



The Self-Regulated Learning in Covid 19: Social Cognitive Theory

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Abstract: Self-regulated learning is one illustration of the development of students' character, where this character is absolute for students. Based on this, researchers are interested in the condition of learning independence and the factors that influence it (peers, learning motivation, and self-efficacy). The approach used in this research is quantitative. The data collection method used is the explanatory research method (questionnaire). The questionnaire consists of 47 statements and each statement has 4 choices. All statements in the questionnaire are valid and reliable to test (CFA). This research used a simple random sampling technique with SMM analysis with 120 respondents. The results show that peers directly have a positive effect (0.0723) on learning independence, but it is not significant ($0.3965 > 0.05$). Different things can be seen in the indirect influence, namely on learning motivation, self-efficacy which shows a positive influence (m_1 of 0.0971, m_2 of 0.1783, m_1 and m_2 of 0.2444) and significance (BootLLCI and BootULCI > 0).

Keywords: self-regulated learning, peers, motivation, self-efficacy

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INTRODUCTION

The end of 2019 was the beginning of the massive changes for the entire world because almost all countries have been struggling to handle the pandemic COVID-19 disaster which was firstly detected in Wuhan, on November 17, 2019. Soon after that, more new cases of COVID-19 transmission have been increasing and continuously spreading across the entire world borders which are finally being declared as a new global health crisis. Based on the latest data and information on COVID-19, issued on December 18, 2020, there were found 74,9 million cases of infected coronavirus in the world and 1.66 million death of this virus had been reported across the world. The emergence of the COVID-19 pandemic has impacted all elements of human life from all countries, including Indonesia. Indonesia has confirmed its first coronavirus cases on March 02, 2020, and is still on-going now. On 18 December 2020, there have been 636.000 reported cases by the Indonesia and 19.248 deaths related to COVID-19 (<https://g.co/kgs/A3xB5k>).

This effort is made to maintain distance between the community, avoid activities in all forms of crowds, gatherings, and avoid gatherings involving many people, (Siahaan, 2020). This policy is carried out to minimize activities or activities in the outdoor environment to avoid interaction with other people to prevent the transmission of the covid 19 virus. With the restrictions on interaction, the Ministry of Education in Indonesia also issued a policy, namely by closing schools and replacing the Teaching and Learning Activities process by using an online system, (Siahaan, 2020).



The impact of the COVID-19 pandemic in Indonesia has also drastically brought massive changes to all parts of various fields, especially the Indonesian educational fields. The impact has caused the limitation of teaching and learning activities which was issued by the regulation of the Indonesian ministry of education. Besides, there are no offline activities at schools and universities. All the activities have been conducted virtually. This new regulation is expected to prevent coronavirus transmission to children and adolescents who are considered to be more vulnerable to Covid-19.

The online learning system has given full monitoring for students to organize their own learning from home. Therefore, each student should have an independent attitude in working at their own pace and time for their own learning at home (Lestari et al., 2020). In independent learning, the enthusiasm of students is needed when the learning process is strong or high, (Handarini & Wulandari, 2020). One of the main characteristics of online learning is the need for the ability to learn independently. The independent learning process is a student process that focuses on the learner himself. This can be interpreted that during the learning process, students will search, find and conclude what they have learned, (Handarini & Wulandari, 2020). Independent learning is a process in which students are directly involved in identifying what needs to be learned to be in control of the learning process (Kirkman in Hasanah et al., 2020).

This independence emphasizes the active role of students in setting their goals in the process of learning (Efklides & Efklides, 2011; Pintrich, 2000; Philip H Winne, 2004; Zimmerman, 2008). In this current online learning, having independence is also considered as an essential component to achieve success in online learning (Hartley & Bendixen, 2001; Lehmann et al., 2013; Wong et al., 2019).

The terms self-regulated learning can be considered as a learning process in which every individual sets her/his own learning goals which then manages the strategy and effort to achieve the settled goal by doing self-regulation, self-motivation, time management, and learning environment to get knowledge and skills needed in achieving the learning goals (Pintrich, 2000; Winne & Perry, 2000). (Votruba & Brookfield, 1987) also stated that self-regulated learning is self-awareness which is controlled by own self, and the ability to learn for achieving goals.

In conventional learning, the independent students will be able to learn effectively. Then, during the COVID-19 pandemic, the students are demanded to be more independent in learning due to the absence of teachers or lecturers in the whole process of learning just like in the traditional classroom (Lehmann et al., 2013). This situation indicates the importance of independence in learning especially in online learning as it is today.

On the other hand, learning independence is not an easy thing to do because many students think that home is a place to rest, while campus is a place to study (Lestari et al., 2020). This is a real illustration of the low level of learning independence. Apart from these thoughts, there are many real pictures regarding the low level of learning independence. one of which can be seen from the way they study at home. They prefer to play on gadgets or even sleep during online classes. This can automatically have an impact on ineffective learning and learning independence

Several researches have also showed that online learning can be failed if the students don't have self-regulated in their own learning (Fatmawati et al., 2022). This is because the students who have the self-independence will be able to realize their own supremacy and weakness on their learning. They will look for the appropriate strategies to overcome the problems in their learning activities (Olasehinde & Olatoye, 2014). (Zimmerman, 1986) also stated that independent students will be able to be active learners in the context of cognitive, motivation, and attitude in the process of learning. This is also supported by (Winters et al., 2008) which stated that independent students will be able to get the achievements during the online learning. Another research by (Broadbent & Poon, 2015) who also stated that self-

regulated learning has a positive and significant relationship to academic success in online learning.

During the online learning, self-regulated learning is very essential for students since it can motivate the students to be successful online learners and accomplish their online tasks on distance learning (Effeney et al., 2013; Purwanti et al., 2021). The same idea delivered by (Puzziferro, 2008), stating that student who are able to control themselves can have greater opportunity to attain more academic success, to learn more, and to get higher-level achievement. As a result, students need to enhance their own self-regulated learning by knowing the factors which may affect the self-regulated learning awareness and enhancement.

(Bandura, 1986) self-regulated learning is the interaction involving person, behavior, and environment. (Balapumi et al., 2016) also stated that self-regulated learning is influenced by the goals and values, self-efficacy, metacognition, experiences, family, school environment, peer groups, and learning habits. The Learning ability is also influenced by two factors, internal factors (endogenous) and external factors (exogenous). The Internal factors cover the inner sources from individuals while the external factors are the opposite of it, such as the environment (Susilowati et al., 2020). Based on those arguments, it can be concluded that personal factors and environment are the factors that can stimulate the awareness and the growth of students' self-regulated learning.

One of the environmental factors that influence self-regulated learning is the peer group environment. The peer group itself has a strong influence on the growth of self-regulated learning for the students. In regards, students who are still at young or mature age tend to spend more time with their friends rather than with their family (Triani, 2012). (Balapumi et al., 2016) also stated that peer groups can influence students; motivation and strategies to have self-independency. In line with (King et al., 2017) who stated that peer groups can give a positive effect on the self-regulated learning construction at young age.

Besides the environmental factors, the personal factors which are also essential to the process of students' independence are self-efficacy and learning motivation. Self-efficacy is defined as a self-assessment about ability in organizing and practicing all expected actions to achieve successful learning and to achieve the expected academic goals (Bandura, 1986; Pajares & Schunk, 2002; Putwain et al., 2013)

Self-efficacy has an essential role in building the self-regulated learning. This is because being independent will react to the dependency of self-confidence and inner power (Uno, 2010). (Balapumi et al., 2016) also stated that self-efficacy and self-regulated learning have interchangeable relationships. (Samruayruen et al., 2013) also stated that self-efficacy can influence the awareness of self-regulated learning.

Learning motivation is also an essential factor in fostering students' self-regulated learning. Learning motivation is psychological and mental power to encourage students to be active, creative, effective, innovative, and fun learners in achieving expected learning goals (Gianistika & Nurhasanah, 2023). Learning motivation can influence the self-regulated learning. The individual along with the learning motivation will encourage the students to do and to manage their own learning activities which manifested to their self-learning awareness. (Isnawati & Samian, 2015) who conducted a study about learning motivation also resulted that the learning motivations give some contribution toward the construction of learning motivation.

Concerning the explanation above, the most basic and distinguishing thing in this research is the main focus of peer interaction, with self-efficacy and self-motivation during the Covid 19 period. Other than that, carrying out this activities certainly cannot be separated from the positive things that support the activities (Sapsağlam & Eryılmaz, 2024) (Suharta et al., 2024). This shows the up-to-datedness of how peer interaction and independent learning are viewed from learning motivation and self-efficacy during a pandemic. Therefore, researchers need to know how these factors can affect students' involvement in independent learning,

especially during the COVID-19 pandemic where all learning activities move beyond online learning at home.

METHOD

The method used in this research is the Explanatory Survey by using the Serial Multiple Mediators (SMM) analysis technique. There were 4 variables consisting of 2 types of variables, namely exogenous variables (peer environment) and endogenous variables (self-efficacy, learning motivation and self regulated learning). The data collection technique used in this research was indirect communication techniques, while the data collection tool was a questionnaire. The type of questionnaire applied was a closed questionnaire consisting of 46 statements, 11 peer variable statements, 13 self-efficacy variable statements, 12 learning motivation variable statements and 10 self regulated learning variable statements. The questionnaire was then distributed to 120 respondents. Each statement has been tested using the Confirmatory Factor Analysis (CFA) method and was declared valid and reliable (Chi-square, Sig, RMSEA, etc). In the next stage there are several assumptions that must be fulfilled including the number of samples, the assumption of outliers and the multicollinearity test that have been fulfilled so that this research can be continued to the analysis stage

FINDINGS AND DISCUSSION

Findings

Based on the research results presented in Figure 1.1, we can answer the research hypothesis as follows:

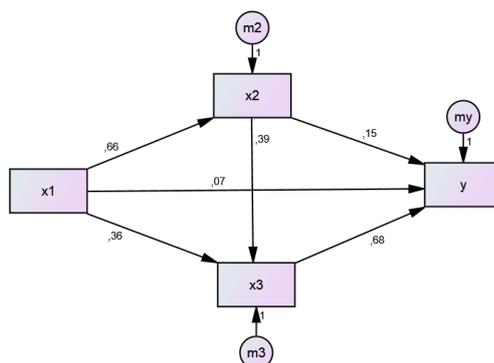


Figure 1.1 Research hypothesis

The first hypothesis in this study aims to determine the direct influence between peers (X_1) on self regulated learning (Y). The coefficient value between x_1 and y is 0.0723 with a P-value = 0.3965. This shows that basically peers have a positive effect on self regulated learning, but not significant ($0.3965 > 0.05$).

Table 1.1 Process Macro output 1

	Effect	SE	T	P	BootLLCI	BootULCI
Total Effect	0.5921	0.1085	5.4557	0.0000	0.3772	0.8070
Direct Effect	0.0723	0.0849	0.8510	0.3965	-0.0960	0.2405
Total Indirect Effect	0.5198	0.0953			0.3446	0.7381
P → S → K	0.0971	0.0476			0.0288	0.2244
P → M → K	0.1783	0.0550			0.0991	0.3165
P → S → M → K	0.2444	0.0759			0.1067	0.4065

In addition to Figure 1.1, briefly the PROCESS Macro output can be seen in Table 1.1 and Table 1.2 as follows:

Table 1.1 Process Macro output 2

Consequent												
Antecedent	M ₁ (Self-Efficacy)			M ₂ (Learning motivation)			Y (Self-Regulated Learning)					
	Coeff	SE	p	Coeff	SE	p	Coeff	SE	p			
X	0.6643	0.1275	0.0000	0.3585	0.1005	0.0005	c'	0.0723	0.0849	0.3965		
M ₁	a ₁	-	-	a ₂	0.3938	0.0654	0.0000	b ₁	0.1462	0.0601	0.0165	
M ₂	-	-	-	-	-	-	b ₂	0.6816	0.0742	0.0000		
Const	i _{M1}	18.9554	4.8316	0.0001	i _{M2}	10.1800	3.6498	0.0062	i _y	4.4681	3.0259	0.1425
			R ₂ = 0.1870			R ₂ = 0.4153			R ₂ = 0.6474			
			F(1,118) = 27.1365			F(2,117) = 41.5501			F(3,116) = 0.6474			
			p = 0.0000			p = 0.0000			p = 0.0000			

Before explaining this second hypothesis, we will explain the results of the Macro PROCESS test which is integrated with SPSS regarding the influence of peers on self-efficacy; this test shows that there is a positive and significant effect. This is evidenced by the coefficient value of 0.6643 and a significance value of 0.0000 < 0.05. Based on these results, the test continues on the second hypothesis regarding to the indirect effect of self-efficacy on the effect of parenting on self-regulated learning. This test shows that there is a positive and significant effect. This is evidenced by the coefficient value of 0.0971 and the bootstrap confidence interval value is above zero, namely (bootLLCI = 0.0288 to bootULCI = 0.2244).

Before explaining this third hypothesis section, we will explain the results of the Macro PROCESS test which is integrated with SPSS regarding to the influence of peers on learning motivation, where this test shows that there is a positive and significant effect. This is evidenced by the coefficient value of 0.3585 and a significance value of 0.0005. Based on the results of these tests, the testing continues on the third hypothesis regarding to the indirect effect of learning motivation on the influence of parenting styles on self-regulated learning, where this test shows that there is a positive and significant effect. This is evidenced by the coefficient value of 0.2444 and the bootstrap confidence interval value is above zero, namely (bootLLCI = 0.0991 to bootULCI = 0.3165).

Before explaining this fourth hypothesis, we will explain the results of the Macro PROCESS test which is integrated with SPSS regarding the effect of self-efficacy on learning motivation, where this test shows that there is a positive and significant effect. This is evidenced by the coefficient value of 0.3938 and a significance value of 0.0000. Based on the results of these tests, the testing continues on the fourth hypothesis regarding the indirect effect of self-efficacy and learning motivation on the effect of parenting on self-regulated learning, where this test shows that there is a positive and significant effect. This is evidenced by the coefficient value of 0.2444 and the bootstrap confidence interval value is above zero, namely (bootLLCI = 0.1067 to bootULCI = 0.4065).

Discussion

Based on the analysis above, it is known that there is no significant influence between peers and self-regulated learning. This is caused by various factors, one of which is the corona virus outbreak (Covid-19). This epidemic greatly affects various fields especially the education. In this field, the government has been implementing the online learning system. This policy requires students to study from home and avoid meeting directly with their friends (Kusuma & Sutapa, 2020). This has an impact on the condition of students such as low learning motivation, tends to have difficulty interacting (difficult to open), less active and inhibits

children's ability to regulate themselves (regulation) (Hutomo et al., 2020). This impact is a real illustration that low peer interaction will inhibit or not affect the independence of students.

Based on these explanations, it can be concluded that this study is different from previous studies. (Lim et al., 2020) states that peers have a positive and significant effect on self-regulated learning ($\beta = 0.528$). The same thing is also explained by (Sihotang et al., 2020) where peers have a positive and significant effect on self-regulated learning which is evidenced by the value of $t = 11.059$. This difference is greatly influenced by conditions and situations, especially the Covid 19 outbreak, where in previous studies peer interaction can be carried out every day so that peers can play their role in shaping self-regulated learning through various interactions they do, for example direct interaction, discussion, application of values, and a congruent understanding of self-regulated learning.

Second, there is a mediating effect of self-efficacy on peer influence on self-regulated learning. The results of this study explain that self-efficacy mediates the influence of peers on self-regulated learning, where peers will encourage the formation of self-efficacy through interactions between peers. This is as what has been explained by (Balapumi et al., 2016) that peer groups are figures who will form self-efficacy and learning abilities which in turn will encourage children to become more independent. In addition, self-efficacy is also one of the important factors that affect self-regulated learning. It is supported by (Zimmerman, 1989) that self-efficacy is a key variable that can affect the self-regulated learning.

Based on these explanations and explanations, it can be concluded that this study is in line with (Liorca et al., 2017) which states that peers have a positive and significant effect on self-efficacy ($\beta = 0.29$). The same thing was also explained by (Li et al., 2020) where peers have a positive and significant effect on self-efficacy, in this case, self-efficacy is divided into two groups, namely in men ($\beta = 0.34$) and in women, namely (β). = 1.63).

Third, based on the results of the study, it is concluded that there is a mediating effect of learning motivation on peer influence on self-regulated learning. This happens because interaction with peers encourages students to be more enthusiastic and more motivated to learn, as explained by (Fauzyah, 2019) that good peer group association will be able to increase students' learning motivation, generate a sense of solidarity, be able to work with others, and so on. In addition, good learning motivation will also encourage students to be more enthusiastic if they are faced with difficulties in the learning process (Sari et al., 2017). This condition is evidenced by the high desire of students to learn even though there are many obstacles starting from the application of online learning and adjusting to new things during the pandemic. So that in the end, peers can change students' motivation and strategies into encouragement to have independence within themselves (Balapumi et al., 2016). This research is in line with (Zhao & Yuan, 2019) which states that peers have a positive and significant effect on learning motivation by 0.083. In addition, (Yudha, 2020) explained the same thing, namely peers have a positive and significant effect on learning motivation ($\beta = 0.334$).

Finally, there are mediating effect of self-efficacy and motivation of peer influence on the self-regulated learning. This effect is formed because the self-efficacy and learning motivation tend to encourage someone to be more independent (Alafgani & Purwandari, 2019). In addition, according to (Schunk & Zimmerman, 2012) someone with good motivation will push himself to reach the limit and prepare himself well to face and solve the challenges that exist, so it is proper that student who has good motivation and better self-efficacy can become a more independent person. Albert Bandura's social cognitive theory proposes that human behavior is the product of the interaction between personal factors, behavioral patterns, and environmental influences. Cognitions such as outcome expectancies (beliefs about the consequences of actions) and self-efficacy (confidence in one's abilities) play a central role in guiding behavior and modifying the environment. Individuals are not passive recipients of

environmental forces. They actively shape and are shaped by their surroundings through ongoing interpretation, choice, and adjustment of behaviors. (Barbara, 2006).

(Yusuf, 2011) also stated that self-efficacy has a positive and significant effect on learning motivation by 0.4. In other hand, (Hasyim, 2018) also found the same thing that self-efficacy has a positive and significant effect on learning motivation dividing into 3, namely motivation in the aspect of interest (0.48), motivation in the aspect of dedication (0.62) and motivation in the aspect of belief (0.52). In line with that (Mulyana et al., 2015) also stated the same results, namely self-efficacy and learning motivation had a positive and significant effect on independence where the value of t self-efficacy = 3.532 and t learning motivation = 2.767.

CONCLUSION

Based on the results and discussion of the research that has been described, there are several important points. First, peers have a positive but not significant effect on self-regulated learning. This means that increased interaction with peers does not necessarily increase the formation or increase self-regulated learning. Second, self-efficacy mediates the influence of peers on self-regulated learning, which means that increasing self-efficacy contributes to increasing peer influence on self-regulated learning. The same thing is also reflected in the motivation variable. Finally, self-efficacy and learning motivation together mediate the influence of peers on self-regulated learning. This means that increasing self-efficacy and learning motivation simultaneously contribute to increasing the influence of peers on self-regulated learning.

SUGGESTION

Based on the implications that have been described previously, the researcher describes several recommendations that can be made to increase learning independence. First, students must build good and quality relationships with peers, this can be seen from the interactions, communication, and discussions that have been built. Second, students must also be more selective in making friends with peers so that the motivation and self-efficacy that has been built can increase and develop through the problems and challenges faced by students together with their peers. Third, this research can also be the basis for other researchers to study, analyze, and develop self-regulated learning through various factors or analyses for the advancement of science.

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