backgrounds that include social, psychological, and physical aspects of students. Each student has different characteristics and abilities (Pambudi et al., 2017). In the learning process, of course, students will form learning strategies according to their respective characteristics in order to achieve maximum learning goals.

The corona pandemic or commonly refer-
The pandemic that occurred resulted in online learning activities being carried out forcibly, so that many students experienced an unstable emotional state and it would be difficult to focus on learning activities. Carter et al. (2020) and Cahyani et al. (2020) both explained that class XI students of SMAN 63 Jakarta were in the medium category level with a percentage of 52.7%. Studies conducted by Dewi et al. (2020) revealed that the ability of self-regulated learning is at a moderate level, students only carry out minimal self-regulated learning strategies to pass the course.

Similar to the results of research conducted by Mendoza-Diaz et al. (2020) shows the results that academic achievement increases when online learning is only in certain subjects. Van Alten et al. (2021) revealed that the ability of self-regulated learning is at a moderate level, students only carry out minimal self-regulated learning strategies to pass the course.

The ability of self-regulated learning strategies which are relatively stable because students of class XI SMAN 63 Jakarta are already able to predict the level of achievement based on expected performance or students only carry out these strategies for certain subjects. Similar to the results of research conducted by Mendoza-Diaz et al. (2020) shows the results that academic achievement increases when online learning is only in certain subjects. Van Alten et al. (2021) revealed that the ability of self-regulated learning is at a moderate level, students only carry out minimal self-regulated learning strategies to pass the course.

Based on the results of data collection that have been carried out illustrate that class XI students of SMAN 63 Jakarta tend to have the ability to self-regulated learning strategies, as can be seen from the dimensions of resource management strategies. Based on the MSLQ scale, the dimensions of resource management strategies have 4 indicators, namely, time and study environment, effort regulation, peer learning, and help seeking with a medium level category with a percentage of 100% in terms of the ability of self-regulated learning strategies that are quite good.

Based on the first indicator, namely time and study environment or resource management, according to Zimmerman & Risemberg (1997) managing study time reminds that students are aware of the time limit and length of time needed to complete assignments and prioritize lesson assignments. The results of the study based on time and study environment indicators explained that class XI students of SMAN 63 Jakarta were in the medium category level with a percentage of 52.7%.

Learning strategies are defined by choosing conducive environmental conditions and effectively scheduling, planning, and managing study time. A conducive learning environment can be defined as a learning environment that is free from auditory, visual, and other disturbances. Based on items number 32, 34, 36 with the calculated number stating that class XI students of SMAN 63 Jakarta are able to choose and con-
tition a conducive learning place so that they can concentrate well in completing assignments, and students state that they arrange and follow a study schedule every time the week. The application of time management strategies allows students to complete their study assignments effectively and efficiently (El-Adl & Alkharusi, 2020).

Previous research conducted by Vaezi et al. (2018) regarding the relationship between resource management strategies and academic achievement, explains that the management of resources that support learning activities is one of the most effective strategies to achieve learning success. The importance of one of these strategies is used to provide the difference between students who are successful and those who are not. Other findings by Naujoks et al. (2021) provides a difference that the ability of students to manage resources that support learning assumes that online learning due to the Covid-19 pandemic requires more time to solve problems in learning and students are less able to apply the strategies they have in the new online learning environment.

The second indicator is regulatory efforts or effort regulation Pintrich & Schrauben (in Taylor, 2012) defines it as the effort made by students to complete the task by paying attention to the usefulness and importance of the lesson. This is reflected in self-regulation, according to opinion Zimmerman (2002) which explains that self-regulation is a process of generating strategies, feelings and actions, an effort to plan and adapt continuously to achieve the set goals can be met. The results of the study found that this indicator was at the level of the medium category with a percentage of 67.3% which could mean that class XI students of SMAN 63 Jakarta already had the ability to try their best to complete the task even though the subject was difficult. Based on items number 41 and 43 in the calculated effort regulation indicator, it is stated that students in learning activities and learning independently have an effort to keep learning the material even though it feels difficult and boring.

In line with the results of research conducted by Neroni et al. (2019) conveyed that time management and regulatory effort were positive predictors of academic performance, the results showed that students who were able to manage time and regulatory effort well received higher academic scores. Regulatory efforts are the ability of a student's strategy to have perseverance in facing academic difficulties and challenges that can help students to achieve good learning goals. Students who are diligent in studying difficult subjects and exploring different ways to complete the coursework can help students to better deal with setbacks and failures in online learning (Anthonysamy et al., 2020).

According to Pintrich et al. (1991) peer learning or peer tutoring has a positive impact on academic achievement. Learning strategies by discussing with peers help students to classify subject matter and broaden insights that may not be obtained by themselves. Peer learning is the third indicator of the dimension of resource management strategies, with a description of the results according to the MSLQ scale in the medium category with a percentage of 62.4% in the sense that class XI SMAN 63 Jakarta students are good enough to apply strategies that rely on peers to improve academic performance results better during online learning.

This is in line with research conducted by Lim et al. (2020) stated that the peer tutoring strategy or peer learning is one of the important strategies to improve students' self-regulatory behavior in online learning, this behavior is able to develop stronger friendships, can set good strategies to face new challenges in the learning process and set goals for achieve better academic grades. Such research conducted by Lopez et al. (2016) regarding the application of peer tutoring methods in improving learning outcomes that the application of these strategies there is an increase in cognitive learning outcomes of class XI students.

The last indicator of the resource management strategies dimension is help seeking. In this regard, Pintrich et al. (1991) defines it as a strategy by seeking additional assistance that supports learning in the form of media, teachers or peer tutors who if they have the competence to achieve learning objectives well. The description of the results on the help seeking indicator used by class XI students of SMAN 63 Jakarta is in the medium category with a percentage of 53.7% in the sense that students seek support that supports the learning process to improve self-regulation in achieving learning goals. Based on item numbers 48 and 49 in this indicator, it is stated that students in student learning activities are more likely to ask for help from friends than teachers in completing assignments or studying subject matter again if there are still things that are not understood.
The results of research that have been carried out by researchers are in line with research conducted by Mahasneh et al. (2012) revealed that students doing help seeking strategies with online learning mostly avoid seeking help, and if they need something important for their needs they will immediately look for peers who can help to achieve their learning goals. The results of other research conducted by Harwood & Koyama (2020) shows a difference with research that has been done by researchers that during the Covid-19 pandemic students who behaved in seeking adaptive help during online learning could develop a stronger sense of learning independence and more often prepare supportive strategies to achieve learning goals. The self-regulated learning strategy carried out by each student in various countries certainly has differences. However, the difference in self-regulated learning strategies is not a problem if the strategies used are able to improve student learning outcomes in online learning during the Covid-19 pandemic.

**CONCLUSION**

Based on the description of the research results above, it can be concluded that class XI students have carried out self-regulated learning strategies in online learning during the Covid-19 pandemic as an effort to improve student learning outcomes. Based on the results of the study, it was concluded that the description of self-regulated learning by class XI students of SMAN 63 Jakarta is resource management strategies in which students prefer to use strategies by managing study time and conditioning the environment, making more efforts to be able to maximize the learning objectives to be achieved, as well as making friends, peers as one of the supporters to discuss in understanding online learning materials during the covid-19 pandemic.

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