The Influence of Learning Styles on the Learning Outcomes of IPS Students Semester II of PGSD UHKBPNP Study Program

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Abstract. This study aims to determine the effect of learning styles on the learning outcomes of students of the second semester of the Elementary School Teacher Education Study Program, UHKBPNP. This study is a quantitative study that is correlational in nature, which involves a variable that is related between one variable and another. Location of the study This research will be conducted at HKBP Nommensen University, PEmatangsiantar on students of the second semester of the Elementary School Teacher Education Study Program. The data collection technique used is the Learning Style Questionnaire and Documentation. The data analysis technique uses statistical data with the product moment correlation formula, namely the correlation test used to determine the degree of closeness of the relationship between 2 variables with interval and ratio scales. In testing this prerequisite test, IBM SPSS is used. The results of the calculation of the analysis of variance on the differences in social studies learning outcomes between students who have a visual learning style and an auditory learning style with an average $\overline{X} = 76.28$ and $\overline{X} = 70.35$. Based on $F_h = 64.80$ and the table value for $\alpha = 0.05$ with dk (1) it is obtained $F_t = 3.97$ so that it can be stated that $F_h (64.80) > F_t (3.97)$. Thus the research findings conclude the research hypothesis which states: the learning outcomes of social studies students who have a visual learning style are higher than the learning outcomes of students who have an auditory learning style at a confidence level $\alpha = 0.05$ has been proven to be true.

Keywords: Learning Style, Outcome, Students

I. INTRODUCTION

Maximum learning outcomes are achieved through serious efforts from students and lecturers as educators. There are two factors that influence student learning outcomes, namely factors originating from within the student themselves and factors originating from outside the student. Factors originating from within can be physical condition, intelligence, creativity, interest, talent, learning style, attention, motivation, discipline, and attitude (Firman et al., 2020). While factors originating from outside the student are family, school, community, and situational factors such as climate, time, and place (Rahmaniar et al., 2019). In addition, learning resources do not only come from teachers but learning resources can be obtained from other people can also be used as learning resources, such as peers, classmates, friends in higher classes, and family (Cheng et al., 2019). Educators who know student learning styles will understand the diversity of student styles in receiving and processing information (Supena et al., 2021). Based on the factors explained above, learning style is one of the causes of low learning outcomes (Munir, 2016). Many students fail to receive information because the teacher's teaching style is not in accordance with the student's learning style. Each individual's learning style is expressed according to their habits and interests (Ariastuti & Wahyudin, 2022). Learning style can be defined in various ways, depending on one's perspective. Some learn by listening, some learn by reading, and some learn by discovering. Each individual does not only have one learning style, many individuals have more than one learning style, but basically the dominant learning style possessed by an individual is only one, according to the individual's ability to understand the learning process (Hat et al., 2017). Learning style is a collection of personal characteristics that make learning effective for some people and ineffective for others (Rosa et al., 2022). Learning style can be said to be a person's tendency to adapt a certain learning strategy by searching and trying. This method differs from one student to another (Weking & Santoso, 2020). The appropriate learning style is the key to success for a student in learning and overcoming learning difficulties in students (Evans, 2019). Learning outcomes are interpreted as the level of success of students in learning the subject matter at school which is expressed in the form of scores obtained from the results of tests to recognize a number of certain subject matters (Kittidachanupap et al., 2012). Learning outcomes are essentially changes in a person's behavior as a result of the learning process (Hanif, 2020). These changes can be in the form of knowledge, understanding, skills

and attitudes which are usually expressed in the form of numbers or letter symbols with predetermined criteria (Pratama et al., 2018).

II. METHOD

This research is a quantitative research that is correlational, which involves a variable that is related between one variable and another (Praheto et al., 2020). It can be understood that quantitative correlation research is research that is conducted to find the influence of two variables to be studied which is then known how close it is (Rahmawati & Ramadan, 2021).
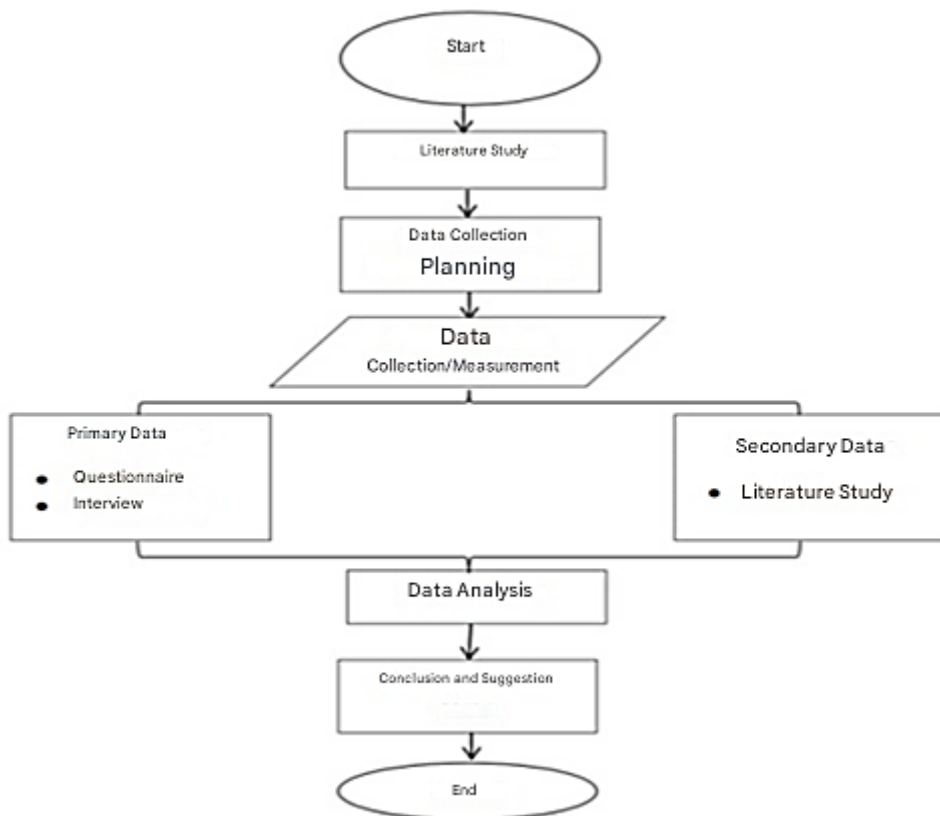

Figure 1. Research Flow

In the research stages above that have been implemented are still in the Data Collection Planning. Later, there will be a learning style questionnaire, collection of student learning outcomes, data analysis, drawing conclusions and outputs, namely in accredited national journals (Dewi et al., 2023). Location of Research Location This research will be conducted at HKBP Nommensen University, PEmatangsiantar for Semester II students of the PGSD Study Program (Siahaan & Yulita, 2021). The Data Collection Technique used is the Learning Style Questionnaire and Documentation. The Data Analysis Technique uses statistical data with the product moment correlation formula, namely the correlation test used to determine the degree of closeness of the relationship between 2 variables with interval and ratio scales. In testing this prerequisite test, IBM SPSS is used (Houn & Em, 2022).

III. RESULTS AND DISCUSSION

Studies Learning Outcomes of Students with Visual Learning Styles.

Based on the data of the results of the social studies learning of students who have a visual learning style, the lowest score is 48 and the highest score is 93, the average score is 76.86, the mode is 86.45, the median is 72.48 and the standard deviation is 10.28 (Purba et al., 2021). The results of the social studies learning of students for visual learning styles can be seen in Table.

Table 1. Students' Social Studies Learning Outcomes for Visual Learning Style.

NO	Interval Class		F. Absolut	F. Relatif (%)
1	48	- 54	2	4,55
2	55	- 61	4	9,09
3	62	- 68	7	15,36
4	69	- 75	8	14,18
5	76	- 82	3	6,82
6	83	- 89	16	36,36
7	90	- 96	6	13,64
Total			46	100,00

Based on Table. the results of social studies learning of students with visual learning styles obtained 36.36% of students are in the average value interval class, 50% are below the average value, while 13.64% are above the average (Simanihuruk et al., 2021). Furthermore, the frequency distribution data is presented in a histogram diagram in Figure.
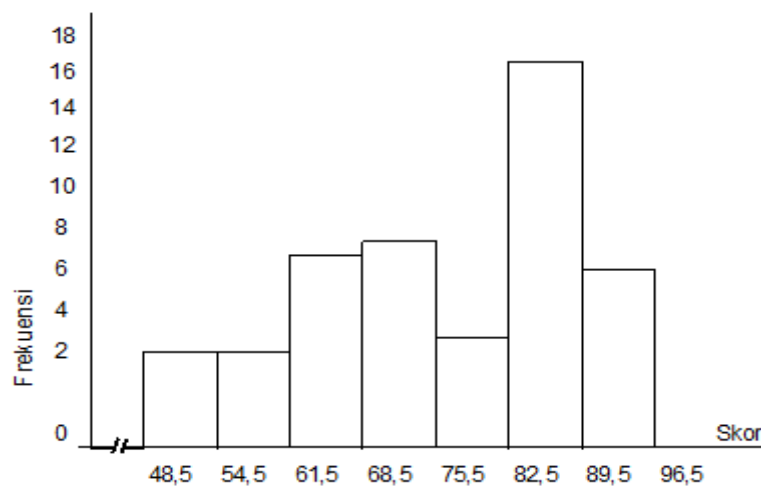

Figure 2. Histogram of Social Studies Learning Outcomes of Students with Visual Learning Styles

From the diagram, it can be seen that the results of students' social studies learning for students who have a visual learning style, the highest diagram is at a value between 82.5 to 89.5, with a total of 16 students and the lowest is at a value between 47.5 to 54.5 with a total of 2 students (Love et al., 2022).

Social Studies Learning Outcomes of Students with Auditory Learning Styles

Based on the data on the results of the social studies learning of students who have an auditory learning style, the lowest score is 43 and the highest score is 93, the average score is 70.03, the mode is 80.75, the median is 75.93, and the standard deviation is 8.99. The results of the social studies learning of students who have an auditory learning style can be seen in Table.

Table 2. Social Studies Learning Outcomes of Students with Auditory Learning Styles

NO	Kelas Interval	F. Absolut	F. Relatif (%)
1	43 - 51	5	14.71
2	52 - 60	5	14.71
3	61 - 69	5	14.71
4	70 - 78	7	20.59
5	79 - 87	9	26.47
6	88 - 96	3	8.82
Jumlah		34	100.00

Based on Table 2, the results of social studies learning of students with auditory learning styles are 20.59% at the average value, 35.29% are below the average value, and 44.13% are above the average value. Furthermore, the data that has been arranged in the form of a frequency distribution is presented in a diagram called a histogram as shown in Figure.
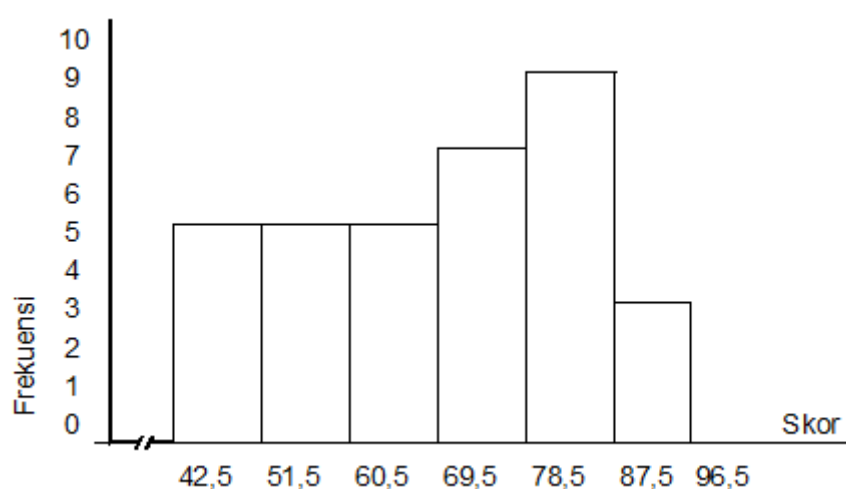

Figure 3. Histogram of Social Studies Learning Outcomes of Students with Auditory Learning Style

From the diagram, it can be seen that the learning outcomes of social studies for students who have an auditory learning style, the highest diagram is at a value between 78.5 to 87.5 with a total of 9 students and the lowest is at a value between 42.5 to 69.5 with a total of 15 students.

Normality Test of Students' Social Studies Learning Outcomes for Visual and Auditory Learning Styles

Table 3. Normality Test

Group	N	L_{count}	L_{table} ($\alpha= 0.05$)	Conclusion
Visual (V)	46	0.0994	0.134	*Normal*
Auditory (A)	34	0.1096	0.157	Normal

From the calculation results in Table 3. for visual learning style, the calculated L = 0.0994 L table = 0.134, then L h (0.0994) < L t (0.134), for auditory learning style, the calculated L = 0.1096 and L table = 0.157, then L h (0.1096) < L t (0.157) it is concluded that both learning style group data are normally distributed for a significance level □of 0.05 (Salvador et al., 2023).

Calculation of Homogeneity Test Between Visual Learning Style and Auditory Learning Style

The magnitude of the variance for visual learning style (V) with N = 46 is S 2 i = 10.04 and for auditory learning style (A) with N = 34 is S 2 i = 5.79. The homogeneity of variance test was conducted using Fisher's test (F test). The summary of the F test for learning styles is presented in table 4.

Table 4. Summary of Results of Calculation of Learning Style Variance

Sampel	n	dk	S^2i
V	46	45	10,04
A	34	33	5,79

Hypothesis testing is carried out to prove the truth of the hypothesis that has been set so that data is obtained as to whether the hypothesis designed in a study is rejected or accepted.

H_a: There is an Influence of Learning Style on the Social Studies Learning Outcomes of Semester II Students of the UHKBPNP Elementary School Teacher Education Study Program

H_0 There is no influence of learning styles on the social studies learning outcomes of second semester students of the PGSD UHKBPNP study program

Statistical hypothesis:

$H_a : \mu_1 \neq \mu_2$

$H_0 : \mu_1 = \mu_2$

The results of the analysis of variance calculations on the differences in social studies learning outcomes between students who have a visual learning style and an auditory learning style with an average $\overline{X} = 76.28$ and $\overline{X} = 70.35$. Based on $F_h = 64.80$ and the table value for $\alpha = 0.05$ with dk (1) it is obtained $F_t = 3.97$ so that it can be stated that $F_h (64.80) > F_t (3.97)$. Thus the research findings conclude the research hypothesis which states: the learning outcomes of social studies students who have a visual learning style are higher than the learning outcomes of students who have an auditory learning style at a confidence level $\alpha = 0.05$ has been proven to be true (Fomunyam, 2019).

Research Discussion

In social studies learning, students who have a visual learning style will usually be challenged to work on all social studies problems whose solutions require practice or reasoning in thinking that is done systematically (Sitinjak et al., 2022). As realistic thinkers, students who have a concrete learning style will be accustomed to doing thinking activities systematically and dynamically (Newton & Nation, 2020). Thus, students who always train themselves continuously will be able to find creative thinking procedures in solving learning problems, including in social studies lessons (Ylinen et al., 2021).

Students who have a visual learning style are students who can always easily remember various grammar and work on problems related to social studies material. They tend to be able to use their thinking potential in solving problems in learning activities. Visual learning style is characterized by strong memory skills so that they are able to solve social studies problems or structures realistically which are very much in accordance with the characteristics of social studies learning (Heo & Toomey, 2020).

On the other hand, students who have an auditory learning style tend to learn from what they hear, rarely use realistic thinking patterns so that sometimes they are less motivated to remember for a long time and do not feel challenged to solve problems in social studies learning (Ramezanali & Faez, 2019). In the learning process, students who have an auditory learning style are more interested in things that are auditory and conceptual, whereas in social studies learning, apart from theory, students must be able to develop concepts and grammar that have been learned in everyday life applications, including in learning that uses simple sentences in social studies (Reyna et al., 2018).

The conclusion of this study also supports the theory put forward by DePorter and Hernacki (Złotowski et al., 2018). which states that people who have a visual learning style tend to use the left hemisphere of the brain and the left brain's thinking process is logical, dynamic, linear, and rational. The left brain is more academic and plays a role in processing logic, words, and sequences. The left brain thinks regularly, logically and coherently, and all of these characteristics are very appropriate for language subjects in this case social studies.

VI. CONCLUSION

Based on the research results, the value Fh = 64.80 is obtained and the table value for □ = 0.05 with dk (1) is obtained Ft = 3.97 so it can be stated that Fh (64.80) > Ft (3.97). Thus, the research findings conclude the research hypothesis which states: the social studies learning outcomes of students who have a visual learning style are higher than the learning outcomes of students who have an auditory learning style at a confidence level of □ = 0.05, the truth has been tested.

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