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Self-regulation of primary education pre-service teachers

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Article Info

ABSTRACT

Motivation for the achievements is urgently needed when attending a class. For renforcing the motivation can be obtained through self-regulation this research aimed to discover students' self-regulation in a private university at Yogyakarta. This research used quantitative approach in the form of survey. The population in this research was all students in Primary school Teacher Education comprising 233 students. Whereas, there were 155 students as the sample taken by using random sampling technique. Furthermore, students' self-regulation was measured by using self regulation learning. The data analysis was conducted qualitatively in the form of descriptive or inferential showed by self-regulation in high category comprising 11 students or 7,09%, medium category comprising 97 students or 62,58%, and low category comprising 47 students or 30,32%. The result of this study showed that: (1) self-regulation of prospective primary school teachers was included into medium category, (2) self-regulation had an important role to improve students' motivation.

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1. INTRODUCTION

Self-regulation is a process used to concentrate a feeling, action, and thought [1] to reach the goal, so it can affect the achievement of students in an educational process [2-8]. Learning success is not only determined by cognitive aspect, but also influenced by affective aspect. Self-regulation in learning often referred as self regulated learning (SLR) which is one important aspect that can form better learning habits, strengthen learning abilities, improve learning achievements, monitor and evaluate students' academic abilities [6]. Selft regulated learning (SLR) in education has an important role which is to support the success of students' learning [9, 10]. Students who have self-regulation in study will have strong mentality and good skill in learning process [11, 12], so students will be more independent, become proficient in controlling their learning, and can improve their learning outcomes.

Students who have high selft regulated learning (SLR) can control, make, and direct their process in order to obtain many achievements, have effort in completing assignments, and can create a pleasant learning environment, for example such as finding suitable learning places and seeking finding help to solve the learning problems faced [13, 14]. Whereas for students who still have low self regulated learning (SLR), they will show some behaviours such as being late for coming to school, not completing assignments for

various reasons, cheating at the test, less utilizing library as a learning resource [15]. Besides that, self regulated learning (SLR) also affects the motivation that results in achievement [2].

Motivation is a complex interaction that occurs in the communication in society [16]. Therefore, motivation is one of the important things that must be possessed by students starting from primary school [17, 18] secondary school [19, 20] to university level [21] to produce optimal learning that will affect achivements [22-24]. Motivation of reaching achievements is divided into two, namely intrinsic motivation and extrinsic motivation [18, 25-27]. Intrinsic motivation is a kind of motivation which comes intrinsically such as interest, curiosity, pleasure, and something that is felt from the learning process. While external motivation is a kind of motivation which comes extrinsically such as desire, demand, structure, and burdening goal [28].

Ryan and Deci [29] explain that motivation derived intrinsically would produce optimal results [30-32]. Some researches found that internal motivation attracts students becoming active in the school activity [33], students in elementary school in grade 4–6, and also in the content of certain subject such as physical education [34-37]. Some researches also found that to make students being motivated can be done by integrating motivation in each lesson [36, 38-40] Those internal motivations have complex interaction with self-regulation learning (SRL) [41].

Self regulated learning (SLR) is not a personal characteristic and can be well developed through the support of people and environment [42]. For example, in the school environment, teachers and peers are parties who are able to develop students' self-regulation through the learning that takes place inside and outside the classroom. Therefore, *self-regulated learning* (SRL) is a main principle for the achievement of students as a prospective teacher [43-45] who will be directly involved in the learning process. Furthermore, teacher also has many other task besides teaching which causes the role of teacher becoming more complex [46, 47]. Good self-regulation possessed by teacher can reduce the stress possibly happened due to the burden of work [47-49] and can also influence students' self-regulation to have more achievements so that students will have motivation to excel [50, 51].

Self-regulated learning (SRL) for students can be improved through teaching, training, learning note, and lecturers' collaboration with students as well as students and students [43]. When students do learning and can manage themselves, it will increase motivation and possitively affects the achievement [52-54]. Therefore, the teaching faculty has the responsibility to form teacher candidates to have self-regulated learning (SRL) and good self-control in the learning process [55, 56]. Lately, a research was conducted by Alghamdi et al [57] which stated that *self-regulated learning* (SRL) can be influenced by the difference of gender because between men and women have different self-management.

Various studies showed that *self-regulated learning* (SRL) can improve students' motivation to obtain achievements. It becomes the background of this study about self-regulation on students of primary education teacher study program, as conducted by Herweig et al [58]. The result of this study showed that the improvement of *self-regulated learning* (SRL) can be done through the questionnaire of self-report. However, before going any further, it is urgent to know the categories of *self-regulated learning* (SRL) possessed by students. Related to that, this study aims to investigate the self-regulated learning (SRL) of students of primary education study program as a prospective primary school teacher, so that the university especially teaching training university can conduct some actions to improve the Self-regulated learning (SRL) of students as a prospective teacher in the future.

2.   RESEARCH METHOD

This research used quantitative approach in the form of survey. This research used cross-sectional design [58] to determine the self-regulation of level 2 students of Primary school Teacher Education study programs at the private university in Yogyakarta. The cross-sectional design was used to collect data about current attitudes, opinions and beliefs. The study population was all students of Primary school Teacher Education comprising 233 students. Then, 155 students were taken using a random sampling technique which means that all members of the population have the same probability / opportunity to be selected as the sample.

The survey in this study was conducted by gathering information about self-regulation using a questionnaire. The questionnaire contained a number of questions about students' self-control in facing assignments. The questionnaire consisted of 54 items using a 5-point Likert scale, which consisted of often, never, sometimes, seldom, and always. Answers never show the lowest points (1), while answers always show the highest points (5).

Data were obtained using a self regulation learning research instrument (SRL) developed by Dörrenbächer & Perels [43]. Self regulation learning (SRL) consisted of 3 stages in which there were 12 components. The planning stage consists of 20 items about objectivity, strategy and planning, self efficacy,

motivation, and goal orientation. For the action stage, there are 21 items which are about attention or focus, learning strategy, procrastination, and memory. Furthermore, the reflection stage consisted of 13 items about self-evaluation, causal, and self-reflection

Data were analysed quantitatively in the form of statistic- descriptive analysis and inferential using SPSS version 23. The descriptive analysis used to describe the categories of *selft regulated learning* (SLR) of students. The results of the analysis were presented in a graphic. An inferential analysis was used to investigate the difference of categories of *self regulated learning* (SLR) of students aiming to be generalized.

Self regulation learning (SRL) is grouped into three groups namely, low SRL group, medium SRL group, and high SRL group. Those grouping was created using quartiles of students of primary school student education scores. SRL groupings are presented in Table 1.

Table 1. Classification

Score	Category
X ≥ Mi + 1 Sdi	High
Mi – SDi ≤ X < Mi + Sdi	Medium
< Mi – Sdi	Low

Explanation: X: score of total subject Mi: ideal Mean SDi: ideal standard deviation

SRL scores of students of Primary school teacher education are below or equal to quartile 1 (<Mi-SDi) which indicate the low SRL scores between quartiles 2 and 3 (Mi-SDi≤ X <Mi + SDi) and indicate a moderate SRL group. The scores which are above or equal to quartile 3 (X ≥ Mi + 1 SDi) indicate a high SRL group.

3. RESULT AND ANALYSIS
3.1. Result

The description of data from the research can use descriptive-statistic technique. The result of descriptive analysis and inferential is shown in Table 2.

Table 2. The result of descriptive analysis hasil analisis

	Mean	Median	Modus	Std. Deviasi	Varians	Range	Mininum	Maksimum
Self-Regulation	149,37	147	145	18,74	351,18	115	101	216

Student regulation can be expressed using a scale instrument consisting of 54 questions. Each item has the score 1 to 5, so the minimum number of scores is 1 x 54 = 54 and the maximum score is 5 x 54 = 270. Based on table 1, it is known that the mean or average value is 149.37 or is rounded up becoming 149, for a median or middle value of 147, the mode or value that most frequently appears is 145, the standard deviation is 18.74 or rounded to 19.

The tendency of the average score of students' self-regulation variables can be known by categorizing the ideal average score that should be obtained. The lowest score is 101 and the highest score is 216. Therefore, frequency distribution of self-regulation as served in Table 3.

Table 3. Distribution of self-regulation frequency

No	Score Interval	Frequency	Percentage
1	101-115	3	1,9
2	116-130	17	11
3	131-145	48	31
4	146-160	50	32,3
5	161-175	25	16,1
6	176-190	8	5,2
7	191-205	2	1,3
8	206-220	2	1,3
	Total	155	100

Table of frequency distribution above can be described in the diagram as follow:

From Figure 1, it can be seen that there are 3 students who have self-regulation scores101-105, 17 students with the score 116-130, 48 students with the score 131-145, 50 students with the score 148-160, 25 students with the score 161-175, 8 students with the score 178 -190, 2 students with the score 191-205, and 2 students with the score 206-220. The classification figure of students' self-regulation is made based on those data.
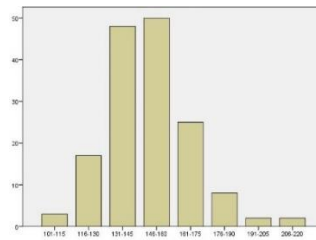

Figure 1. Diagram of Frequency Distribution of Students' Self-Regulation

In Table 5, it is explained that respondents have self-regulation learning (SLR) in the high category are 11 students or 11.09%, the medium category is 97 students or 62.58%, and the low category is 47 students or 30.32%. Overall, students' self-regulation in a private university is grouped into the medium and low category based on the classification of self regulated learning in Table 4. Besides that, the classification of *selft regulated learning* (SLR) as seen in Figure 2:

Table 4. Classification of self-regulation

Self-Regulation	Category
X≥ 178	High
139 ≤X< 178	Medium
< 139	Low

Table 5. Data classification of students' self-regulation

No	Score Interval	Category	Frequency	Percentage
1	X≥178	High	11	7,09%
2	139≤X<178	Medium	97	62,58%
3	< 139	Low	47	30,32%
	Total		155	100%

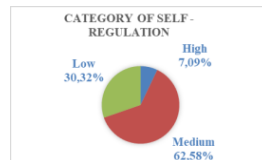Explanation: X is the score of students' self regulation

Figure 2. Diagram of the self-regulation classification

Therefore, the percentage of every self-regulation indicator is summarized in the Table 6 below.

Table 6. Percentage of Self-Regulation Indicator

Indicator	Sub Indicator	Quantity of Questions	Quantitiy of Scores	Maximum Scores	Percentage
Planning	Objectivity	4	1983	3100	63,97%
	Strategy planning and the scheduling	5	2031	3875	52,41%
	self-efficacy	5	2410	3875	62,19%
	Motivation	3	1485	2325	63,87%
Action	Goal orientation	3	1371	2325	58,97%
	Attention or focus	6	2432	4650	52,30%
	Learning strategy	4	1533	3100	49,45%
	Procrastination	6	2084	4650	44,82%
	Memory	5	2241	3875	57,83%
Reflection	Self-evaluation	5	2202	3875	56,83%
	Causal	4	1518	3100	48,97%
	Self-reaction	4	1863	3100	60,10%

Based on table 6, the students' self-regulation indicator of primary school teacher education study program at a private university in Yogyakarta have different percentages. The percentage of each sub-indicator of self-regulation is objectivity 63.97%, strategic planning and scheduling 52.41%, self-efficacy 62.19%, motivation 63.87%, goal orientation 58.97%, attention or focus 52.30 %, learning strategy 49.45%, procrastination 44.82%, memory 57.83%, self-evaluation 56.83%, causal 48.97%, and self-reactions 60.10%. The average of sub-indicator of self regulated learning (SLR) was already above 50%. Those sub-indicators influence the self-regulation of students of primary school teacher education.

3.2. Discussion

Descriptive analysis result shows that students' self-regulation is still at medium level. The self regulation is measured using three component indicators, namely planning, action, and reflection that are conducted by students before, during, and after attending the class [43]. Students who have high *selft regulated learning* (SRL) will be motivated in the learning process, so it directs the feeling, thought, and action to achieve the goals. *Selft regulated learning* (SRL) is one of the indicators which affects the achievements of students in learning process [59-61], so high self-regulation will affect the achievement [43, 62, 63].

The ability of self-regulation in students can be seen from the ability to determinethe planning consisting of objectivity, strategy planning and scheduling, selectivity-efficacy, and motivation. Determination of actions that can be seen includes goal orientation, attention or focus, learning strategy, procrastination, and memory. Furthermore, the determination of self-reflection consists of self-evaluation, causal, and self-reaction. The previous research found that students who have high *selft regulated learning* (SRL) will be motivated in determining planning strategy, organizing strategy, and reviewing strategy. It will be different with students who have low *selft regulated learning* (SRL) [64]. One way to improve student self-regulation is through lecturing methods used by lecturers and by learning methods used by students through e-learning [65]. Selft regulated learning (SLR) is conducted in three phases, namely future phases of thinking or planning, performance or action, and self-reflection [66].

3.2.1. Planning

In the planning aspect, student are good enough to control themselves. Students have done things that need to be prepared [67] before attending lectures such as thinking about learning strategy or learning style [68, 69], determining learning schedule, also increasing self-confidence and motivation. The result of previous researches also stated that motivation has important role in learning [66] and self-efficacy can affect students' beliefs in completing learning process [66, 70, 71] and accomplish the tasks in the future [72]. Self-efficacy is the main thing to foster motivation in conducting the process of self-regulation. the effect of self-efficacy includes selection, effort and persistence, emotion and problem repetition [73]. In the planning stage, the result obtained for each indicator is above 50%, so that in this aspect the students' self-regulation is good but still needs to be improved. Besides that, students are still in the early adulthood, which is characterized by one of them being responsible for themselves [74].

3.2.2. Action

Action related to how students conduct the learning process that is influenced by previous planning. The action is in the form of goal orientation, attention during the lecture, the lecture strategy used, the postponement of the assignment, and how to remember the lesson [11], [66]. This goal orientation is something that students will achieve [75] which serves to direct their behavior. The planning of learning strategies is influenced by two things namely metacognition ability and knowledge of learning strategy [76] and the understanding of the context where students will learn [77]. The more effective the students are in developing their self-management, behavior, and environment planning strategy, the higher the level of students' self-regulation.

In the action indicator, the delay in assignment received the lowest percentage of 44.82%. It is caused by the ability to control emotions that have not been stable [64], so that it will cause a feeling of laziness, boredom, lack of confidence, and give up easily. Besides of procrastination, the learning strategy also received a percentage below 50%. Therefore, students' self-regulation must be improved. If students have high self-regulation, they will be expert in using learning strategy so they are proud or satisfied with the efforts made.

3.2.3. Self-reflection

After lecturing, students need to reflect and react. The self-reflection includes self-assessment by evaluating the performance of lectures and making causal attributions as the results. Self-assessment is conducted by comparing the performance with existing standards, for example comparing with

the performance of others, making personal performance standard, or comparing current performance with the past [11]. Then solve the problems in order to get maximum results. Self-reaction is related to satisfaction, that is feeling disappointed or happy and has an adaptive / defensive strategy in achieving performance [2]. The level of self satisfaction is very influential on students' motivation to conduct self-regulation in the future.

The results above show that one of the indicators of reflection is still below 50% of the causal sub-indicator. Causal is the tendency of how students assess or examine themselves, for example, when they fail and will fix their mistakes then do some reflections.

High and low self-regulation can be caused by various things such as internal motivation, stimulation from others, and the influence of educational institution [60]. Other researches explain that self-regulation of learning is influenced by ineffective learning practices on university [61]. A research in southern United States shows that self-regulation of undergraduate students is lower than graduate students [62]. However, there is no more explanations about the factrs which affects *selft regulated learning* (SLR) and the difference of *selft regulated learning* (SLR) between men and women found in this research. Therefore, a further research is urgently needed to know and prove the factors which affect *selft regulated learning* (SLR) of students in Indonesia.

4. CONCLUSION

Selft regulated learning (SLR) of students of elementary teacher education study in grade 2 in one of university in Yogyakarta is still in medium category. Selft regulated learning (SLR) should be possessed by students because it fuctions as a bridge between external factor and interbnal factor of individuals. The level of self-regulation influences the way a person interacts as a result of the reciprocal interaction in the surrounding environment. The result of this study concludes that (1) the self-regulation of students as the prospective teacher is included to medium category, (2) self-regulation has essential roles to improve students' motivation in obtaining achievements. Therefore, self-regulation of studnets of primary school teacher education still needs to be improved in order to increase the motivation in obtaining achievements.

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REFERENCES

[1]   C. E. McClelland, M. M., & Cameron, "Self-regulation in early childhood: Improving conceptual clarity and developing ecologically valid measures," Child Dev. Perspect., vol. 6, no. 2, pp. 136–142, 2012.
[2]   Schunk D. H., Learning Theories An Educational Perspective, Fifth Edit. New Jersey: Pearson Education, 2009.
[3]   Zimmerman B. J., Motivational sources and outcomes of self-regulated learning and performance, In B. J. Z. New York: Routledge, 2011.
[4]   Wollfolk A., Educational Psychology, 10th ed. Boston: Pearson Education, 2007.
[5]   Zimmerman, B. J.; Martinez-Pons, "Student difference in self-regulated learning: relating grade, sex, and giftedness to self-efficacy and strategy use," J. Educ. Psychol., vol. 82, no. 1, pp. 51–59, 1990.
[6]   Zumbrunn E. D., S., Tadlock, J., Roberts, "Encouraging self regulated learning in the classroom: A riview of the literature.," Metrop. Educ. Reserach Consort., 2011.
[7]   McClelland, M., Acock, A. C., Piccinin, A., Rhea, S. A., & Stallings, "Relations between preschool attention span-persistence and age 25 educational outcomes," Early Child. Res. Q., vol. 28, no. 2, pp. 314–324, 2013.
[8]   McClelland, M. M., et all., "Predictors of early growth in academic achievement: The head-toesknees-shoulders task," Front. Psychol., vol. 5, pp. 1–14, 2014.
[9]   Liew J., "Effortful control, executive functions, and education: Bringing self-regulatory and social-emotional competencies to the table," Child Dev. Perspect., vol. 6, no. 2, pp. 105–111, 2012.
[10] Neuenschwander, R., Röthlisberger, M., Cimeli, P., & Roebers, "How different aspects of self-regulation predict successful adaptation to school?," J. Exp. Child Psychol., vol. 113, no. 3, pp. 353–371, 2012.
[11] Zimmerman B. J., "Becoming a self-regulated learner: An overview," Theory Pract., vol. 42, no. 1, pp. 64–70, 2002.
[12] Mägi, K., Männamaa, M., & Kikas, "Profiles of self-regulation in elementary grades: Relations to math and reading skills.," Learn. Individ. Differ., vol. 51, pp. 37–48, 2016.
[13] Montalvo, F.T. & Torres, "Self Regulated Learning: Current and Future Direction," Electron. J. Res. Educ. Psychol., vol. 2, no. 1, pp. 1–34, 2004.

[14] Dawson, P., & Guare, Executive skills in children and adolescents. A practical guide to assessment and intervention. New York: The Guilford Press, 2010.

[15] Pujiati, Indah N. 2010. The Relationship between self-efficacy and student learning independence: A study of Class VII Students of junior high school 2 Rajapolah, Tasikmalaya, Academic Year 2010/2011 (in Bahasa). Bandung: UPI.

[16] Wigfield, A., & Eccles, "Expectancy-value theory of achievement motivation.," Contemp. Educ. Psychol., vol. 25, no. 1, pp. 68–81, 2000.

[17] Kriegbaum, N. Becker, B. Spinath, "The relative importance of intelligence and motivation as predictors of school achievement: A meta-analysis," Educ. Res. Rev., vol. 25, pp. 120-148, 2018.

[18] Marina S.Lemosa., "The Relationships between Intrinsic Motivation, Extrinsic Motivation, and Achievement, Along Elementary School.," Soc. Behav. Sci., vol. 112, pp. 930–938, 2014.

[19] Karlen, F. Suter, C. Hirt, and K. Maag, "Learning and Individual Di ff erences The role of implicit theories in students ' grit , achievement goals , intrinsic and extrinsic motivation , and achievement in the context a long-term challenging task," Learn. Individ. Differ., vol. 74, pp. 101757, 2019.

[20] Jiang, E. Q. Rosenzweig, and H. Gaspard, "An expectancy-value-cost approach in predicting adolescent students ' academic motivation and achievement ," Contemp. Educ. Psychol., vol. 54, pp. 139–152, 2018.

[21] Meens, E. E. M., Bakx, A. W. E. A., Klimstra, T. A., & Denissen, "The association of identity and motivation with students' academic achievement in higher education.," Learn. Individ. Differ., vol. 64, pp. 54–70, 2018.

[22] Dotterer, A. M., & Lowe, "Classroom context, school engagement, and academic achievement in early adolescence.," J. Youth Adolesc., vol. 40, no. 12, pp. 1649–1660, 2011.

[23] Taylor, G., Jungert, T., Mageau, G. A., Schattke, K., Dedic, H., Rosenfield, S. and R., "A self-determination theory approach to predicting school achievement over time: The unique role of intrinsic motivation," Contemp. Educ. Psychol., vol. 39, no. 4, pp. 342–358, 2014.

[24] Schunk, D. H., Pintrich, P. R., & Meece, Motivation in education: Theory, research, and applications. Upper Saddle River. NJ: Merrill Prentice Hall, 2008.

[25] Ratelle, C. F., Guay, F., Vallerand, R. J., Larose, S., & Senécal, "Autonomous, controlled, and amotivated types of academic motivation: A person-oriented analysis," J. Educ. Psychol., vol. 99, no. 4, pp. 734–746, 2007.

[26] Walls, T. A., & Little, "Relations among personal agency, motivation, and school adjustment in early adolescence," J. Educ. Psychol., vol. 97, no. 1, pp. 23–31, 2005.

[27] Ryan, R., & Deci, "Self-determination theory and the facilitation of intrinsic motivation.," Am. Psychol., vol. 55, no. 1, pp. 68–78, 2000.

[28] Deci, E. L., & Ryan, "Facilitating optimal motivation and psychological well-being across life's domains," Can. Psychol., vol. 49, no. 1, pp. 14–23, 2008.

[29] Ryan, R. M., & Deci, Self-determination theory: Basic psychological needs in motivation, development, and wellness. New York,US: Guilford Press, 2017.

[30] Mekler, E. D., Brühlmann, F., Tuch, A. N., & Opwis, "Towards understanding the effects of individual gamification elements on intrinsic motivation and performance," Comput. Human Behav., vol. 71, pp. 525–534, 2017.

[31] Feng, Y., Ye, H. J., Yu, Y., Yang, C., & Cui, "Gamification artifacts and crowdsourcing participation: Examining the mediating role of intrinsic motivations," Comput. Human Behav., vol. 81, pp. 124–136, 2018.

[32] Malmberg L., & Martin A. J., "Processes of Students' Effort Exertion, Competence Beliefs and Motivation: Cyclic and Dynamic Effects of Learning Experiences within School Days and School Subjects," Contemp. Educ. Psychol., vol. 58, pp. 229-309, 2019.

[33] Datu, J. A. D., King, R. B., & Valdez, "Psychological capital bolsters motivation, engagement, and achievement: Cross-sectional and longitudinal studies," J. Posit. Psychol., vol. 13, no. 3, pp. 260–270, 2018.

[34] Ntoumanis N., "A self-determination approach to the understanding of motivation in physical education," Br. J. Educ. Psychol., vol. 71, no. 2, pp. 225–242, 2001.

[35] Standage, et al, "Students' motivational processes and their relationship to teacher ratings in school physical education: A self-determination theory approach," Res. Q. Exerc. Sport, vol. 77, no. 1, pp. 100–110, 2006.

[36] Gaspard, H., et al, "Fostering adolescents' value beliefs for mathematics with a relevance intervention in the classroom," Dev. Psychol., vol. 51, , no. 9, pp. 1226–1240, 2015.

[37] Standage N., M., Duda, J. L., & Ntoumanis, "A test of self-determination theory in school physical education," Br. J. Educ. Psychol., vol. 75, no. 3, pp. 411–433, 2005.

[38] Harackiewicz, J., Canning, E., Tibbetts, Y., Priniski, S., & Hyde, "Closing achievement gaps with a utility-value intervention: Disentangling race and social class," J. Pers. Soc. Psychol., vol. 111, no. 5, pp. 745–765, 2016.

[39] Hulleman, C., Godes, O., Hendricks, B., & Harackiewicz, "Enhancing interest and performance with a utility value intervention," J. Educ. Psychol., vol. 102, no. 4, pp. 880–895, 2010.

[40] Zhou, N. Ntoumanis, and C. Thøgersen-ntoumani, "Effects of perceived autonomy support from social agents on motivation and engagement of Chinese primary school students : Psychological need satisfaction as mediator," Contemp. Educ. Psychol., vol. 58, no. 299, pp. 323–330, 2019.

[41] B. M, "Self-regulated learning: A new concept embraced by researchers, policy makers, educators, teachers, and students," Learn. Instr., vol. 7, no. 2, pp. 161–186, 1997.

[42] Fonagy, P., Target, "Early intervention and the development of self-regulation.," Psychoanal. Q., vol. 22, no. 3, pp. 307–335, 2002.

[43] Dörrenbächer, L., & Perels, "More is more? Evaluation of interventions to foster selfregulated learning in college," Int. J. Educ. Res., vol. 78, pp. 50–65, 2016.

[44] Acar E., and Aktam H., "The relationship between self-regulation strategies and prospective elementary school teachers ' academic achievement in mathematics teaching course," vol. 2, no. 2, pp. 5539–5543, 2010.

[45] Aktamış E., H., & Acar, "The effect of 'laboratory practices in science teaching' course on development of prospective science teachers' self- regulation skills," Procedia - Soc. Behav. Sci., vol. 2, no. 2, pp. 5549–5553, 2010.

[46] Hammerness, K. J., Darling-Hammond, L., & Bransford, How teachers learn and develop. In L. Darling-Hammond, & J. Bransford (Eds.), Preparing teachers for a changing world: What teachers should learn and be able to do. San Francisco: Jossey-Bass, 2005.

[47] Philipp, A. M., & Kunter, "How do teachers spend their time? A study on teachers' strategies of selection, optimisation, and compensation over their career cycle," Teach. Teach. Educ., vol. 35, pp. 1–12, 2013.

[48] Pietarinen, J. K., Pyhalto, K., Soini, T., & Salmela-Aro, "Reducing teacher burnout: a socio-contextual approach.," Teach. Teach. Educ., vol. 35, pp. 62–72, 2013.

[49] Mattern, J. J., & Bauer, "Does teachers' cognitive self-regulation increase their occupational well-being? The structure and role of self-regulation in the teaching context.," Teach. Teach. Educ., vol. 43, pp. 58–68, 2014.

[50] Grau, V. D., & Whitebread, "Self and social regulation of learning during collaborative activities in the classroom: The interplay of individual and group cognition.," Learn. Instr., vol. 22, no. 6, pp. 401–412, 2012.

[51] Hadwin, A. M., Järvelä, S., & Miller, Self-regulation, co-regulation, and shared regulation in collaborative learning environments. In D. Schunk, & J. A, Greene (Ed. New York: Routledge, 2018.

[52] Daniela P., "The Relationship Between Self-Regulation , Motivation And Performance At Secondary School Students," Procedia - Soc. Behav. Sci., vol. 191, pp. 2549–2553, 2015.

[53] Zachariou A., and Whitebread D., "Developmental differences in young children's self-regulation," J. Appl. Dev. Psychol., vol. 62, pp. 282–293, 2019.

[54] Kilis S., and Z. Yıldırım, "Investigation of community of inquiry framework in regard to self-regulation, metacognition and motivation," Comput. Educ., vol. 128, pp. 53-56, 2018.

[55] Perry, L. N. E., Philips, L., & Hutchinson, "Mentoring student teachers to support selfregulated learning," Elem. Sch. J., vol. 106, no. 3, pp. 237–254, 2006.

[56] Perry, C. N. E., et al "Talking about teaching self-regulated learning: Scaffolding student teachers' development and use of practices that promote selfregulated learning," Int. J. Educ. Res., vol. 47, no. 2, pp. 97–108, 2008.

[57] Kerlinger F. N., Principles of behavioral research (in Bahasa), Yogyakarta: UGM Press, 2004.

[58] Creswell J. W., Educational Research: Planning, Conducting and Evaluating Quantitative and Qualitative Research. Boston: Pearson, 2012.

[59] Arikunto S., Research Procedure of A Practical Approach (in Bahasa), Jakarta: Rineka Cipta, 2012.

[60] Sagasser C. P., Margaretha H; Kramer, Anneke WM; van der Vleuten, . "How do postgraduate GP trainees regulate their learning and what helps and hinders them? A qualitative study," BMC Med. Educ., vol. 12, no. 1, p. 67, 2012.

[61] Ewijk G., Charlotte Dignath-van; Dickhäuser, Oliver; Büttner, "Assessing How Teachers Enhance Self-Regulated Learning: A Multiperspective Approach.," J. Cogn. Educ. Psychol., vol. 12, no. 3, pp. 338–358, 2013.

[62] Tseng H., Yi X., and Yeh H., Learning-related soft skills among online business students in higher education: Grade level and managerial role differences in self-regulation, motivation, and social skill. Elsevier B.V., 2018.

[63] Nakata Y., "Encouraging student teachers to support self-regulated learning: A multiple case study on prospective language teachers," Int. J. Educ. Res., vol. 95, pp. 200–211, 2019.

[64] Aftina Nurul Husna, et al, "Outstanding Student Self Regulation with Achievement (in Bahasa).," J. Univ. Diponegoro, vol. 13, no. 1, pp. 50–63, 2014.

[65] Delbesoğlugil F. Y. T. A. B. Ö., "Questioning Academic Success through Selfregulation, Self-esteem and Attitude in Foreign Language Learning (A Case Study)," Theory Pract. Lang. Stud., vol. 4, no. 11, pp. 2223–2230, 2014.

[66] Zimmerman, A. B.J. & Moylan, "Self Regulation: Where Metacognition and Motivation Intersec," in Dalam Hacker, D.J., Dunlosky, J., & Graesser, A.C. (Eds.). Handbook of Metacognition in Education, New York: Routledge, 2009.

[67] Ariani T. W., "Why Do I Study? The Mediating Effect Of Motivation And SelfRegulation On Student Performance Dorothea Wahyu Ariani," Business, Manag. Educ., vol. 14, no. 2, pp. 153–178, 2016.

[68] Pintrich, E. V. P. R.; De Groot, "Motivational and self-regulated learning components of classroom academic performance," J. Educ. Psychol., vol. 82, no. 1, pp. 33–40, 1990.

[69] Priyambodo E., "The Effectiveness of Collaborative Academic Online Based Learning through Students' Self-Regulated Learning," J. Educ. Learn., vol. 10, no. 4, pp. 405–410, 2016.

[70] Lonka M. J. K, Olkinuora E, "Aspects and prospects of measuring studying and learning in higher education," Educ. Psychol., vol. 16, no. 4, pp. 301–323, 2004.

[71] Pajares F., "Gender and Perceived Self-Efficacy in Self Regulated Learning," Theory Pract., vol. 41, no. 2, pp. 116–125, 2002.

[72] Bandura A., Self Efficacy: The Exercise of Control. New York: W.H. Freeman and Company, 1997.

[73] Pervin, O. L.A. & John, Personality: Theory and Research. New York: John Wiley & Sons, Inc, 1999.

[74] Santrock J. W., Life Span Development, Edisi keli. New York: McGraw-Hill, 2013.

[75] Kreitner A., R. & Kinicki, Organizational Behavior. Boston: McGraw-Hill Companies, Inc, 2001.

[76] Zimmerman B, "A Social Cognitive View of Self Regulated Academic Learning.," J. Educ. Psychol., vol. 81, no. 3, pp. 329–339, 1989.

[77] Butler D, "The Strategic Content Learning Approach to Promoting Self Regulated Learning: An Introduction to Coordinated Symposium," in Makalah disampaikan pada pertemuan American Educational Research Association, 1996.

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