DRIVERS OF SELF-REGULATED LEARNING: EXAMINING THE INFLUENCE OF MOTIVATION, SELF-EFFICACY, AND PEERS

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ABSTRACT

The quality of students can be reflected through the success of their learning. If learning is done with full independence, the success of the learning process can be achieved optimally. This study aims to examine how peers, self-efficacy, and learning motivation have an influence on self-regulated learning (SRL). This study uses quantitative methodology and data is obtained directly using a questionnaire. The population is 352 grade XI students of Public Vocational School 13 Jakarta and sample of 187 respondents, determined through proportional random sampling techniques, then data processed using the SPSS program. The findings of the analysis revealed that learning motivation has a significant partial influence on SRL, self-efficacy has a significant partial influence on SRL, and peers have a significant partial influence on SRL. Then, learning motivation, self-efficacy, and peers have a significant simultaneous influence on SRL. The findings of this study are expected to be a guide in developing learning activities for self-regulated learning, which should be able to increase learning motivation, self-efficacy, and create a supportive peer environment.
Keyword: Self-regulated learning, Learning motivation, Self-efficacy, Peers

ABSTRAK

Kualitas peserta didik dapat tercermin melalui keberhasilan belajar yang telah dilaluinya. Jika belajar dilakukan dengan penuh kemandirian maka keberhasilan proses pembelajaran mampu diraih dengan optimal. Penelitian ini mempunyai tujuan, yakni meneliti bagaimana teman sebaya, efikasi diri, dan motivasi belajar memiliki pengaruh terhadap *self-regulated learning* (SRL). Penelitian ini memanfaatkan metodologi kuantitatif dan data diperoleh secara langsung dengan menggunakan angket. Populasinya merupakan siswa kelas XI SMK Negeri 13 Jakarta yang berjumlah 352 dan sampel sejumlah 187 responden, ditetapkan melalui teknik *proportional random sampling,* selanjutnya data diolah memanfaatkan program SPSS. Temuan analisis mengungkapkan, motivasi belajar memiliki pengaruh yang signifikan secara parsial terhadap SRL, efikasi diri memiliki pengaruh yang signifikan secara parsial terhadap SRL, dan teman sebaya dengan memiliki pengaruh yang signifikan secara parsial terhadap SRL. Kemudian, motivasi belajar, efikasi diri, dan teman sebaya dengan memiliki pengaruh yang signifikan secara simultan terhadap SRL. Temuan penelitian ini diharapkan dapat menjadi panduan dalam mengembangkan kegiatan pembelajaran untuk *self-regulated learning*, yang hendaknya dapat meningkatkan motivasi belajar, efikasi diri, dan menciptakan lingkungan teman sebaya yang mendukung.
Kata kunci: Kemandirian belajar, Motivasi belajar, Efikasi diri, Teman sebaya

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INTRODUCTION

The students' quality can be reflected through the success of the learning they have gone through. If learning is done with full independence, it is possible to maximize the learning process's success. Independence itself is the ability to take the initiative, solve problems, have self-confidence, and be able to do something on their own without help from others. Individuals who have independent behavior have the desire to do everything for themselves and can solve problems faced by themselves without expecting help from other individuals (Sari et al., 2017).

However, students often lose their enthusiasm to learn when they experience challenges when learning. Students' self-regulated learning (SRL), which is still relatively low, causes students to be unable to face difficulties during the educational process they experience. Learners who exhibit inadequate self-regulated learning generally prefer instant shortcuts or tend to commit academic fraud such as copying and cheating on their friends' work to achieve goals in learning.

This is similiar with the results of the researcher's observations during the preliminary study. Based on the observations of researchers during the preliminary study at Public Vocational High Schools 13 Jakarta, there were a few students who did not reflect an independent attitude in learning. The majority of students are less enthusiastic and tend to be passive during learning, reluctant to take the initiative to learn independently, and easily lose their enthusiasm for learning when faced with a problem or obstacle. Not only that, academic violations or cheating committed by students such as copying or cheating on friends' work, and working together during exams are also often found. This finding is in line with the statement of Amin et al. (2021) that in order to get high grades, students do various methods and turn a blind eye to aspects of honesty so that similar cases are still found to occur in the student environment. This explanation leads to the conclusion that self-regulated learning is student behavior based on self-confidence and has its own efforts in solving the problems or obstacles it faces.

The factors that influence self-regulated learning according to Cobb (2003) in Kumaladewi and Setyorini (2022) are learning motivation, learning goals, and self-efficacy. Then, factors that influence self-regulated learning according to Marlinah (2017), namely internal factors (responsibility behavior, learning motivation, and self-efficacy) and external factors (peers, family, school environment, and society). Motivation for learning is one of the key components, that has contributed to the creation of independent behavior. Learning motivation provides encouragement to students in meeting their learning needs in order to be capable to fulfill the anticipated learning objectives independently without assistance from others. Students who exhibit strong motivation for learning will be encouraged to learn based on their own wants and needs (Kumaladewi and Setyorini, 2022). The findings of the studies that Santoso (2021) also Siska et al. (2022) has undertaken, demonstrate that self-regulated learning is positively impacted by learning motivation.

Learning motivation must also be accompanied by self-efficacy in learning activities. Self-efficacy is one of the personality values that greatly affects self-regulated learning. Students who have good self-efficacy can stimulate and increase independence in students because of the belief that they are able to solve the problems faced with their own abilities without help from others (Saragih and Kusnendi, 2020). The findings of the studies that Karmila and Raudhoh (2021) has undertaken, state self-efficacy contributes and has a positive influence towards students' SRL.

The level of SRL can also be driven by peers as an external factor. According to Olasehinde and Olatoye (2014) in Saragih (2020) they argue that peers who have similarities in terms of character will allow them to influence each other's behavior and beliefs. Then, another impact of the learning process with peers is the formation of self-reliance, learning

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planning and good self-adjustment of each friend member (Lim et al., 2020). This statement is reinforced by research by Paska and Laka (2020), King et al. (2018), and Saragih (2020) which prove that peers have a positive influence towards students' SRL. From the background previously described, this research aims to examine how peers, self-efficacy, and learning motivation have an influence on SRL of Public Vocational High Schools 13 Jakarta students, both partially and simultaneously.

LITERATURE REVIEW

Patras et al. (2021), argue that SRL is a learning activity that is supported by one's own abilities and responsibilities. Then, Ardiansyah (2018), argues that SRL is a study activities carried out by not relying on assistance from other people, both from friends or teachers, in order to achieve learning goals and solving the problems they face. In order to meet learning objectives, students must actively and independently develop their innate talents in order to produce the intended outcomes. This is why SRL is essential to the process of learning. This is since that students are free to select and determine the many learning methods that best suit their needs and help them reach their objectives (Nasution, 2018).

Learning motivation has a contribution to the emergence of independence in learning because learning motivation is an internal component that supports and fosters the desire to learn independently, so learning motivation is closely related to learning independence. The stronger the motivation possessed by students will increase their desire to behave independently (Marthadiningrum and Widayati, 2022). According to Fadhilah et al. (2019), the incentive that propels pupils to take action is known as learning motivation. Motivation is able to encourage students to ultimately transform into experts in certain domains of knowledge. Students' increased motivation will help them to meet their learning objectives. When students lack motivation, they get easily bored, are not enthusiastic about studying, find it difficult to focus, and are more likely to be lazy learners (Batubara and Nugroho, 2021). Research by Septiana and Sholeh (2021), Siska et al. (2022), and Laili (2021) demonstrates that SRL is positively and significantly impacted by learning motivation which means that the higher the level of learning motivation that students have in themselves, the higher the level of SRL.

Then, self-efficacy is also an internal factor that is the basis for students' beliefs to behave independently when learning. Self-efficacy or a person's conviction about the extent of he is able to perform the tasks, achieving the goals, and planning attitudes to reach the goals that have been set (Lubis, 2018). Then Efendi et al. (2020) argue that self-efficacy is a person's conviction in their capabilities to manage, perform the tasks, achieve goals, produce something, and implement actions in order to achieve certain skills. With a high level of self-efficacy can make students confident in their capacity to finish the objectives they set out to do, act independently, and be persistent when making decisions. Furthermore, self-efficacy can support students in overcoming any obstacles they may encounter while learning. Self-efficacy or self-belief will help students learn more independently. Conversely, though, students with low levels of self-efficacy are more likely to be easily discouraged and to be doubtful of their own skills and potential, which makes them more likely to cheat on tests or by duplicating the work of others. Research by Valentin and Hadi (2018), Karmila and Raudhoh (2021), and Aprilia et al. (2017) proves that SRL is positively and significantly impacted by self-efficacy, meaning that students who have higher levels of self-efficacy also have higher levels of SRL.

Peers, according to Santrock (2007) are individuals who are the same age or have the same level of maturity. Peer environments are crucial because they are the ones closest to students, especially for friends in the same class. Similar-character classmates frequently have an impact on one another's attitudes and actions. Peers as external factors that have an

important role in shaping student behavior, including in terms of learning independence. Positive relationships established among peers will encourage students to open up to each other and direct each other to learn independently. The better or more positive the peer environment is, the higher the level of SRL that students have. Research by Paska and Laka (2020), Arista et al. (2022), and Amidah (2022) proves that SRL is positively and significantly impacted by peers, which means that the better or more positive the peer environment is, the higher the level of SRL it has.

In light of the foregoing explanation, the following hypothesis is proposed: H1 = There is an influence of learning motivation towards SRL; H2 = There is an influence of self-efficacy towards SRL; H3 = There is an influence of peers towards SRL; and H4 = There is an influence of learning motivation, self-efficacy, and peers towards SRL.

METHOD

This research was conducted at Public Vocational High Schools 13 Jakarta and uses quantitative methodology. The population were grade XI, totaling 352 with a sample size of 187 respondents determined with proportional random sampling technique with data processing used the SPSS version 26. The data uses are primary data because obtained directly using a questionnaire to respondents by Google-Form, measuring variables using a Likert scale of 1-5.

The indicators used to measure self-regulated learning according to Abdullah et al. (2021) are task completion, homework assignment, preparation of learning equipment, learning on their own, concentration when studying, confidence when studying, overcoming difficulties in understanding material, and overcoming learning problems. Then, the indicators used to measure learning motivation using learning motivation indicators according to Nababan in Sonia and Medriati (2022) are high learning activities, perseverance when doing tasks, tenacity when experiencing difficulties, information from the teacher, feedback, and reinforcement. Then, the indicators used to measure self-efficacy according to Jahring et al. (2021) are belief in the ability to the level of difficulty of the task, belief in the ability to carry out tasks in various activities, the level of strength of belief in one's abilities. Furthermore, the indicators used to measure peers according to Khairinal et al. (2020) and Arista et al. (2022), are interaction or social relationships in the peer environment, peer support, student involvement in interacting, as a student's study buddy, and increasing student self-esteem. The instrument grids used to measure learning independence variables, learning motivation, self-efficacy, and peers can be viewed in Table 1.

Table 1. Instrument Grid

Variable	Indicators	Number of Item	
		Positive	**Negative**
Self-Regulated Learning (Y)	Task completion	1, 2, 3	-
	Homework assignment	4, 5	-
	Preparation of learning equipment	6, 7, 8	-
	Learning on their own	9, 10 ,11	-
	Concentration when studying	12, 13, 14	-
	Confidence when studying	15, 16	-
Self-Regulated Learning (Y)	Overcoming difficulties in understanding material	17, 18	-
	Overcoming learning problems	19	-
Learning Motivation (X1)	High learning activities	1, 2	3
	Perseverance when doing tasks	4, 5	-
	Tenacity when experiencing difficulties	6, 7	-
	Information from the teacher	8, 9	-
	Feedback	10, 11	-
	Reinforcement	12, 13	-

Variable	Indicators	Number of Item	
		Positive	Negative
Self-Efficacy (X2)	Belief in the ability to the level of difficulty of the task	1, 2, 3	4, 5
	The level of strength of belief in one's abilities	6, 7, 8	9, 10
	Belief in the ability to carry out tasks in various activities	11, 12	13
Peers (X3)	Interaction or social relationships in the peer environment	1, 2	3
	Student involvement in interacting	4, 5	-
	Peer support	6, 7	8
	As a student's study buddy	9, 10, 11	-
	Increasing student self-esteem	12, 13	-

The questionnaire used to assess the research variables was tested on 30 respondents outside the sample. The decision-making criterion for validity analysis is that if the r_{count} value $> r_{table}$ at the 5% significance level, the questionnaire items can be declared valid. Referring to the results of the instrument validity test, it was found that the valid instrument items on the variable items of self-regulated learning were 19 items, learning motivation was 13 items, self-efficacy was 13 items, and peers were 13 items, so that the questionnaire was considered to be able to measure the variables studied. Furthermore, the instrument reliability test was carried out by paying attention to the Cronbach's alpha coefficient. The Cronbach's alpha of self-regulated learning is 0.814, learning motivation is 0.826, self-efficacy is 0.857, and peers are 0.648. So, it can be concluded that entire questionnaire variables have a Cronbach's alpha > 0.60 so, it can be considered reliable and able to measure the variables studied. the data analysis techniques used include instrument tests (validity and reliability tests), analysis requirements test (normality and linearty tests), classical assumption test (multicollinearity and heteroscedasticity tests), multiple linear regression analysis, and hypothesis test (simultaneous tests, partial tests, and coefficient of determination analysis).

RESULTS AND DISCUSSION
Normality Test
In order to determine whether the data distribution is normally distributed or not, a normality test is carried out. Kolmogorov-Smirnov and Normal Probability Plot was implemented to complete the normality test in this study. Within the Kolmogorov-Smirnov normality test, the data is considered normally distributed if the significance value > 0.05. With the Normal Probability Plot, the data is considered normally distributed if the data spreads around the diagonal line and follows the diagonal direction. The results of normality test with Kolmogorov-Smirnov, the data is normally distributed because in Table 2, the Sig. value $0.200 > 0.05$. The subsequent are the results of normality test with Normal Probability Plot, the data is normally distributed because it is spread following the direction of the diagonal line and is around the diagonal line, as shown in Figure 1

Table 2. One-Sample Kolmogorov-Smirnov Test

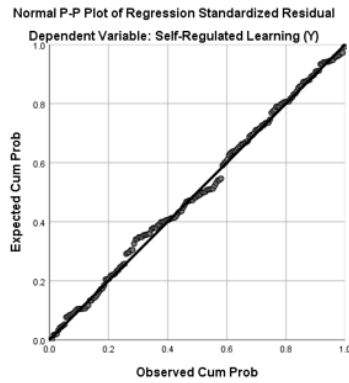|		Unstandardized Residual
N		187
Normal Parameters [a,b]	Mean	.0000000
	Std. Deviation	6.24054748
Most Extreme Differences	Absolute	.050
	Positive	.044
	Negative	-.050
Test Statistic		.050
Asym. Sig. (2-tailed)		.200[c,d]

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Figure 1. Normality Probability Plot

Linearity Test

As shown in Table 3, the deviation from linearity of Learning Motivation has sig. value $0.663 > 0.05$, it can be stated, between Learning Motivation and SRL there is a linear relationship. Then, the deviation from linearity of Self-Efficacy has sig. value $0.895 > 0.05$, it could be stated, between Self-Efficacy and SRL there is a linear relationship. Furthermore, the deviation from linearity of Peers has sig. value $0.521 > 0.05$, it can be stated, between Peers and SRL there is a linear relationship.

Table 3. Linearity Test Results

Variable	Deviation from linearity sig. value	Description
Learning Motivation	0,663	Linear
Self-Efficacy	0,895	Linear
Peers	0,521	Linear

Multicollinearity Test

The multicollinearity test is used to define whether the independent variables in a regression model have a high or perfect correlation. Tolerance value of Learning Motivation in Table 4 was $0.845 > 0.10$, Self-Efficacy was $0.849 > 0.10$, and Peers was $0.988 > 0.10$. Then, the VIF value of Learning Motivation was $1.184 < 10$, Self-Efficacy was $1.178 < 10$, and Peers was $1.012 < 10$. So, there are no symptoms of multicollinearity.

Table 4. Multicollinearity Test Results

Variable	α	VIF
Learning Motivation	0,845	1,184
Self-Efficacy	0,849	1,178
Peers	0,988	1,012

Heteroscedasticity Test

In this study, the heteroscedasticity test was used to determine whether there is variance inequality or residuals from one observation to another in a regression model. A regression model that exhibits both homoscedasticity and absence of heteroscedasticity is considered acceptable. Sig. value of Learning Motivation in Table 5 is $0.368 > 0.05$; Self-efficacy is $0.863 > 0.05$; and Peers is $0.542 > 0.05$. Then, there is no heteroscedasticity symptom.

Table 5. Glejser Heteroscedasticity Test Results

Variable	Sig.
Learning Motivation	0,368
Self-Efficacy	0,863
Peers	0,542

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Multiple Linear Regression Analysis

According to the data in Table 6, multiple linear regression equations were obtained:

$$Y = 19{,}911 + 0{,}258X1 + 0{,}596X2 + 0{,}180X3$$

The regression equation obtained has the following explanation: 1) The constant value has a positive value of 19.911. This shows that if all independent variables have a value of 0 or do not change, then the value of learning independence is 19.911 and a positive constant means that between the independent variable and the dependent variable there is a unidirectional influence; 2) The coefficient value of learning motivation is 0.258 which means that if the value increases by 1, it will influence and increase the value of learning independence by 0.258; 3) The coefficient value of self-efficacy is 0.596 which means that if the value increases by 1, it will influence and increase the value of learning independence by 0.596; 4) The coefficient value of peers is 0.180 which means that if the value increases by 1, it will influence and increase the value of learning independence by 0.180.

Table 6. Multiple Linear Regression Analysis Results

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Constant	19.911	4.973		4.004	.000
Learning Motivation	.258	.069	.230	3.748	.000
Self-Efficacy	.596	.075	.485	7.914	.000
Peers	.180	.065	.157	2.769	.006

Simultaneous Test (F Test)

The simultaneous test's goal is to ascertain if the independent factors taken as a whole significantly affect the dependent variable. Obtained a sig. value (0.000 < 0.05). F_{table} value is 2.65. As can be seen in Table 7, the F_{count} is 43.705 > F_{table} 2.65. So, the variables of learning motivation, self-efficacy, and peers simultaneously influence SRL.

Table 7. Simultaneous Test Results

Model	F_{count}	Sig.
Regression	43,705	0.000

Partial Test (T Test)

A partial test's objective is to assess the partial influence of each independent variable on the dependent variable. T_{table} with a significance level of 0.05 or 5% is 1.97301. As can be seen in Table 8: Learning motivation variable obtained a sig. value 0.000 < 0.05 and a T_{count} 3.748 > T_{table} 1.97301. So, it stated that the learning motivation has a significant influence individually or partially towards SRL. Self-Efficacy obtained a sig. value 0.000 < 0.05 and a T_{count} 7.914 > T_{table} 1.97301. So, it stated that the Self-Efficacy has a significant influence individually or partially towards SRL. Peers' variable obtained a sig. value 0.006 < 0.05 and a T_{count} 2.76 9 > T_{table} 1.97301. So, it stated that the Peers has a significant influence individually or partially towards SRL.

Table 8. Partial Test Results

Variable	T count	Sig.
Learning Motivation (X1)	3,748	0,000
Self-Efficacy (X2)	7,914	0,000
Peers (X3)	2,769	0,006

Coefficient of Determination Analysis (R^2)

The contribution of each independent variable's combined influence on the dependent variable is calculated and measured using the coefficient of determination test. As can be seen in Table 9, the R^2 (R square) value is 0.417 or 42%. This value indicates that the independent variable learning motivation, self-efficacy, and peers can explain the dependent variable SRL by 42%, the remaining 58% is influenced by other variables outside this study.

Table 9. Coefficient of Determination Analysis Test Results

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.646	.417	.408	6.291

Discussion

Referring to the calculation result previously described, there was a positive and significant influence of the learning motivation towards SRL. The learning motivation variable has a T_{count} value of 3.748 (T_{count} 3.748 > T_{table} 1.97301). Mean that learning motivation partially has a significant influence towards self-regulated learning, it can be stated that H1 is accepted. This result are commensurate with previous research by Sudarwo et al. (2018), Arista et al. (2022), Santoso (2021), Siska et al. (2022), Afandi et al. (2022), and Daulay (2021), learning motivation has a positive and significant influence towards SRL. Learning motivation as one of the influential aspects that can contribute to the realization of independent behavior in student learning. Self-regulated learning and learning motivation have a close relationship because learning motivation underlies and encourages students' desire to learn independently. Students must be responsible, take initiative, be tenacious or persistent, have strong self-confidence, and be able to grow in their level of SRL in order to advance their knowledge. Students that have a strong desire to learn will be motivated to become more autonomous learners and will be inspired to approach their studies with enthusiasm and passion. If students have high learning motivation, it will certainly increase the student's desire for independent behavior. However, if students have low or poor motivation, students will be lazy to learn, easily give up, and quickly feel bored when learning which can trigger students to cheat such as cheating.

Self-efficacy variable in the T test has a T_{count} value of 7.914. (T_{count} 7.914 > T_{table} 1.97301). Mean that self-efficacy partially has a significant influence towards SRL, it can be stated that H2 is accepted. This result are commensurate with previous research by Patras et al. (2021), Amidah (2022), Saputra et al. (2021), Valentin and Hadi (2018), Aprilia et al. (2017), Saragih and Kusnendi (2020), and Balapumi et al. (2016) self-efficacy has a significant and positive influence towards SRL. Self-efficacy is one of the personality values that has a strong influence towards SRL. Good self-efficacy can trigger and increase independence in students because of the belief in the ability to solve problems or challenges faced. This belief also encourages students to complete their tasks and responsibilities. Students are required to be able to recognize themselves, including knowing their strengths and weaknesses, so that students are able to manage and apply the potential or abilities that exist in themselves to be able to increase their independence in learning. Students that have strong self-efficacy are self-assured that they can finish assignments, behave independently, and make decisions with assertiveness. SRL will increase when students have stronger self-confidence. However, if their confidence is low, students will be easily discouraged and have no trust or confidence in their capabilities.

Peers' variable in the T test has a T_{count} value of 2.769 (T_{count} 2.769 > T_{table} 1.97301). Mean that peers partially have a significant influence towards SRL, it can be stated that H3 is accepted. This result are commensurate with previous research by Paska and Laka (2020),

Saragih (2020), Arista et al. (2022), Amidah (2022), and Saragih and Kusnendi (2020), peers have a significant and positive influence towards SRL. In learning activities, of course, there will be interactions between peers where these peers are external factors that have an important role in student behavior, especially in terms of learning independence. Students with peers must provide mutual support and direct them to study independently in order to increase SRL. Therefore, it is expected of students to be able to build good relationships with their peers. If students have supportive peers, they will be motivated to improve their abilities, correct themselves, create thoughtful study plans, share responsibilities, and become more independent learners. On the other hand, if students build negative friendships, it will trigger students to become closed to each other with their peers, this can lead to a decrease in motivation to provide mutual support and direction, especially in terms of independent learning.

Referring to the F test calculation, F_{count} value is 43.705. This figure is greater than the F_{table} value of 2.65 (F_{count} 43.705 > F_{table} 2.65). Mean that learning motivation, self-efficacy, and peers together (simultaneously) have a significant influence towards self-regulated learning, it can be stated that H4 is accepted. These results are commensurate with previous research by Marthadiningrum & Widayati (2022), learning motivation, self-efficacy, and peers simultaneously have a significant influence towards SRL. Learning motivation plays a crucial role in supporting, guiding, and encouraging students to learn independently. Learning motivation and self-efficacy are interrelated, students are encouraged to behave independently because they have confidence in their abilities. In addition, the formation of independent behavior in learning is also influenced by peers. The higher the level of learning motivation and self-confidence or self-efficacy of students and the more positive the peer environment, the higher the level of student learning independence.

CONCLUSION AND RECOMMENDATION

The study's findings analysis reveal that: 1) Learning motivation has a significant influence individually or partially on self-regulated learning. The stronger the learning motivation, the higher the level of SRL of grade XI students at Public Vocational High Schools 13 Jakarta; 2) Self-efficacy has a significant influence individually or partially on SRL. The higher the level of self-confidence or self-efficacy of students, the higher the level of SRL of grade XI students at Public Vocational High Schools 13 Jakarta; 3) Peers have a significant influence individually or partially on SRL. The more positive the student's peer environment, the higher the level of SRL of grade XI students at Public Vocational High Schools 13 Jakarta; and 4) Learning motivation, self-efficacy, and peers have a significant influence together or simultaneously on SRL. This means that the higher the level of learning motivation and self-efficacy and the more positive the peer environment, the higher the level of SRL.

The study's findings are expected to serve as a guide when developing learning activities for self-regulated learning, which will boost learning motivation, boost self-efficacy, and create a supportive peer environment. Furthermore, it is hoped that the results of this study would possess the ability to add insight and become valuable input and can be a reference and contribution to conceptual contributions for similar and relevant research in the context of developing science. The limitations of this research are only using three independent variables which include learning motivation, self-efficacy, and peers, so it is recommended for future research to broaden the study's focus by looking at additional variables outside of this research and can expand the scope of research by examining other objects also increasing the scope of the sample so that the data obtained or generated is more accurate.

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