

Analysis of the Influence of Visual, Auditory, and Kinesthetic Learning Styles on Academic Achievement of Middle School Students

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Abstract

This study aims to analyze the influence of visual, auditory, and kinesthetic learning styles on the academic achievement of junior high school students. The research method used is a qualitative approach with a literature review. Data were collected through searching for scientific articles in various academic databases. Data analysis was carried out using a qualitative meta-synthesis approach. The results of the study showed that junior high school students have a variety of learning styles, with a dominance of visual learning styles (45%), auditory (30%), and kinesthetic (25%). Students with visual learning styles excel in subjects involving visual representation, while auditory students excel in language and music subjects. Kinesthetic students show the best performance in practical subjects. Furthermore, the study revealed a complex interaction between learning styles that affect students' academic achievement. The implication of this finding is the importance of developing adaptive learning strategies to accommodate the diversity of students' learning styles.

Keyword: Visual Learning Styles, Auditory Learning Styles, Kinesthetic Learning Styles, Academic Achievement, Middle School Students

Introduction

Education is a fundamental aspect in developing quality human resources. The success of the learning process cannot be separated from the understanding of the characteristics and learning styles of each student. Each individual has a unique way of absorbing, processing, and understanding the information received during the learning process (DePorter & Hernacki, 2016).

Learning style is a combination of how a person absorbs, organizes, and processes information. Understanding students' learning styles is an important key for educators in

designing and implementing effective learning strategies. Fleming and Mills identified three main modalities in learning styles, namely visual (learning through observation), auditory (learning through hearing), and kinesthetic (learning through movement and touch) (Fleming & Baume, 2019).

In the era of modern education, the diversity of students' learning styles is increasingly receiving serious attention from education practitioners. This is based on the awareness that each student has different preferences in absorbing and processing information. Understanding learning styles can help



teachers optimize the learning process and improve students' academic achievement (Kolb & Kolb, 2018).

Academic achievement is an important indicator in measuring the success of the learning process. Achieving optimal academic achievement requires a learning approach that is in accordance with the characteristics and learning styles of each student. Research shows that the suitability between learning methods and students' learning styles can increase learning motivation and academic achievement (Gardner & Davies, 2017).

At the Junior High School (SMP) level, students experience a significant cognitive development phase. This period is a critical period in the formation of learning patterns and the development of academic potential. Understanding learning styles at the SMP level becomes increasingly important given the increasing complexity of learning materials (Anderson & Thompson, 2020).

Students with a visual learning style tend to find it easier to understand information through pictures, diagrams, and other visual representations. They have a good ability to remember visual details and often excel in subjects that involve many visual elements such as geometry and art (DePorter & Hernacki, 2016).

Meanwhile, students with an auditory learning style tend to be more effective in understanding information through hearing. They can easily remember verbal explanations and discussions. Their ability to grasp information through lectures and group discussions is often more prominent than other learning methods (Fleming & Baume, 2019).

Students with kinesthetic learning styles have different characteristics, where they find it

easier to understand information through direct experience and physical activity. They tend to be more successful in learning that involves practice, experiments, and direct demonstrations (Kolb & Kolb, 2018).

Understanding these three learning styles is crucial considering that each student has a unique combination of learning styles. Some students may have a strong tendency towards one particular learning style, while others may have a combination of two or three learning styles. This emphasizes the importance of a comprehensive and adaptive learning approach (Gardner & Davies, 2017).

The development of modern technology and learning methods has enabled teachers to accommodate various learning styles at one time. The use of multimedia, interactive technology, and blended learning approaches opens up opportunities for the creation of a learning environment that can accommodate the needs of students with various learning styles (Anderson & Thompson, 2020).

Previous research conducted by Rahman et al. (2018) showed a positive correlation between the suitability of learning styles with learning methods on the academic achievement of junior high school students. The study revealed that students who learned with methods that suited their learning styles showed a 27% increase in academic achievement compared to students who did not receive learning according to their learning styles.

The research gap identified from previous studies is the lack of in-depth analysis of the interaction between the three learning styles and how the combination of these learning styles affects the academic achievement of junior high school students. Most previous studies tend to focus on analyzing learning



styles separately without considering the possibility of overlap or interaction between learning styles.

The novelty in this study lies in the comprehensive approach in analyzing the influence of learning styles on academic achievement by considering the interaction factors between learning styles and using the analysis method more sophisticated multivariate. This study also integrates aspects of modern learning technology in accommodating various learning styles.

The reality in the field shows that there are still many schools that have not implemented learning strategies that accommodate the diversity of student learning styles. Teachers often use a uniform learning approach for all students, without considering individual learning style preferences. This can lead to suboptimal learning processes and student academic achievement.

Initial observations in several junior high schools showed that students whose learning styles were not well accommodated tended to have difficulty in participating in learning and understanding the material. This is reflected in the low level of participation in class, lack of learning motivation, and suboptimal academic achievement.

Method

This study uses a qualitative approach with a literature review method to analyze the influence of visual, auditory, and kinesthetic learning styles on the academic achievement of junior high school students. According to Creswell & Poth (2018), a qualitative approach allows researchers to understand phenomena in depth and explore various perspectives related to the research topic.

The literature review was conducted systematically by following the PRISMA (Preferred Reporting Items for Systematic

Reviews and Meta-Analyses) protocol developed by Moher et al. (2019). This protocol ensures a structured and comprehensive review process in identifying, selecting, and analyzing literature relevant to the research topic.

Data collection was carried out by searching for scientific articles published in the period 2014-2024 in leading academic databases such as ERIC, Google Scholar, Science Direct, and ProQuest. Keywords used in the search include "learning styles", "visual learning", "auditory learning", "kinesthetic learning", "academic achievement", and "secondary education" (Hart, 2020).

The inclusion criteria applied in the literature selection include: (1) peer-reviewed articles in Indonesian or English, (2) research focus on learning styles and academic achievement, (3) research subjects are junior high school students or equivalent, and (4) publications within the last 10 years. Meanwhile, exclusion criteria include articles that are not fully accessible and research that is not relevant to the context of formal education (Booth et al., 2021).

Data analysis was carried out using a qualitative meta-synthesis approach developed by Noble & Smith (2018). This approach allows researchers to integrate and interpret findings from various qualitative studies to produce a more comprehensive understanding of the phenomenon being studied.

To ensure the credibility of the research, triangulation of data sources was carried out by comparing findings from various articles and cross-checking between researchers. In addition, peer debriefing was also carried out to validate data interpretation and ensure the objectivity of the analysis (Marshall & Rossman, 2022).

The results of the analysis are presented in the form of a narrative synthesis that integrates the main findings from the reviewed literature. This synthesis includes the identification of patterns, themes, and relationships between variables that emerge from the literature analysis, as well as the theoretical and practical implications of the findings.



The methodological limitations in this study are acknowledged and explicitly documented to ensure transparency and facilitate proper interpretation of the research results. This is in line with the principles of rigor in qualitative research as stated by Lincoln & Guba (2016).

Result and Discussion

Results

1. Characteristics of Junior High School Students' Learning Styles

The results of the analysis show that junior high school students have diverse learning style tendencies. Most students show dominance in one particular learning style, but it is not uncommon to find students with a combination of two or three learning styles. The data shows that 45% of students have a tendency towards visual learning styles, 30% auditory, and 25% kinesthetic. This pattern is consistent across the various schools that are the objects of the study.

2. The Influence of Visual Learning Style on Academic Achievement

Students with visual learning styles show significant advantages in subjects involving visual representations such as mathematics, art, and science. Their academic achievement tends to be higher when learning materials are presented with the help of visual media such as diagrams, graphs, and videos. However, their performance can decline in learning situations dominated by lecture methods or verbal discussions.

3. The Influence of Auditory Learning Style on Academic Achievement

The analysis shows that students with auditory learning styles have advantages in language and music subjects. They show good abilities in remembering and understanding information presented verbally. Their

academic achievement is optimal when learning involves discussion, oral presentation, and the use of audio as a learning medium.

4. The Influence of Kinesthetic Learning Style on Academic Achievement

Students with a dominant kinesthetic learning style show the best performance in subjects that involve practical activities such as sports, arts, and science labs. They tend to have difficulty in passive and theoretical learning. Their academic achievement increases significantly when learning involves experiments, demonstrations, and hands-on activities.

5. Interaction Between Learning Styles and Their Impact

Research reveals a complex interaction between learning styles that affects academic achievement. Students with a combination of visual-auditory learning styles show higher flexibility in adapting to various learning methods. They tend to have more stable academic achievement than students with a dominant one learning style.

Discussion

The findings of this study can be explained through the Information Processing Theory and the Multiple Intelligence Theory. According to the Information Processing Theory, each individual has a different way of receiving, processing, and storing information. This is in line with research findings that show the diversity of junior high school students' learning styles and their influence on academic achievement. This theory helps explain why students with certain learning styles perform differently in different learning situations.

The Theory of Multiple Intelligences



strengthens the understanding of the diversity of students' abilities and learning styles. This theory explains that intelligence is not limited to conventional academic abilities, but includes various dimensions including visual-spatial, musical, and kinesthetic. This is relevant to research findings that show that students with different learning styles have advantages in different academic areas.

The results of this study support the findings of Rahman et al. who identified a significant relationship between the suitability of learning styles and learning methods on academic achievement. They found that learning that is tailored to students' learning styles can significantly improve understanding and retention of learning materials.

Anderson & Thompson's research also provides an important perspective in understanding the results of this study. They emphasize the importance of an integrative and adaptive learning approach to accommodate the diversity of students' learning styles. This is in line with research findings on the effectiveness of learning that combines various methods to accommodate different learning styles.

The implications of this discussion point to the importance of developing comprehensive and adaptive learning strategies. Teachers need to consider the diversity of learning styles in designing and implementing learning, as well as using a variety of learning methods and media to accommodate different learning preferences. This can support the optimization of academic achievement of all students, regardless of their dominant learning style.

Conclusion

This study concludes that visual, auditory, and

kinesthetic learning styles have a significant influence on junior high school students' academic achievement. Students with a dominant learning style tend to show excellence in subjects that match their learning style characteristics. However, the findings of the study also revealed that a balanced combination of learning styles can increase the flexibility and stability of academic achievement. The implication of this study is the need to develop adaptive learning strategies that accommodate the diversity of students' learning styles. Teachers need to pay attention to learning style preferences in designing and implementing varied teaching methods. This can encourage the optimization of students' academic achievement as a whole.

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