



## **Analysis of Learning Style Characteristics of Class X2 Students in Biology Subject at SMA Negeri 2 Sukoharjo**

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**Abstract:** Student has different characteristics in receiving an education and teaching, including different learning styles. Learning styles owned by students affect the achievement of learning objectives. A teacher needs to understand the learning styles of students in order to create effective learning. The purpose of this study was to determine the learning styles of students. The subjects of this research were X grade students of senior high school Sukoharjo. The research method used in this research is descriptive qualitative. Data collection in this study was carried out using observation instruments and questionnaires about learning styles. Observations were made and the learning style questionnaire was filled in by 33 class X students. The data from observations and filling out the questionnaire were analyzed using the percentage method and then described. The results of the analysis of learning styles show that there are 3 types of learning styles in class X2, namely visual, auditory and kinesthetic learning styles. The tendency of the learning style of class X2 students is kinesthetic learning style with a percentage of 61%.

**Keywords:** learning styles, visual, auditory, kinesthetic

### **INTRODUCTION**

The most important thing that needs to be considered in the world of education and teaching is students. As a good educator, of course, it is necessary to understand and study the character and development possessed by students. Each student has a different level of development resulting in variations in a population in the class. The better the teacher understands the level of development of students, the more effective the learning activities in class will be.

Development is a process of change in growth at a time as a function of maturity and interaction with the environment. Overall development follows an orderly period, starting from pre-natal, infancy, childhood, adolescence and adulthood followed by years of development of physical functioning abilities because of the maturity process. Maturity itself refers to a natural growth sequence or physical growth that is relatively free from environmental factors.

There are several factors that influence maturity, including biological factors related to physical maturity or heredity, and socio-cultural factors related to social environmental situations, values and norms.

The term development refers to how people grow, adapt, and change throughout their life's journey through physical development, personality development, socio-emotional development, cognitive (thinking) development, and language development. So, development is regular and long-lasting growth, adjustment, and change throughout the course of life. Therefore, in terms of creating effectiveness in learning, a teacher should understand the various levels of cognitive and socio-emotional development of students from infancy to adulthood.

Learning according to KBBI is an effort made to gain intelligence or knowledge, learning is also interpreted by changes in behavior or changes in a response that is influenced by experience. Each learner has his own way of learning to gain knowledge, this is what is often called a learning style. Learning styles are very important for teachers and students. For teachers, knowing the learning styles of students can be used as a reference for determining learning methods in the learning process. As for students, by knowing their own learning styles, students can maximize learning methods so that there is an increase in knowledge and skills.

According to Wibowo (2016) learning style is a key that can be used to develop performance both at work and at school. The learning style that students like will make it easier for students to understand a material. If the subject matter is easy to understand then student achievement will increase, this is because the knowledge and skills of students increase in a positive direction. Meanwhile, according to Sari (2014), learning style is one of the characteristics related to absorbing, processing and conveying information. According to Ahmad (2020), some students will like the teacher teaching by writing information on the blackboard, there are also students who like the teacher teaching by delivering material orally, and there are also students who prefer to discuss with groups to understand a material.

According to Barwood (2011) in Chairawati (2020), students who benefit when the teacher conveys material through learning media both in the form of stationary objects and moving objects and can stimulate their vision are called visual learning styles. Students with the type of visual learning style tend to have difficulty understanding subject matter without media, this is because they are used to visualizing any information then recording it in a book as a result of processing that information. According to Santosa (2009), the characteristics of students who have a visual learning style can be seen by: 1) preferring to read and watch, 2) preferring to use pictures or patterns when giving or receiving information, 3) preferring to learn independently, 4) globally oriented, 5) has a tendency to speak quickly, 6) relates to others through eye contact and facial expressions, 7) has a good visual memory, 8) can respond well when shown information, 9) diligent in learning, 10) prefer to order the presentation of information carefully.

Students with the type of auditory learning style have a tendency to like music and sound, so that in the learning process they rely more on hearing than sight. Students with an auditory learning style prefer to process written information into sound information so that it is understood more quickly. When there is information in the form of sound, they prefer to record it rather than record it and then listen to it repeatedly (Chairawati, 2020). According to Santosa (2009), the characteristics of students who have an auditory learning style can be seen by: 1) preferring to listen to rather than being read to, 2) preferring to use verbal words when giving and receiving explanations, 3) preferring to study with friends, 4) likes details, 5) tends to speak at moderate speed, 6) prefers to interact with others through discussions, 7) tends to be able to remember well and memorize words and ideas that have been expressed, 8) can respond well when listening, 9) not diligent in studying, 10) not happy in sequentially sorting the presentation of material or information carefully.

Learners with the kinesthetic learning style type have a tendency to rely on motion as a medium to learn something. They are able to control gestures and memorize information by making gestures. In addition, students with the type of kinesthetic learning style have advantages in organizing and managing groups. They tend to prefer studying in the open in groups (Chairawati, 2020).

According to Suparman (2010) in Ahmad (2020), students who have a kinesthetic learning style can be seen by: 1) a tendency to speak slowly and slowly, 2) prefer to respond to physical attention, 3) prefer to learn through practice and engineering, 4) tend to be physically oriented and move a lot, 5) prefer to memorize by walking around and seeing, 6) unable to sit still for long periods of time, 7) use more gestures, 8) prefer to use words which contain action, 9) have a strong desire to do something, 10) prefer games that are busy and require a lot of physical activity.

Thus, it can be concluded that learning style is an important aspect for the achievement of learning objectives. Teachers must be able to understand all the learning styles of students so that an effective learning process is realized. Based on the importance of learning styles in a learning process, the researchers conducted an analysis of the learning styles of students in a class, namely class X2 at SMA Negeri 2 Sukoharjo. The objectives of this research are: (1) Identify the results of the analysis of the learning styles of class students at SMA Negeri 2 Sukoharjo, including Visual, Auditory and Kinesthetic in Biology subjects; (2) Describe the characteristics of Visual, Auditory and Kinesthetic learning styles through literature studies.

This research is also expected to provide benefits, especially for teachers and students. The following are some of the expected benefits of this study: For teachers, by knowing the type of student learning style, the teacher can determine the learning method that can be used in the learning process. The method used must be a method that can accommodate all types of student learning styles. If the teacher uses a method that is appropriate to the learning style of students, it will make it easier for the teacher to provide material. The material provided by the teacher in the learning process can be well received by students so that there

is an increase in knowledge and skills. For students, by knowing the type of learning style they have, students can maximize their learning style according to their respective learning style types. Students will also find it easy to understand the subject matter according to their learning style.

## METHOD

This study aims to determine the type of learning styles of students at SMA Negeri 2 Sukoharjo, with the research subjects being 33 students in class X2. The research method used in this research is descriptive qualitative, this is because this research is non-experimental research conducted on a characteristic of the research subject according to the situation as it is without manipulation.

This research was conducted to obtain information about the learning styles of students at SMA Negeri 2 Sukoharjo in Biology subject. This research focuses on describing the learning styles of students based on the facts obtained during learning. This study also uses the literature study method by reviewing references to explain the characteristics of each learning style. The literature study is also used to explain learning methods that suit each learning style.

This study uses a questionnaire or questionnaire filled out by research subjects as a research instrument. The research was conducted during the learning process, the first step was to observe students' activities during learning to see the type of learning style. The next step is to distribute questionnaires related to the types of learning styles to students. The questionnaire used contains statements or information related to the type of student learning style. The questionnaire has provided an answer column and research subjects can directly answer statements relating to themselves. The data obtained from the questionnaire was then analyzed to make it easier for the reader to understand the research results. The results of the data obtained from filling out the questionnaire are then grouped based on the type of learning style.

The following are the steps in the analysis results. In the learning style questionnaire there is a statement that reflects the type of each learning style and there are "Yes" and "No" answer choices. The answer "Yes" gets a score of 1 and the answer "No" gets a score of 0. Each answer from each type of learning style is then added up to produce a value. The tendency of the types of learning styles of students can be concluded by comparing the values of each type of learning style. The highest value is the value used to conclude the type of student's dominant learning style. The research data is presented by making tables and diagrams to describe the data for each type of student learning style.

## RESULT AND DISCUSSION

Questionnaire analysis was carried out on 33 research subjects, namely from class X2 SMA Negeri 2 Sukoharjo. Questionnaire analysis was carried out by calculating the score of each research subject based on the learning style questionnaire instrument filled out. Based on the results of the analysis, 3 groups of students' learning tendencies were obtained, namely:

- Visual, symbolized by the letter V

- Auditory, symbolized by the letter A
- Kinesthetic, symbolized by the letter K

The results of the analysis show that the learning styles of students in class X2, namely the number of students with an auditory learning style are 6 children, a percentage of 18%. The number of students with a visual learning style is 7 children, a percentage of 21% while the number of students with a kinesthetic learning style is 20 students, a percentage of 61%. Based on these results, the results show that the dominant learning style in class X2 is the kinesthetic learning style. Data analysis results can be seen in the following table and diagram.

Table 1. Tendencies in the learning styles of class X2 students.

Learning Style	Count Of Student	Percentage (%)
Auditory	6	18%
Visual	7	21%
Kinesthetic	20	61%

Based on the results of the analysis that has been done, the dominant learning style in class X2 in Biology is the kinesthetic learning style. It can be seen from the percentage diagram that the number of students who have a type of kinesthetic learning style is more than half of the total number of students in class X2. Before conducting this research, the researcher first made direct observations during the learning process in class. The observation results show that most students tend to be active when learning. Students carry out activities that have nothing to do with learning, such as turning their bodies in various directions, playing rulers, chatting, and sometimes there are students who stand up from their seats. Based on the results of observations, it can be seen that the types of learning styles possessed by students X2 were then carried out by analyzing the types of learning styles of students in class X2.

Based on the results of the questionnaire and the observation that the dominant type of learning style in class X2 is the kinesthetic learning style. However, other student learning styles such as visual and auditory learning styles also cannot be ruled out. Each student has their own learning style, with this learning style students can optimize themselves in the learning process. The teacher has a role to determine the course of the learning process. Before starting the learning process the teacher can know in advance the learning styles of students so they can determine the right learning method.

Each student is a child who has unique characteristics so that the differences in students can be seen. Differences are not only in terms of gender, height, age or ethnicity, but also in the type of learning style. This learning style is a characteristic of students in receiving teaching in the learning process. The type of learning style that students have will certainly affect the way they learn and achieve learning goals. In the learning process the teacher can determine the



appropriate learning method according to the type of learning style of students so that the learning process can run effectively.

The learning process can be carried out effectively if the learning objectives can be achieved. Learning styles owned by students can affect the achievement of goals in the learning process. A learning should be able to accommodate various types of learning styles owned by students so that the learning process takes place optimally. The learning process can be carried out effectively if the learning objectives can be achieved. Learning styles owned by students can affect the achievement of goals in the learning process. A learning should be able to accommodate various types of learning styles owned by students so that the learning process takes place optimally.

### **Characteristics of Visual Learning**

According to Wiedarti (2018), students with a visual learning style tend to learn by using their eyes. These learners prefer to see how to do something rather than discuss or listen to information. In the type of visual learning style, students learn by seeing and observing information. Common activities carried out by students with a visual learning style in the learning process are making neat and detailed notes. In addition, students with the type of visual learning style tend to like to sit in the front so they can see clearly. As for suggestions that can be made by the teacher to maximize the learning process with a visual learning style, as follows:

- Teachers can use diagrams, color codes or learning videos to reinforce students' knowledge with visual learning styles.
- Teachers can use flashcards or various types of charts.
- The teacher can guide students to load an outline or mind map regarding the subject matter being studied.
- Teachers can use assessments in the form of essays, multiple choice and diagrams instead of using tests that involve the sense of hearing.

### **Characteristics of Auditory Learning**

According to Wiedarti (2018), students with an auditory learning style have a tendency to learn by hearing and listening to teacher explanations. Students with an auditory style will ensure that information is well understood and then repeat it to strengthen understanding. Activities that are usually carried out by auditory students in the learning process are happy listening to other people, happy to discuss and often read aloud to increase knowledge. There are suggestions that teachers can make to maximize the learning process with an auditory learning style, as follows:

- The teacher provides an explanation regarding the material in a different way so that it can be accepted by auditory students.
- The teacher uses learning resources in the form of audiobooks to maximize students' listening skills in gaining knowledge.

- The teacher can give assignments in the form of oral reports, interviews or content paraphrases.

### Characteristics Kinesthetic Learning

According to Wiedarti (2018), students with kinesthetic learning styles can understand or obtain information by interacting, touching, doing and experiencing things around them. Learners with a kinesthetic learning style do things and use their bodies to remember facts. The usual activities of students with kinesthetic learning styles in the learning process are moving a lot, talking a lot with gestures and carrying out activities related to the material being taught. There are suggestions that can be made by teachers to maximize the learning process with kinesthetic learning styles, as follows:

- Teachers can apply kinesthetic learning models such as role playing, carrying out physical activities according to the material, building models of teaching materials and experimenting directly.
- Teachers can provide assessments through physical activities related to teaching materials such as free writing and playing games.
- The teacher provides an assessment by presenting a case or problem to be solved quickly such as multiple choice, tests with short entries or short definitions.

### CONCLUSION

Based on the research that has been done, it can be concluded that: The percentage of class X2 students at SMA Negeri 2 Sukoharjo who have a type of visual learning style is 21. The percentage of class X2 students at SMA Negeri 2 Sukoharjo who have an auditory learning style type is 18%. The percentage of class X2 students at SMA Negeri 2 Sukoharjo who have a type of kinesthetic learning style is 61%. The learning style of class X2 students at SMA Negeri 2 Sukoharjo is dominated by kinesthetic learning styles. This research also provides suggestions for teachers and students, including the teacher can apply a variety of learning methods according to the type of learning style of each student so that learning objectives can be achieved effectively. Learners can maximize their learning style in studying and understanding the subject matter.

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