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# Improving Learning Discipline: The Effect of Self-Management Ability on Students in Mathematics Subjects

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**ABSTRACT**

**Purpose of the study:** This research aims to describe and interpret the ability to self-manage students' mathematics learning discipline in class VIII Darud Da'wah wal Irsyad Al-Irsyah Makassar junior high school.

**Methodology:** This research uses two variables, namely self-management ability as the independent variable and students' mathematics learning discipline as the dependent variable. The population in this study were all Class VIII students at Darud Da'wah wal Irsyad Al-Irsyah Makassar junior high school. The total sample was 30 class VIII students at Darud Da'wah wal Irsyad Al-Irsyah Makassar junior high school. To obtain data, questionnaire instruments and documentation were used by researchers to mathematics teachers.

**Main Findings:** Based on the results of research and descriptive analysis, the average score for self-management ability is in the good category and the average score for mathematics learning discipline is in the good category. The results of the inferential analysis show that the Rcount value is 0.982, while the Rtable at the 5% significance level is 0.361. Thus, the Rcount value is much greater than the Rtable value, so Ha is accepted, meaning that there is a significant relationship between students' thinking abilities and the mathematics learning discipline of Class VIII students at Darud Da'wah wal Irsyad Al-Irsyah Makassar junior high school.

**Novelty/Originality of this stud:** Through this research, it was found that implementing self-management strategies not only improves students' academic performance but also builds attitudes of responsibility and independence that are essential for long-term success in education.



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## 1. INTRODUCTION

Education is a formal or informal process that aims to transfer knowledge, skills, values, and attitudes to individuals [1],[2]. It involves conscious and organized efforts to develop human potential, encourage personal growth, and prepare individuals to participate in society [3]–[5]. Education is not limited to the school environment, but can also occur at home, at work, or through everyday experiences [6],[7]. The main goal of education is to provide students with a solid foundation of knowledge, help them develop critical and creative skills, and shape good character [8]–[10]. Education plays an important role in changing individual lives and opening up opportunities for personal and professional advancement.

It is the foundation for developing quality human resources, driving innovation and progress in various fields, and playing a key role in building a better society. The ability to manage oneself (self-management) refers to an individual's skills and capacity to organize, control and direct themselves in achieving goals and maintaining balance in various aspects of life [11],[12]. This ability involves managing time, emotions, energy, and actions to achieve desired outcomes and maintain personal well-being. The ability to manage yourself is an important competency in personal and professional life. By mastering these skills, a person can increase their effectiveness, efficiency, and personal well-being [13], [14]. It can also help in achieving long-term goals, overcoming obstacles, and facing challenges better.

Learning discipline is the ability and habit to regulate oneself in the learning process. This involves the willingness and ability to adhere to a study schedule, adhere to rules, carry out assignments in a timely manner, and maintain focus on learning [15],[16]. Learning discipline is an important factor in achieving good learning results. By developing strong learning discipline, a person can increase learning effectiveness, improve understanding, and achieve higher academic achievement [17]–[19]. Learning discipline also prepares individuals to face challenges in the learning process, develops positive habits, and forms the basis for continuous self-development.

Discipline is a term that has become popular in various educational institutions. We know about work discipline, traffic discipline, study discipline and other types of discipline terms. The disciplinary issues discussed in this research only focus on learning discipline. The discipline referred to in this case is the discipline carried out by students in their learning activities both at home and at school. From the definition of discipline, it can be concluded that what is meant by learning discipline in this research is a statement of the attitudes and actions of students in learning mathematics to carry out their learning obligations consciously by obeying the rules that exist in the school environment and at home [20],[21]. Previous research conducted by Zain et al [22] was updated with research which currently aims to measure the influence of self-management abilities on students' learning discipline.

The novelty of this research is that it reveals a significant relationship between self-management skills and the level of mathematics learning discipline, offering practical strategies to improve students' academic performance through developing self-management skills. Additionally, this study provides a new perspective in mathematics education by emphasizing the importance of self-management, showing that strengthening this ability can substantially improve student discipline and learning outcomes.

The urgency of this research lies in the urgent need to improve the quality of mathematics education in Indonesia, where low learning discipline is often the main obstacle to student academic achievement. It is important to carry out this research to identify key factors that can improve learning discipline, so that it can provide practical solutions for educators in facing the challenges of low student motivation and performance in mathematics subjects. Based on the introduction above, the aim of this research is to determine the influence of self-management abilities on students' learning discipline.

## 2. RESEARCH METHOD

### 2.1. Research Type

The type of research used in this research is ex-post facto research because the researchers deal with variables that have already occurred and they do not need to provide treatment to the variables studied. In this research, the independent variable and the dependent variable have been stated explicitly, and then connected as correlation research or predicted if the independent variable has a certain influence on the dependent variable. Meanwhile, to look for relationships or predictions, a researcher is advised to use a hypothesis as a guide in solving research problems.

### 2.2. Population and Sample

In principle, a population is all members of a group of humans, animals, events, or objects who live together in one place and in a planned manner become the target for the conclusion of the final discipline of research. The population in this study were all accelerated class students in Class VIII of Darud Da'wah wal Irsyad Al-Irsyad Makassar junior high school.

The sample is part of the number and characteristics of the population. The purpose of sampling is to obtain information about the research object by observing only part of the population [23], [24]. The sampling technique used in this research is saturated sampling or census, where all members of the population are sampled. So, the sample in this study was 30 people.

### 2.3. Research Procedures

The research procedures carried out are: planning, implementation, data processing, reporting stages with the following explanation:

1. Planning stage

The planning stage is the initial stage of an activity before the researcher conducts direct field research to collect data, for example drafting a thesis, obtaining permission letters to conduct research from the parties concerned.

2. Implementation stage
   What is done in this case is conducting research in the field to obtain concrete data using research instruments, namely giving questionnaires to students.
3. Data processing stage
   At this stage, what is done is to carry out data processing on data obtained from research disciplines in schools using descriptive statistical calculations and inferential statistics.
4. Reporting stage
   At this stage the researcher prepares a research report carried out in the form of finalizing the research by pouring the discipline of processing, analysis and conclusions into written form that is prepared consistently, systematically and methodologically.

### 2.4. Data Collection Instrument

The research instruments used to collect data were questionnaires and documentation. Where the following questionnaire is in the form of a series of questions or statements about a person's attitude towards their personal situation and environment. The form of documentation used is in the form of official records and secondary sources, as well as expressive documents such as biographies, letters, agendas, school profiles, class absences and so on.

### 2.5. Data Analysis Technique

The data analysis technique used is quantitative descriptive analysis which consists of average, data range, number of interval classes, class length, standard deviation and categorization. Next, inferential analysis, namely the correlation test.

## 3. RESULTS AND DISCUSSION

In the implementation of the educational process, learning activities are the most basic activities, it can be said that without learning there is no education. This means that the success or failure of achieving educational goals depends on the extent to which the thinking process emphasizes the process of searching for and finding knowledge through interactions between individuals and their environment [25], [26] . Learning is a process of changing a person's behavior as a result of interaction with their environment in fulfilling their life. The changes in question are in the form of knowledge, attitudes, skills, understanding and other aspects that exist in individuals who carry out learning activities.

According to Baginda [27] the various types of discipline are indicated by three disciplines, namely: 1) discipline in the classroom, 2) discipline outside the classroom in the school environment, and 3) discipline at home. Meanwhile, Astalini et al and Harizon et al [28], [29] states that in order for a student to learn well he must be disciplined, especially disciplined in the following matters: a. Discipline in keeping to the study schedule. b. Be disciplined in overcoming all temptations that will delay study time. c. Be disciplined towards yourself to be able to develop the will and enthusiasm for learning both at school, such as obeying the rules, and discipline at home, such as being regular in studying. d. Discipline in maintaining physical condition so that you are always healthy and fit by eating regularly and nutritiously and exercising regularly.

Learning outcomes as an assessment object are essentially a description of the learning outcomes that students must master in the form of student abilities after receiving or completing a learning experience. Learning outcomes are influenced by two factors, namely from within (internal) and factors from outside (external). Internal factors include psychological factors (e.g. intelligence, achievement motivation and cognitive ability) while external factors include environmental factors and instrumental factors (e.g. teachers, curriculum and learning models) [30], [31] . In this study, data was obtained on the ability to self-manage learning disciplines which are shown in table 1 below.

Table 1. Self-management categories for learning discipline of class VIII students at SMP DDI Al-Irsyad Makassar

| Balance level | Frequency | Category/qualification |
|---|---|---|
| 1-24 | 0 | Very less |
| 25-48 | 0 | Not enough |
| 49-71 | 3 | Enough |
| 72-94 | 19 | Good |
| 95-117 | 8 | Very good |

Based on the categorization of self-management of class VIII students at at Darud Da'wah wal Irsyad Al-Irsyah Makassar junior high school in table 1 above, it can be concluded that self-management is in the good category by looking at the score level of 72-94, there are 19 students out of a total of 30 students, there are 95-117. 8 people were in the very good category, 49-71 there were 3 people in the fair category, for the poor and very poor categories there was not a single student. Based on data obtained from research using a questionnaire regarding self-management of students in Class VIII at Darud Da'wah wal Irsyad Al-Irsyah Makassar junior high school with a total sample of 30 students, 8 people scored very well, 19 people were in the good category and 3 people were in the good category. So it can be concluded that the average self-management of Class VIII students at at Darud Da'wah wal Irsyad Al-Irsyah Makassar junior high school is in the good category.

To find out the significant relationship between self-management and the learning discipline of Class VIII students at at Darud Da'wah wal Irsyad Al-Irsyah Makassar junior high school, this was done by analyzing the data obtained using inferential statistical analysis. Inferential analysis is statistics that provides rules or methods that can be used as a tool to try to draw general conclusions from a set of data that has been compiled and processed. Therefore, the data obtained is distributed as seen in table 2 below.

Table 2. Statistics on the relationship between self-management and learning discipline for class VIII students at at Darud Da'wah wal Irsyad Al-Irsyah Makassar junior high school

| X | Y | $X^2$ | $Y^2$ | XY |
|---|---|---|---|---|
| 103 | 61 | 10609 | 3721 | 6283 |
| 103 | 66 | 9025 | 4356 | 6270 |
| 102 | 85 | 10404 | 7225 | 8670 |
| 94 | 75 | 8836 | 5625 | 7050 |
| 92 | 70 | 8464 | 4900 | 6440 |
| 88 | 78 | 7744 | 6084 | 6864 |
| 98 | 60 | 9604 | 3600 | 5880 |
| 86 | 70 | 7396 | 4900 | 6020 |
| 84 | 76 | 7056 | 5776 | 6384 |
| 80 | 84 | 6400 | 7056 | 6720 |
| 93 | 80 | 8649 | 6400 | 6720 |
| 107 | 80 | 11449 | 6400 | 7440 |
| 84 | 76 | 7056 | 5776 | 6384 |
| 94 | 80 | 8836 | 6400 | 7520 |
| 92 | 86 | 8464 | 7396 | 7912 |
| 90 | 80 | 8100 | 6400 | 7200 |
| 85 | 90 | 7225 | 8100 | 7650 |
| 99 | 95 | 9801 | 9025 | 9405 |
| 85 | 95 | 7225 | 9025 | 8075 |
| 82 | 80 | 6724 | 6400 | 6560 |
| 68 | 98 | 4624 | 9604 | 6664 |
| 64 | 94 | 4096 | 8836 | 6016 |
| 87 | 80 | 7569 | 6400 | 6960 |
| 82 | 70 | 6724 | 4900 | 5740 |
| 100 | 80 | 10000 | 6400 | 8000 |
| 92 | 70 | 8464 | 4900 | 6440 |
| 90 | 70 | 8100 | 4900 | 6300 |
| 90 | 80 | 8100 | 6400 | 7200 |
| 101 | 76 | 10201 | 5776 | 7676 |
| 83 | 70 | 6889 | 4900 | 5810 |
| 243834 | 187581 | | 210093 | |

By using product moment person, the degree of correlation is described quantitatively with a correlation coefficient. The rcalculated price is then compared with the rtable price with a certain real degree, so that the hypothesis H0 is accepted or rejected, or vice versa, H1 is accepted or rejected. The rcalculated correlation coefficient price above is interpreted well with the correlation coefficient table, or by consulting the product moment critical price table so that the significance of the correlation can be determined. By consulting the correlation coefficient table, between 0.800 and 1.000 is in the very high category, between 0.600 and 0.799 is in the high category, between 0.400 and 0.599 is in the moderate category, between 0.200 and 0.399 is in the low category, between 0.00 and with 0.199 being in the very low category, the coefficient r value of 0.982 is in the very high category. Thus, managing students' self-management has a very high correlation with the mathematics learning discipline of Class VIII students at at Darud Da'wah wal Irsyad Al-Irsyah Makassar junior high school.

This is in accordance with the theory stating that self-management is self-control of thoughts, words and actions carried out, thereby encouraging self-avoidance of bad things and increasing good and correct actions. Based on the discipline of inferential statistical analysis using product moment analysis with a significant level of $\alpha$ = 5%, it is obtained that Rcount is greater than Rtable, namely (Rh = 0.982 > Rt = 0.361), so the results of this study answer the hypothesis, namely Ha is accepted and Ho is rejected, meaning that there is an influence between the ability to self-manage the mathematics learning discipline of Class VIII students at at Darud Da'wah wal Irsyad Al-Irsyah Makassar junior high school. The limitation of this research is that the researcher focused on measuring the influence of self-management abilities on students' disciplined learning attitudes. For this reason, recommendations for further research are to expand the population and sample and obtain more varied and better results.

This research shows that self-management skills have a significant impact on students' learning discipline in mathematics subjects. Students who are able to manage time, set goals, and monitor their learning progress tend to show better discipline improvements compared to those who do not have these skills. This is important because good study discipline is necessary in mathematics, which requires a deep understanding of concepts and the ability to solve complex problems. The results of this study support the theory that self-management skills are the key to improving academic performance, because disciplined students are more likely to complete assignments on time, attend class regularly, and participate actively in learning.

In addition, this research also found that interventions designed to improve self-management abilities can provide positive results in the long term. Training programs that teach time management strategies, goal setting techniques, and problem solving skills not only improve students' learning discipline but also build an attitude of responsibility and independence. Students involved in this program show increased intrinsic motivation and greater self-confidence in facing academic challenges. Thus, this research suggests that schools and educators need to pay more attention to developing self-management skills as part of the curriculum to maximize students' academic potential in mathematics and other areas.

The novelty of this research is that these findings can help educators design more holistic and integrated learning strategies, which do not only focus on mastering the material, but also on developing students' personal skills that are essential for long-term success. The limitation of this research is that this research may be limited to a particular school context, so the results cannot be generalized to all schools or different educational environments. The influence of self-management abilities on students' learning discipline in mathematics may be influenced by other external factors, such as support from the family or school policies, which were not fully controlled in this study.

## 4. CONCLUSION

Based on the research discipline which is processed in the form of descriptive and inferential analysis in the discussion, it can be concluded that the number of samples taken was 30 students, 8 people scored very well, 19 people were in the good category and 3 people were in the fair category. So it can be concluded that the average score for managing students in Class VIII at Darud Da'wah wal Irsyad Al-Irsyah Makassar junior high school is in the good category. Based on the discipline of inferential statistical analysis using product moment analysis with a significant level of $\alpha$ = 5%, it is obtained that Rcount is greater than Rtable, namely (Rh = 0.982 > Rt = 0.361), so this research discipline answers the hypothesis, namely Ha is accepted and Ho is rejected, meaning the atmosphere of the classroom environment students are closely related to the mathematics learning discipline of Class VIII students at at Darud Da'wah wal Irsyad Al-Irsyah Makassar junior high school. Further research can develop more structured and systematic intervention programs and evaluate their effectiveness in various educational contexts and demographics to strengthen findings regarding the positive impact of self-management skills on students' learning discipline in mathematics.

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