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Mapping Student Needs in Science Learning in Class IX 5 MTS Hasanah Pekanbaru in 2023

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ABSTRACT

This research was conducted to determine the mapping of students' needs in science learning class IX.5 at MTs Hasanah Pekanbaru. This research involved 28 samples using quantitative descriptive methods and research instruments in the form of questionnaires regarding initial knowledge, learning profiles and learning styles of class IX.5 semester students odd 2023/2024 by calculating percentages to map student needs. After analysis, based on the results of filling out the questionnaire, there were 43% of students in class IX.5 MTs Hasanah Pekanbaru for the 2023/2024 academic year who did not understand the material, this means that the majority of students had not mastered the science material. For student learning profiles, from the tables and diagrams it can be seen that students studying individually and in groups have a ratio of 39%: 61%, the difference between students studying individually and in groups is only 22% of the entire sample. Then the more dominant student learning styles are kinesthetic learning style at 32%, followed by mixed learning style at 29%, visual learning style at 21%, and auditory learning style at 18%.

Keywords : *learning styles, science concepts, mapping, prior knowledge, learning profiles.*

1 Introduction

Education is a way of learning to improve one's knowledge, attitudes and skills. School is a direct teaching facility, where teachers and students meet. The quality of student learning in schools varies greatly so that students' levels of understanding vary, this must be a concern for schools, especially for teachers as teachers and educators of school students. One of them is by paying attention to students' learning profiles (Dewi et al., 2021).

Schools as formal educational institutions direct students to acquire skills and knowledge and develop positive attitudes and personalities. The learning materials and activities offered should be arranged in a learning program that encourages the achievement of educational goals set by the school. The aim of implementing the training program is to help students develop their personalities so that they are better able to face life's challenges both now and in the future. This condition is an indication that educational institutions are an important element in efforts to improve students into citizens of superior quality and competitiveness.

A learning profile is each person's unique characteristics that influence their learning style and habits, helping them understand concepts and learn new skills more quickly. Learning profiles influence how a child learns. One of them is forming effective study groups so that every student has the opportunity to succeed. Group learning is a knowledge transfer process in which more than one person participates and complements and exchanges ideas. To reduce learning difficulties by introducing a group study system.

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Failure to understand learning disabilities results in the failure of teachers and parents to provide appropriate learning methods, thereby allowing children to experience pressure from incorrect learning methods and demands from teachers and parents, which has a negative impact on children's development. Of course, a good learning process must help every teacher and parent map a child's potential, so that teachers and parents can guide children to realize their potential and encourage children to use their potential to the maximum. According to the 1945 Constitution, Article 31 states that "every citizen has the right to receive education", and Article 12 Point 1b states "Every student in every educational unit has the right to receive educational services in accordance with their talents, interests and abilities." This is in line with the opinion of humanistic psychologist Maslow (1954) who explained that learning activities must be based on students' needs. Dan Rogers in Sudjanas (2013:91) said that learning activities in the classroom are student-centered.

One factor that needs to be considered in the learning process to develop student self-efficacy is learning style. Learning style is a person's way of using his skills, which is related to how he wants to learn. Learning styles are the easiest way to receive, acquire, organize and process information about the environment. In this case, learning style is a person's way of obtaining and receiving information about their environment, including the learning environment. Learning style is a process of behavior, evaluation and a learner's tendency to learn or acquire knowledge in a certain way. Learning style is a combination of aspects related to collecting or receiving information through seeing, hearing, writing, speaking and touching, processing, organizing and processing information. Learning styles are people's preferred ways of thinking, processing, and understanding information. There are several learning styles, namely visual, auditory, kinesthetic, linguistic and logical learning styles. In fact, no one's learning style is purely visual or purely auditory or purely kinesthetic or purely linguistic or purely logical. There is only a learning style that is more dominant than the five learning styles mentioned above or a combined learning style. The dominant learning style shows the best way a person learns to process and interpret the information they get from the teacher (Labu, 2021).

So that the curriculum delivered by teachers to students is appropriate in the learning process, teachers must know the students' basic abilities. Initial skills are skills that students already have before receiving the lessons given. The diversity of backgrounds and experiences makes each person's initial information different. People with high prior knowledge can learn better than their average and low prior knowledge peers. Initial skills provide teachers with information to determine whether students can agree with the upcoming lesson and to determine how well students know the material presented.

Based on the background above, researchers can see how important and useful it is to conduct research on the needs of class 9.5 students at MTs Hasanah Pekanbaru in learning science. In this research, researchers observed students' prior knowledge, student learning profiles (individuals or groups), and students' learning styles, namely visual, auditory, kinesthetic, linguistic and logical in science learning in class 9.5 MTsS Hasanah Pekanbaru.

2 Research Methodology

The research method used is descriptive quantitative which describes the distribution of needs of class 9.5 students at MTs Hasanah Pekanbaru in science subjects. The sample taken in this research was 28 students from class 9.5. The instruments used in this research were questionnaires and questions and answers to obtain information about students' needs in science learning. In addition, data analysis includes information on students' prior knowledge, learning profiles and learning styles.

3 Results and Discussion

Based on the results of analytical research on 28 samples of class 9.5 MTsS Hasanah Pekanbaru. Based on the tables and diagrams, the results are for initial knowledge of static electricity material: 32% of students

understand the material, 43% don't understand the material, and 25% don't understand the material. For student learning profiles, individual learning is 39%, and group learning is 61%. Then, for students' learning styles, it is 21% visual, 18% auditory, 32% kinesthetic, and 29% mixed.

The data collection technique used is in the form of a questionnaire or questionnaire containing mapping of student needs with 3 types of information including: students' initial knowledge of static electricity, student learning profiles, and student learning styles. After the questionnaire was filled in by students with a total of 28 respondents, the researcher analyzed the data from the questionnaire, the results of which are in tables 1, 2 and 3.

Processing of data obtained according to Ridwan's (2008) percentage formula is as follows:

$$P = \frac{f}{N} \text{ x } 100\ \%$$

Information:

P = Percentage number

f = Score obtained

N = Number of frequencies/maximum score

Table 1. Results of Research on Students' Initial Knowledge of Static Electricity Material

No	Learning methods	Frequency	Percentage (%)
1	Understand	9	32%
2	Lack of Understanding	12	43%
3	Do not understand	7	25%
	TOTAL	28	100 %

Table 2. Research Results of Learning Profiles that are Interested in Students

No	Learning Profile	Frequency	Percentage (%)
1	Individual	11	39%
2	Group	17	61%
	TOTAL	28	100 %

Table 3. Research Results on Learning Styles that are Interested in Students

No	Learning Style	Frequency	Percentage (%)
1	Visual	6	21%
2	Audiotory	5	18%
3	Kinesthetic	9	32%
4	mixture	8	29%
	TOTAL	28	100 %

Based on table 1 above, the highest percentage of students' need for initial knowledge of static electricity material is 43%. Therefore, a science teacher is obliged to provide basic initial knowledge first so that students have initial knowledge regarding static electricity for each student, making it easier for the teacher to continue to the next material. Because a high percentage of students do not understand the material, as a science teacher you have to work extra to transfer this knowledge.

Based on table 2 above, students' needs for learning profiles, students who like group and individual study have a percentage difference of 22%, because of this low difference, as a teacher, there is more freedom to choose the learning process both in groups and individually, it can take one month of study. The next month the group studies individually, of course, also adapting to the material being taught, so that all students feel fair in the learning process.

Based on table 3 above, students' needs for learning styles are in varying percentages, so that students are able to maximize learning styles that are dedicated to the process of assimilating knowledge if learning influences the learning outcomes achieved. Learning styles are certain ways that students apply in

their learning activities to achieve learning goals. When students know their learning styles, students can pick and choose important actions to facilitate their learning faster and easier. Learning style is a person's way of feeling comfortable and easy to obtain, organize and understand information in a way that influences a person's learning outcomes. As a teacher, when students have different learning styles, the teacher must be able to understand each child's learning style so that all students can maximize their learning abilities according to that student's learning style.

(Yaumi, 2013), students with an auditory learning style learn best by listening. Most auditory learners have excellent listening skills in addition to excellent speaking skills. Therefore, when receiving assignments or final exams, it is best to use oral or dictation. Meanwhile (Nurmayani, 2016), students with a kinesthetic learning style do more physical activity than seeing and hearing through the lecture method. The characteristics of students with a kinesthetic learning style require students to touch something that provides certain information so that students can remember it, rather than sitting for a long time listening to information.

Based on the description above, it can be seen that only 32% of class 9.5 students at MTs Hasanah Pekanbaru for the 2023/2024 academic year have mastered the basic knowledge of static electricity material, more students do not understand the material, meaning that the majority of students have not mastered the static electricity material. . From the tables and graphs of student learning profiles, it can be seen that the ratio of individual students to groups is 39%:61%, meaning that the difference between individual students and groups is only 22% of the entire sample. Then the kinesthetic learning style of students dominates at 32%, followed by mixed learning styles at 29%, visual learning styles at 21%, and auditory learning styles at 18%.

4 Conclusion

Based on the results above, it can be concluded that only 32% of class 9.5 students at MTs Hasanah Pekanbaru for the 2023/2024 academic year have mastered the students' needs in basic knowledge of static electricity material, more students do not understand the material, meaning that the majority of students have not mastered the static electricity material. . From the tables and graphs of student learning profiles, it can be seen that the ratio of individual students to groups is 39% : 61%, meaning that the difference between individual students and groups is only 22% of the entire sample. Then the student learning style that is more dominant is kinesthetic learning style 32%, followed by mixed learning style 29%, visual learning style 21% and auditory learning style 18%. Therefore, the author suggests that teachers adapt to the results of mapping students' needs in the learning process.

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