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ABSTRACT

This study was conducted to analyze things that can have an influence on self-efficacy and outcome expectations in learning mathematics and to confirm the suitability of the model with the data using First order confirmatory factor analysis (1st Order CFA). The population in this study were students of SMA Plus Al Athiyah Aceh with a large sample of 53 students. The sample was selected based on a purposive sampling technique with the criteria that students with good, medium and low math achievement from each grade level. The research data were analyzed using the Linear Structural Model (LISREL) version 8.8 from Joreskog and Sorbom. The results of data analysis showed that the self-efficacy and outcome expectation instruments had good quality construct validity after eliminating the two items c3 and c5. Item c1 which is the belief in being able to correctly solve all math problems that the teacher gives most dominantly reflects self-efficacy in learning mathematics, while item d2 which feels it is important to learn mathematics most dominantly reflects the aspect of outcome expectation in learning mathematics.

Keywords: Confirmatory factor analysis, Outcome Expectation, Self-Efficacy

ABSTRAK

Penelitian ini dilakukan untuk menganalisis hal-hal yang dapat memberi pengaruh pada self-efficacy dan outcome expectation pada pembelajaran matematika dan mengkonfirmasikan kesesuaian model dengan data menggunakan First order confirmatory factor analysis (1st Order CFA). Populasi dalam penelitian ini adalah siswa SMA Plus Al Athiyah Aceh dengan banyaknya sampel yaitu 53 siswa. Sampel dipilih berdasarkan teknik purposive sampling dengan kriteria yaitu siswa dengan prestasi matematika baik, sedang dan rendah dari setiap jenjang kelas. Data penelitian dianalisis menggunakan Linear Structural Model (LISREL) versi 8.8 dari Joreskog dan Sorbom. Hasil analisis data menunjukkan bahwa instrumen self-efficacy dan outcome expectation mempunyai kualitas validitas konstruk yang baik setelah menghilangkan dua item yang c3 dan c5. item c1 yaitu keyakinan mampu menyelesaikan dengan benar semua soal matematika yang guru berikan paling dominan merefleksikan self-efficacy dalam pembelajaran matematika, sedangkan item d2 yaitu merasa penting untuk belajar matematika paling dominan mrefleksikan aspek outcome expectation pada pembelajaran matematika.

Kata kunci: Analisis Faktor Konfirmatori, Outcome Expectation, Self-Efficacy

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Introduction

Education has an influence on children's development both physically, cognitively and psychosocially (Papalia & Martorell, 2015). Education plays an important role in the formation of individual personalities, not only in students' thinking processes but also in children's ability to socialize with others (King, 2014). Student's development will have an impact on the environment or society and more broadly can have an impact on the progress of a country (Santrock, 2018). Individual quality in education cannot be separated from academic achievement (Jensen, 2015).

Self-efficacy is part of an individual's ability to adapt. Bandura was the one who first developed this theory. Self-efficacy is related to a person's ability to organize and perform actions to demonstrate certain skills (Bandura et al., 1986). Self-efficacy is students' belief in their ability to design, do, and produce something that can affect their lives (Sagone & Caroli, 2013). Self-

efficacy influences people's decisions about behavioral regulation, how much effort they put into getting work done, and how long they can persist despite obstacles (Strecher et al., 1986). (Bandura, 1977) shows that self-efficacy is the main factor influencing decision making and human behavior. In addition, (Zimmerman, 2000) assumes that self-efficacy motivates people to organize themselves as best they can to set and achieve goals.

(Strecher et al., 1986) explained that self-efficacy can influence decisions that determine people's behavior, make more efforts to get things done, and can refrain from retreating if there are obstacles. Self-efficacy has a big influence in achieving academic success (Ahmad & Safaria, 2013; Köseoğlu, 2015; Basith et al., 2020; Warsihna et al., 2021). Students who have learning difficulties tend to have low academic self-efficacy, and lead to low achievement (Girli & Öztürk, 2017). Students with low self-efficacy have higher anxiety in solving math problems (Novita et al., 2018). On the other hand, Students who have high self-efficacy will also be skilled in learning (Kudo & Mori, 2015). To gain achievement, students need self-efficacy (Agustiani et al., 2016;Lee & Mao, 2016). Self-efficacy will motivate students to be able to get the expected mathematical achievements (Hanifah et al., 2020). Self-efficacy can help students in making effective learning decisions (Al-mehsin, 2017).

Self-efficacy is a belief in one's ability to get things done (Warner & French, 2020). Self-efficacy has been shown to be a predictor in influencing learning achievement and helping self-regulation in learning (Hedeshi, 2017). Self-efficacy is one of the factors that can predict learning achievement (Fokkens-Bruinsma et al., 2021). Self-efficacy is part of intrinsic motivation that can affect a person's ability to survive in the face of difficulties or obstacles (Pasha-Zaidi et al., 2019).

According to (Bandura, 1997), self-efficacy is the main factor influencing decisions and behavior. (Zimmerman, 2000) also argues that self-efficacy motivates individuals to learn through goal setting, self-management, self-respect, and self-regulation through strategy execution. Self-efficacy can shape a person's life through career choices and situations. Self-efficacy allows people to take difficult actions and choose situations that they believe can be resolved. Self-efficacy responds to events and situations that occur effectively, works in good faith, believes in their abilities, sees difficulties as challenges rather than threats, seeks new situations, and seeks goals, accepts challenges, believes in their ability to work hard, is productive, focused on the job, develop coping skills, recover quickly from frustration and stress, and are able to deal with threats (Bandura, 1997). (Bandura, 1997) also found that people with low self-efficacy are lethargic, easily sad, indifferent, anxious, avoid difficult tasks, and give up easily when faced with obstacles. In difficult situations and challenges, he thinks about his shortcomings and the consequences of his failures, and after his failures he gradually regains his emotions.

Self-efficacy has a meaning that is not the same as ideals. ideals represent effort (what can be achieved) and self-efficacy represents a person's evaluation of his abilities (Alwisol, 2007). (Bandura et al., 1989) revealed that self-efficacy has an important role in motivation and coordination to achieve goals. Self-efficacy is a person's strength in determining how much effort must be made and the time it takes a person to complete a job. People with high self-efficacy prefer solving problems, and people with low self-efficacy tend to reduce their efforts and run away from problems. Self-efficacy is a form of a person's belief in his ability to act or respond to something. One of the efforts to maintain self-efficacy or self-strength in dealing with something is to provide learning facilities for students to be able to choose treatment for

themselves to restore their self-efficacy (self-efficacy) when experiencing a decrease in selfquality (Khilmi, 2018). Students need to have self-efficacy beliefs about themselves in learning practices as well as to achieve their academic achievements (Lusiana & Setyaningsih, 2018).

According to (Gibson & Donelly, 2000), Self-efficacy has three aspects: belief in the ability to deal with problems that are not easy to solve, belief in strength, and expectations for overall performance. Someone with high self-efficacy in problem solving tends to be independent and directly involved in very challenging tasks. challenges are not for him a threat and he have a great interest in all activities, strives to develop and achieve his goals. he will also increase his efforts to avoid fear and failure. Even if that happens, it will not drag on with disappointment, but will immediately improve with a new, more effective strategy (Bandura, 1994). People with high self-efficacy perceive failure as a lack of commitment, knowledge, and skills. He also likes challenges (Bandura, 1997). Individuals who have low self-efficacy do not like to think about the best way to solve complex problems. In the face of failure, he does not quickly regain his confidence (Bandura, 1994).

According to (Bandura, 1997), self-efficacy is belief in one's ability to learn or perform effectively, whereas expectations for results indicate belief in the ultimate goal of an activity. As an example of self-efficacy, (Zimmerman, 2000) assumes that a person believes that he or she will get better grades in a lesson while the expected result of good grades can increase his or her chances of finding the desired job. Self-efficacy can affect expectations for outcomes. In other words, the higher a person's belief in his abilities, the higher the goals formulated and his desire to maintain these goals (Bandura, 1991). According to (Hackett & Betz, 1989), the expectation of the outcome is the belief in the outcome of an action, while self-efficacy is the belief about how to deal with a particular problem. In the Theory of Expectancy, a behavior is a combination of the expected outcome of the behavior and the person's expectations of how that outcome will be measured. For example, students who believe in their mathematical skills expect high scores on math tests and vice versa (Schunk, 1991). Self-efficacy and expected results (outcome expectations) can also be negatively correlated. A high level of self-efficacy can lead to complaints and protests because the results that occur are considered ineffective. On the other hand, people are more prone to depression when they have low self-efficacy but high expected outcomes. However, with rising expectations, he will try hard to achieve the expected results.

Self-efficacy and expected results are part of self-regulation that students need to master, especially when learning mathematics. These two words have different but related meanings. According to (Bandura, 1997), self-efficacy is belief in one's ability to learn or perform effectively, whereas expectations for results indicate belief in the ultimate goal of an activity. As an example of self-efficacy, (Zimmerman, 2000) assumes that a person believes that he or she will get better grades in a lesson while the expected result of good grades can increase his or her chances of finding the desired job. According to (Hackett & Betz, 1989), the expectation of the outcome is the belief in the outcome of an action, while self-efficacy is the belief about how to deal with a particular problem. In the theory of expectancy, a behavior is a combination of the expected outcome of the behavior and the person's expectations of how that outcome will be measured. For example, students who believe in their mathematical skills expect high scores on math tests and vice versa (Schunk, 1991). Self-efficacy and expected results (outcome expectations) can also be negatively correlated. A high level of self-efficacy can lead to complaints and protests because the results that occur are considered ineffective. On the other

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Research Methods

The participants in this study were students of SMA Plus Al Athiyah Aceh. The sample was selected based on the purposive sampling technique, totaling 53 students. Purposive sampling is a sampling technique by setting certain criteria (Sugiyono, 2015). The criteria used to select the sample in this study were students with good, medium and low math achievement from each grade level.

The instrument used to measure self-efficacy and outcome expectation in mathematics learning in this study refers to the characteristics of self-efficacy and outcome expectation proposed by (Zimmerman, 2000) and (Bandura et al., 1986). The scale used in the instrument is a Likert scale with four categories, namely strongly disagree given a score of 1, disagree given a score of 2, agree given a score of 3 and strongly agree given a score of 4. The scale used has opposite forms of meaning, namely favorable and unfavorable. The number 1/STS reflects the lowest value of the respondent's answer to an item and the number 4/SS reflects the highest value given by the respondent to a statement item. The following are the indicators that show self-efficacy and outcome expectations in learning mathematics.

Table 1. Aspects and indicators of self-efficacy and outcome expectation			
Aspect		Indicator	
Self-Efficacy	a.	Confidence in being able to correctly solve all the math	
		problems that the teacher gives	
	b.	Enjoy reading mathematics books	
	c.	Be challenged when you find difficult math problems	
Outcome	a.	By learning math make your dreams come true	
Expectation	b.	Feel important to learn mathematics	

The blueprint for the self-efficacy and outcome expectation scale is shown in table 2 below.

A	I., 1	Item's number		Γ
Aspect	Indicator	Favo Unfavo		Σ.
Self-Efficacy	a. Confidence in being able to correctly solve all the math problems that the teacher gives	1	6,7	3
	b. Enjoy reading mathematics			
	books	3	2	2
	c. Be challenged when you find			
	difficult math problems	5	4	2
Outcome Expectation	a. By learning math make your dreams come true	10	8	2
1	b. Feel important to learn mathematics	9	11	2
Total Items				11

 Table 2. Blue Print Scale of self-efficacy and outcome expectation

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Brown (2015) mentions that Confirmatory Factor Analysis (CFA) is an inseparable analytical tool for construct validation in social and behavioral sciences. The results of the CFA test provide convincing evidence of the convergent and discriminant validity of the construction of a theory. Different indicators of theoretically similar or overlapping constructs that are interrelated indicate convergent validity.

Confirmatory Factor Analysis (CFA) is useful for testing how indicators describe a factor (Hair et al., 2010). This test will describe how well the indicators can be used to measure self-efficacy and outcome expectations in learning mathematics. In this study, the data were analyzed using the Structural Equation Model (SEM) using the Linear Structural Model (LISREL) version 8.8 through first order CFA. First order confirmatory factor analysis (1st Order CFA) is carried out if the researcher only wants evidence on one level of latent variables (Retnawati, 2016).

The first Order CFA test is carried out by considering the calculated t value, factor load, p value, and RMSEA. According to Retnawati (2016), a significant path coefficient is indicated by the T-value which is not red (significance level 0.05 and T-value not less than 1.96). Carmines and Zeller explain that a construct can be said to be good if it has a minimum factor load of 0.30. Thus, if the value of 0.30, the indicator is said to be valid (Sugiyono, 2015). In addition, the model is said to be suitable if it has a p-value > 0.05 (Retnawati, 2016). According to Brown (2015), the value of RMSEA 0.05 indicates a close fit model, while 0.05 <RMSEA 0.08 indicates the model has good fit.

Result and Discussions

Data analysis was performed using LISREL 8.8 software. (Joreskog & Sorbom, 1996) stated that if there was no red arrow in the analysis of the t-value then all items were significant at the 0.05 level (t-value >1.96). The t values obtained as a result of confirmatory factor analysis are presented in Table 3.

Instruments in learning mathem		
Item	t Value	Description
c1		
c2	2.43	Sig
c3	1.71	Not sig
c4	2.51	Sig
c5	1.34	Not sig
c6	2.20	Sig
c7	2.75	Sig
d1		
d2	3.46	Sig
d3	3.34	Sig
d4	3.43	Sig

Table 3. The t value in the first order CFA test on the self-efficacy and outcome expectation instruments in learning mathematics

These results indicate that items c3 and c5 have a value of t < 1.96 (shows red line) so that these items cannot be included. The final result of the model can be seen in the following figure.



The final result of the model calculation using first order CFA is showed in Table 4.

Table 4. The final result of the model calculation using first order CFA				
Criteria	Compatibility Level	Model Result	Model Evaluation	
Chi-Square (df=43)	Chi-Square <2df	45.52	Fit	
P-Value	> 0.05	0.36746	Fit	
RMSEA	≤ 0.08	0.034	Fit	

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Information on the calculation of the first order CFA on the self-efficacy and outcome expectation instruments in full is presented in Table 5.

		Instruments		
Item	T-Value	Loading Factor	\mathbb{R}^2	Description
c 1		0.64	0.4	
c2	2.43	0.43	0.19	Sig
c4	2.51	0.60	0.36	Sig
c6	2.20	0.38	0.14	Sig
c7	2.75	0.52	0.27	Sig
d1		0.46	0.22	
d2	3.46	0.84	0.71	Sig
d3	3.34	0.76	0.58	Sig
d4	3.43	0.82	0.67	Sig

 Table 5. Calculation of First Order CFA on Self-Efficacy and Outcome Expectation

Based on table 5, it can be seen that item c1, namely the belief in being able to correctly solve all math problems that the teacher gives most dominantly reflects self-efficacy in learning mathematics, while item d2, which is feeling important to learn mathematics, most dominantly reflects the outcome expectation aspect in learning mathematics.

Self-efficacy and outcome expectations are part of self-regulation that must be owned by a person and can affect his motivation in activities (Zimmerman, 2000). Self-efficacy can affect expectations for outcomes. In other words, the higher a person's belief in his abilities, the higher the goals formulated and his desire to maintain these goals (Bandura, 1997). According to (Hackett & Betz, 1989), the expectation of the outcome (outcome expectation) is a belief in the outcome of an action, while self-efficacy is a belief about how to deal with certain problems.

This study was conducted to analyze things that can affect self-efficacy and outcome expectations in mathematics learning and confirm the suitability of the model with the data using First order confirmatory factor analysis (1st Order CFA). Based on the results of this study, it was found that items c3 and c5, namely I was challenged when I encountered difficult math problems and I lacked confidence when asked to solve math problems in front of the class, had a t value of < 1.96 (red line) so that the item could not be included.

The final result of the model calculation using first order CFA without including c3 and c5 shows that the p-value = 0.36746 (> 0.05), RMSEA = 0.034 (< 0.08) and chi-square = 45.52 <2df which means that the model is fit. In this study, it was shown that item c1, namely the belief in being able to correctly solve all math problems that the teacher gave most dominantly reflected self-efficacy in learning mathematics, followed by c2 (I like reading math textbooks), c4 (I can only solve easy math problems only), c6 (I'm hopeless if I can't answer math problems

given by the teacher), and c7 (I often copy my friend's answer because I think my friend's answer is the most correct).

In the outcome expectation aspect, item d2, which is feeling important to learn mathematics, most dominantly reflects the outcome expectation aspect in learning mathematics, followed by d4 (I feel I can still achieve my goals even though I can't do math), d3 (I don't feel the need to learn mathematics), and d1 (studying mathematics helped me realize my dreams). Based on these results, there are still students who feel there is no connection between mathematics and their future so that they do not have outcome expectations from learning mathematics which have an impact on low motivation to participate in learning mathematics.

In addition to this, there are still students who despair if they cannot answer the math questions given by the teacher, this shows that self-efficacy is still low. This can be a benchmark for educators on how to increase students' self-efficacy in learning mathematics and grow the outcome expectations of the learning by explaining the various benefits of the material learned in students' daily lives. Although there are still students who feel hopeless if they cannot answer the questions from the teacher, the majority of students believe that they can correctly solve all the mathematics problems that the teacher gives. This can be a consideration for teachers to give students the ability to discuss in groups so that students who have high efficacy in learning mathematics. Teachers can also vary the level of questions given in order to increase student confidence which is still low.

Conclusion

The results showed that the self-efficacy and outcome expectation instruments had good quality after eliminating two items, namely c3 and c5 in the aspect of self-efficacy. Thus, the self-efficacy and outcome expectation instruments can be used by mathematics teachers. In this study, it was shown that item c1, namely the belief in being able to correctly solve all mathematics problems that the teacher gave most dominantly reflected self-efficacy in learning mathematics, followed by c2 (I like reading math textbooks), c4 (I can only solve easy mathematics problems), c6 (I'm hopeless if I can't answer math problems given by the teacher), and c7 (I often copy my friend's answer because I think my friend's answer is the most correct). In the outcome expectation aspect, item d2, which is feeling important to learn mathematics, most dominantly reflects the outcome expectation aspect in learning mathematics, followed by d4 (I feel I can still achieve my goals even though I can't do math), d3 (I don't feel the need to learn math), and d1 (studying mathematics helped me realize my dreams).

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Bibliography

- Agustiani, H., Cahyad, S., & Musa, M. (2016). Self-efficacy and Self-Regulated Learning as Predictors of Students Academic Performance. *The Open Psychology Journal*, 9(1), 1–6. https://doi.org/10.2174/1874350101609010001
- Ahmad, A., & Safaria, T. (2013). Effects of Self-Efficacy on Students' Academic Performance. In *Journal of Educational, Health and Community Psychology* (Vol. 2, Issue 1).

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- Al-mehsin, S. A. (2017). Self-Efficacy and Its Relationship with Social Skills and the Quality of Decision-Making among the Students of Prince Sattam Bin Abdul-Aziz University. *International Education Studies*, 10(7), 108. https://doi.org/10.5539/ies.v10n7p108
- Alwisol. (2007). Psikologi kepribadian. UMM Press.
- Bandura, A. (1977). Self-efficacy: Toward a Unifying Theory of Behavioral Change. In *Psychological Review* (Vol. 84, Issue 2).
- Bandura, A. (1994). *Encyclopedia of mental health* (Vol. 4). Academic Press. http://www.des.emory.edu/mfp/BanEncy.html
- Bandura, A. (1997). Self-Efficacy, The Exercise of Control. W.H. Freeman and Company.
- Bandura, A., Schunk Bandura, D. H., & Schunk, A. (n.d.). Cultivating Competence, Self-Efficacy, and Intrinsic Interest Through Proximal Self-Motivation. In *Journal of Personality and Social Psychology* (Vol. 41). http://www.apa.org/
- Basith, A., Syahputra, A., & Aris Ichwanto, M. (2020). Academic Self-Efficacy As Predictor Of Academic Achievement. JPI (Jurnal Pendidikan Indonesia), 9(1), 163. https://doi.org/10.23887/jpi-undiksha.v9i1.24403
- Brown, T. (2015). *Confirmatory Factor Analysis for applied Research* (Second). The Guilford Press.
- Fokkens-Bruinsma, M., Vermue, C., Deinum, J. F., & van Rooij, E. (2021). First-year academic achievement: the role of academic self-efficacy, self-regulated learning and beyond classroom engagement. Assessment and Evaluation in Higher Education, 46(7), 1115– 1126. https://doi.org/10.1080/02602938.2020.1845606
- Gibson, James. L., & Donelly. (2000). Organizations Behavior Structure Processes (Tenth). McGraw-Hill.
- Girli, A., & Öztürk, H. (2017). Metacognitive reading strategies in learning disability: Relations between usage level, academic self-efficacy and self-concept. *International Electronic Journal of Elementary Education*, 10(1), 93–102. https://doi.org/10.26822/iejee.2017131890
- Hackett, G., & Betz, N. E. (1989). An Exploration of The Mathematics Self-Efficacy/Mathematics Performance Correspondence. In *Journal for Research in Mathematics Education* (Vol. 20, Issue 3).
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis: A global perspective* (seventh). Pearson Education, Inc.
- Hanifah, Waluya, S. B., Rochmad, & Wardono. (2020). Mathematical Representation Ability and Self -Efficacy. *Journal of Physics: Conference Series*, 1613(1). https://doi.org/10.1088/1742-6596/1613/1/012062
- Hedeshi, V. M. (2017). The Effect of Self-Regulatory Learning Strategies on Academic Engagement and Task Value. World Family Medicine Journal/Middle East Journal of Family Medicine, 15(10), 242–247. https://doi.org/10.5742/mewfm.2017.93168
- Jensen, M. (2015). Personality Traits, Learning and Academic Achievements. Journal of Education and Learning, 4(4), 91. https://doi.org/10.5539/jel.v4n4p91
- Joreskog, K. G., & Sorbom, D. (1996). LISREL8: User's Reference Guide. SSI, Inc.
- Khilmi, N. (2018). Pengaruh Blended Learning Terhadap Kemampuan Representasi Matematis Dan Self Efficacy Siswa. In *AlphaMath Journal of Mathematics Education* (Vol. 4, Issue 2). http://jurnalnasional.ump.ac.id/index.php/alphamath/
- King, L. A. (2014). The science of Psychology (3 rd). McGraw-Hill.
- Köseoğlu, Y. (2015). *Journal of Education and Practice www.iiste.org ISSN* (Vol. 6, Issue 29). Online. www.iiste.org

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- Kudo, H., & Mori, K. (2015). A preliminary study of increasing self-efficacy in junior high school students: Induced success and a vicarious experience. *Psychological Reports*, 117(2), 631–642. https://doi.org/10.2466/11.07.PR0.117c22z4
- Lee, P. C., & Mao, Z. (2016). The relation among self-efficacy, learning approaches, and academic performance: An exploratory study. *Journal of Teaching in Travel and Tourism*, *16*(3), 178–194. https://doi.org/10.1080/15313220.2015.1136581
- Lusiana, D., & Setyaningsih, E. (2018). Pengaruh Pembelajaran Berbasis Masalah Dengan Strategi Think Talk Write Terhadap Kemampuan Representasi Matematis Dan Self Efficacy Siswa. In *AlphaMath Journal of Mathematics Education* (Vol. 4, Issue 2).
- Novita, D., Novita, S. &, & Djalal, M. (2018). The Effect of Self-Efficacy to Mathematical Anxiety on Junior High School Students of YDM Learning Guidance Course Makassar.
- Papalia, D. E., & Martorell, G. (2015). Experience Human Development. McGraw-Hill.
- Pasha-Zaidi, N., Afari, E., Sevi, B., Urganci, B., & Durham, J. (2019). Responsibility of learning: a cross-cultural examination of the relationship of grit, motivational belief and self-regulation among college students in the US, UAE and Turkey. *Learning Environments Research*, 22(1), 83–100. https://doi.org/10.1007/s10984-018-9268-y
- Retnawati, H. (2016). Analisis Kuantitaif Instrumen Penelitian. Parama Publishing.
- Sagone, E., & Caroli, M. E. de. (2013). Relationships between Resilience, Self-Efficacy, and Thinking Styles in Italian Middle Adolescents. *Procedia - Social and Behavioral Sciences*, 92, 838–845. https://doi.org/10.1016/j.sbspro.2013.08.763
- Santrock, John. W. (2018). Educational psychology (6 th). McGraw-Hill.
- Schunk, D. H. (n.d.). Self-E f ficacy and Academic Motivation. In *Educational Psychologist* (Vol. 26, Issue 4).
- Strecher, V. J., Brenda McEvoy DeVellis, M., Becker, M. H., Irwin Rosenstock, M. M., Strecher is Assistant Professor, V. J., Becker is Professor, M. H., & Rosenstock is Professor, I. M. (n.d.). *The Role of Self-Efficacy in Achieving Health Behavior Change*.
- Sugiyono. (2015). Metode Penelitian Kuantitatif, kualitatif dan R & D. Alfabeta.
- Warner, L. M., & French, D. P. (2020). 32 Self-Efficacy Interventions. https://doi.org/10.1017/97811086773180.032
- Warsihna, J., Ramdani, Z., & Felisima Tae, L. (2021). The Measurement of Science Teaching Efficacy Belief Instrument (STEBI): Sustaining Teacher's Quality (Issue 3). www.psychologyandeducation.net
- Zimmerman, B. J. (2000). Self-Efficacy: An Essential Motive to Learn. *Contemporary Educational Psychology*, 25(1), 82–91. https://doi.org/10.1006/ceps.1999.1016