



Gender-Based Variations in The Learning Styles of Students

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Abstract

This study aims to analyze the differences in learning styles (visual, auditory, kinesthetic) among seventh-grade students at SMP Negeri 3 Batu based on gender. Using a comparative research design, data was collected from 314 students through the VAK Learning Style Inventory and analyzed using chi-square tests. The findings reveal that there is no significant relationship between gender and learning styles, as indicated by an Asymp. Sig. value of 0.940. The predominant learning style among students is visual, followed by kinesthetic and auditory. These results indicate that gender does not significantly influence the learning style preferences of students. Consequently, factors such as physical, emotional, psychological, environmental, strategic, and interest-related elements play a more substantial role in shaping learning styles. The implications for educators and counselors are profound, suggesting that a broader range of influencing factors should be considered when designing interventions and support strategies to enhance student learning experiences and outcomes. Future research should investigate these variables further with larger sample sizes and consider additional factors that may impact learning styles.

Keywords: learning styles; gender differences; educational interventions

1. Introduction

Learning styles encompass individuals' methods and strategies to receive, remember, absorb, and manage acquired information and knowledge (Azizah et al., 2023). These styles reflect how individuals process information, determined by a unique combination of cognitive, affective, and physiological characteristics that influence how they interpret and understand various concepts (Wiedarti, 2018). Each individual possesses distinct traits due to their inherent uniqueness, leading to diverse methods and varying levels of information absorption and processing (Azis et al., 2020). In the educational domain, understanding and identifying each student's learning style is paramount. This understanding not only helps recognize students' individual needs but also serves as a guideline for educators to tailor their teaching methods accordingly. By accommodating these differences, educators can ensure that the instructional material is delivered in a manner that optimally suits each student's learning style, thereby enhancing their learning experience and outcomes (Arumsari, 2023).

Research has consistently shown that learning styles have a significant impact on students' academic performance. For instance, a study by Nia (2020) revealed that there is a direct correlation between students' learning styles and their academic results. This is further supported by findings from Khoeron et al. (2016), which indicate that students' learning styles play a crucial role in their overall academic achievement. These studies underscore the importance of recognizing and addressing diverse learning styles within a classroom setting to promote better educational outcomes for all students. Furthermore, the implications of these findings extend beyond the classroom. They highlight the need for educational systems to incorporate flexible and adaptive teaching methods that cater to the varied learning preferences of students. By doing so, educators can create an inclusive learning environment that fosters

academic success and personal growth for every student, irrespective of their individual learning style. This approach not only enhances the effectiveness of the teaching-learning process but also contributes to the holistic development of students, preparing them for future academic and professional endeavors.

Learning styles are generally classified into three categories: visual, auditory, and kinesthetic (Bire et al., 2019). Visual learning style involves a predominant reliance on the sense of sight. Individuals with a visual learning style are characterized by their ability to remember information based on what they see (Yulianci & Nurjumiati, 2020). Auditory learning style, on the other hand, primarily involves the sense of hearing. Individuals with this learning style are distinguished by their ability to recall information based on what they hear (Supit et al., 2023). Lastly, the kinesthetic learning style requires individuals to engage in direct physical activity to remember the provided information. Those with a kinesthetic learning style are known for their ability to absorb information through movement and hands-on practice (Sundayana, 2016). The varying characteristics of these learning styles present a challenge for educators to develop suitable teaching methods. In the educational context, accommodating these learning styles involves specific strategies. For visual learners, instructional techniques should include the use of diagrams, concept maps, and images to explain the material effectively. For auditory learners, teaching methods should maximize the use of audio resources such as music, radio, and similar auditory aids. Kinesthetic learners benefit from an increased emphasis on direct practice and hands-on activities (Zagoto et al., 2019).

Educators must recognize and adapt to these diverse learning styles to enhance the educational experience and effectiveness for each student. By employing a variety of teaching methods tailored to these learning styles, teachers can create a more inclusive and effective learning environment. This approach not only helps in meeting the individual needs of students but also contributes to their overall academic success and personal development.

One of the factors influencing academic achievement is gender (Munawarah, 2021). Males and females possess different characteristics inherent to their nature (Wiasti, 2017). Research by Anita (2015) indicates that gender affects students' learning motivation. Several other studies align with this finding, suggesting that gender influences learning interest as well. For instance, Rojabiyah and Setiawan (2015) reported that male students have a greater learning interest compared to female students. However, Maula and Hidayah (2019) found that female students exhibit a higher learning interest than their male counterparts. These studies reveal conflicting conclusions regarding gender-based differences in learning interest. Additionally, research by Zakiyah (2019) indicates that learning interest is influenced by students' learning styles.

In the context of Guidance and Counseling, understanding gender-based variations in learning styles is crucial for developing effective interventions and support strategies. Counselors play a significant role in addressing students' academic and personal challenges, and insights into how gender influences learning preferences can enhance their ability to provide tailored support. By recognizing these differences, counselors can better guide students in developing effective study habits and coping strategies that align with their learning styles. This targeted support can help bridge gaps in academic achievement and promote a more equitable educational experience for all students, regardless of gender. Hence, the urgency of this research lies in its potential to inform and improve counseling practices, ultimately contributing to the overall well-being and success of students.

Despite numerous studies examining the influence of gender on learning motivation and interest, there is a significant research gap regarding the specific impact of gender on learning

styles. Existing research often yields conflicting conclusions and lacks comprehensive analysis in diverse educational contexts. This gap underscores the need for more detailed investigations to clarify how gender differences manifest in various learning styles and to determine the implications for educational practices and counseling interventions. Therefore, this study aims to identify and analyze the differences in learning styles among students based on gender. By addressing this research gap, the study seeks to provide insights that can enhance educational strategies and counseling practices, ensuring they are more responsive to the needs of both male and female students. Ultimately, the goal is to contribute to the development of a more inclusive and effective educational environment that supports the academic and personal growth of all students.

2. Method

This study adopted a comparative design to investigate gender-based variations in learning styles among seventh-grade students at SMP Negeri 3 Batu. The total population for the study comprised 320 students, all of whom were initially included as the sample. However, during the data collection phase, six students failed to complete the research instrument in its entirety, leading to a final sample size of 314 participants. The gender distribution within this sample included 168 male students and 146 female students. The research was conducted over five days, from June 8 to June 12, 2024. The research methodology encompassed several key steps to ensure a systematic approach. First, the VAK Learning Style Inventory, originally in print format, was converted into an online Google Form to facilitate easier distribution and collection of responses. This was followed by the identification and selection of research subjects from the seventh-grade cohort. Once the subjects were identified, the VAK Learning Style Inventory was distributed to them. The VAK Learning Style Inventory is a well-established tool designed to assess learning styles and was translated into Indonesian by Nizaruddin et al. (2020). This inventory consists of 30 items, each with three response options. Each item offers choices that correspond to different learning styles: visual (option A), auditory (option B), and kinesthetic (option C). The instrument's items demonstrated a Pearson product-moment correlation coefficient (r_{xy}) of 0.30 or higher, indicating strong internal consistency. Furthermore, the inventory exhibited satisfactory Cronbach's alpha values, with 0.80 for the visual learning style, 0.76 for the auditory learning style, and 0.78 for the kinesthetic learning style. These reliability coefficients underscore the instrument's robustness and dependability, as affirmed by Nizaruddin et al. (2020) and Rahman (2019). After distributing the inventory and collecting the responses, the next step involved the tabulation of data. This process entailed organizing and summarizing the responses to facilitate subsequent analysis. The analysis phase involved applying statistical techniques to interpret the data and draw meaningful conclusions regarding gender differences in learning styles. Specifically, the Chi-Square test was employed to examine the association between gender and learning styles. This statistical test was conducted using SPSS Version 26.

3. Results and Discussion

3.1 Result

Table 1 provides a comprehensive overview of the descriptive analysis results, highlighting the percentage distribution of learning styles among seventh-grade students at SMP Negeri 3 Batu. This analysis reveals significant insights into the prevalence of different learning styles within the student population. The visual learning style emerges as the most predominant among the students. Specifically, 159 students, which constitutes 51% of the total sample, have

been identified as having a visual learning style. This high percentage suggests that a majority of the students prefer to engage with information through visual means, such as reading, observing diagrams, and watching demonstrations. In contrast, the auditory learning style is the least prevalent among the students. Only 57 students, representing 18% of the total sample, have been found to exhibit an auditory learning style. This finding indicates that a smaller proportion of students favor learning through listening to lectures, participating in discussions, and hearing explanations. The kinesthetic learning style holds a middle ground in terms of prevalence, with 98 students, or 31% of the total sample, displaying a preference for this learning style. Kinesthetic learners prefer a hands-on approach, engaging with learning materials through physical activities and practical experiences. Overall, the data presented in Table 1 illuminate the diverse learning preferences among the seventh-grade students at SMP Negeri 3 Batu.

Table 1. Descriptive Analysis Results

No	Learning Style	Frequency	Percentage
1	Visual	159	51%
2	Auditory	57	18%
3	Kinesthetic	98	31%

Table 2. Gender-Based Distribution of Learning Styles

No	Learning Style	Male (n=168)	Female (n=146)
1	Visual	51,19%	50%
2	Auditory	18,45%	17,81%
3	Kinesthetic	30,36%	32,19%

Furthermore, Table 2 presents a detailed analysis of the distribution of learning styles segmented by gender. This table provides insights into how learning style preferences vary between male and female students. For male students, who total 168 individuals, the distribution of learning styles is as follows: 51.19% have a visual learning style, 18.45% have an auditory learning style, and 30.36% have a kinesthetic learning style. This data indicates that more than half of the male students prefer the visual learning style, which is consistent with the overall trend observed in the general student population. The preference for kinesthetic learning among male students is also notable, comprising nearly one-third of the group, while auditory learning is the least favored among the three styles. In contrast, the female students, totaling 146 individuals, exhibit a slightly different distribution of learning styles. Among the female students, 50% prefer the visual learning style, 17.81% favor the auditory learning style, and 32.19% lean towards the kinesthetic learning style. Similar to the male students, the visual learning style is the most predominant among females. However, the proportion of kinesthetic learners is slightly higher among female students compared to their male counterparts. The auditory learning style remains the least preferred among female students as well. The gender-based analysis highlights that both male and female students at SMP Negeri 3 Batu predominantly favor the visual learning style. However, there are slight variations in the distribution of auditory and kinesthetic learning styles between the genders.

The Chi-Square test was conducted using SPSS Version 26 for Windows to examine the association between gender and learning styles among seventh-grade students at SMP Negeri 3 Batu. The results of this statistical analysis yielded an Asymp. Sig. value of 0.940. Given that the Asymp. Sig. value is significantly higher than the conventional threshold of 0.05, we can conclude that there is no statistically significant difference between male and female students

in terms of their learning styles. In other words, the data suggests that gender does not have a significant impact on the learning styles of the students. This finding implies that both male and female students at SMP Negeri 3 Batu exhibit similar preferences for visual, auditory, and kinesthetic learning styles. Therefore, gender is not a determining factor in how students prefer to learn.

3.2 Discussion

Based on the data obtained, it is evident that gender does not have a significant relationship with learning styles. This finding is consistent with several previous studies investigating the relationship between gender and learning styles. For instance, Mufardisah et al. (2017) reported that there is no significant correlation between learning styles and academic achievement among students, with varying correlation values for each type of learning style. Similarly, Ulfah (2017) found no significant differences between the learning styles of male and female students. This also implies that there is no significant relationship between learning styles and academic performance for both male and female students.

However, contrasting findings were reported by Putri (2018), who identified a significant influence of gender on students' learning styles. This discrepancy suggests that while gender may influence learning styles in certain contexts, it is not a consistent determinant across different studies and populations. The results from various studies indicate that gender is a minor factor in influencing the characteristics of individual learning styles. Research by Khovivah & Putri (2023) identifies several factors that can influence learning styles, including physical, emotional, sociological, and environmental factors. This aligns with the findings of Mar'ah (2015), who noted that learning styles and their effectiveness are influenced by physical conditions, learning strategies and methods, interest and motivation, supportive learning facilities, learning environment, discipline, and order.

These influencing factors are closely related to Maslow's hierarchy of needs (Khovivah & Putri, 2023). According to Maslow's theory, human needs include physiological needs, safety needs, love and belonging needs, esteem needs, and self-actualization needs (Subakti, 2022). In striving to fulfill these needs, individuals have the freedom to choose their methods of achieving them. Although males and females often exhibit inherently different characteristics, which can influence their learning styles, gender is not the primary factor. Instead, the various internal and external factors identified in previous studies have a more substantial impact on an individual's learning style tendencies.

The findings of this study, along with supporting literature, suggest that while gender differences do exist, they are not significant enough to affect learning style preferences substantially. Educators should thus focus on a broader range of influencing factors when addressing students' learning needs. By recognizing and accommodating the diverse factors that influence learning styles, educational practices can be more effectively tailored to support the academic success and personal development of all students, irrespective of gender.

The implications of these findings for guidance and counseling are significant. Counselors should be aware that while gender may play a role in shaping students' learning experiences, it is not a primary determinant of learning styles. Therefore, counseling strategies should not be gender-specific but rather tailored to the individual needs of each student, considering the broader range of influencing factors such as physical, emotional, sociological, and environmental aspects. Guidance and counseling programs should focus on helping students understand their unique learning preferences and develop strategies that leverage their strengths. Moreover, by incorporating insights from Finishia et al. (2020) on the urgency of guidance and counseling in schools, counselors can advocate for a more holistic approach that addresses the multifaceted needs of students, thereby fostering a more inclusive and supportive educational environment. This approach not only supports academic achievement but also promotes overall well-being and personal growth.

Despite the valuable insights gained from this study, several limitations should be acknowledged. First, the study was conducted within a single school, SMP Negeri 3 Batu, which may limit the generalizability of the findings to other educational settings with different

demographic profiles. Second, the reliance on self-reported data for determining learning styles may introduce bias, as students' perceptions of their learning preferences might not accurately reflect their actual behaviors in diverse learning contexts. Additionally, the study did not account for other potential confounding variables such as socioeconomic status, cultural background, or previous educational experiences, which could influence learning style preferences. Future research should consider these factors and aim to include a more diverse sample to enhance the generalizability and applicability of the findings.

4. Conclusion

Based on the findings and discussion presented, it can be concluded that there is no significant relationship between gender and the visual, auditory, and kinesthetic learning styles. The factors influencing learning styles extend beyond gender to include physical, emotional, psychological, environmental, strategic, and interest-related elements. This study highlights the need for future research to explore these variables with larger sample sizes and to investigate additional factors that may impact learning styles. Such research can assist educators in providing targeted interventions to optimize student learning experiences based on their individual learning preferences. Additionally, the implications for guidance and counseling are significant, as counselors should focus on addressing the diverse factors that influence learning styles rather than relying on gender-specific strategies. By recognizing and accommodating these broader influences, counselors can better support students' academic and personal development, fostering a more inclusive and effective educational environment.

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