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The Influence *Self Efficacy*, *Flow*, through Achievement Motivation on Mathematics Learning Outcomes of Class VIII Students in DKI Jakarta Region

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Abstract

Mathematics learning is one of the most important basics because it is closely related to everyday life and is designed to hone thinking from complex problems. In fact, students at school are more likely to dislike mathematics because it is considered a difficult subject and has a lot of formulas and calculations. As a result, students do not have the interest and motivation to learn mathematics, resulting in low mathematics learning outcomes of students at school. This study aims to examine the effect of direct and indirect effects between math self-efficacy, academic flow, achievement motivation and mathematics learning outcomes at SMPN DKI Jakarta. The research method used is a quantitative explanatory survey with a causal approach. The sample is 302 class VIII junior high school students who are in the DKI Jakarta Province for the 2021/2022 Academic Year. The data collection method is in the form of a questionnaire/questionnaire. The analysis technique uses Structural Equation Modeling (SEM) analysis and uses the help of the AMOS v24 tool. The results showed that math self-efficacy significantly affected flow, achievement motivation, and learning outcomes. Significantly flow affects achievement motivation but does not significantly affect mathematics learning outcomes. significantly from achievement motivation affects mathematics learning outcomes. Indirectly, math self-efficacy significantly affects achievement motivation through academic flow. Indirectly, math self-efficacy does not significantly affect mathematics learning outcomes through achievement motivation. Indirectly, math self-efficacy affects mathematics learning outcomes through flow academicIndirectly flow affects mathematics learning outcomes through achievement motivation.

Keywords
math self-efficacy; academic flow; achievement motivation; mathematics learning outcomes

I. Introduction

Mathematics is a scientific discipline that has an important role in education because it is a basic science that develops students' arithmetic and critical thinking skills, and to measure students' intelligence (Maulidya & Nugraheni, 2021). Learning mathematics is one of the most important basics because it is closely related to everyday life and is designed to hone thinking from complex problems. But in reality, students at school are more likely to dislike mathematics because it is considered a difficult subject and has a lot of formulas and calculations. As a result, students do not have the interest and motivation to learn mathematics, resulting in low mathematics learning outcomes for students at school (Salamah & Amelia, 2020).

The results of the Stoet & Geary survey (2017) explain that Indonesia is one of the countries that has low academic achievement, especially in science and mathematics in junior high school (SMP) and high school (SMA). According to the *Program for*

International Student Assessment (PISA) Report released by *the Organization for Economic Co-operation and Development* (OECD), the quality of education in Indonesia is low. According to PISA statistics on mathematics education attainment in Indonesia, about 1% of students score at Level 5 or higher in mathematics (OECD average: 11%) (OECD, 2018). Based on these data, it can be said that there are problems in the learning outcomes of students in Indonesia in mathematics.

Flow is a condition that individuals need, especially when learning. The importance of academic *flow* can be a bridge or medium for effective knowledge acquisition. The existence *flows* in terms of learning, students can open themselves to the information they receive so that students can understand the material being studied (Csikszentmihalyi, 2014). The results of research by Kim & Park (2021) show that *flow* has an effect on improving learning outcomes. The results of the research by Olcar, Golub, & Rijavec (2021) show that *flow is related* to a higher GPA. In line with the results of Putri's research (2016) *flow* has a significant correlation to mathematics learning achievement (p = 0.019). Students who achieve *flow* will get positive benefits, one of which is more optimal learning outcomes.

Based on the study that has been described, *flow* can have a good effect on mathematics learning outcomes. But in reality, not all students are able to create conditions as characterized in *flow* academicSchunk (2012) suggests that motivation is needed for achievement. Motivation comes from the Latin word movere which means drive or driving force (Purba and Sudibjo, 2020). According to Schunk (2012), motivation and learning can influence each other. When students learn and feel more skilled, they will be more motivated to continue learning. Achievement motivation refers to a person's efforts to become more competent in certain activities. In the field of education, the success of students in achieving high learning outcomes is determined by achievement motivation.

These data encourage researchers to develop a research model on the influence of *math self-efficacy* on *flow* academic *math self-efficacy* and *flow* on learning outcomes, and develop a mediating effect of achievement motivation on the effect of *math self-efficacy* and *flow* on learning outcomes. This refers to previous studies that have not provided consistent conclusions, such as research by Negara et al. (2021) found that the variation in Mathematics learning outcomes could be explained by the variation of Mathematics self-efficacy by 14.8%, while the research of zcan & Kültür (2021) found that the sources of mathematics self-efficacy explained 56% of the total variation in mathematics learning outcomes. Other studies such as revealing Ly et al. (2016) found there was a strong relationship between achievement motivation variables and learning outcomes, while Li et al. (2012) showed a moderate relationship between learning motivation and learning outcomes.

This study aims to determine the direct and indirect influence between *math self-efficacy*, academic flow, achievement motivation and mathematics learning outcomes at SMPN DKI Jakarta Class VIII.

II. Research Method

This research approach is an *explanatory survey* with a causal approach. The population in this study were all eighth grade junior high school students in the DKI Jakarta Province for the 2021/2022 Academic Year. In this study using *cluster random sampling* and *purposive sampling* with the aim that the resulting sample can be *representative*. Samples from each sub-cluster were *randomly selected* and then the selection of the technique for drawing the size of the student response was using the Slovin

formula so that a sample of 302 samples was obtained. The data collection method is in the form of a questionnaire/questionnaire. The analysis technique uses *Structural Equation Modeling* (SEM) analysis and uses the help of the AMOS v24 tool.

III. Results and Discussion

The structural relationship between the variables is seen from the path diagram obtained from the output of the AMOS v24 program and tested for conformity with the *goodness-of-fit index*. The chi-square value of 319.701 with a probability of 0.000 is fit or has been accepted, a significance level of 0.000, this indicates that the null hypothesis is accepted, which means that there is no difference between the sample covariance matrix and the estimated population covariance matrix. In other words, this SEM analysis model fits the data. Besides that, it is also shown from the CFI value of 0.926 > 0.90, the TLI value of 0.911 > 0.90, the RMSEA value of 0.078 < 0.08 and the CMIN/DF value of 2.829 < 5.00.

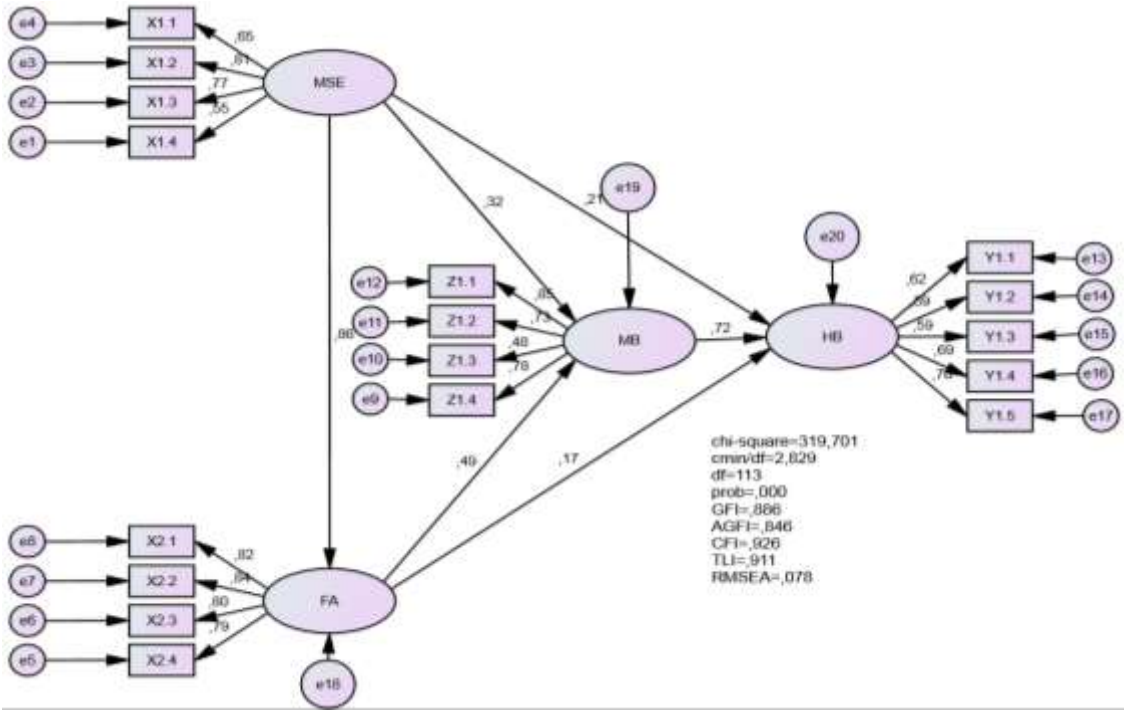

Figure 1. *Full Structural Equation Model*

Testing of the proposed hypothesis is carried out by analyzing the direct effect [path coefficient] observed from standardized regression weights, by testing the comparative significance of the value of CR (*Critical Ratio*) or *p* (*probability*) must be **0.05**. The indirect effect was tested using the Sobel test with a critical value > 1.96. The alternative hypothesis is accepted if the prob value (P) < 0.05 and the critical value > 1.96. The results of data processing using AMOS v24 are presented below:

Table 1. Hypothesis Test Results

Hypothesis	Std. Estimate	CR	P	Information
H_1 : MSE FA	_	8,801	0.000	Accepted
H_2 : MSE MB	_	2,355	0.019	Accepted
H_3 : FA MB	_	3,733	0.000	Accepted
H_4 : MSE HB	0.213	_	0.034	Accepted
H_5 : FA HB	0.170	1.695	0.090	Rejected
H_6 : MB HB	_	7,898	0.000	Accepted
H_7 : MSE FA MB	0.423	_	0.011	Accepted
H_8 : MSE MB HB	0.680	0.910	0.362	Rejected
H_9 : MSE FA HB	0.355	2600	0.009	Accepted
H_{10} : FA 0.001 Accepted	Limit	Significant	0.05	MSE
Description			=	

: *math self-efficacy*; FA = *flow* academic MB = Achievement Motivation;
HB = Mathematics Learning Outcomes.

The results of testing the hypothesis above are described as follows: (1) the results of data processing can be seen that the CR value of 8.801> 1.96 with a probability value of 0.000 <0.05 means hypothesis 1 (H1) which states that there is a significant effect of *math self-efficacy* towards *flow* is accepted. (2) The results of data processing can be seen that the CR value of 2.355> 1.96 with a probability value of 0.019 <0.05 means hypothesis 2 (H2) which states that there is a significant effect of *math self-efficacy* on achievement motivation is accepted. (3) The results of data processing can be seen that the CR value of 3.733> 1.96 with a probability value of 0.000 <0.05 means that hypothesis 3 (H3) which states that there is a significant influence of *flow* on achievement motivation is accepted. (4) The results of data processing can be seen that the CR value is 2.118> 1.96 with a probability value of 0.034 <0.05, which means that hypothesis 4 (H4) states that there is a significant effect of *math self-efficacy* on mathematics learning outcomes is accepted. (5) The results of data processing can be seen that the CR value of 1.695 <1.96 with a probability value of 0.090> 0.05 means that hypothesis 5 (H5) which states that there is a significant influence of *flow* on mathematics learning outcomes is rejected. (6) The results of data processing can be seen that the CR value is 7.898> 1.96 with a probability value of 0.000 <0.05, which means that hypothesis 6 (H6) which states that there is a significant influence of achievement motivation on mathematics learning outcomes is accepted. (7) The results of data processing can be seen that the CR value of 2.513> 1.96 with a probability value of 0.021 <0.05 means hypothesis 7 (H7) which states that there is a significant effect of *math self-efficacy* on achievement motivation through *flow* is accepted. (8) the results of data processing can be seen that the CR value of 0.910 <1.96 with a probability value of 0.362> 0.05 means hypothesis 8 (H8) which states that there is a significant effect of *math self-efficacy* on mathematics learning outcomes through achievement motivation was rejected. (9) The results of data processing can be seen that the CR value of 2.600> 1.96 with a probability value of 0.009 <0.05 means hypothesis 9 (H9) which states that there is a significant effect of *math self-efficacy* on mathematics learning outcomes through *flow* is accepted. (10) The results of data processing can be seen that the CR value of 3,278> 1.96 with a probability value of 0.001 <0.05 means that hypothesis 10 (H10) which states that there is a significant influence of *flow* on learning outcomes of mathematics through achievement motivation is accepted.

This research model produces 10 hypothesis testing, from testing the 10 hypotheses proposed eight hypotheses can be accepted, namely H1, H2, H3, H4, H6, H7, H9, and H10. Meanwhile, two hypotheses were rejected or not accepted, namely H5 and H8.

3.1 The Influence *of Math Self-Efficacy on* Academic *Flow* of

hypothesis testing indicates that there is a significant effect of *math self-efficacy* on *flow* in class VIII SMP students in the DKI Jakarta Province for the 2021/2022 Academic Year. These results indicate that there is a significant effect of *math self-efficacy* towards *flow* is 0.858 or 85.8%. That is, *math self-efficacy* has a high contribution to the flow of students. This finding provides an explanation that *math self-efficacy* will increase *flow* of students. This explains that students' high confidence that they can successfully perform math tasks will open themselves up to the information they receive so that students can understand the material being studied. It can be seen that if a student has developed an interest in a given task and is able to control his behavior to maintain an effort to complete the task, he will easily concentrate and immerse himself in the task he receives. Therefore, self-efficacy is considered as the driving force that drives one's learning activities to experience a flowing state.

According to Schunk (2012) *math self-efficacy* is a student's belief that he or she can successfully perform a given mathematical task at a certain level. According to Bonne & Lawes (2016), *self-efficacy* in mathematics shows students' confidence in their ability to overcome difficulties or obstacles to solving mathematical problems. Meanwhile, according to Csikszentmihalyi (2014), the existence of *flow* in terms of learning allows students to open themselves to the information they receive so that students can understand the material being studied.

This finding is reinforced by the results of the study of Tian et al. (2022) demonstrating that *self-efficacy* had a direct and positive effect on the *flow*. However, these findings do not support the results of Guo et al. (2019), that the effect of students' academic self-efficacy on overall flow experience was not statistically significant, but had significant effects on perceived control, skill and challenge balance, and feedback.

3.2 Influence *Math Pengaruh Self-Efficacy on* Achievement Motivation

The results of hypothesis testing indicate that there is a significant influence of *math self-efficacy* on achievement motivation in class VIII SMP students in the DKI Jakarta Province for the 2021/2022 Academic Year. These results indicate that there is a significant effect of *math self-efficacy* on achievement motivation is 0.318 or 31.8%. These findings indicate that *self-efficacy* is an important predictor of achievement motivation. Achievement motivation can be increased through increasing self-efficacy.

self-efficacy causes individuals to behave differently even though they have the same abilities. This is because self-efficacy affects the persistence and choice of learners in setting goals, solving problems, and overcoming math problems. However, students who believe that they can solve mathematical problems will be able to develop their self-efficacy to try to solve more complex mathematical problems. According to Schunk (2012), when students learn and feel more skilled and set targets that are quite difficult but easy to achieve, they will be more motivated to continue their learning. The results of this study are reinforced by the research results of Zhang et al. (2015) which shows that there is a significant positive relationship between self-efficacy and achievement motivation.

3.3 Effect *Flow* Academic on Achievement Motivation

The results of hypothesis testing indicate that there is a significant influence on *flow* academic achievement motivation in class VIII SMP students in the DKI Jakarta Province for the 2021/2022 Academic Year. These results indicate that there is a significant influence of *flow* academic to achievement motivation of 0.493 or 49.3%. These findings

indicate that *flow* can have a positive effect on students' academic achievement motivation. Students who are able to balance task challenges with their skills, are full of concentration and are confident in completing assignments, plus students who enjoy what they are doing will be motivated to engage in activities so that they are motivated to achieve the expected academic achievements.

The experience of the sensation of *flow* is one of the most important factors contributing to motivation. The academic field requires *flow* conditions or fluid conditions so that students can focus, enjoy the assigned tasks and reduce stress. When learning, students must have experienced situations where they were fully involved in what was learned (Csikszentmihalyi, 2014). The same thing was expressed by zhan & Kocadere (2020), the motivation experienced by students during the period of learning activities mostly came from the sensation of *flow*. *Flow* is a very strong predictor of motivation. Throughout the duration of *flow*, the individual is fully focused on the task and the individual concentrates on the task being realized, is not worried, and does not realize how much time has passed. Full concentration on the task realized by the individual experiencing *flow* affects the ability to complete the task correctly. These findings are reinforced by the research of zhan & Kocadere (2020), which shows that *flow* has a very significant impact on motivation.

3.4 The Effect *of Math Self-Efficacy* on Learning

Outcomes The results of hypothesis testing show that there is a significant effect of *math self-efficacy* on learning outcomes for class VIII junior high school students in the DKI Jakarta Province for the 2021/2022 academic year. These results indicate that there is a significant effect of *math self-efficacy* on learning outcomes of 0.213 or 21.3%. This finding explains that students with high self-efficacy work harder to overcome existing challenges. If students have high self-efficacy, they will be motivated to succeed in achieving learning goals and be able to survive difficulties (homework in this case). Therefore, self-efficacy greatly affects student learning outcomes, especially in mathematics.

Self-efficacy has an important role in student success. Mathematics self-efficacy is an important determinant of mathematical achievement. Students with high self-efficacy believe that they can do something to change things around them. On the other hand, students with low self-efficacy consider themselves helpless. Students with low self-efficacy tend to give up easily in difficult situations.

According to Schunk (2012), learners who feel more successful in learning should be more likely to engage in self-regulation (e.g., identify goals to be achieved, apply them constructively to learning, monitor learners' level of understanding, analyze stages of progress toward goals) and create favorable environment for learning (eg eliminating or reducing distractions, making good learning partners). In turn, *self-efficacy* is influenced by behavioral outcomes (eg, increased achievement) and environmental inputs (eg, encouragement from teachers, social image with peers). In line with the research of zcan & Kültür (2021) shows that the sources of mathematics self-efficacy have an effect on student achievement. Research by Talsma et al. (2018) also found that self-efficacy can affect academic achievement.

3.5 Effect *Flow* Academic on Learning

Outcomes The results of hypothesis testing indicate that there is an insignificant effect *flow* on learning outcomes for class VIII SMP students in the DKI Jakarta Province for the 2021/2022 Academic Year. This means that *flow* does not make an important

contribution to improving student learning outcomes. This is possible because the ability to absorb and understand mathematics lessons and the experience level of *flow* is different for each student. Even though students are already involved or able to focus, feel comfortable, and internally motivated when learning mathematics or doing math assignments, students still find it difficult to learn mathematics and still think mathematics is a difficult subject. According to Sari et al. (2019), many students have the mentality that mathematics is a difficult subject, and such a view will affect students' interest in learning.

Thus, a student who experiences *flow* in an academic situation is still unable to perform better than a student who does not experience *flow*. These findings are not in line with Mustafa & Jahan's (2019) research that emerged as a significant predictor of academic achievement. *flow* can be useful for students because it makes students more focused, creative, and easier to absorb subject matter, especially mathematics so that it has an impact on optimal learning outcomes. It is also not in line with the research of Kim & Park (2021) which shows that *flow* has a significant effect on learning outcomes.

3.6 The Effect of Achievement Motivation on Mathematics Learning Outcomes

The results of hypothesis testing indicate that there is a significant influence of achievement motivation on learning outcomes in class VIII SMP students in the DKI Jakarta Province for the 2021/2022 Academic Year. These results indicate that there is a significant effect of achievement motivation on learning outcomes of 0.721 or 72.1%. That is, achievement motivation has a high contribution to improving student learning outcomes. These findings explain that the success of students in achieving high learning outcomes is determined by their achievement motivation.

Achievement motivation is an important factor in improving learning outcomes. As stated by Schunk et al. (2014) that achievement motivation is an encouragement to maintain activities that aim to achieve the desired goals. Heckhausen & Heckhausen (2018), the characteristics of individuals who have high achievement motivation are positive thinking, optimistic and confident; choose intermediate tasks over the most difficult or easiest tasks; have a vision of the future; value time; patient, diligent, persistent in doing the task. This encouragement is owned by every student, the goal is to be successful in learning. Learning outcomes are targets that are expected by students after participating in all teaching and learning processes. If students do not have the characteristics of achievement motivation as mentioned above, it will be difficult to achieve optimal learning outcomes.

According to Schunk (2012), motivation and learning can influence each other. When students learn to feel more skilled, they will be more motivated to continue their work. Achievement motivation refers to a person's efforts to become more competent in certain activities.

Furthermore, John Atkinson's achievement motivation theory as quoted by Schunk (2012) explains that a person's attitude depends on his hopes to get something. Action gives hope for success as well as fear for failure. The best way to develop achievement behavior is to combine a strong hope for success and a slight fear of failure. This method shows that students who have high achievement motivation will choose the most difficult tasks, where students believe that they can complete these tasks and will get a feeling of achievement. In contrast, students who have low achievement motivation tend to choose tasks that are simple and easy and have little effort to succeed (Schunk, 2012). The results of this study are in line with the research of Li et al. (2012), Ly et al. (2016) show that there is a significant relationship between achievement motivation and learning outcomes.

3.7 Influence *Math Pengaruh Self-Efficacy* on Achievement Motivation through *Flow* Academic

The results of the indirect effect test show that there is a significant indirect effect on *math self-efficacy* on achievement motivation through *flow* in class VIII SMP students in the DKI Jakarta Province for the 2021/2022 Academic Year. The magnitude of the indirect effect of *math self-efficacy* on achievement motivation through *flow* is 0.423 or 42.3%.

This shows that self-concept related to students' belief in their ability to do or complete a task or math problem can encourage feeling happy, increase concentration, involvement, dissolve in activities, focus, and increase self-control, thus encouraging students to achieve related achievements. with math lessons. Students who have high confidence in their abilities and success in doing math assignments will encourage students to focus, feel comfortable, and be internally motivated when studying so that it has an impact on their achievement motivation. Students who have *self-efficacy* will be successful in their learning activities and can carry out their academic tasks smoothly and vice versa. Students who have *self-efficacy* will spend various efforts when facing difficulties and be persistent in doing assignments when students have the skills or knowledge needed to do the task.

According to Schunk (2012), when students learn and feel more skilled and set targets that are quite difficult but easy to achieve, they will be more motivated to continue their learning. *self-efficacy* can affect the dimensions of achievement motivation in difficult situations. Therefore, it is necessary for students to open themselves to the information they receive. According to Csikszentmihalyi (2014) high student confidence that he can successfully perform mathematical tasks will open himself to the information he receives so that students can understand the material being studied. Therefore, self-efficacy is considered as the driving force that drives one's learning activities to experience a flowing state. The research results of Tian et al. (2022) demonstrated that *self-efficacy* has a direct and positive effect on the experience of *flow*.

conditions *Flow* or fluid conditions so that students can focus, enjoy the assigned tasks and reduce stress. When learning, students must have experienced situations where they were fully involved in what they were learning (Csikszentmihalyi, 2014). The results of the research by zhan & Kocadere (2020) reveal that *flow* is a very strong predictor of motivation. Throughout the duration of *flow*, the individual is fully focused on the task and the individual concentrates on the task being realized, is not worried, and does not realize how much time has passed. Full concentration on the task realized by the individual experiencing *flow* affects the ability to complete the task correctly.

3.8 Influence *Math Pengaruh Self-Efficacy* on Learning Outcomes through Achievement Motivation

The results of the indirect effect test show that achievement motivation cannot mediate the effect of *math self-efficacy* on learning outcomes in class VIII SMP students in the DKI Jakarta Province for the 2021/2022 Academic Year. In other words, there is no indirect effect of *math self-efficacy* on learning outcomes through achievement motivation. This explains that students who have high self-efficacy automatically have high motivation to succeed because they believe that they can do something to change things around them, so that it directly impacts their learning outcomes.

According to Schunk (2012), when students learn and feel more skilled and set targets that are quite difficult but easy to achieve, they will be more motivated to continue their learning. In line with the research of zcan & Kültür (2021) shows that the sources of mathematics self-efficacy have a direct effect on students' learning achievement. Research

by Talsma et al. (2018) also found that self-efficacy can directly affect academic achievement.

3.9 Influence *Math Pengaruh Self-Efficacy* on Learning Outcomes through *Flow* Academic

The results of the indirect effect test show that there is a significant indirect effect on *math self-efficacy* on learning outcomes through *flow* in class VIII SMP students in the DKI Jakarta Province for the 2021/2022 Academic Year. The magnitude of the indirect effect of *math self-efficacy* on learning outcomes through *flow* is 0.680 or 68%.

This shows that students' high confidence that they can successfully perform math tasks will open themselves up to the information they receive so that students can understand the material being studied. Disclosure of information which is themed with conditions of focus, comfort, and motivation so that you forget about time, don't feel tired, fatigue, and other negative things will have an impact on improving learning outcomes. Self-concept related to students' belief in their ability to perform or complete a task or math problem can encourage happiness, increased concentration, involvement, increased activity, focus, and self-control, so that it has an impact on mathematics learning outcomes.

Research Tian et al. (2022) demonstrated that *self-efficacy* had a positive effect on the *flow*. The higher the self-concept related to students' confidence in their ability to complete a math task, the more students can increase their concentration, focus, and self-control and get involved in activities. On the other hand, a state of preoccupation that makes students so involved in activities so that students feel they enjoy learning activities to the point of forgetting time will provide a great effort to successfully achieve learning goals. This implies that concentration, sense of control and rewarding experiences have a positive impact on learning outcomes. The results of Mustafa & Jahan's research (2019) *flow* emerged as a significant predictor of academic achievement.

3.10 Effect *Flow* Academic on Learning Outcomes through Achievement Motivation

The results of the indirect effect test show that there is a significant indirect effect *flow* on learning outcomes through learning motivation. for class VIII SMP students in the DKI Jakarta Province for the 2021/2022 Academic Year. The magnitude of the indirect influence of *flow* on learning outcomes through learning motivation of 0.355 or 35.5%.

Students who have a search condition can focus, enjoy the given task and reduce stress or students who focus completely on the task and concentrate on the task being realized, are not worried, and do not realize how much time has passed. Full concentration on the task realized by students who experience *flow* affects the ability to complete the task correctly. This ability has an impact on their learning outcomes as well.

These findings are reinforced by the research of Li et al. (2012) show that together *flow* academicThis finding describes students who feel happy, concentration increases, involvement, dissolves in activities, focus, and self-control increases, this will lead students to come up with ideas, desires and efforts to carry out math learning activities effectively and efficiently. , thereby improving learning outcomes.

The theory *flow* proposed by Csikszentmihalyi (2014) explains that if students experience a state of flow, their involvement in the learning environment increases. To achieve *flow*, individuals need to focus and share interest and pleasure in an activity so that *flow* can occur. The results of the research by zhan & Kocadere (2020) show that *flow* has a very significant impact on motivation.

Learners' involvement increases when they feel that tasks and skills are challenged and balanced, that the teacher's instructions are relevant, and the learning environment is under their control. Students who experience *flow* are more involved in the learning process, experience increased learning outcomes, are more enthusiastic in completing challenging tasks, and tend to be better at attention, emotion, and motivation than students who do not experience *flow*. The results of Li et al. (2012), Ly et al. (2016) show that there is a significant relationship between achievement motivation and learning outcomes. This illustrates that students who have ideas, desires and efforts to carry out mathematics learning activities effectively and efficiently will improve learning outcomes.

Indirectly *flow* can affect learning outcomes through achievement motivation. This shows that students who are in *flow* or fluid conditions can focus, enjoy the tasks given and reduce stress, this leads to the creation of ideas or ideas, the desire and effort to carry out math learning activities effectively and efficiently, so that they will improve learning outcomes.

IV. Conclusion

Based on the results of the analysis that has been carried out in this study, it can be concluded that (1) *math self-efficacy* significantly affects *flow* academic (2) significantly *math self-efficacy* affects achievement motivation.significantly *flow* affects achievement motivation. (4) *math self-efficacy* significantly affects mathematics learning outcomes. (5) *academic flow* does not significantly affect mathematics learning outcomes. (6) significantly the achievement motivation affects mathematics learning outcomes. (7) indirectly *math self-efficacy* significantly affects achievement motivation through academic flow. (8) indirectly *math self-efficacy* does not significantly affect mathematics learning outcomes through achievement motivation. indirectly *math self-efficacy* affects mathematics learning outcomes through *flow* academic indirectly *flow* affects mathematics learning outcomes through achievement motivation.

The results of this research are that related parties, both schools and educational institutions, pay attention to *math self-efficacy* and *flow* in encouraging achievement motivation and student learning outcomes, especially in class VIII junior high school students. The results of this study also provide input for further research to examine the same topic, it is recommended to expand the study or add independent variables related to other affective aspects such as anxiety, *flow experience*, and so on.

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