Sys Rev Pharm 2020;11(11):367-372
A multifaceted review journal in the field of pharmacy

THE RULE OF SELF REGULATED LEARNING METHOD STRATEGY AND SELF EFFICACY TO CONCEPTUAL APPLICATION

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Abstract
The purpose of this study is to analyze the rule of self regulated learning method strategy and self efficacy to conceptual application as learning outcomes for second semester on Christian Religious Education students. Research subjects were 96 people divided into two groups namely the experiment and control groups. Data were obtained through Neil's self-efficacy questionnaire and tests to measure the learning outcomes of conceptual application. Data analysis were done using two-way ANOVA. The results show that there are differences in the learning outcomes of the conceptual application between learning strategies (self regulated learning and teacher regulated learning) with different levels of self efficacy (high and low levels of self efficacy) (sig 0.001 <0.05). There is an interaction between learning strategies with self efficacy based to the learning outcomes of conceptual application (sig 0.003 <0, 05). It can be concluded that self regulated learning method strategy and high self efficacy have better influence on the learning outcomes of students' conceptual application.

Keywords: Self regulated learning method strategy, self efficacy, conceptual application.

INTRODUCTION

The importance of the conceptual application as a form of basic mastery of students towards the lessons that have been delivered by educators, is also felt necessary for students of the second semester Christian Religious Education study program at the Institut Agama Kristen Negeri Ambon especially for learning theory courses. Considering that the second semester students are categorized as new students in the world of higher education, thus requiring the process of adjusting to the academic climate in tertiary institutions, one of which is a learning strategy. Learning strategies in higher education are different from learning strategies obtained in secondary schools, where teachers are more dominant than students, students are only listeners, that teachers have more role in regulating student learning, about when, where, what sources will be used until how the student is learning or teacher centered learning (TCL).

According to VenkatRaoVishnumolakala et al., (2017) the dynamics of learning on TCL that occur tend to make students as recipients of information (passive recipients) without considering them to actively participate, thus making students lack independence in learning, lack of motivation to try, lack of ability to transfer knowledge possessed, lack of self-confidence in their own abilities, lack of ability to regulate themselves in learning, and also make them not ideal in developing thinking skills. Learning strategies at college students require them to be more active compared to lecturers. Students must be given the opportunity to arrange their own learning about when, where, what resources will be used to how to learn in higher education as a method of strategy.

Learning strategies that are in line with the nature of learning in higher education are learning strategies that provide opportunities for students to organize themselves for learning or self-regulated learning that here and after will be referred to SRL. SRL is an activity in which individuals who learn actively, arrange, determine learning goals, plan and monitor, regulate and control cognition, motivational behavior and environment to achieve the goals set (Pintrich, 2000; Wolters et al., 2003). Some research results show that SRL strategies are very effective to be used as learning strategies to improve learning outcomes in understanding facts, concepts, principles and procedures. Meanwhile, conventional learning in higher education still use TCL in the courses.

SRL strategies help students determine the first step to learning, provide their needs, set their learning goals, explore learning resources, manage time and environment, and apply them effectively to achieve satisfying learning outcomes (Zhu et al., 2016). Pauli (2007) investigated the effect of the SRL strategy in solving mathematical problems independently andNurlaela (2012) reported SRL learning strategies affect learning outcomes. The same thing was also stated by Fasikhahand Fatimah (2013), that SRL method strategies can improve academic achievement (Sadi&Uyar, 2013).

In addition to learning strategies, one of the conditions for learning success is determined by the characteristics of students. According to Dicket al.(2001) states that, *"Information about the group's general characteristics can be very helpful in planning instructions tailored to group needs"*. Student characteristics are all backgrounds that are brought when present in class before learning begins. Reigeluth (2009) explains that optimal learning outcomes are strongly influenced by the application of learning procedures that consider the student's value system, methods, conditions (characteristics), materials and learning objectives. Therefore, lecturers in carrying out learning in class, need to pay attention to the method of subject characteristics and learning

objectives, and the condition of students. Self efficacy according to Bandura (1993) is a belief held by students about the ability in an effort to complete a task, about his perseverance, and also about his achievements. The results showed that students with high self efficacy had high academic achievement whereas students with low self efficacy had low performance (Willson-Conrad &Kowalske, 2018). Self efficacy significantly improves learning outcomes.

There are three formulation of the problem based on the description above: 1) Is there a significant difference in the learning outcomes of the conceptual application between students who are taught with SRL method as learning strategy and students who are taught with TRL method as learning strategy? 2) Is there a difference in the learning outcomes of the conceptual application between students who have high self efficacy and low self efficacy? 3) Is there an interaction between learning strategies (SRL and TRL) with self efficacy levels on the learning outcomes of conceptual application?

The purpose of this study are: 1) to find out the significant difference in the learning outcomes of the conceptual application between students who are taught with SRL method as learning strategy and students who are taught with TRL method as learning strategy, 2) to find out the difference in the learning outcomes of the conceptual application between students who have high self efficacy and low self efficacy, and 3) to find out the interaction between learning strategies (SRL and TRL) with self efficacy levels on the learning outcomes of conceptual application.

THEORITICAL REVIEW

Conceptual Application

The conceptual application in Bloom's taxonomy is in the C3 cognitive domain, which uses or implements a particular procedure to work on probing problems or solving problems. Application or implementation of concepts is intended as the ability to use concepts in practice or new situations. Krathwohl and Anderson(2009), suggested that the application of concepts is the use of abstractions (ideas, principles, and theories) to solve new problems or problems in real life. The ability of this application requires students to use the principles or knowledge in solving problems.

Self Regulated Learning Method Strategy

Schunkand Zimmerman was the first to write about SRL method strategy (Panadero et al., 2017). There are several theoretical and perspective about SRL such as social cognitive theory, will theory and phenemology (Schunk&Zimmerman, 1998). SRL shows the ability of students to actively and deliberately set goals for their learning and to monitor, regulate, control and evaluate their cognition, behavior, motivation and environment to achieve their learning goals (Pintrich, 2000; Schunk&Zimmerman, 1998). Pintrich (2000) describes SRL as,*"Active and constructive processes in which students set goals for their learning and then try to monitor, regulate, and control their cognition, motivation and behavior, and are guided and limited by appropriate contextual goals and features its environment."*

In the process of learning activation the conceptual application of SRL method strategy, there are several steps to guide proactive students learning using the Pintrich 2000 model, namely: 1) forethought, planning, and activation, 2) monitoring, 3) controlling, and 4) reaction and reflection. Based on the SRL steps proposed by Pintrich, the steps for a learning strategy based on SRL are made, as in the Table 1.

Table 1. Steps of SRL Method Strategy on Learning Theories Courses

Procedure		**Activity**	
Learning Activities	**SRL Strategy**	**Lecturers**	**Students**
Preliminaries activities	Forethought, planning and activation	Presenting the learning goals.	1. Listening and take notes. 2. Analyzing their study assignments based on the stated learning objectives 3. Determining their learning goals 4. Determining how the learning strategy. 5. Searching actively for information with several sources, modules, internet, library, etc.
Core activities	Monitoring Controlling	1.Monitoring students' activities. 2.Controlling students' activities. (In this step, lecturers can help students in problems)	1. Monitoring progress in completing tasks, and monitoring the effectiveness of the strategies chosen 2. Monitoring the motivation to complete the task. (In this steps, students can ask the lecturers or friends)
Closing activities	Reaction and reflection	Evaluating the performance according to standards.	1. Evaluating performance on study assignment. 2. Manage emotional responses related to results learning experience (action taking).

Self Efficacy

The term of self efficacy was first coined by Albert Bandura in 1977. Self efficacy is self-confidence or encounter in one's ability to carry out effectively determined tasks (Bandura, 1986, 1977). Self efficacy theory is considered one of the approaches of applying social learning theory or social cognitive theory. According to Betz & Hackett (1995) self efficacy has an important role in the belief in the ability of students in achieving success in achieving the tasks or behaviors that are expected. Self efficacy is a student's self-confidence and self-confidence in his own ability to do certain tasks effectively (Yeşilyurt et al., 2016).

RESEARCH METHOD

This study uses quasi-experimental research to test hypotheses to the causal relationships between variables (Degeng&Sudana, 1989: 13). The research design used was a 2 x 2 factorial design (Degeng&Sudana, 1989: 15; Setyosari, 2010: 180). The research design can be seen in Table 2.

Table 2. Factorial Design 2x2

Independent Variable	Learning Strategies	
Moderator Variable	Self Regulated Learning (SRL) (A1)	Teacher Regulated Learning (TRL) (A2)

Self efficacy	High (B1) Low (B2)	A1b1 A1b2	A2b1 A2b2

Annotation:

1. A1B1 Group: The learning outcomes of the conceptual application with learning strategies based on SRL method strategy and high self efficacy.
2. A1B2 Group: The learning outcomes of the conceptual application with learning strategies based on SRL method strategy and low self efficacy.
3. A2B1 Group: The learning outcomes of the conceptual application with learning strategies based on TRL method strategy and high self efficacy.
4. A2B2 Group: The learning outcomes of the conceptual application with learning strategies based on TRL method strategy and low self efficacy.

The subject of the study was the second semester students of the Christian Religious Education study program at the Institut Agama Kristen Negeri Ambon in the academic year 2017/2018, which consisted of 4 parallel classes (classes A, B, C, and D). Each class numbered 23 people so that the total number of 96 people, then divided into two groups namely the experimental group and the control group. The experimental class is class A and class B, while class C and class D are the control group. During the learning process, all students follow from the beginning of the learning activities to the end, both for the experimental class and the control class, thus the research subjects numbered 96 people. For more details about the research subjects can be seen in the Table 3.

Table 3. Research Subjects on Experiment and Control Groups

No	Experiment Class		Control Class		Students
	Class	Students	Class	Students	
1	A	23	C	23	46
2	B	23	D	23	46
Total	2	46	2	46	96

The instrument used in this study consisted of tests and questionnaires. The test form is multiple choice. Test instrument is used to measure the learning outcomes of the conceptual application. The number of questions used is 25 items with a score of 1 for the correct answer and a score of 0 for the wrong answer (dichotomy test). While the questionnaire is used to collect data related to self efficacy which refers to Neil (2008). The questionnaire consisted of 35 items, using a Likert scale with a range of 1 to 4. To classify research subjects based on high or low self efficacy, it was carried out by finding the median (median) using SPSS. The median value obtained was 104. Based on the midpoint, then research subjects who scored below 104 were grouped in research subjects with low self efficacy and research subjects who scored above 140 were grouped in research subjects with high self efficacy.

The data analyzed were divided into two, the first as a requirement for ANOVA analysis and the second as the main analysis to test the research hypothesis. For the prerequisite analysis in the form of data normality tests and homogeneity tests, data must be normal and homogeneous. Data normality test uses Kolmogorov-Smirnov and homogeneity variance test uses Levene's test. Test data normality and homogeneity to meet parametric assumptions as ANOVA test requirements. Data analysis to test the research hypothesis using two-way ANOVA statistical techniques with the SPSS for Windows program. And all parametric assumption tests were carried out at a significance value of 5%.

RESULTS AND DISCUSSION

Description on Pretest Results of Conceptual Application

Before holding the stages of research and giving treatment of learning strategies, pretest is conducted to students who will be involved in research to find out the initial abilities possessed by them related to the Learning Theory courses. Pretest results are presented in Table 4.

Table4. Pretest Results on Conceptual Application

	N	Min	Max	Mean	Std.D
Pretest (ExperimentClass)	46	60	72	66.17	4.276
Pretest (Control Class)	46	60	72	65.48	4.247
Valid N (Listwise)	60				

Table 4 shows that the average value of the conceptual application pretest results for the experimental class was 66.17, with a standard deviation of 4.276, meanwhile the average value obtained by the classroom was 65.48, with a standard deviation of 4.247. The pretest average value of the experiment class is higher than the control class.

Description on Self Efficacy

Self efficacy as a moderator variable is divided into two namely high self efficacy and low self efficacy. Table 5 presents the results of the measurement groups of research subjects based on learning strategies and self efficacy levels. The pattern on subjects amount is presented.

Table 5. Description on Research Subject of Learning Method Strategy and Self Efficacy

Class	Self Efficacy		Total
	High	Low	
SRL method strategy	23	23	46
TRL method strategy	23	23	46
Total	46	46	92

Table 5 shows that selfefficacy for the experiment class (using SRL method) and the control class (using TRL method). Students who have high self-efficacy are 23 peopleand students who have low selfefficacy of 23 people. Meanwhilethe control classes show the same results.Students who have high self efficacy is 23 people and st who have low self efficacy are 23 people.

Description on Post-test Results of Conceptual Application

The learning outcomes of the conceptual application post-test results in this study were obtained after the group of research subjects received treatment with learning strategies based on SRL method strategy and TRL method strategy. The post-test results of the learning outcomes of the conceptual application are shown in Table 6based on self efficacy levels.

Table 6. Post-test Results on Conceptual Application

Learning Strategy	Self Efficacy	Mean	Std. Deviation	N
SRL method strategy	High	76.52	4.261	23
	Low	64.00	4.000	23
	Total	70.26	7.620	46
TRL method strategy	High	74.43	5.492	23
	Low	62.61	4.283	23

	Total	68.52	7.711	46
Total	High	75.48	5.102	46
	Low	63.30	4.157	46
	Total	69.39	7.673	92

Table 6 shows the learning outcomes of the conceptual application on experiment classes (using SRL method strategy). The groups of students who have high self efficacy are 23 people and the score obtained is an average value of 76.52, with a standard deviation of 4.261. The groups of students who have low self efficacy are 23 people and the score obtained is an average value of 64.00, with a standard deviation of 4.000. Furthermore, Table 6 also shows the learning outcomes of the conceptual application obtained by the control class (using TRL method strategy).Students who have with high selfefficacy are 23 and the score obtained is an average value of 74.43, with a standard deviation of 5.492. Students whohave low self efficacy are 23 and the score obtained is an average value of 62.61, with a standard deviation of 4.283. Both groups of students have differences.

The post-test results showed that there were significant differences in the learning outcomes of the conceptual application between experiment class(using SRL method strategy) and the control class (using TRL method strategy). Based on the post-test results, the average value of the learning outcomes of the concept application for the experimental class was 70.26 with a standard deviation of 7.620 and a control class of 68.52 with a standard deviation of 7.711. This shows that the average value of the experiment class is higher than the average value of the control class.

From the results of the post-test score the learning outcomes of the conceptual application, groups of students who have high selfefficacy get an average value of 75.48 with a standard deviation of 5.102, while the score of learning outcomes for the conceptual application for groups of students who have low selfefficacy get an average value of 63.90 with a standard deviation of 4.157.It can be said that the group of students who have high selfefficacy also havebetter learning outcomes of the conceptual application than the group of students who have low selfefficacy after treatment applied.

Prerequisite Analysis Test

To test the hypothesis proposed in this study, the variables studied were tested using Analysis of Variance (ANOVA). The independent variables in this study are learning strategies which are SRL method strategy and TRL method strategy.The moderator variable in this study isstudents' self efficacy levels (high and low categories).The dependent variable is this study is the learning outcomes of the conceptual application. All of variables are tested using ANOVA (Analysis of Variance).Before analyzing the results data of the research using ANOVA,the prerequisite tests of ANOVA must be fulfilled. Those are normality test and homogeneity test.

Normality Test

Normality test is used to determine whether the data is normally distributed or not as one of the prerequisites for conducting two-way ANOVA analysis tests.The results of the post-test data normality test for the conceptual application is presented in Table 7.

Table7. Normality Test of Post-test Results on Conceptual Application

Items	Learning Strategies	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
The Learning Outcomes of the Conceptual Application	SRL	.129	46	.054	.959	46	.106
	TRL	.147	46	.014	.945	46	.030

Based on the table above the normality test results using Kolmogorov-Smirnov show that the significance value of the learning outcomes of the concept application for learning strategies based on self regulated learning and teacher regulated learning is greater than 0.05 (0.54> 0.05, 0.14> 0 , 05). This means that the learning outcomes of the application concept data are normally distributed.

Homogeneity Test

Homogeneity test to determine the homogeneity of variance score data on learning outcomes of application concepts using Levene's test, the following homogeneity test results are presented in Table 8.

Table 8. Homogeneity Test of Post-test Results on Conceptual Application

F	df1	df2	Sig.
1.249	3	88	.297

Based on the table above the homogeneity test results show that the significance value for learning outcomes of application concepts for learning strategies based on self regulated learning and teacher regulated learning is greater than 0.05 (0.8297> 0.05). This means that the data has a homogeneous variance matrix. After two of prerequisite test are fulfilled, the ANOVA test can be carried out.

Research Hypotheses Test

The research hypotheses in this study consist of three hypotheses which are:

1) Ho-1: there is no difference in the learning outcomes of the conceptual application in learning theory courses between students who are taught with SRL and students who are taught with TRL.

Ha-1: there is difference in the learning outcomes of the conceptual application in learning theory courses between students who are taught with SRL and students who are taught with TRL.

2) Ho-2: there is no difference in the learning outcomes of the conceptual application in learning theory courses between students who have high self efficacy and students who have low self efficacy.

Ha-2: there is difference in the learning outcomes of the conceptual application in learning theory courses between students who have high self efficacy and students who have low self efficacy.

3) Ho-3: there is no interaction between learning strategies and self efficacy to the learning outcomes of the conceptual application.

Ha-3: there is interaction between learning strategies and self efficacy to the learning outcomes of the conceptual application.

To test the hypothesis above, the ANOVA analysis results are presented in the form of an inter-subject effect test (Test of Between-subject Effects) in Table 9.

Table 9. Results of Two Way ANOVA Test of Between-Subject Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.

Corrected Model	4294.087[a]	3	1431.362	64.345	.000
Intercept	479812.348	1	479812.348	21569.389	.000
STRATEGI	828.000	1	828.000	37.222	.000
SELFEFFICACY	3457.565	1	3457.565	155.431	.000
STRATEGI * SELFEFFICACY	8.522	1	8.522	3.383	.004
Error	1957.565	88	22.245		
Total	486064.000	92			
Corrected Total	6251.652	91			

The results of the first hypothesis test based on the two way ANOVA test in Table 9 show that the calculated F value is 37.222 for the learning strategyand the significance value is 0.00. Significance value is smaller than 0.05 (0.00 <0.05). Thus the null hypothesis is rejected, this means that there are significant differences in the learning outcomes of application concepts between groups taught with SRLwhich is experiment class and groups taught with TRL which is control class.

The results of the second hypothesis test based on the two wayANOVA test in Table 9 show that the calculated F value is 155.431 and the significance value is 0.00. Significance value is smaller than 0.05 (0.00 <0.05). Thus the null hypothesis is rejected, this means that there are significant differences in the learning outcomes of conceptual applicationbetween groups that have high self efficacy and groups that have low self efficacy. This shows that students who have high selfefficacy have better conceptual application than groups of students who have low selfefficacy.

The third hypothesis is that there is an interaction between learning strategies and selfefficacy towards the learning outcomes of the conceptual application. The ANOVA 2 path test results in Table 9 shows that the calculated F value of 3.383 and a significance value of 0.04. Significance value is smaller than 0.05 (0.04 <0.05). Thus the null hypothesis is rejected, this means there is an interaction between learning strategies and selfefficacy towards the learning outcomes of the conceptual application of the Learning Theory courses. The difference between them is significant.

DISCUSSION

Based on the results of the hypothesis test, the first hypothesis in this study is: there is difference in the learning outcomes of the conceptual application in learning theory courses between students who are taught with SRL and students who are taught with TRL is accepted. This means that groups of students who use SRL get higher application learning outcomes compared to groups of students who use TRL.

The results of this study is supported by the results of Zhu, Au & Yates (2016) that helping students in self direction can determine the steps for learning and can improve learning outcomes if these steps applied effectively.

This is also supported by research by Fasikhah&Fatimah, (2013) that SRL method strategy improves learning achievement. This study found that in applying SRL, students use the ability of metacognition process of thinking so that they can make stages to help them learn(Flavel, 1976). These stages includeforethought, planning and activation or the planning stage. The second stage is monitoring and controlling.The third stage is reaction and reflection. Pintrich (2000) states that behavior is a regulatory strategy that can help students plan their learning and evaluate so that it can improve learning achievement.

The results of the second hypothesis test showed that there were significant differences in the learning outcomes of application concepts between groups with high self efficacy and low self efficacy. The results of this study are supported by Bandura (1986) that students with high self efficacy will get good results whereas students with low self efficacy will get less learning results.

Students with high selfefficacy tend to have a high level of selfconfidence of their abilities and the belief encourages them to learn. The abilities are used to find sources of information to complete the given task. Meanwhile students with low selfefficacy have low confidence in the abilities possessed yet their abilities to perform supporting arguments in solving problems and ideas are relatively small.Students with low self efficacy are not sure that they are able to get better learning outcomes. The results of this study support the results of research by Angela Willson-Conrad andKowalske (2018), high self efficacy has high academic achievement whereas students with low self efficacy have low performance. This is in line with what is found by individuals with low self efficacy will have negative thoughts and consider the task as a threat, thus setting low goals for themselves (Md& Ali, 2009), other research shows that self efficacy can improve learning outcomes (Yusuf, 2011; Motlaghet al., 2011;Ismailetal., 2005; Tamara & Koufteros, 2002).

The third hypothesis test results show that there is an interaction between learning strategies and students' selfefficacy. The results of this study are supported by Sharon Zumbrunn, (2011) that states SRL through selfefficacy can result in higher academic performance and achievement. Also Sadi's & Uyar (2013) found that SRL and self efficacycan improve academic achievement.

CONCLUSION

Based on the results and discussion of the research in the previous section, it can be concluded that: 1) SRL method as learning strategy has a positive influence on the learning outcomes of theconceptual application during the process of theory courses learning. Thus it can be concluded that there are significant differences on the learning outcomes of the application concepts between students who were taught using TRL and SRL. It can be said thatSRL method as learning strategyhas a better and more positive influence on the learning outcomes of the conceptual application ofChristian Religious Education learning theory than TRL method as learning strategy. 2) High self efficacy gives a positive influence on the learning outcomes of conceptual application of the learning theory. 3) There is an interaction between learning strategies and self efficacy to the learning outcomes of the conceptual application. Based on the brief conclusion, it can also be added that the SRL method as learning strategy and high self efficacy are very effective to conceptual application. For this reason, SRL method strategy is very appropriate to be applied in the learning process as an effort to improve the learning outcomes of the conceptual application by paying more attention to students' self-efficacy skills.

ACKNOWLEDGEMENT

The author would like to thank to Institut Agama Kristen Ambon dan Universitas Negeri Malang. This research was supported by both educational institutions.

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