

# Motivation and Learning Strategies: Student Motivation Affects Student Learning Strategies

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## Motivation and Learning Strategies: Student Motivation Affects Student Learning Strategies

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15

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**Abstract:** Despite being a popular research subject internationally, self-regulated learning is relatively under-investigated in the Indonesian context. This article examined student learning motivation and its use as an indicator to predict student learning strategies in an Indonesian school context. This article applied quantitative research design, with *Motivated Strategies for Learning Questionnaire (MSLQ)* used to collect the data. This questionnaire was completed by 308 public high secondary students randomly selected from the population in Lampung Province schools, and multiple regression was used to analyze the obtained data. Results show that student motivation and learning strategies were positively and significantly correlated; three predictor variables of student motivation could significantly predict learning strategies; and value components of student motivation best predicted learning strategies. In conclusion, these findings indicate that, when teachers apply learning strategies, such variables as motivation including value, expectancy, and affective components should be strongly considered to be in place. It is hoped finally that the students will be self-regulated learners for their success.

**Keywords:** *Learning strategies, metacognition, motivation, self-regulated learning, student.*

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### Introduction

#### Background to this Article

Self-regulated learning (SRL) has been a noteworthy research area about how schoolchildren become self-regulated learners for years (Steffens, 2006; Zimmerman, 2008), in higher education (Kosnin, 2007) and particularly in schools (Dignath et al., 2008). The research in this field including motivation orientations and learning strategies (Pintrich et al., 1991) is relatively diverse (e.g. Pintrich, 2004).

Interest in SRL has been on the rise since the 1980s, and most research examined metacognitive monitoring accuracy has encompassed tertiary education students (e.g. Bruin et al., 2011) as well as school students (Dignath et al., 2008). In addition, the SRL measured using *Motivated Strategies for Learning Questionnaire (MSLQ)* (Pintrich et al., 1991) has been in many other language versions applied by many researchers worldwide, comprising the United States, the United Kingdom, Turkey, Russia, the Philippines, Malaysia, Japan, Iraq, India, Egypt, Cyprus, Croatia, China, Chile, Canada, Brazil, Australia, and Argentina (Garcia & McKeachie, 2005), and recently China (Banisaeid & Huang, 2015), Estonia (Saks et al., 2015), Norway (Ulstad et al., 2016), the West Indies, Korea (Jo et al., 2016). However, the research is unevenly distributed geographically, i.e. it is rare in the Indonesian context.

In general, Zumbrohn et al. (2011) outline the important research results, based on their literature review, that SRL: (a) is considered critical for students to involve in processes of learning (Järvelä & Järvenoja, 2011; Zimmerman, 2008), (b) is able to help them enhance their interests and skills of learning (Wolters, 2011), (c) implement strategies of learning to improve educational outcomes, (d) monitor their performance (Harris et al., 2005) and (e) assess their educational

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improvement (de Bruin et al., 2011). As a result, educators including teachers ought to be familiar with the influencing variables of a student capacity for self-regulating the strategies of learning to enhance SRL.

In particular, findings that SRL positively influences student achievement have been consistently revealed (e.g., Cleary & Platten, 2013; Zumbunn et al., 2011). SRL capacity is essential to make students self-regulated learners (Kosnin, 2007). These learners are capable of both implementing cognitive learning strategies in academic tasks (Vrieling et al., 2012) and regulating learning to enhance their outcomes of learning (Steffens, 2006).

#### *SRL Concept*

SRL is defined differently (Pintrich & De Groot, 1990). To illustrate, Pintrich (2000), defines SRL as a learning process where learners actively and constructively determine learning objectives for the purpose of monitoring, regulating, and controlling motivation, cognition and behavior. Zumbunn et al. (2011) add that SRL constitutes a process to help learners manage their views, behaviors, and feelings to steer their learning capabilities successfully when the students' actions are purposefully directed to acquire skills or information during the process. While, for Corno and Mandinach (1983), SRL is an action to manipulate and deepen their networking in a specific field and do monitoring and improvement of the expanding process. Cazan (2013) views academic SRL as self-generalized views, spirits, and intended to accomplish educational aims.

However, despite being differently defined, students generally could actively self-regulate learning to some extent in behavior, metacognition, and motivation (Zimmerman, 1986). Behaviorally, the students choose structure and make physical and social environments optimizing learning acquisition. Metacognitively, they carried out planning, organizing, self-instructing and self-evaluating at different stages during learning acquisition. Motivationally, they are intrinsically motivated, self-efficacious, and autonomous. Hence, students become effectively responsive to practical relationships between both their social and environmental outcomes and their thought and action patterns. Through SRL, students' cognition, behaviors, and motivation are activated and sustained. These three aspects are methodically in favor of the accomplishment of their objectives (Kadhiravan & Suresh, 2008).

#### *Conceptual Framework for SRL*

SRL, according to Pintrich's conceptual framework, is a procedure that enables students to enthusiastically involve in determining aims as well as attempting to use the four stages: (1) forethought, planning, and activation; (2) monitoring, control, and (4) reaction and reflection. These stages cut the four self-regulation context areas: (1) cognition, (2) motivation/affect, (3) behavior, and (4) context (Kadhiravan & Suresh, 2008; Pintrich, 2000; Schunk, 2005; Xu, 2008). The stages are also interactive in that individually the students might simultaneously engage in more than one stages (Kadhiravan & Suresh, 2008). They need to be actively engaged in their learning by applying their stages and the context areas of self-regulation to be self-regulated learners. Such learners are behaviorally, metacognitively, and motivationally active participants in learning (Zimmerman, 1990).

#### *Motivated Strategies for Learning Questionnaire (MSLQ)*

This 81-item questionnaire (Pintrich et al., 1991) was a widely used to measure SRL (Zimmerman, 2008), refined in 1986, 1987, 1988, and 1991 (Garcia & McKeachie, 2005), and finalized in 1993, reflecting a decade of extensive work (Pintrich et al., 1993).

The instrument comprises two parts: motivation and learning strategies. These two parts consist of the scales. First, the motivation part (consisting of 31 items) composed of three scales: (1) value, (2) expectancy, and (3) affect. Value comprises three elements: orientation of intrinsic goal, orientation of extrinsic goal, and task. Expectancy comprises two elements: self-efficacy and control of learning. Affect comprises one element: anxiety of test. Second, the learning strategies part: (13) comprises of 31 cognitive-metacognitive items and 19 behavior items. The former comprises five elements: (1) elaboration, (2) rehearsal, (3) critical thinking, (4) organization, and (5) metacognitive self-regulation. The latter comprises four elements: (1) effort management, (2) time and study environment, (3) help seeking, and (4) peer learning (Pintrich et al., 1991).

#### *Prior Studies on SRL Using MSLQ*

Studies on SRL have been widely conducted (Montalvo & Torres, 2004; Ng et al., 2017) and nowadays SRL gradually has been conducted in various learning settings (Schunk, 2005) particularly in the United States (Cleary & Platten, 2013; Hardy, 2013; Pintrich & De Groot, 1990; Zimmerman & Kitsantas, 2014) and many other countries such as Australia (Neville & Bennett, 2004), the Netherlands (Vrieling et al., 2012), China (Banisaeid & Huang, 2015), Germany and China (Wang et al., 2013), seven countries (Australia, Canada, India, Malaysia, Taiwan, Thailand, and the United States (Credé & Phillips, 2011), Singapore (Chang & Smith, 1998; Ng et al., 2017), Philippines and Korea (Turingan & Yang, 2009), Turkey (Ozan et al., 2012; Şen et al., 2014; Tanriseven, 2014), Malaysia (Kosnin, 2007), and South Africa (Tsemrekal, 2013).

SRL as measured by the MSLQ has been widely used in such countries to make learners self-regulated. SRL capacity is essential for students to intervene in their learning in order for them to be self-regulated learners (Kosnin, 2007). These learners are capable of implementing cognitive learning strategies in academic tasks (Vrieling et al., 2012) and able to regulate learning to enhance learning outcomes (Steffens, 2006).

Kosnin (2007) asserts that research investigating SRL in relationship with student achievement have generally revealed positive correlation between both across subject areas and education levels. Also, studies have consistently revealed that SRL positively affects student achievement over years (Cleary & Platten, 2013; Zumbrunn et al., 2011).

However, SRL has not yet been comprehensively investigated (Tsemrekal, 2013), particularly little is known in the literature about SRL in an Indonesian context, particularly focusing on student motivation orientations in association with, and predictors of, student learning strategies.

Therefore, this article examined student learning motivation (consisting of value, expectancy, and affective components) in association with, and predictors of, student learning strategies in in Lampung schools, Indonesia. This aim is answered with the research questions below.

#### *Research Questions of this Article*

Three research questions are proposed to help achieve the aim of this article:

- (1) What are the relationships between student motivation (value, expectancy, affective components) and learning strategies?
- (2) Can the student motivation significantly predict the learning strategies?
- (3) Which predictor best predicts the learning strategies?

Such research questions are important to guide the researchers to be on the tract in the research processes to investigate the research problem.

### **Methodology**

#### *Research Design, Population and Sample*

This article used quantitative research design based on survey questionnaire (MSLQ) to address the research questions.

This article area had a population of 160,100 students throughout 691 junior secondary schools in Lampung Province. Like in Thai school system, Indonesian students take three years to pass this school level, after six years of primary schools (Nownaisin et al., 2020). A sample of 500 students was randomly selected from 50 schools in five districts out of 15 districts in the province (Dirjendikdasmen, 2017), using multi-stage random sampling with three stages: provincial level, district level, and school level. In the first stage, five districts (Metro, Bandar Lampung, Pesawaran, Pringsewu, and Lampung Timur) were selected from the 15 districts in the Province of Lampung. In the second stage, 50 schools were selected from the five districts (10 schools from each district). In the last stage, 500 students were selected from the selected schools. These students are from various ethnic groups in Indonesia, mostly Javanese descents and Sumatran origins. Completed responses were gained from 408 participants (an 81.60% response rate). This sample number is considered sufficient to predict learning strategies for the population (Smith, 2013; Taherdoost, 2017).

#### *Description of Participants*

Authors surveyed such participants' demographics as sex, ethnical background, and school location. The following are their descriptive statistics (Table 1).

*Table 1. Demographic characteristics of participants (n = 408)*

<b>Characteristics</b>	<b>Freq.</b>	<b>% of Total</b>
<b>Sex</b>		
Female	277	67.89
Male	131	32.11
<b>Ethnic Group</b>		
Javanese	279	68.38
Lampungnese	81	19.85
Sundanese	21	5.15
Others	27	6.62
<b>School Location</b>		
Urban	259	63.48
Rural	149	36.52
Total	408	100.00

Table 1 shows that the number of the participants was a total of 408 students consisting of 277 females (32%) and 131 males (32%), with the number of Javanese students being 279 (68%) as the majority, followed by Lampungese students (81 or 20%), and Sundanese students (21 or 5%), and the rest from other ethnic groups (27 or 7%). Most students (259 or 63%) went to urban schools (in cities or district capitals) and the rest (149 or 37%) went to rural schools.

These results indicate that students in state junior high schools in Lampung Province are dominated by female students, and these students are mostly Javanese with a percentage of above 50% of all the 408 students, while Lampungese students stand at the second place, occupying only 20%. The participants mostly attend schools in the cities and in the district capitals.

#### Research Instrument and Procedure

In collecting the data, this article used self-designed demographic questionnaire and the MSLQ developed by Pintrich et al., (1991, 1993). The latter has been in the public domain so that permission to use the instrument is not needed (Pintrich et al., 1991); Holland et al., 2018). The Demographic Questionnaire was self-developed and used to describe participants' demographics: gender or sex, ethnical background, and school location.

In this article, the MSLQ was used to measure the students' SRL, particularly value, expectancy, and affective components in association with, and used as predictors of, learning strategies. The participants responded using seven-point ratings ranging "from *not all true of me* to *very true of me*" (Zimmerman, 2008, p. 168).

For this article, the MSLQ was translated into Bahasa Indonesia from English and vice versa by two independent experts from Indonesia. This way of translation is as carried out by other researchers (for example Hariri, Monypenny, & Prideaux, 2012, 2014, 2016).

#### Validity and Reliability

Studies show that the MSLQ widely used in various languages all over the world has confirmed its validity and reliability. It is adaptable for a variety of purposes (e.g., researchers, students, and educators) (Garcia & McKeachie, 2005; Garrido-Vargas, 2012). In particular, Garrido-Vargas (2012) asserts that the studies during the MSLQ developmental stages have led to the sufficient validity and reliability establishment of the questionnaire (Pintrich & De Groot, 1990), including confirmation of convergent and discriminative validity for its construct (Zimmerman and Martinez-Pons, 1988).

Pintrich et al. (1991) reported acceptable reliability ranging from 0.52 to 0.93. Garrido-Vargas (2012) adds the facts that the MSLQ was adequately reliable with Cronbach's alpha value of 0.95 for this questionnaire, 0.91 for the scale of motivation, and 0.88 for scale of learning strategies, and the instrument was also found to have good and adequate internal reliability with Cronbach's alpha values between 0.52 and 0.93 (White et al., 2012). For this article sample (N=50), the MSLQ has acceptable reliability with Cronbach's alpha value of 0.84 for this instrument, 0.79 for the scale of motivation, 0.79 for the scale of learning strategies, 0.85 for subscale of value components, 0.81 for the subscale of expectancy components, 0.91 for the subscale of affective components, 0.79 for the subscale of cognitive and metacognitive strategies, and 0.82 for the subscale of resource management strategies.

#### Scoring

For scoring in this article, the scale scores of MSLQ were average ones, obtained from score of four items summed and then they were divided by the number of scale items to create mean score. Items negatively worded are firstly reversed prior to computing individual scores (Pintrich et al., 1991).

#### Data Analysis

The MLQ measured the students' SRL in terms of value, expectancy, affective components, and learning strategies. This article used descriptive statistics particularly to depict participants and variables, and the data were analyzed with linear regression.

#### Descriptive Analysis

This descriptive analysis presents the data obtained from the research project carried out in state junior high schools in five out of the fifteen districts in the Province of Lampung, Indonesia. The five districts are Metro, Bandar Lampung, Pesawaran, Pringsewu, and Lampung Timur. The research project from which the data were obtained was conducted between 16 August and 16 October 2018. The MSLQ as well as demographic questionnaire was addressed to 500 students, but 408 students completed the questionnaire (an 81.60% response rate).

Their participation was suggested to be voluntary, items honestly responded, and responses kept confidential. The 81 questions were addressed to the students and they were asked to answer by giving an X on each question number considered closest to their feeling on their motivation and learning strategies.

#### Description of Variables

The four variables (value, expectancy, affective components) and learning strategies were used in this article. The data were collected using MSLQ and analyzed using SPSS on a seven-point Likert rating scales. The descriptive statistics in this article was used to describe the attributes of the variables as shown in Table 2.

Table 2. Descriptive statistics of student-perceived variables (n = 408)

Variables	Mean	Std. Dev.	Skewness		Kurtosis	
	Stats	Stats	Stats	Std. Error	Stats	Std. Error
Value components	5.75	0.64	-0.80	0.12	0.94	0.24
Expectancy components	5.55	0.66	-0.41	0.12	-0.03	0.24
Affective components	4.28	1.16	-0.17	0.12	-0.56	0.24
Learning Strategies	4.86	0.57	-0.30	0.12	0.17	0.24

Table 2 lists the measures particularly mean, standard deviation, skewness, and kurtosis used as a basis to interpret results. Skewness and kurtosis were used to test normal distribution of data. In this case, the data analysis resulted in the values of skewness ranging from -0.80 to -0.17, while those of kurtosis ranging from -0.56 to 0.94.

#### General Assumptions

Results and discussion are preceded by general assumptions for parametric data and assumptions for multiple regressions. General assumptions of parametric were checked before running statistical analysis to ensure accurate results. These assumptions include random sampling, continuous measures (interval or ratio level), normality, variance homogeneity, and observation independence (Field, 2009).

All these assumptions were confirmed. Continuous measures were met by rescaling data from qualitative into continuous variables following the methods suggested by the authors of MSLQ (Pintrich et al., 1991). Random sampling was met in the step of research design stage. The normality of data was confirmed using kurtosis and skewness with the values ranging between +2 and -2 (Garson, 2010). The independent observations were confirmed, any other observation did not influence those observations (Pallant, 2007). Variance homogeneity was assessed using Levene's test revealing that the variances were equal for the participants,  $F(31, 371) \geq 0.05$ , NS, for all the variables, indicating homogeneity of the variances. Having met the general assumptions, the data were then analyzed using multiple regressions.

## Results

#### Multiple Regression

Multiple regression was carried out for the data analysis to answer the research question. This analysis is preceded by checking its assumptions as a part of interpretation of output from multiple regressions as previously outlined in Data Analysis section. Then, results and discussion were presented in response to the research questions.

Standard multiple regression was used for data analysis of this article. The assumptions include multicollinearity, linearity and homoscedasticity, residual normality, and residual independence.

(1) Multicollinearity. This assumption was checked using the relationships of the four variables (see Table 3).

Table 3. Variable Relationships

Variables		1	2	3	4	
Pearson Correlation	1	Learning Strategies	1.00			
	2	Value components	0.67	1.00		
	3	Expectancy components	0.61	0.73	1.00	
	4	Affective components	0.22	0.08	0.12	1.00
Sig. (1-tailed)	1	Learning Strategies		0.000	0.000	0.000
	2	Value components	0.000		0.000	0.045
	3	Expectancy components	0.000	0.000		0.009
	4	Affective components	0.000	0.045	0.009	

Table 3 shows the relationships between the predictor variables with an individual magnitude of less than 0.80 as required for the variables to be retained (Pallant, 2007).

(2) Homoscedasticity and linearity. The \*ZRESID against \*ZPRED was plotted using SPSS resulting in confirmation of the two assumptions (Field (2005)). In this article, the plot produced the graph shown in Figure 1.

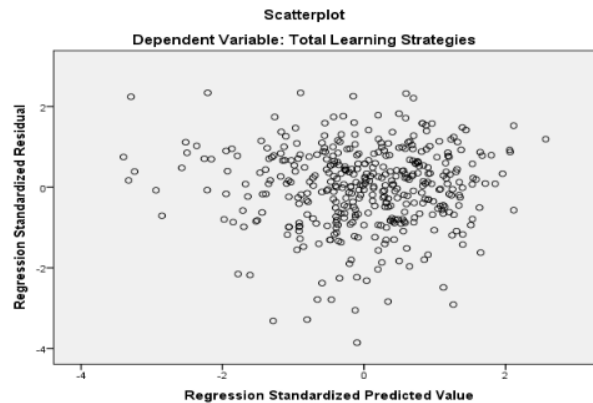


Figure 1 Scatterplot of residuals

Figure 1 displays the randomly dispersed residuals, treated being homoscedastic. This condition shows evidence that the homoscedasticity and linearity assumptions are confirmed (Field, 2005), and this way of checking such assumptions was also used by Hariri et al. (2016).

(3) Residual normality. This assumption applying to the dependent variable (learning strategies) was tested using histogram as shown in Figure 2.

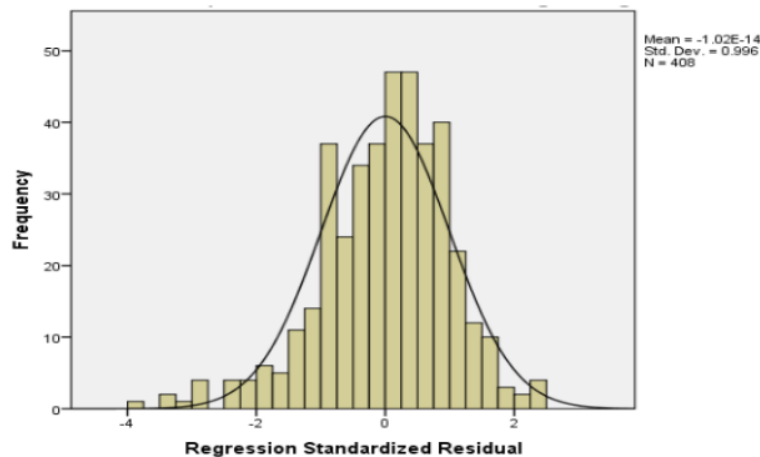


Figure 2 Histogram of standardized residuals of learning strategies

Figure 2 displays symmetrical histogram, indicating normally distributed residuals (Field, 2005).

(4) Residual independence. All the values of the outcome variable in this article were assumed to be independent due to the use of cross-sectional data (Field, 2005).

All the assumptions of multiple regressions for the data for this article were met to ensure the fitting between the model produced from the analysis and the data. Thus, the data analyses proceed to answering the research questions using multiple regression analysis.

#### Results of RQ1

RQ 1 is: What are the relationships between student motivation (value, expectancy, affective components) and learning strategies?

This RQ1 is analyzed when multicollinearity was checked as shown in Table 3. Table 3 shows that, in general, there are positive and significant relationships between student motivation (value, expectancy, affective components) and learning strategies ( $p < 0.0001$ ). Specifically, the strongest relationship is between value components and expectancy components ( $r = 0.73$ ), followed by the relationship between value components and learning strategies ( $r = 0.67$ ), then the relationship between expectancy components and learning strategies ( $r = 0.61$ ). Weak relationship is between affective components and learning strategies ( $r = 0.22$ ), followed by weaker relationship between affective components and expectancy components ( $r = 0.12$ ), and the weakest relationship between affective components and value components ( $r = 0.08$ ).

#### Results of RQ2 and RQ3

RQ 2 is: Can the student motivation (value, expectancy, and affective components) significantly predict learning strategies of students?

RQ 3 is: Which predictor best predicts the learning strategies?

These two questions were addressed using a standard multiple regression analysis. Value, expectancy, and affective components are the sets of the independent (predictor) variables. Learning strategies are the dependent variable. The multiple regression analysis was employed and produced significant predictor variables of the learning strategies ( $\alpha = 0.05$ ).

Table 4. Coefficients with three predictor variables

Model	Unstd Coeff.		Std Coeff.	t	Sig.	95% Confidence		Relationships			Col. Stats	
	B	SE	$\beta$			LB	UB	ZO	Partial	Part	Tol.	VIF
1 (Constant)	0.899	0.197		4,566	0.000	0.512	1,286					
Value	0.433	0.046	0.485	9,441	0.000	0.343	0.524	0.670	0.425	0.331	0.466	2,146
Expectancy	0.204	0.045	0.236	4,587	0.000	0.117	0.292	0.609	0.222	0.161	0.463	2,160
Affective	0.077	0.017	0.156	4,422	0.000	0.043	0.111	0.225	0.215	0.155	0.986	1,014

Dependent variable: Learning strategies

As seen in Table 4, the analysis of the regression resulted in three significant predictors (affective components, value components, and expectancy components) of learning strategies ( $\alpha = 0.05$ ), with the total contribution of 50% as shown in Table 5.

Table 5. Model summary

Model	R	R Sq.	Adj. R Sq.	SE of the Estimate
1	0.710 <sup>a</sup>	0.504	0.500	0.406

- Predictors: (Constant), Value, Expectancy, and Affective
- Dependent Variable: Learning Strategies

The research questions are: Can student motivation (value, expectancy, and affective components) significantly predict learning strategies of students? Which best predicts learning strategies? The SPSS output box labelled coefficients provides answers to these questions (see Table 4). The  $\beta$ -values are the standardized coefficients applied to see the differences between the variables. While, the B values are the unstandardized coefficients used to make the equation of regression (Pallant, 2007).

When the  $\beta$ -values are larger, the contribution of the predictors to learning strategies will be stronger. The regression analysis resulted in a  $\beta$ -value of 0.485 as the largest  $\beta$  coefficient obtained by value components, followed by expectancy components with a  $\beta$ -value of 0.236, and affective components with a  $\beta$ -value of 0.156. These three predictors significantly contributed to predicting learning strategies ( $\alpha = 0.05$ ).

## Discussion

### Discussion of RQ1 Result

Analysis of the data addressing the first research question using Pearson Correlation reveals positive and significant relationships between student motivation factors (value, expectancy, affective components) and learning strategies. This result indicates that all elements that make up student motivation need to consider when in teaching and learning process. For example, teachers need to know characteristics individual students in terms of their intrinsic and extrinsic motivation, value of the tasks assigned to them. Learning that students feel valuable will make their motivation emerge and improve when students feel that what they learn is valuable (Ginsberg & Wlodkowski, 2019). Also, the result highlights learning self-efficacy, particularly learners with high anxiety (Roick & Ringeisen, 2017). It is evidence that learning strategies, task value anxiety, and self-efficacy are correlated as noted by Chou (2019). In particular, learners with high anxiety need to be paid attention since anxiety could negatively influence their learning (Oplaz, 2019).



This result is also in line with what Adesola and Li (2018) revealed that self-efficacy had high relationship with cognitive strategy and self-regulation. Anxiety and learning outcomes were highly correlated. Self-regulation was highly correlated with cognitive strategy. In achieving their learning goals, students who showed high self-regulation implemented self-efficacy and cognitive strategy.

The positive and significant relationships between the motivation scales and learning strategies show a good indication as Pintrich (2004) emphasizes that learners have capability of regulating their cognition, affect and motivation.

#### *Discussion of RQ2 and RQ3 Results*

Regarding RQ2, the findings suggest that motivation (value, expectancy, and affective components) can significantly predict learning strategies of the students.

This finding adds to our understanding that in general learning strategies of students are an important aspect that is influenced by motivation, leading to the students being regulated learners. This finding also confirms that learning strategies need to support learning processes (Järvelin & Järvenoja, 2011; Zimmerman, 2008), improve study skills and learning habits (Wolters, 2011), and thus increase academic outcomes and performance (Harris, Friedlander, Saddler, Frizzelle, & Graham, 2005), academic achievement of the students (e.g., Cleary & Platten, 2013; Zumbunn et al., 2011), and thinking skills (Tohir et al., 2020).

Regarding RQ3, the findings indicate that the value components best predict learning strategies. These findings suggest that:

- 1) The three predictor variables (value, expectancy, and affective components) can significantly predict learning strategies.
- 2) The value components best predict learning strategies.
- 3) The three predictors together explain 50% of the variance in the learning strategies of students (see Table 5), indicating this model does not account for the other 50%.

This model gained a statistical significance of  $p < 0.0001$ . The adjusted  $R^2$  value was 0.500, nearly the same as the  $R^2$  value of 0.504 (a very little decrease of only 0.4%). Hence, this model can be regarded as a very good one to predict student learning strategies (Field, 2005, p. 188).

The findings of the three questions of this article were little known in the literature on the SRL even though researchers have conducted many studies on the SRL. Thus, these findings have partly closed this gap. The findings are significant because SRL, particularly regarding orientations of motivation and strategies of learning of the students, positively and significantly affects their academic achievement (Cleary & Platten, 2013; Zumbunn et al., 2011).

The significant findings of this article support previous findings showing that SRL capacity is essential for students to intervene in their learning (Kosnin, 2007, p. 221). These learners are capable of implementing cognitive learning strategies in academic tasks (Vrieling et al., 2012) and good at regulating learning to enhance their outcomes of learning (Steffens, 2006). Also, it is essential to highlight that increased use of learning strategies is followed by increased level of academic outcomes (Ofiaz, 2019), and it is evidence that SRL leads to positive academic outcomes (Kayacan & Sonmez Ektem, 2019).

#### **Conclusion**

Findings of this article show, first, positive and significant relationships between motivation factors (value, expectancy, affective) and learning strategies. Second, the findings show that the three predictor motivation variables can significantly predict learning strategies of the students. Third, the value components variable best predicts learning strategies. In short, these findings indicate that, when teachers apply learning strategies, such variables as value, expectancy, and affective components should be strongly considered to be in place.

Theoretically, the findings of this article will extend the body of knowledge and contribute to an increased understanding of SRL in terms of motivation and learning strategies in an Indonesian school context.

#### **Suggestions**

For teachers, findings can be used as basis to apply in their activities to facilitate the pupils to be capable of self-regulated learners. For school principals, the findings can be used as input to plan a training program for teachers to help teachers have capacity to facilitate students to be motivationally, metacognitively, and behaviorally good at learning process. Educational district offices, particularly, in Lampung Province, can use to set policy based on the findings of this article to help school principals as well as teachers to apply teaching and learning processes in ways that facilitate the schoolchildren to effectively regulate their own learning.

For future researchers, the results of this article give opportunity to study students' feelings on their learning by including qualitative method using in-depth interview to deeply understand the students' feelings of their learning process that cannot be explored in this article.

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