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APPLICATION OF SELF DIRECTED LEARNING TO REDUCE MATHEMATICS ACADEMIC PROCRASTINATION

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Abstract

Self Directed Learning is a learning process of self-will and self-control so that it can solve problems or tasks. This study examines the differences in academic procrastination in mathematics learning in groups that apply Self Directed Learning learning models and groups that use conventional learning models. This type of research is a quasi-experiment. The instrument of this research is an academic procrastination questionnaire given to 25 students in the control class and 26 students in the experimental class. This study's results indicate no significant difference in reducing mathematics academic procrastination in students who apply Self Directed Learning with students who apply conventional learning at SMP N 4 Padangsidimpuan. However, regarding the average value, there is a difference in reducing mathematics academic procrastination in students who apply Self Directed Learning with students who apply conventional learning at SMP N 4 Padangsidimpuan. So, classes with self-directed learning are better than classes with conventional learning.

Keywords : Mathematics Academic Procrastination, Self Directed Learning, Conventional Learning

Abstrak

Self Directed Learning yaitu proses pembelajaran atas kemauan dari diri sendiri dan mengontrol diri sehingga dapat menyelesaikan permasalahan ataupun tugas. Penelitian ini bertujuan menguji perbedaan prokrastinasi akademik pada pembelajaran matematika pada kelompok yang menerapkan model pembelajaran *Self Directed Learning* dan kelompok yang menggunakan model pembelajaran konvensional. Jenis penelitian ini adalah quasi eksperimen. Instrumen penelitian ini adalah angket prokrastinasi akademik yang diberikan kepada 25 siswa di kelas kontrol dan 26 siswa di kelas eksperimen. Hasil penelitian ini menunjukkan tidak terdapat perbedan yang signifikan penurunan prokrastinasi akademik matematika pada siswa yang menerapkan *Self Directed Learning* dengan siswa yang menerapkan pembelajaran konvensional di SMP N 4 Padangsidimpuan. Tetapi ditinjau dari nilai rata-rata terdapat perbedaan penurunan prokrastinasi akademik matematika pada siswa yang menerapkan *Self Directed Learning* dengan siswa yang menerapkan pembelajaran konvensional di SMP N 4 Padangsidimpuan. Sehingga dapat disimpulkan kelas dengan pembelajaran *self directed learning* lebih baik daripada kelas dengan pembelajaran konvensional.

Kata kunci: Prokrastinasi Akademik, *Self Directed Learning,* Model Pembelajaran Konvensional

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INTRODUCTION

Education is one of the basic needs and is very important for humans. With education, changes can be made in accordance with the purpose of human creation, namely as Abdullah and Khalifatullah. So education in the Islamic view aims to form human beings with character, namely people who have an Islamic personality and are also directed at mastering Islamic tsaqofah as well as science and technology. As Muslims, we must have certain goals in education so that great motivation and enthusiasm is born in studying or achieving the highest possible education. In Islam, sciences which include science and technology are fardhu kifayah to be studied, including mathematics. Mathematics is a science that has an important role in the progress of science and technology. Studying mathematics currently aims to be able to solve problems in real life (Diana, 2021). Of course, to understand mathematics you have to study(Manoi et al., 2022). Mathematics is studied from kindergarten, Elementary School, Junior High School and Senior High School to University (Hasan & Timur, 2021). Mathematics is a very important subject matter because in real life or in everyday activities it is always related to mathematics.

However, many people think mathematics lessons are very difficult and boring and are not liked by students. If students always have this assumption, it will have an unfavorable influence on students and will give rise to many problems in the teaching and learning process, one of the problems is academic procrastination. Based on a preliminary study at SMP N 4 Padangsidimpuan, students experienced academic procrastination in mathematics learning. It can be seen from the students failing to complete their assignments according to the stipulated time. Academic procastination is an attitude that leads to delaying completing assignments, thus causing delays in completing assignments according to the specified time. Even the assignments given by the teacher were not completed by the students at all. Procrastination is the habit of postponing completing important activities until the end of the specified time (Salsabiela et al., 2018). Students who are procrastinating do not have a number of stimuli to carry out activities that must be done at one time (Asri, 2018).

Tasks are activities that are a person's obligation. This assignment is also a tool for interaction between teachers and students (Fatimah, 2021). However, students' daily tasks are work given by the teacher which is the student's obligation to achieve standard grades which are made in the form of a learning results report. With mathematics assignments, a teacher can express the context that exists in the concept of mathematical material in abstract form in various models, techniques and strategies. One of the factors causing academic procrastination is busyness outside of school such as organizing, events with family, already having a job, and choosing to do it later at home Evelina et al., (2020) and lack of support from parents (J. Xu, 2023).

Previous research that has been carried out (Afandy, 2021). In this study, researchers tried to reduce academic procrastination with Self Directed Learning, namely the process of learning based on one's own will and self-control so that one can solve problems or assignments (Puspitasari et al., 2020). This learning motivates students so that they have a high desire to learn independently. Through this Self Directed Learning System, students can be more active and freer in setting targets they want to obtain from learning

Based on the explanation above, the aim of this research is to examine the difference in the reduction in academic mathematics procastination in students who apply Self Directed Learning and students who apply conventional learning at SMP N 4 Padangsidimpuan. This research can be used in the world of education for researchers and other researchers to increase scientific insight. It is hoped that this research can contribute to teaching staff to improve the teaching and learning process and be a solution to academic procrastination, especially in the field of mathematics learning.

METHODS

The type of research used by researchers is quantitative research. The method used in this research is a quasi experimental design method with the Pretest-Posttest Control Group Design type in two different classes which are divided into experimental class and control class. The experimental group was given treatment, namely learning using the Self Directed Learning learning model. Meanwhile, the control group was not subjected to learning using the Self Directed Learning learning model. and the learning process runs as usual or conventional. This experimental design is a randomized control group design with pretest and posttest. Because this research uses trials on two groups by comparing the results of each group consisting of the experimental class and the control class.

Table 1. Research Design

Class	*Pretest*	Treatment	*Posttest*
Experiment	T_1	X	T_2
Control	T_1	-	T_2

Information: T_1 = pretest score
T_2 = posttest score
X =given Self Directed Learning treatmen
- = not given Self Directed Learning treatment

This design was used to examine the difference in the reduction of academic mathematics procrastination between students who applied Self Directed Learning and students who applied conventional learning at SMP N 4 Padangsidimpuan. In this study, researchers used the Cluster Random Sampling technique because the conditions of all classes in this school have

heterogeneous conditions for each class. The classes taken as samples were class VIII-4 with 26 people (called the control class) and class VIII-5 with 26 people (called the Experimental class).

To obtain data appropriate to this research, the author used a data collection tool in the form of a questionnaire. The academic procrastination questionnaire grid can be found in Table 2.

Table 2. Academic Procrastination Questionnaire Grid

No.	Indikator	Item		Item Number
		F	UF	
1	Delays in starting and completing tasks.	5, 10, 26, 31, 34	2, 13, 21, 29	9
2	Delay in completing tasks.	3, 8, 14, 24, 33	7, 12, 17, 30, 36	10
3	Time gap between plan and actual performance.	4, 6, 23, 32	9, 16, 20, 22, 28	9
4	Do more fun activities.	1, 11, 15, 27, 35	18, 19, 25,	8
	Total	19	17	36

Alternative respondents are shown in Table 3.

Table 3. Alternative Respondents

Information	Weight
SS : more agree	4
S : agree	3
TS : don't agree	2
STS : more disagree	1

The range of academic procrastination values can be found in Table 4.

Table 4. Procrastination Class

Range	Category
≤ 45	Low
46 – 65	Middle
66 – 85	High
≥85	Very High

(Schouwenburg, H.C)

Before giving the test to the research subjects, the researcher tested it in other classes outside the control and experimental classes. This trial aims to find out whether the questionnaire meets requirements such as validity and reliability. Based on the calculations carried out, the value r_{11} = 0,823. This value is considered high, in other words this question instrument is suitable for use in research.

Questionnaire data analysis was carried out by determining the percentage of students' answers to each question in the questionnaire, analyzed descriptively and then analyzed quantitatively. Initial data analysis used the normality test and homogeneity test. From the results of research conducted on initial data (Pre Test) in both the experimental class and control class, it shows that the conditions obtained were the same. Then, after carrying out normality and homogeneity tests, the two classes were not normally distributed but were homogeneous.

From the results of the Post Test requirements that have been carried out, the two classes are not normally distributed and not homogeneous, so to test the hypothesis a non-parametric statistical test was used using the *Mann-Whitney U* Test with the help of the SPSS v application. 22, namely the average difference test which will determine whether there is a difference in reducing academic mathematics procrastination between students who apply Self Directed Learning and students who apply conventional learning at SMP N 4 Padangsidimpuan.

RESULT AND DISCUSSION

Pre-Test Data

The data described to obtain an initial picture regarding the academic procrastination of mathematics in the control class can be seen in Table 5.

Table 5. Pre Test Results Data on Mathematics Academic Procrastination in the Control Class

No.	Distribution	Value
1	Maximum	97
2	Minimum	36
3	Range	61
4	Mean	53,16
5	Median	47
6	Mode	47
7	Std. Deviation	13,542
8	Variance	183,390
9	Sample	25

The histogram of the academic procrastination of mathematics in the control class are shown in Figure 1.

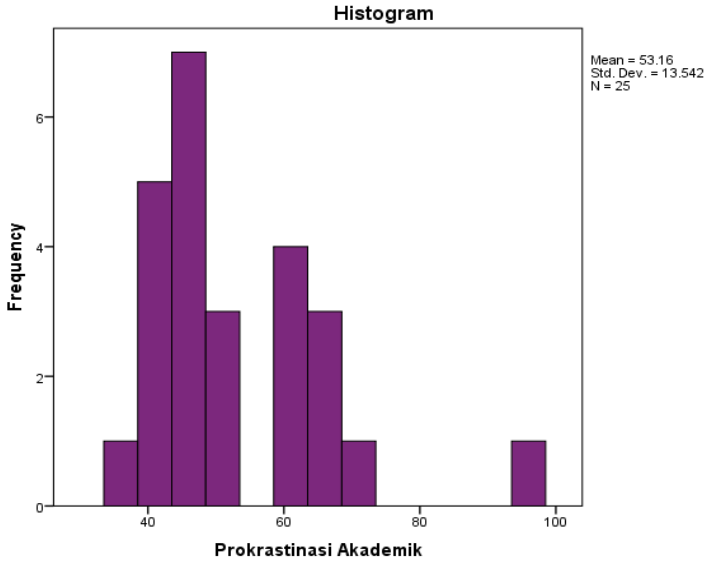

Figure 1. Control Class Mathematics Academic Procrastination Pre-Test Results

Based on Table 5 and Figure 1, the mathematics academic procrastination of students in the moderate category.

The data described to obtain an initial picture of the academic procrastination of mathematics in the experimental are shown in Table 6.

Table 6. Pre-Test Results Data on Mathematics Academic Procrastination in the Experimental Class

No.	Distribution	Value
1	Maximum	77
2	Minimum	29
3	Range	48
4	Mean	53,69
5	Median	52,50
6	Mode	43
7	Std. Deviation	11,224
8	Variance	125,982
9	Sample	26

The histogram of the academic procrastination of mathematics in the experimental class are shown in Figure 2.

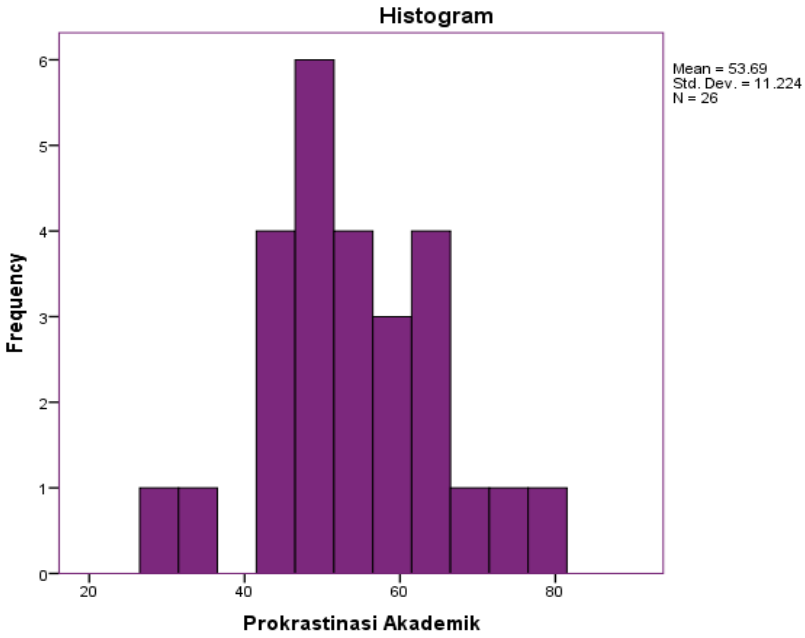

Figure 2. Experimental Class Mathematics Academic Procrastination Pre-Test Results

Based on Table 6 and Figure 2, the mathematics academic procrastination of students in the moderate category.

Post-Test Data

An overview of the academic procrastination of mathematics in the control class, namely by applying conventional learning models, can be found in Table 7.

Table 7. Post Test Results Data on Mathematics Academic Procrastination in the Control Class

No.	Distribution	Value
1	Maximum	94
2	Minimum	36
3	Range	58
4	Mean	53,62

5	Median	48,50
6	Mode	43
7	Std. Deviation	12,738
8	Variance	162,246
9	Sample	26

The histogram of the academic procrastination of mathematics post test in the control class are shown in Figure 3.

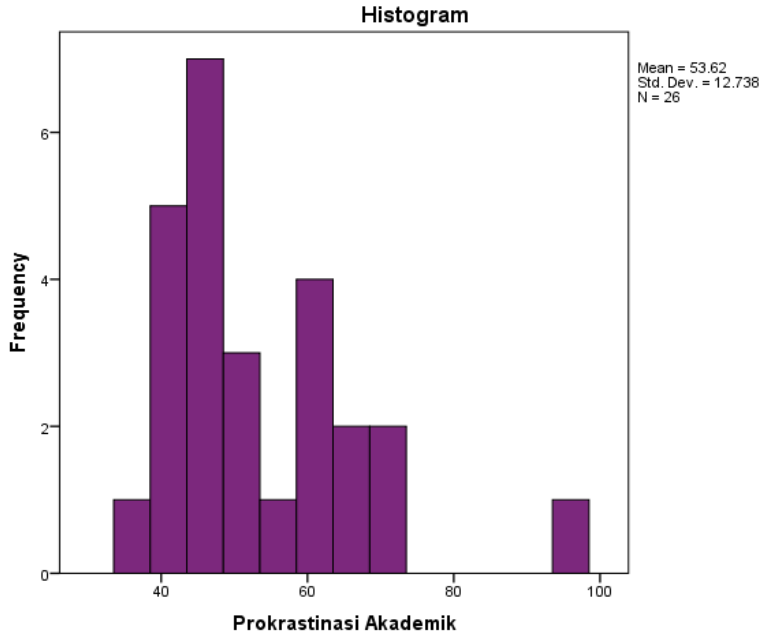

Figure 3. Control Class Mathematics Academic Procrastination Post Test Results

Based on Table 7 and Figure 3, the mathematics academic procrastination of students in the moderate category.

An overview of academic mathematics procastination in the experimental class are presented in Table 8.

Tabel 8. Post Test Results Data on Mathematics Academic Procrastination in the Experimental Class

No.	Distribution	Value
1	Maximum	64
2	Minimum	31
3	Range	33
4	Mean	50,04
5	Median	51
6	Mode	47
7	Std. Deviation	7,247
8	Variance	52,518
9	Sample	26

The histogram of the academic procrastination of mathematics post test in the experimental class are shown in Figure 4.

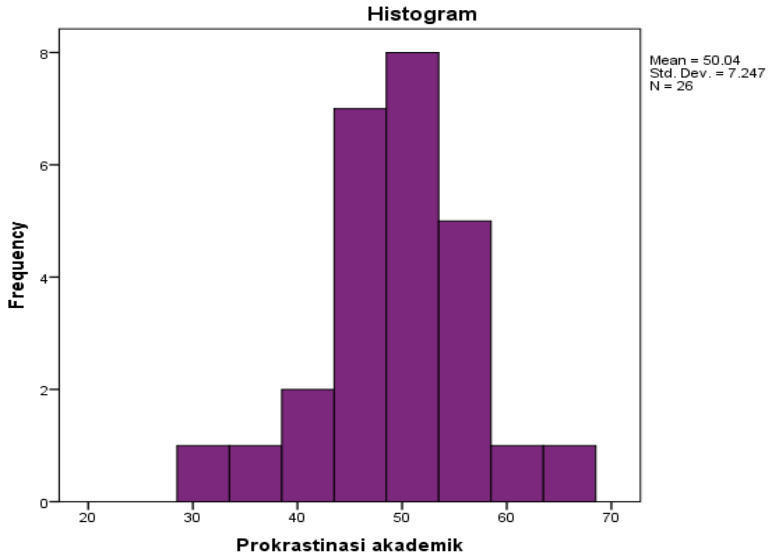

Figure 4. Experimental Class Mathematics Academic Procrastination Post Test Results

Based on Table 8 and Figure 4, students' academic mathematics procrastination is classified as moderate procrastination.

From the results of research conducted on initial data (Pre Test) in both the experimental and control classes, it shows that the conditions obtained were the same. Then, after carrying out normality and homogeneity tests, the two classes were not normally distributed but were homogeneous.

From the results of the Post Test requirements that have been carried out, the two classes are not normally distributed and not homogeneous, so to test the hypothesis a non-parametric statistical test was used using the Mann-Whitney U Test with the help of the SPSS v application. 22, namely the average difference test which will determine whether there is a difference in reducing academic mathematics procrastination between students who apply Self Directed Learning and students who apply conventional learning at SMP N 4 Padangsidimpuan.

Tabel 9. Mann-Whitney U Test Results Reducing Mathematics Academic Procrastination by Implementing Self Directed Learning

Test Statistics[a]

			Prokrastinasi Akademik
Mann-Whitney U			295.000
Wilcoxon W			646.000
Z			-.566
Asymp. Sig. (2-tailed)			.571
Monte Carlo Sig. (2-tailed)	Sig.		.576[b]
	95% Confidence Interval	Lower Bound	.566
		Upper Bound	.586
Monte Carlo Sig. (1-tailed)	Sig.		.287[b]
	95% Confidence Interval	Lower Bound	.278
		Upper Bound	.296

a. Grouping Variable: Grup

b. Based on 10000 sampled tables with starting seed 299883525.

It can be seen from Table 9 that the value Z_{hitung} obtained in the output above is -0.566. Then, in the output above we get *Asymp. Sig. (2-tailed)* sebesar 0.571. Nilai *P-value* used is *monte carlo sig (2-tailed),* which is 0,576. The criteria for hypothesis testing are if *P-value* > α, then it is H_0 accepted and if *P-value* < α then it is H_0 rejected. This means that at the 95% confidence level there is no significant difference in reducing academic mathematics procrastination between students who apply Self Directed Learning and students who apply conventional learning at SMP N 4 Padangsidimpuan. However, we can see the difference in the decrease in academic mathematics procrastination between students who apply Self Directed Learning and students who apply conventional learning at SMP N 4 Padangsidimpuan from the students' average scores. From the data above, students' academic mathematics procrastination is classified as moderate procrastination. From the calsulation results, the mean Pre-Test of academik procrastination in the control class was 53,16 and Post Test of academic procrastination in the control class were 53, 62 . Pre-Test of academik procrastination in the experimental class was 53, 69 and Post Test of academic procrastination in the experimental class were 50, 04. So it can be concluded that the experimental class has a better reduction in academik procrastination compared to the control class.

Academic procrastination is students who procrastinate in doing mathematics assignments given by the teacher. This academic procrastination is carried out deliberately by students, because procrastination is a tendency of the students themselves. There are several indicators of academic procrastination in mathematics learning, namely: students feel anxious or confused in doing

assignments so they always delay completing them, students do not complete assignments according to the time set by the teacher, and do not submit math assignments at all.

Academic procrastination must be reduced, so that learning targets are achieved with satisfactory learning outcomes. One learning model that can reduce academic procrastination is Self Directed Learning, namely the learning process based on one's own will and self-control so that one can solve problems or tasks (Puspitasari et al., 2020). This learning motivates students so that they have a high desire to learn independently. Through this Self Directed Learning System, students can be more active and freer in setting targets that they want to obtain from learning.

Self-Directed Learning is a learning process where students create and determine the targets they want to achieve, students also create strategies and solve problems faced when achieving these targets and review the activities carried out in achieving the targets or goals they want to achieve (Akbar et al., 2017). In this learning, students make their own efforts to achieve their goals. With encouragement from yourself by determining your own learning steps (Elyaumi, 2020). This learning can also be described as planned activities that are managed independently to achieve certain goals (Permatasari & Anggaryani, 2021).

Procrastination in research decreased after students implemented the Self Directed Learning learning model. This is in line with Lala Nailah's research, with the application of the Self Directed Learning learning model, it can improve students' mathematical understanding. The essence of implementing the Self Directed Learning learning model is an independent learning system. This independent learning can develop students to be more active and free to determine the learning goals to be achieved (Nailah & Ruswana, 2018). Self Directed Learning is learning that takes into account the uniqueness of students' styles and gives students independence in planning their learning, students determine the learning targets they want to achieve, after that they observe and evaluate their learning. Self-Directed Learning increases knowledge, skills, achievements and individual development which begins with one's own initiative using one's own learning planning and is carried out alone, realizing one's own learning needs in achieving learning goals by creating one's own learning strategies and assessing one's own learning results.

The implementation of this research was carried out carefully using steps in accordance with quantitative research procedures. This is done in order to get the best possible results. However, getting perfect results is very difficult, because in carrying out this research there are limitations: 1) In giving pretest and posttest questions. There are still students who fill out questionnaires carelessly, or don't read the questionnaire correctly. 2) This research only had two meetings, so it is recommended that further researchers continue by applying the self-directed learning model for more than 4 meetings so that the reduction in procrastination increases further.

CONCLUSION

From the research carried out, conclusions were obtained in accordance with the objectives of the problem that had been formulated, and based on the results of the data analysis carried out, namely from the Mann-Whitney U Test value Z_{skor} obtained in the output above is -0.566. There is no significant difference in reducing academic mathematics procrastination between students who apply Self Directed Learning and students who apply conventional learning at SMP N 4 Padangsidimpuan. However, we can see the difference in the decrease in academic mathematics procrastination between students who apply Self Directed Learning and students who apply conventional learning at SMP N 4 Padangsidimpuan from the students' average scores. From the data above, students' academic mathematics procrastination is classified as moderate procrastination. From the calsulation results, the mean Pre-Test and Post-Test of academik procrastination in the control and experimental can be concluded that the experimental class has a better reduction in academik procrastination compared to the control class.

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