

COMPARATIVE STUDY: THE DIFFERENCES STUDENTS' LEARNING BASED ON GENDER

Irmawaty Natsir^{1*}, Anis Munfarikhatin², Dian Mayasari³,
Dessy R. Suryani⁴, Sadrack Luden Pagiling⁵

^{1,2,3,4,5}Department of Mathematics Education, Faculty of Teacher Training and Education, Universitas Musamus
Jl. Kamizaun Mopah Lama, Merauke, 99611, Indonesia

Corresponding author e-mail: ^{1*} natsir_fkip@unmus.ac.id

Abstract. This research is motivated by various ways in which students absorb, organize and process information received, such as there are students who find it easier to remember the material given visually than auditory or vice versa, there are students who find it difficult to write, but are good at telling stories, there are students who are easily disturbed by noise, there are students who can't sit still for a long time and there are students who prefer practical activities. This study is a comparative study to determine differences in learning styles between male and female students at SMP Yapis Merauke. The research sample amounted to 80 students. Data was collected from a learning style questionnaire and analyzed descriptively and inferentially. Descriptive analysis shows that dominant male students had auditory and dominant female students had a visual learning style. Inferential analysis with the Anova test showed a significant value of $p=0,00$ ($p<0,05$), which means a difference between the learning styles of males and females.

Keywords: learning style, gender

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1. INTRODUCTION

The implementation of quality education is very much needed as an effort to support the creation of intelligent and competitive human beings. Education as a planned effort in creating a learning climate and learning process so that students are actively able to develop their potential and be able to face challenges and changes in the era of the industrial revolution 4.0. The implementation of education cannot be separated from learning and learning activities. Learning is an activity that shows a change in a person's behavior as a result of his experience [1]. Each student has their own way/characteristic in learning, such as there are students who learn more easily if they see directly the object being studied, there are students who learn more easily by listening without having to see the object being studied directly, and there are students who are easier to learn. if you put it into practice. The way/characteristic that each student has in learning is known as a learning style.

According to Arylien, Geradus & Bire [2], learning style is the easiest way that individuals have in absorbing, organizing, and managing any information received. In line with this [3] suggests that learning style is a combination of the way a person absorbs information, organizes information and processes information into something meaningful. Learning styles are important characteristics that can influence the way students learn and cannot be ignored [4]. Learning styles are classified into three based on sensory modalities, namely visual learning styles (seeing), auditory learning styles (hearing), and kinesthetic learning styles (moving) [3].

The results of observations obtained that a number of students have their own way of understanding, and processing the information provided by the teacher such as there are students who are easier to remember the material seen than what is heard, there are students who have difficulty grasping the material because the explanation is too fast, there are students who do not like the work that is done. requires long answers, there are students who find it difficult to write, but are great at telling stories, there are students who are easily distracted by noise, there are students who cannot sit still for long and there are students who prefer practical activities rather than having to listen to explanations. teacher for hours.

When students learn in different ways and the teacher uses the same method for each student during the learning process, it will be a hereditary problem so that learning will not be effective. Success in achieving learning objectives is very dependent on how the learning process is carried out. A teacher must be able to create conditions and a conducive environment and provide equal learning opportunities to students in certain ways according to the characteristics of each student. However, because students study in the same class, most teachers still assume that all students are able to receive the learning materials delivered in the same way. But in reality, every student is not the same person. There are two main keys in the learning process by paying attention to the learning styles that each student has, namely providing choices and using a variety of methods for students to learn. Thus, students are more optimal in understanding and absorbing the information they get.

In addition to learning styles, gender is another characteristic that can distinguish students' ways of learning and processing information [5]. Gender is a psychosocial aspect that can determine the way individuals think, behave and act so that they can be accepted in their environment. Gender is a sociocultural and psychological dimension of men and women in a particular cultural context [6]. In line with this opinion [7] suggests that gender is a social interpretation that depends on people's expectations about roles and responsibilities, characteristics, attitudes and behavior of being male or female. Gender differences can be a differentiating factor between men and women in thinking and acting in dealing with the problems they face and affect the psychological differences in student learning [8].

The results of the preliminary study show differences in learning styles between male and female students in the learning process. Female students are more enthusiastic in participating in lessons compared to male students. Male students in the learning process always want to move and are faster in responding to the teacher's actions, in contrast to female students who tend to be quiet and calm. These results are in line with research [9] which states that there is a difference between the learning styles of male and female students with a significant value of 0.033 ($p < 0.05$), where male students are more dominant in having a visual learning style and students have a visual learning style. Females are more dominant in having a kinesthetic learning style. Several studies suggest differences that arise between male and female students in cognitive areas such as males who are superior in visual-spatial math skills and science, while females have better verbal skills than male students [6]. Niederle & Vesterlund [10] stated that female students have a more free

and varied learning style compared to male students, thus enabling collaboration and interaction in the classroom.

Each student's learning style has its own characteristics, so there is no one that is the best or the worst. Every learning activity expects maximum results, but there are differences in the learning styles of male and female students in absorbing and processing information [11] so that students cannot be equated with one another. In reality, each individual has these three learning styles, but generally each individual only has one more dominant learning style, therefore each individual must be aware of the most dominant learning style in himself so that it can be used as an advantage that can be developed in improving learning outcomes [12]. If a student is forced to learn in a way that is not right for him, it is likely that this will hinder the student's learning process and the absorption of the information received will be less than optimal. Based on this, the purpose of this study was to determine the differences in learning styles between male students and female students at SMP Yapis Merauke.

2. RESEARCH METHOD

This study is a comparative study with a quantitative approach that aims to determine the dominant learning styles of male and female students and the differences in learning styles between male and female students at Yapis Merauke Junior High School. The research sample was 80th grade students, consisting of 40 male students and 40 female students. The instrument used is a learning style questionnaire consisting of several statements and includes visual, auditory and kinesthetic dimensions.

Table 1. Dimensions and Indicators of Learning Style

Dimensions	Indicator
Visual Learning Style	<ul style="list-style-type: none"> a. Be organized, pay attention to everything, take care of appearance b. Remembering with pictures, prefers to read than be read c. Answer questions with short answers d. Requires a comprehensive overview and goals
Auditory Learning Style	<ul style="list-style-type: none"> a. It's easy to get distracted b. Speak in a pattern/rhythm c. Move your lips while studying and make a sound when reading d. Dialogue internally and externally
Kinesthetic Learning Style	<ul style="list-style-type: none"> a. Move frequently, stand close together and touch others when interacting b. Learn by practicing directly c. Pointing at writing while reading d. Remembering while walking and looking

Source: DePorter, B., & Hernacki, M. [3]

The instruments that have been made before being used are tested for validity and reliability tests first. The results of the validity of the learning style questionnaire obtained 16 valid statement items from 22 statement items tested on 27 students with the smallest value range of 0.383 and the highest value range of 0.827 with a reliability value of 0.748.

The data analysis technique used descriptive statistics and inferential statistics. Descriptive statistics are used to determine the dominant learning styles of male and female students. Inferential statistics were used to determine the differences in learning styles between male and female students at SMP Yapis Merauke. Before testing the hypothesis using the ANOVA test, prerequisite tests were first carried out including the normality test and homogeneity test. The hypothesis testing to be carried out is as follows.

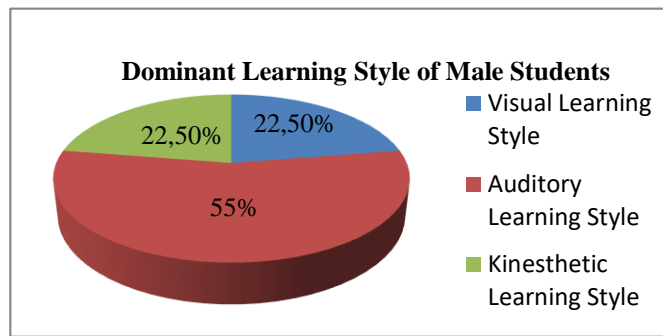
H_0 : There is no difference between the learning styles of male and female students at SMP Yapis Merauke

H_1 : There is a difference between the learning styles of male and female students at SMP Yapis Merauke

3. RESULTS AND DISCUSSION

3.1. The Dominant Learning Style of Male Junior High School Students Yapis Merauke

The dominant learning styles of male students at SMP Yapis Merauke are described in Picture 1.



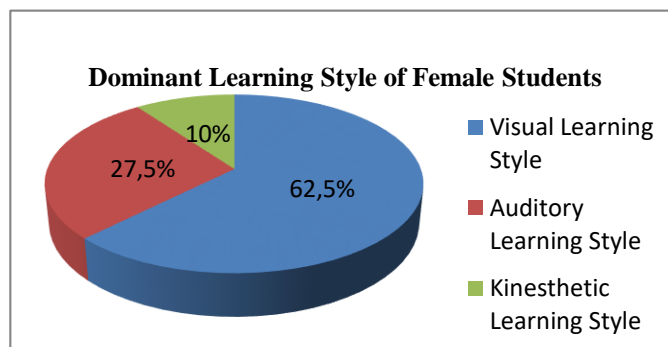
Picture 1. Percentage of Male Students' Dominant Learning Style

Picture 1 above shows the percentage of visual learning styles of 22,5%, the percentage of auditory learning styles of 55% and the percentage of kinesthetic learning styles of 22,5%. From these results, the dominant learning style of male students at SMP Yapis Merauke is auditory learning style. This means that male students at SMP Yapis Merauke prefer the learning process by means of listening, discussion and presentation, have a habit of making a sound when reading and when speaking they always emphasize certain words/sentences so that they sound like rhythmic. In learning, his attention is easily distracted on certain things such as the sound of vehicles around the school, and the noise of students in other classes. The results of this study are in line with research [13] which suggests that male students are more dominant in using auditory learning styles compared to female students. This is in accordance with the statement [2] that men rely more on the sense of hearing in understanding and remembering things. However, on the other hand, men are quite difficult to absorb information in written form.

Auditory learning style is a learning style that relies on the sense of hearing. Someone who has an auditory learning style tends to understand and remember things by listening, being able to convey the information obtained, reading aloud, talking to himself at work, having a pattern/rhythm when speaking, likes to ask questions that are not clear. , his attention is easily distracted by things that happen in the surrounding environment and has problems at work that involves visualization [14].

3.2. The Dominant Learning Style of Female Junior High School Students Yapis Merauke

The dominant learning styles of female students at SMP Yapis Merauke are described in picture 2.



Picture 2. Percentage of Female Students' Dominant Learning Style

Picture 2 above shows the percentage of visual learning styles of 62,5%, auditory learning styles of 27,5%, and kinesthetic learning styles of 10%. From these results, it was found that the dominant learning style of female students at SMP Yapis Merauke was visual learning style. This means that female students at SMP Yapis Merauke prefer the learning process by displaying real constructions such as the use of learning media, visual aids or pictures, prefer to read alone rather than be read aloud and tend to be able to learn in a noisy classroom environment. Always pay attention to everything in the environment such as class cleanliness, neatness and so on. The results of this study are in line with the opinion [3] which suggests that visual learning styles tend to be easier to remember based on the sense of sight, better understand written instructions or pictures than verbal instructions. This is reinforced by the statement [15] that people who have a visual learning style, in learning something rely more on the sense of sight. They are easier to capture and understand information by reading, viewing or observing pictures, diagrams, tables, videos and other visual media.

3.3. Student Learning Styles Differences Between Male and Female Students

The difference in learning styles between male and female students can be seen in the results of hypothesis testing. However, before testing the hypothesis using the Anova test, a prerequisite test was carried out, namely the normality test and homogeneity test. The normality test uses the Kolmogorov-Smirnov test, where the population is said to be normally distributed if the significance value (p value) obtained is greater than the 5% significant level. Furthermore, the homogeneity test uses the Test of Homogeneity of Variances. The homogeneity test was carried out to determine the variance of the two samples or it could be said that there was no difference in the variance of the two samples. The homogeneity test can be seen in Levene's Test, if a p value $> 0,05$ is obtained, it can be said that the two samples are homogeneous.

Normality Test

The normality test of the data using the Kolmogorov-Smirnov is described in table 2.

Table 2 Normality Test Results

	Male Learning Style	Female Learning Style
N	40	40
Kolmogorov-Smirnov Z	0,924	0,964
Asymp. Sig. (2-tailed)	0,360	0,342

From Table 2 above, it is obtained that $p = 0,360$ for male students' learning styles with a significance level of 5% ($\alpha = 0,05$) this shows $p > \alpha$ which means that the male student learning style data is normally distributed. And the value of $p = 0,342$ for the learning style of female students with a significance level of 5% ($\alpha = 0,05$) this shows $p > \alpha$ which means that the learning style data of female students is normally distributed, so it can be concluded that the learning styles of male and female students women are normally distributed.

Homogeneity Test

The homogeneity test of the data using the Test of Homogeneity of Variances is described in Table 3.

Table 3. Homogeneity Test Results

Levene Statistic	df1	df2	sig
1,535	1	78	0,219

From Table 3 above, the Levene Statistic test results for the similarity of variance obtained a value of $p = 0,219$, this shows $p > (0,219 > 0,05)$ which means that the learning style data between male and female students is homogeneous.

Hypothesis Test

Hypothesis testing using one way Anova test. The results of hypothesis testing are described in Table 4.

Table 4. Hypothesis Test Results

	Sum Square	df	Mean Square	F	Sig.
Between Groups	567,112	1	567,112	15,057	,000
Within Groups	2937,775	78	37,664		
Total	3504,887	79			

Table 4 above shows the results of hypothesis testing using one way Anova with the acquisition value of $p = 0,000$ ($p < 0,05$), this means that H_1 is accepted and H_0 is rejected. So, there is a difference between the learning styles of male students and female students at SMP Yapis Merauke. The research results obtained are in line with research [9] which shows that there is a difference between the learning styles of male students and female students with a value of $p = 0,033$ ($p < 0,05$). Research [16] shows the same thing, namely there

is a significant difference between the learning styles of male students and female students in learning. However, different results are shown from research [17] which suggests that there is no difference in learning styles between male and female students. Male students and female students on average have the same learning style tendencies so that there is no dominant learning style owned by male students and female students. A similar thing was expressed by [18] that there was no difference between the learning styles of male students and female students in the learning process.

The difference in the results of this study can also be caused by several other factors that affect a person's learning style such as the characteristics of a subject and the applicable curriculum. In the learning process the teacher must be able to combine the three aspects of students' learning styles to stimulate students' sensory modalities, such as stimulating the visual aspect the teacher can display pictures that are in accordance with the material to be studied using the LCD, to stimulate the auditory aspect the teacher can conduct discussions and question and answer and to stimulate the kinesthetic aspect the teacher can make practical activities carried out in the classroom and in the school environment. For this reason, the learning process carried out in schools must be multisensory and full of variety so that students do not get bored and do not assume that the teacher only understands one of the characteristics of students. According to [19] stating the use of variation in learning aims to reduce boredom in learning, students can experience a non-monotonous learning process so that learning becomes more memorable. In addition, the learning method applied by the teacher in the classroom also greatly determines student learning achievement. Less precise application of learning methods, can result in not achieving learning objectives. One of the factors that is considered in the selection and determination of learning methods is the individual differences of students in which it is necessary to pay attention to the psychological aspect that each student has different characteristics, including learning styles. Therefore, learning methods must be designed systematically by taking into account the character of students, the conditions of the learning environment, and available learning resources, so that students can maximize the learning styles that are easiest to absorb knowledge.

4. CONCLUSIONS

From the results of the research and discussion that have been described, it can be concluded that there are differences between the learning styles of male students and female students at Yapis Merauke Junior High School. The dominant male student has an auditory learning style with a percentage of 55%. Auditory learning style is characterized by learning characteristics that focus on the sense of hearing such as preferring discussion and question and answer activities. Dominant female students have a visual learning style with a percentage of 62,5%. Visual learning style is characterized by learning characteristics that focus on the sense of sight such as preferring to learn by using pictures. The results of this study can be information for teachers in designing learning by taking into account the characteristics of each student's learning style.

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