Analysis of student learning styles at SMA Negeri 1 Kalasan, Sleman Regency

Cintya Dewi [1], *; Febrina Ayu Wulandari [2], ; Destri Ratna Ma'rifah

Biology Education, Ahmad Dahlan University, Yogyakarta

[1] cnty098@gmail.com*; [2] febrina1900008086@webmail.uad.ac.id; [3] destrirm@pbio.uad.ac.id

* Corresponding author

ARTICLE INFO	ABSTRACT
	Learning style is one of the mandatory factors that must be considered since prospective students enter the education unit. Learning styles should be considered for the achievement of educational goals. The purpose of this study was to determine the learning style of students in class XII MIPA at SMA N 1 Kalasan which can be used as a reference for teachers in applying suitable learning media and models. The research method used is descriptive, the research population includes all students at SMA N 1 Kalasan with a sample of XII MIPA class at SMA N 1 Kalasan which is determined by random sampling. Data analysis was done quantitatively by presenting the results of a closed questionnaire. The results obtained in this study are in class XII MIPA 1, XII MIPA 2, and class XII MIPA 4 the average student has a learning style with a visual type. In class XII MIPA 3 has an auditorial learning style. Therefore, teachers must adjust the learning media and learning models used.

Introduction

Education is a structured action that aims to create learning situations and learning processes so that students can grow abilities in themselves, so that later students not only gain intelligence in science but can develop the abilities contained in themselves which can later be used as provisions in everyday life[1]. A nation can be said to be left behind if the nation has a low level of education. In addition, the progress of the nation depends on the quality of human resources and the power of students to understand science and technology. Therefore, the Indonesian nation needs to immediately improve education in Indonesia so that later the next generation of the nation can compete in the international arena to catch up because global currents are running fast. This can be created through education both through family education, community education and school education[2].

The learning process certainly cannot solely run exactly as expected, there are problems that are generally found related to low student outcomes. Low student learning outcomes are closely related to the factors that influence them, there are two factors that can influence,

namely factors from within and factors from outside themselves. Factors from outside the self that can come from family, community and school. External factors that can affect student learning outcomes include physical health, talent, interest, motivation and learning style[3].

Learning style can affect the results of students' scores (learning style is a factor that needs special attention in improving students' learning outcomes. Many students do not understand the learning style that is suitable for them and teachers also do not know the learning style of their students, thus causing the expected learning not to be achieved. This of course if allowed to happen continuously will result in low self-learning results and will result in class learning outcomes[4].

Learning style is a description and preferred learning efforts of learners, of course, between each individual has its own preferences and uniqueness. Learning styles in general can also be interpreted as individual efforts that can make a person more comfortable in terms of thinking, managing and obtaining information. In addition, the definition of learning styles is an effort to identify the kinds of learning methods that are suitable and more effective for students[1].

Every individual must have different preferences in terms of suitable learning styles. A person's learning style usually stems from cognitive abilities, personality and psychological underpinnings, as well as knowledge in the field of education. The variety of learning styles of students must of course be understood from an early age. If not, in addition to disrupting learning activities in the classroom, the achievement of educational goals also depends on the learning style of students. If someone can recognize their own learning style, it will be easier to understand something. For this reason, teachers must recognize the learning styles of students since entering the education unit. It is expected that by recognizing the learning styles of students, teachers are able to determine suitable learning media so that learning objectives will be achieved[5].

Learning styles or learning types can also be classified into six types of learning, namely visual, auditive, kinesthetic, tactile, olfactory and gustative[6]. In addition to the learning styles that have been mentioned, there are also learning styles based on the senses. A frequent and commonly used approach is learning styles based on these senses, namely: visual, auditorial and kinesthetic learning styles. Visual learning styles tend towards images, auditorial learning styles have a tendency towards sound, while kinesthetic learning styles are movements[6].

Method

This research is a type of descriptive research. Population is a generalization area consisting of subjects or objects that have the qualities and characteristics previously determined by researchers to study and then draw conclusions[7]. The research population includes all students at SMA Negeri 1 Kalasan. If the total population is more than 100, then the sample taken is 10%-25% of the total population[8]. Based on this theory, the number of samples taken was 91 of the XII MIPA class students of SMA N 1 Kalasan, which was determined by random sampling. Data collection was carried out on September 20, 2022 through a closed questionnaire in the form of google forms distributed online. Data collection was carried out using an instrument in the form of a closed questionnaire sheet. Data analysis was carried out descriptively by presenting the results of the questionnaire.

Results and Discussion

The results of research based on the learning styles of students in class XII MIPA at SMA Negeri 1 Kalasan are grouped into learning styles per class and learning styles that are often used in class XII MIPA SMA N 1 Kalasan. The data used comes from the answers of students in class XII MIPA SMA N 1 Kalasan in the form of questions related to learning styles.

Learning Styles Per Class
1. Learning Style of Class XII MIPA 1

Table 1. Learning styles of class XII MIPA 1 at SMA N 1 Kalasan

Learning Style	Frequency	%
Visual	19	76%
Auditorial	4	16%
Kinesthetic	2	8%
Total	25	100%

The results of the data recap in table 1 can be said that the learning style of students in class XII MIPA 1 at SMA N 1 Kalasan with a total of 25 students, 19 of them or 76% have a visual learning style. As many as 4 students or 16% have an auditorial learning style and as many as 2 students or 8% have a kinesthetic learning style. Learning styles in class XII MIPA 1 are displayed with the following diagram:

Learning Style of Class XII MIPA 1
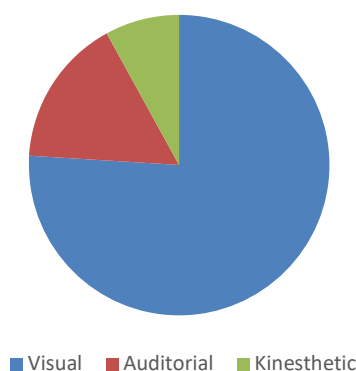

■ Visual ■ Auditorial ■ Kinesthetic

Fig 1. Learning style diagram of class XII MIPA 11.

The graph above can be concluded that the highest learning style interest in class XII MIPA 1 SMA N 1 Kalasan is visual.

2. Learning Style of Class XII MIPA 2

Table 2. Learning style of class XII MIPA 2 at SMA N 1 Kalasan

Learning Style	Frequency	%
Visual	12	85.71%
Auditorial	2	14.29%
Kinesthetic	0	0%
Total	14	100%

It can be said that the learning style of students in class XII MIPA 2 as many as 12 respondents have a visual learning style with a percentage of 85.71%. A total of two respondents had an auditorial learning style with a percentage of 14.20%. Learning styles in class XII MIPA 2 are displayed with the following diagram:

Learning Style of Class XII MIPA 2
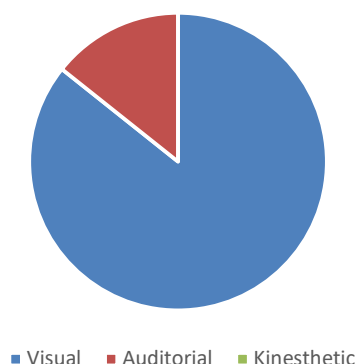

Visual   Auditorial   Kinesthetic

Fig 2. Diagram of learning styles of class XII MIPA 2

The results of data processing in table 2 can be concluded that the learning style of students in class 12 MIPA 2 at SMA Negeri 1 Kalasan is visual.

3. Learning Style of Class XII MIPA 3

Table 3. Learning style of class XII MIPA 3 at SMAN 1 Kalasan

Learning Style	Frequency	%
Visual	4	23.53%
Auditorial	9	52.94%
Kinesthetic	4	23.53%
Total	17	100%

The results of the data recap in table 3 can be said that the learning style of students in class XII MIPA 3 at SMA N 1 Kalasan with the total number of students who filled in as many as 17, 4 of them or 23.53% had a visual learning style. A total of 9 students or 52.94% have an auditorial learning style and as many as 4 students or 23.53% have a kinesthetic learning style. Learning styles in class XII MIPA 3 are displayed with the following graph:

Learning Style of Class XII MIPA 3

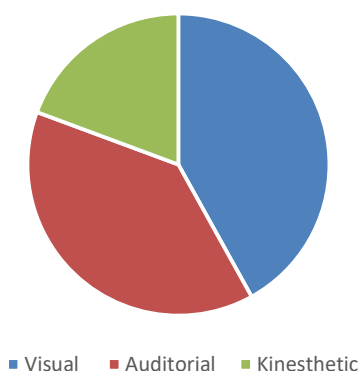
Visual   Auditorial   Kinesthetic

Fig 3. Diagram of learning styles of class XII MIPA 3

The graph above can be concluded that the highest learning style interest in class XII MIPA 3 SMA N 1 Kalasan is auditorial.

4. Learning Style of Class XII MIPA 4

Table 4. Learning style of class XII MIPA 4 at SMA N 1 Kalasan

Learning Style	Frequency	%
Visual	13	41.94%
Auditorial	12	38.71%
Kinesthetic	6	19.35%
Total	31	100%

The results of the data recapitulation in Table 4 can be said that the learning style of students in class XII MIPA 4 at SMA N 1 Kalasan with the total number of students who filled in as many as 31, 13 of them or 41.94% had a visual learning style. A total of 12 students or 38.71% have an auditorial learning style and as many as 6 students or 19.35% have a kinesthetic learning style. Learning styles in class XII MIPA 4 are displayed with a diagram as follows:

Learning Style of Class XII MIPA 4

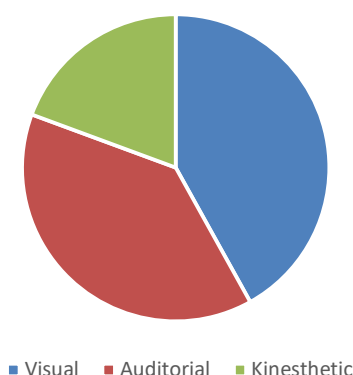■ Visual ■ Auditorial ■ Kinesthetic

Fig 4. Diagram of learning style of class XII MIPA 4

Based on the results of research and data processing of learning styles in each XII MIPA class at SMA N 1 Kalasan, it can be obtained if in class XII MIPA 1 the highest data is 76% having a visual learning style, in class XII MIPA 2 the highest data is 85.71% having a visual learning style, in class XII MIPA 3 the highest data is 52.94% having an auditorial learning style, and in class XII MIPA 4 the highest data is 41.94% having a visual learning style. Some people have a level of understanding in understanding a learning quickly and there are also some people who understand learning slowly. Each person also has a different learning comprehension process. The existence of these differences certainly affects the way a person understands the same information or lesson. This way of processing information is what is interpreted as a learning style[9].

The research results that have been obtained above also indicate that everyone has a different learning style. Learning styles have various types including visual learning styles, auditorial learning styles and kinesthetic learning styles. The three types of learning styles have different characteristics. The visual learning style type has the characteristics of students tending to look at maps to show directions when traveling, remembering things more easily, preferring to watch television, photography, looking at art or people watching to spend free time, preferring to write a lot of revision notes or diagrams to improve exams, preferring to explain to someone by showing something. In line with the opinion S. Wahyuni & Etfita reveals the characteristics of the visual learning style, including that students find it easier to remember information by directly seeing the event or event and students maximize the sense of sight to remember a concept[10].

Students' auditorial learning styles tend to listen to someone's explanation to understand something, listen to music to fill spare time, prefer to give oral explanations, and ask for oral instructions to understand and decide something. This matches the opinion Wahyuni that the auditorial learning style has the characteristics of students preferring to talk to themselves when doing something, tending to read aloud, having the ability to tell stories but having less ability to write down what they think, preferring to discuss something they see[11]. A person's learning style can determine how to learn effectively, in other words that learning style will be more effective and enjoyable if it matches the learning style. This is because learning style is the way students react and use the stimuli they receive in the learning process[12,13].

Kinesthetic learning style has characteristics in processing information learners do independently, use gestures to remember, prefer hands-on practice, listen to someone's words closely and in deciding something is more likely to use instinct. This is in accordance with the opinion Chania et al., stating that the kinesthetic learning style has characteristics: if saying something is done slowly, if someone is talking listening nearby, always doing a lot of physical movement activities and in learning prefer direct practice[14]. Kinesthetic learning style uses moving, working, and touching[15].

Based on the results of the data obtained, it explains that the preferred learning style of XII MIPA class students at SMA N 1 Kalasan has a visual and auditory learning style. People who have a visual learning style in understanding learning well prefer to use images[16]. They are more likely to be sensitive to conditions and can read the teacher's body gestures. Someone who has a learning style can better understand a lesson by listening and inferring using tone, likes talking rather than writing and memorizing methods by speaking[17].

Learning style is an important aspect for teachers in determining learning media and learning methods that will be applied in the classroom. Students who have a visual learning style will prefer learning media using components of images, diagrams, colors, and photos. Teachers are advised to use learning media that is suitable for the learning styles of students in classes XII MIPA 1, XII MIPA 2 and XII MIPA 4, namely visual. The media that can be used are Power Point, charta, diagrams, posters, pamphlets and leaflets. Whereas in class XII MIPA 3 the effective learning media used is in the form of sound recordings. The use of sound, music, rhymes will increase the effectiveness of learning. Donkey bridges can also be applied to support students with visual learning styles. However, the donkey bridge will be better if it uses rhythm or sound[18].

In addition to influencing the learning media that can be utilized by teachers, learning styles can also influence learning models that are suitable for students' preferred learning styles. One learning model that is rarely used by teachers and is very suitable for someone with a visual learning style is the picture and picture learning model. The picture and picture learning model is related to pictures where in this learning model the teacher usually has prepared pictures that match the learning and later students in small groups arrange the pictures that have been given. This matches the opinion Kurniasih & Berlin that the picture and picture learning model is very suitable if used in science learning, because this learning model is concerned with small groups and uses image media that will be arranged[19]. This learning model is perfect for visual learning styles.

One learning model that can be used and is suitable for auditorial learning styles is talking stick. The talking stick learning model is a learning model that is carried out both in groups and individually using stick games, for anyone who gets it then must respond to questions given by the teacher. This is in accordance with the opinion Marpaung & Napitupulu that the talking stick learning model is a learning model utilizing a stick, someone who carries a stick must respond to the questions the teacher throws at him[20]. This learning model can also be combined with music, where when the song starts to stop whoever holds the stick must answer the question and of course this is very suitable for someone with an auditorial learning style type. However, not every learning model described above is suitable for some learning

materials, only learning materials that can use pictures and light learning materials can be used with both learning models. Therefore, teachers must understand which materials are suitable for both learning models which can later adjust to the learning styles of their students. Teachers must understand each learning style of their students in order to achieve the goals they want to achieve during the learning process.

Conclusion

Based on the results and discussion, it can be concluded that the learning styles of students in class XII MIPA at SMA N 1 Kalasan have various types of learning styles. The learning styles of students in classes XII MIPA 1, XII MIPA 2 and XII MIPA 4 are visual learning styles, while in class XII MIPA 3 has an auditorial learning style. The type of learning style determines the media and learning model used by the teacher in the learning process.

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