The Effect of Application of Gender-Based Class Separation on Motivation and Learning Outcomes in Mathematics Class VI Students at SDIT Al-Hanif Cilegon

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Abstract

SDIT Al-Hanif Cilegon is an Islamic-based school that applies class separation based on gender. Class separation is done to create a focus and limit association between men and women. However, the application of class separation also has weaknesses, where students can feel free and do not understand the material being taught. The background in this research is that it starts from the problems that occur from the mixing of classes between men and women. The purpose of this study was to determine the effect of applying gender-based class segregation to motivation and learning outcomes in mathematics for sixth grade students at SDIT Al-Hanif Cilegon. The type of research used in this study is a type of correlational research with a quantitative approach. Data collection techniques in this study used test instruments, class separation questionnaires based on gender, and learning motivation questionnaires. The data analysis technique used in this study is the Prerequisite Test (Normality Test and Linearity Test), Simple Linear Regression Test, and Hypothesis Test. The results of the research based on data analysis can be concluded that: 1) there is a positive and significant effect of applying class separation based on gender on students' motivation to learn mathematics with a sig value of $0.000 < 0.05$; 2) there is no significant effect of applying class separation based on gender on students' mathematics learning outcomes as indicated by the acquisition of a sig score of $0.852 > 0.05$.

Keywords: separation of classes based on gender, motivation, learning outcomes.

A. INTRODUCTION

Education is a tool used to enhance human capacity, both physically, spiritually, and spiritually. Education can be seen as a process in which individuals develop their potential in order to achieve a better life. According to Ki Hajar Dewantara, education is defined as guidance in the growth of children's lives. Its purpose is to guide all the natural strengths that exist in children, so that they can achieve the highest level of safety and happiness as human beings and as members of society. Essentially, education is one of the most important tools, both formal and informal, for humans because it becomes a preparation for the life they lead (Fitriana, 2020).

Law Number 20 of 2003 states that learning is a process of interaction or synergistic relationships that occur among learners, educators, and learning resources. In this regard, learning is a process in which each individual or student interacts with their teacher, as well as with other students and the environment, with the aim of obtaining behavioral changes in themselves so that they become better individuals (Latifah, 2015).

In the field of education, there are various models of learning, one of which is class segregation between boys and girls. The system of separating classes for boys and girls has been positively responded to by various parts of the world. Based on data obtained from Thoriquttyas and Rohmawati's research (2018), in 2009, there were more than 550 educational institutions in the United States that implemented gender-based class segregation, known as Single Sex Public Education (SSPE). This is based on the principle that SSPE believes that boys are more dominant in competition during their development, while girls require a calm and cooperative learning environment. Additionally, gender-based class segregation is also implemented in eastern parts of the world, such as Saudi Arabia. This is because the region is based on Islamic sharia law, which prohibits the mixing of men and women in the same room. However, if it is not possible, there must be barriers or partitions to separate them.

According to Latifah (2015), the use of gender-based class segregation as a learning model in Indonesia is still a subject of debate. Some argue that if this model is implemented with the aim of minimizing moral degradation, it may actually create awkwardness and hinder interactions in the learning process.

The implementation of gender-based class segregation is indeed very rare in schools. It is only certain educational institutions, particularly those based on Islamic principles, that adopt this approach. Essentially, the implementation of gender-based class segregation is a measure taken to prevent slander and free mixing (Latifah, 2015). The aim is to limit interaction between males and females who are not mahram (unmarriageable kin) and prevent any undesirable situations. Additionally, students are expected to be more focused on listening and participating in the learning activities.

One important factor that can influence the success of the learning process is the motivation of the learners. According to Beratha, as cited in the research by Setiawati & Arsana (2018), motivation is the effort made by an individual to push themselves to compete more effectively, such as striving for perfection in completing tasks or achieving good grades in class. Students with high motivation will demonstrate enthusiasm and perseverance in completing their learning tasks. On the other hand, students with low motivation may experience a lack of spirit, quickly get bored, and show reluctance to learn.

Furthermore, the role of educators in the classroom also greatly influences students' learning outcomes. Other factors that determine the quality of learning outcomes include external and internal factors. Internal factors refer to conditions that originate from within the learners themselves, such as their physical and spiritual well-being, including physiological aspects related to the body and senses, as well as psychological aspects encompassing cognitive abilities, potential, attraction, and learning motivation. On the other hand, external factors refer to conditions in which learners are influenced by social environmental factors such as teachers, family, friends, and the community. Additionally, non-social environmental factors such as learning environment, study time, and the school environment also play a role (Choir, 2020).

SDIT Al-Hanif Cilegon is one of the Islamic-based schools in Cilegon where its students have achieved remarkable achievements. They have participated in various competitions at both provincial and national levels and have won many trophies. However, achieving these achievements is not easy and requires support and contributions from various parties, such as the school and teachers who make efforts to guide the students as much as possible, thus creating a burning spirit within them.

Based on the observations conducted at SDIT Al-Hanif, the students' learning motivation is considered good. This is evident from their enthusiasm during learning activities. The students' responses in the classroom show a strong commitment to learning. It can be said that the students there are disciplined in the learning process. Moreover, the learning outcomes of the students are also quite impressive. As seen from the previous semester's results, the average grades obtained by the students are above the minimum passing grade (KKM).

One interesting aspect is the school's policy of implementing gender-based class separation. The class separation is divided into separate classes for boys and girls. The reason for implementing this class separation is to ensure that students can concentrate better during the learning process and understand the boundaries of interaction between boys and girls. This policy aims to address the challenges that arise from mixed-gender classrooms. In mixed-gender classes, students may find it difficult to focus on learning because of the presence of the opposite sex. Especially if students have a special relationship with someone of the opposite sex, their focus can be diverted and disrupt the learning process. If problems arise in their relationships, they tend to become less motivated and less enthusiastic about learning. Additionally, the presence of the opposite sex can make them feel embarrassed and awkward when the teacher calls on them to solve a problem in front of the class or when they need to ask the teacher questions about the subject matter.

However, in applying class separation based on gender, there are weaknesses that arise, namely students will feel free to do things such as not being embarrassed if they sleep while studying in class because they feel that no one is watching because there is no opposite sex in the classroom. The impact is that they do not understand well about the material that has been taught by the teacher.

Based on the description that has been submitted, the researcher is interested in researching and takes the research title "The Effect of Application of Gender-based Class Separation on Motivation and Learning Outcomes in Mathematics Class VI Students at SDIT Al-Hanif Cilegon".

B. METHODS

This type of research used is a type of correlational research with a quantitative approach. Correlational research is research that aims to find a relationship or influence between two or more variables (Muhson, 2006). To determine the effect of class separation based on gender (X) on motivation to learn mathematics (Y_1) and class separation based on gender (X) on mathematics learning outcomes (Y_2), the technique that can be used is a simple linear regression technique.

The population is a generalization area consisting of objects/subjects that have certain qualities and characteristics determined by researchers to be studied and then drawn conclusions (Sugiyono, 2013). The population used is all grade 6 students at SD Al-Hanif Cilegon Academic Year 2022/2023 with a total of 170 students.

According to Sheskin in Ismail (2018) the sample is a collection of objects that represent the population. In taking this sample, the researcher used a purposive sampling technique. The purpose of this technique is a sampling technique that is used in a way that is considered in order to obtain certain goals (Riduwan, 2012. Pg 63). The sample used in this study was class VI A, B, D, E with the consideration that these classes represent each

gender, with class divisions namely class A and B are male classes and classes D and E are female classes.

The data collection technique is to use test instruments, class separation questionnaires based on gender, and students' mathematics learning motivation questionnaires. The analysis technique used in this study is the Prerequisite Test (Normality Test and Linearity Test), Simple Linear Regression Test, and Hypothesis Test.

C. RESULT AND DISCUSSION

Before carrying out a simple linear regression test, there is a prerequisite test that must be met first. Prerequisite tests in this study are normality tests and linearity tests.

Normality test

In analyzing the normality test calculations, researchers used the SPSS 21 program. The results of the normality test can be seen in the following table.

Table 1. X-Y_1 Variable Normality Test Results

		Unstandardized Residual
N		137
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	6.07240285
	Absolute	.066
Most Extreme Differences	Positive	.066
	Negative	-.038
Kolmogorov-Smirnov Z		.776
Asymp. Sig. (2-tailed)		.583

Based on the results of the normality test that has been carried out, a significant value of 0.583 is obtained. The significant value of 0.583 is greater than 0.05 so it can be concluded that the data is normally distributed.

Table 2. X-Y_2 Variable Normality Test Results

		Unstandardized Residual
N		137
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	2.47920225
	Absolute	.096
Most Extreme Differences	Positive	.088
	Negative	-.096
Kolmogorov-Smirnov Z		1.127
Asymp. Sig. (2-tailed)		.157

While the results of the normality test that has been carried out obtained a significant value of 0.157. The significant value of 0.157 is greater than 0.05 so it can be concluded that the data is normally distributed.

linearity test

To calculate the linearity test, researchers used SPSS 21. The following are the results of the linearity test.

Table 3. X-Y_1 Variable Linearity Test Results

	Sum of Square	df	Mean Square	F	Sig.
(Combined)	1490.458	24	62.102	1.738	.029
Linearity	478.556	1	478.556	13.390	.000

	Sum of Square	df	Mean Square	F	Sig.
Deviation from Linearity	1011.902	23	43.996	1.231	.234
Within Groups	4002.973	112	35.741		
Total	5493.431	136			

Based on the results of the linearity test that has been obtained above, it is known that the value of Sig. Deviation from Linearity class separation variable based on gender (X) with motivation to learn mathematics (Y_1) obtains 0.234. As for the value of Sig. 0.234 > 0.05, it can be said that there is a linear relationship.

Table 4. X-Y_2 Variable Linearity Test Results

	Sum of Square	df	Mean Square	F	Sig.
(Combined)	96.830	24	4.035	.611	.918
Linearity	.215	1	.215	.033	.857
Deviation from Linearity	96.615	23	4.201	.636	.894
Within Groups	739.301	112	6.601		
Total	836.131	136			

Then for the results of the linearity test for class separation variables based on gender (X) with mathematics learning outcomes (Y_2) the value of Sig. Deviation from Linearity of 0.894. This means that the value of Sig. 0.894 > 0.05 so it can be concluded that there is a linear relationship.

Data analysis on the effect of class separation based on gender on learning motivation in mathematics for sixth grade students at SDIT Al-Hanif Cilegon.

Table 5. Simple Linear Regression Test Results

	B	Std. Error	Beta	t	Sig.
(Constant)	57.237	6.147		9.312	.000
Pemisahan Kelas	.328	.091	.295	3.589	.000

From the data from the simple linear regression test that has been calculated above, the equation value $Y = 57.237 + 0.328X_1$ is obtained.

The B value for Class Separation is 0.328, while the results of the t test yield a value of 3.589 with a significant value of 0.000. The t-test value of 0.000 is less than 0.05, so it can be stated that there is a significant and positive influence between class separation based on gender (X) on the learning motivation (Y1) of class VI students at SDIT Al-Hanif Cilegon in mathematics.

Table 6. Coefficient of Determination

R	R Square	Adjusted R Square	Std. Error of the Estimate
.295[a]	.087	.080	6.095

From the table above, it is known that a value of 0.087 or 8.7% is obtained for the R Square value. This shows that the magnitude of the effect of class separation based on gender on students' motivation to learn mathematics is 8.7%. As for the remaining 91.3% due to other factors outside of this study.

Based on the analysis conducted, it found the same results as previous research by Siti Masruroh Rizky Fitriana (2020) entitled "The Influence of Gender Segregation in Learning Activities on the Learning Motivation of Class 5 MI Kenongomulyo Nguntoronadi, Magetan Academic Year 2019/2020". The research shows that gender segregation has a positive and significant influence on students' learning motivation. In

addition, this study also used indicators of class separation, namely patterns of interaction, socialization, friendships and the learning process. This means that the indicators of class separation can influence student learning motivation. This is also in line with research conducted by Barotut Taqiyah (2016) which found that there was a positive influence between class separation of male and female students on learning motivation of 15%. As for the level of effect of applying class separation based on gender in this study, it was obtained at 8.7%, which means that the effect on students' motivation to learn mathematics was only 8.7%. This shows that the possibility of other factors besides the application of class separation based on gender is not the only one that can influence students' motivation to learn mathematics but can be from internal and external motivational factors.

Data analysis on the effect of class separation based on gender on learning outcomes in mathematics for class VI students at SDIT Al-Hanif Cilegon

Table 7. Simple Linear Regression Test Results

	B	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)	5.651	2.509		2.252	.026
Pemisahan Kelas	.007	.037	.016	.186	.852

From the results shown in table above, the equation value $Y = 5.651 + 0.007X_1$ is obtained.

The B value for Class Separation is 0.007 and the result of the t test is 0.186 with a significant value of 0.852. The value of $0.852 > 0.05$, thus the conclusion that can be drawn from the results of the t test is that there is no significant effect of the independent variable (X), namely class separation based on gender, on the dependent variable (Y2), namely the results of learning mathematics.

Table 8. Coefficient of Determination

R	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
.016[a]	.000	-.007	2.488

Table 8 above is the acquisition of the output R Square, which is 0.000. In other words, the degree of influence resulting from the independent variable (X), namely class separation based on gender on the dependent variable (Y2), namely the results of learning mathematics, is 0%.

The results of the calculations that the researcher has analyzed are the same as the research that has been conducted by Gusti Ayu Dewi Setiawati and Anak Agung Putu Persana (2018) with the title Effects of Learning Motivation and Gender on Science Learning Achievement for Bilingual Class Students of Saraswati 1 Middle School (SLUB) Denpasar. The results of this study stated that gender did not have a significant and positive effect on student achievement. The findings that the researchers obtained are also in line with research conducted by Arif Hidayat and Dwiningrum (2016) where it was found that both men and women have the same opportunity to achieve high academic achievement. In this case, the results that have been obtained in the research show that the application of class separation based on gender does not affect students' mathematics learning outcomes. This means that the application of class separation based on gender is not the only factor that can affect student learning outcomes. Thus the possibility of other factors that can affect learning outcomes such as external factors and internal factors.

D. CONCLUSION

Separation of classes based on gender has a significant and positive influence on the motivation to learn mathematics for grade VI students at SDIT Al-Hanif Cilegon. The results of simple linear regression analysis show that the coefficient of determination (R Square) is 0.087, which means that the effect of class separation based on gender on students' motivation to learn mathematics is 8.7%. The remaining 91.3% is influenced by other factors not examined in this study. Possible factors other than the implementation of class separation based on gender are not the only ones that can influence students' motivation to learn mathematics but can be from internal and external motivational factors.

The results showed that class separation based on gender had no positive and significant effect on the mathematics learning outcomes of grade VI students at SDIT Al-Hanif Cilegon. This is reinforced by the value of the coefficient of determination (R Square) of 0.000 obtained from simple linear regression analysis. These results indicate that the effect of class separation based on gender on students' mathematics learning outcomes is 0.000%, or there is no contribution. This means that the application of class separation based on gender is not the only factor that can affect student learning outcomes. Thus the possibility of other factors that can affect learning outcomes such as external factors and internal factors.

The suggestions given in this study are as follows.

1. For schools, it is hoped that from the research that has been conducted, schools can develop strategies to increase student motivation and learning outcomes, especially in mathematics, by applying class separation based on gender. With this step, it is hoped that there will be significant improvements in the future.

2. For students, it is hoped that the research that has been carried out can increase motivation and can also improve learning outcomes through the application of class separation based on gender.

3. For future researchers, it is hoped that the research that has been carried out can broaden and add insight. Besides that, it is hoped that it can also become a reference list for future researchers.

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