

Exploring Learning Styles and Their Impact on Academic Achievement: A Study of Outstanding Students at Islamic University in Banda Aceh

Darmiah¹, Syabuddin Gade², Saifullah Maysa³, Silahuddin⁴, Tria Marvida⁵

¹ Universitas Islam Negeri Ar-Raniry, Banda Aceh, Indonesia; darmiah.salam@ar-raniry.ac.id

² Universitas Islam Negeri Ar-Raniry, Banda Aceh, Indonesia; syabuddin@ar-raniry.ac.id

³ Universitas Islam Negeri Ar-Raniry, Banda Aceh, Indonesia; saifullah.maysa@ar-raniry.ac.id

⁴ Universitas Islam Negeri Ar-Raniry, Banda Aceh, Indonesia; silahuddin@ar-raniry.ac.id

⁵ Universitas Bina Bangsa Getsempena, Banda Aceh, Indonesia; tria@bbg.ac.id

ARTICLE INFO

Keywords:

learning styles;
academic achievement;
visual learners;
auditory learners;
kinesthetic learners

Article history:

Received 2025-02-11

Revised 2025-03-21

Accepted 2025-09-30

ABSTRACT

Understanding individual learning styles is essential for enhancing educational outcomes, particularly among high-achieving students. This study explores the characteristics, distribution, and academic implications of learning styles—visual, auditory, and kinesthetic—among outstanding students at UIN Ar-Raniry, Banda Aceh. Employing a descriptive qualitative design, the research involved 24 students selected from nine faculties based on academic excellence. Data were gathered through semi-structured interviews, non-participant observations, and documentation, then analyzed using Miles and Huberman's interactive model of qualitative analysis. The findings reveal that 37.5% of participants demonstrated a preference for visual learning, benefiting most from reading, writing, and visual representations. Auditory learners comprised 33.33%, favoring discussion-based and listening-centered activities, while 29.16% were kinesthetic learners who excelled through physical engagement and experiential learning. These results suggest that the dominant learning style among high-achieving students is visual, followed closely by auditory and kinesthetic preferences. The study indicates a potential correlation between learning style alignment and academic performance, although causality cannot be inferred due to methodological limitations. Nevertheless, the findings support the importance of differentiated instruction. Educators are encouraged to design flexible, multimodal learning environments that cater to diverse cognitive preferences. While the study offers insights specific to a localized educational context, broader generalizations require further empirical validation using larger and more diverse samples.

This is an open access article under the [CC BY-NC-SA](https://creativecommons.org/licenses/by-nc-sa/4.0/) license.



Corresponding Author:

Darmiah

Universitas Islam Negeri Ar-Raniry, Banda Aceh, Indonesia; darmiah.salam@ar-raniry.ac.id

1. INTRODUCTION

Learning is a dynamic process involving continuous interaction between students, educators, learning materials, and the educational environment. At its core, learning leads to behavioral and cognitive change, which is relatively permanent and functional (Putra & Purwasih, 2015). In higher education, effective learning is often characterized by active student engagement and the ability of lecturers to facilitate environments that support diverse cognitive needs. However, individual differences in how students absorb, process, and retain information—commonly referred to as learning styles—remain a topic of ongoing debate in educational research.

Learning styles refer to the preferred modes through which individuals understand and engage with information. One of the most popular models categorizes learning styles into visual, auditory, and kinesthetic (DePorter & Hernacki, 2000). Visual learners absorb information best through images, diagrams, and reading; auditory learners prefer listening and verbal explanations; while kinesthetic learners learn more effectively through physical activities and hands-on experiences (Papilaya & Huliselan, 2016). Several studies suggest that aligning instruction with students' preferred learning styles can lead to improved academic outcomes (Gunawan, 2012; Dunn & Dunn, 1993). This belief has fueled the adoption of learning style inventories and customized teaching approaches in various educational settings.

Despite its popularity, the concept of learning styles and the pedagogical practices derived from it have been the subject of significant criticism in global educational literature. A major critique lies in the lack of robust empirical evidence supporting the “meshing hypothesis”—the claim that matching teaching styles to learning styles improves learning outcomes. Pashler et al. (2008), in a widely cited review, concluded that there is no substantial scientific support for the effectiveness of learning style-based instruction. They argue that while individuals may have preferences, adapting instruction to these preferences does not necessarily enhance academic achievement. Similarly, Coffield et al. (2004) found that many learning style models lack theoretical coherence and methodological reliability, raising concerns about their validity as tools for instructional design.

Given this context, studies focusing on learning styles must be situated carefully within the broader academic discourse. While the global literature questions the efficacy of adapting instruction to learning styles, localized investigations remain valuable, especially in under-researched educational settings. In particular, there is a scarcity of studies examining how high-achieving students in Islamic universities in Indonesia engage with learning materials based on their preferred styles. Understanding these patterns may not confirm the causal link between learning styles and performance, but it can inform institutional strategies for enhancing student engagement and learning satisfaction.

UIN Ar-Raniry, a state Islamic university in Banda Aceh, Indonesia, serves a highly diverse student population from across the archipelago. This diversity contributes to a wide range of learning behaviors, cultural backgrounds, and academic expectations. Outstanding students at this institution are often required to balance rigorous academic workloads with extracurricular and religious commitments. For such students, identifying and optimizing their learning approaches becomes crucial to maintaining academic excellence and personal well-being. Prior studies have shown that high-achieving students often demonstrate stronger self-regulation, goal-setting, and adaptability (Chamorro-Premuzic & Furnham, 2008; Zhang & Sternberg, 2005), yet there is limited research exploring how these traits intersect with learning style preferences in the Indonesian Islamic higher education context.

This study seeks to address this gap by exploring the learning styles of outstanding students at UIN Ar-Raniry and examining how these styles relate to their academic performance. Specifically, it aims to: (1) describe the characteristics of visual, auditory, and kinesthetic learning styles among high-achieving students, (2) identify the most dominant learning style within this group, and (3) analyze the potential implications of these styles for academic success. The research employs a descriptive

qualitative design, using interviews, observations, and documentation, analyzed through the Miles and Huberman model (Miles, Huberman, & Saldaña, 2014).

While this study does not claim to provide definitive evidence supporting the learning styles hypothesis, it offers contextual insights into how high-performing students perceive and utilize various learning modalities. The findings contribute to the growing body of literature that advocates for differentiated and inclusive teaching strategies, not by rigidly matching teaching to learning styles, but by creating multimodal instructional environments that engage a broader range of learners. In doing so, this study encourages educators and curriculum designers in Indonesian Islamic universities to reflect critically on pedagogical assumptions and to innovate teaching practices that are both evidence-informed and contextually grounded.

2. METHODS

This study employs a qualitative descriptive approach. According to Nasution, qualitative research involves observing a group, engaging in interaction, and interpreting how individuals understand their surrounding environment. Descriptive research, as explained by Rukajat (2018), seeks to describe and validate phenomena based on factual data rather than subjective opinions. This method was chosen to explore the learning styles of outstanding students at UIN Ar-Raniry Banda Aceh. Consequently, the researcher adopts an interpersonal approach, allowing for direct engagement with participants at the research site during the data collection process. This strategy enables the researcher to obtain in-depth information and nuanced insights relevant to the study.

As defined by Suharsimi Arikunto, the research subject refers to the source from which data is derived, including individuals (respondents), dynamic entities, or processes (Arikunto, 2021). In qualitative research, these subjects are commonly referred to as informants who provide the necessary data. The subjects in this study are students from UIN Ar-Raniry Banda Aceh, drawn from its nine faculties.

1. Faculty of Sharia and Law (FSH)
2. Faculty of Education and Teacher Training (FTK)
3. Faculty of Humanities (FAH)
4. Faculty of Da'wah and Communication (FDK)
5. Faculty of Theology and Philosophy (FUF)
6. Faculty of Islamic Economics and Business (FEBI)
7. Faculty of Science and Technology (SAINTEK)
8. Faculty of Psychology (FP)
9. Faculty of Social and Political Sciences (FISIP).

A total of 24 outstanding students selected from the nine faculties at UIN Ar-Raniry Banda Aceh. The selection was based on the consideration that these students represent a diverse range of learning styles within the university's academic environment. The sample size was determined in alignment with the qualitative approach, which prioritizes depth of understanding over broad generalization. It is important to note that while this sample is appropriate for qualitative inquiry, it may have limitations in studies requiring complex statistical analysis, generalizability, or sensitivity to outliers.

The object of this research is the learning styles of high-achieving students at UIN Ar-Raniry. The data collection techniques employed in this study include observation, interviews, and documentation, which are essential in qualitative research for obtaining rich, contextual data.

Observation in this study was used to capture the natural behavior and learning practices of participants in their real-life academic settings. As noted by Anggito and Setiawan (2018), observation is a complex process involving both biological and psychological components, suitable for studying

human behavior and natural settings. In this context, observation was conducted without any intervention, manipulation, or regulation of participants' behavior. The focus was on observing the learning styles exhibited by outstanding students, such as their preferred learning environments, study habits, and interactions during academic activities.

Interviews were used to gather in-depth verbal information about students' learning preferences, motivations, and personal strategies. Moleong (as cited in Manik, 2015) defines interviews as a conscious dialogue between the interviewer and interviewee aimed at collecting data, opinions, and perspectives. This study used semi-structured, open-ended interviews, allowing respondents to answer freely and in detail.

A total of 17 interview questions were developed, structured around four key indicators of learning style:

1. Items 1–3: Modality – the preferred sensory channels through which students absorb information (e.g., visual, auditory, kinesthetic).
2. Items 4–6: Interest – students' enthusiasm and preference for particular subjects or activities.
3. Items 7–12: Talent – inherent abilities that support the learning process.
4. Items 10, 13–17: Attitudes – behavioral and motivational aspects influencing learning engagement.

These questions were designed to explore multiple dimensions of learning styles. Data saturation was considered reached when repetitive patterns emerged and no new information was found. If significant variation persisted, it would suggest the need for a broader sample or a mixed-methods approach in future research.

Documentation was used to support and triangulate data obtained from observations and interviews. According to Manik (2015), documents such as books, photographs, and statistical records can serve as valuable evidence in qualitative research. In this study, photographs were particularly used to visually capture learning environments and activities, offering additional descriptive validity and context to the findings.

Data analysis involved a series of systematic steps to process and interpret the information collected. Following Manik (2015) and Miles & Huberman (1994), the analysis included the following stages:

1. Data Reduction – selecting, simplifying, and focusing on relevant information by coding transcripts and field notes. Codes were assigned to describe learning style patterns (e.g., visual, auditory, kinesthetic).
2. Data Display – organizing coded data into categories and visual formats for thematic analysis.
3. Verification and Conclusion Drawing – interpreting the meaning of patterns and relationships among themes.

Thematic analysis was used to identify recurring ideas across interviews, grouping them into key themes such as learning strategies, factors influencing learning styles, and challenges faced by high-achieving students. These themes were reviewed for internal consistency and relevance, then named clearly and compiled into a comprehensive narrative. Direct quotes from participants were included to enhance the credibility and richness of the findings.

This research adhered to established ethical standards in qualitative research. Participants' anonymity and confidentiality were strictly maintained. No personal identifiers were included in the final report, and all data were analyzed in aggregate form. Before data collection, participants were informed of the study's objectives and procedures and were asked to provide written informed consent. These measures ensured compliance with ethical principles, including voluntary participation, privacy, and respect for participant autonomy.

3. FINDINGS AND DISCUSSION

The data presented in this chapter will be described descriptively, obtained from the results of interviews with research subjects, namely outstanding students of UIN Ar-Raniry, totaling 24 students. In order to be more focused in presenting this data, the researcher will present the data based on the main points of discussion, namely as follows:

3.1 *Characteristics of Visual, Auditory and Kinesthetic Learning Styles in Achieving Students*

The characteristics of visual, auditory and kinesthetic learning styles in outstanding students of UIN Ar-Raniry Banda Aceh are known through the results of direct interviews with the students themselves. The results of interviews conducted by researchers with outstanding students of UIN Ar-Raniry Banda Aceh using instruments (in the form of questions that discuss students' learning styles and their characteristics).

3.1.1 **Visual**

The learning styles of high-achieving students can be identified through four key aspects: modality, interest, talent, and attitude. The modality aspect refers to how individuals best absorb information through their senses. Students with a visual learning style prefer to process information through seeing, reading, and writing. They tend to recall visual information more effectively than auditory input and often benefit from visual aids such as charts, diagrams, maps, and written text (Pashler et al., 2008). Findings from interviews in this study revealed that visual learners not only depend on visual input but also enhance their understanding by rewriting or summarizing the information they hear.

The interest aspect reflects internal motivation and emotional engagement with certain activities or content areas. According to Sardiman (2011), interest involves attention combined with emotional elements that drive engagement. Visual learners in this study expressed preferences for reading, writing, and learning environments that incorporate discussion and practical activities. These students were particularly drawn to lecturers who encouraged interactive and hands-on learning experiences, suggesting that interest significantly influences their academic engagement.

Talent, the third aspect, refers to general innate abilities. Gardner (1999) classifies talents under various intelligences, with visual learners commonly demonstrating strengths in Verbal-Linguistic and Visual-Spatial intelligences. Students with Verbal-Linguistic intelligence tend to excel in reading, writing, debating, and public speaking—skills that align well with visual learning preferences. Meanwhile, those with Visual-Spatial intelligence are proficient in interpreting visual information, such as maps, charts, and diagrams. Although many students recognized their talents, a few remained uncertain, possibly due to a lack of self-awareness or readiness to explore their potential.

The final aspect, attitude, reflects behavioral tendencies that indicate a learner's preference. Visual learners often show attentiveness by focusing intently, writing notes, or silently observing while absorbing information. As noted by Fleming (2001), such learners naturally take notes as a method of internalizing content. In this study, while most visual learners actively wrote during lectures, some opted to listen attentively without writing, indicating variability even within the same modality.

In summary, the learning characteristics of high-achieving visual learners are evident in their sensory preferences, interests, innate abilities, and behavioral expressions. These factors contribute to how they process, engage with, and demonstrate understanding in academic contexts.

3.1.2 **Auditory**

The learning styles of high-achieving students can be identified through four main aspects: modality, interest, talent, and attitude. The modality aspect refers to the preferred sensory channel used to absorb information. Students with an auditory learning style primarily rely on their sense of hearing.

They tend to retain information better through listening and often engage in activities such as reading aloud to reinforce understanding. According to Fleming (2001), auditory learners learn best through spoken instruction and often benefit from discussions or listening to explanations. Findings from this study show that auditory learners absorb information effectively by listening attentively and reading aloud.

The interest aspect involves emotional engagement and motivation toward certain activities. Sardiman (2011) emphasizes that interest includes attention and emotional connection to specific content or experiences. Auditory learners typically enjoy verbal interactions such as conversations and discussions, making them inclined toward lecturers who employ discussion-based or lecture-driven teaching strategies. Their interest in auditory-based activities supports their learning preferences and strengthens academic engagement.

In terms of talent, which refers to innate abilities, auditory learners often demonstrate strengths in verbal communication. Gardner (1999) classifies these as aspects of Verbal-Linguistic Intelligence. Students with this learning style tend to excel in activities such as reciting the Qur'an, public speaking, or giving presentations. Their ability to imitate tone, rhythm, and pronunciation enhances their communication skills, making them strong oral performers. These talents are closely related to their preference for auditory input and oral expression.

The attitude aspect reflects students' behavioral responses and preferences during the learning process. Auditory learners typically show focused listening behavior during lectures. They also enjoy audio-related activities such as listening to music or recitation in their leisure time. As noted by Pashler et al. (2008), auditory learners naturally engage in listening behaviors, which supports the acquisition and retention of information. This behavior was consistently observed among participants during data collection.

In conclusion, auditory learners demonstrate distinct patterns across modality, interest, talent, and attitude, which align with their preference for hearing-based input and verbal engagement.

3.1.3 Kinesthetic

The learning styles of high-achieving students can be examined through four key aspects: modality, interest, talent, and attitude. The modality aspect refers to how individuals best absorb information. Students with a kinesthetic learning style tend to process information through movement and physical interaction. They often rely on touch, action, and direct experience to retain knowledge. In this study, kinesthetic learners reinforced learning by writing, reading aloud, and recording their own voices. This multi-sensory approach—especially involving physical engagement—enhances their ability to memorize and understand content.

The interest aspect relates to internal motivation and emotional engagement. Kinesthetic learners are typically drawn to hands-on activities, showing strong interest in physical tasks, sports, and practical exercises. They prefer active classroom environments where learning involves doing rather than passive listening. As such, they are more engaged when lecturers include discussions, group work, presentations, or laboratory activities that require movement or active participation.

The talent aspect concerns the innate or natural abilities that learners possess. Kinesthetic learners often exhibit strengths in physical movement and verbal expression. They may excel in areas such as sports, dance, acting, or public speaking. Despite these tendencies, some kinesthetic learners are still exploring or unsure about their specific talents, likely due to limited self-awareness or lack of exposure to diverse experiences. Nevertheless, many demonstrate a natural inclination for physical and expressive activities, aligning with their preferred learning style.

The final aspect, attitude, refers to observable behaviors and preferences. Kinesthetic learners often express themselves through physical actions. For instance, during lectures, they may take notes

by doodling or making quick sketches to stay focused. In their free time, they tend to engage in movement-based activities such as walking or exercising. These behaviors reflect their need for physical engagement even outside structured learning environments.

In summary, kinesthetic learners prefer active, hands-on learning and exhibit distinct interests, talents, and attitudes that align with physical interaction and movement. Recognizing these characteristics is essential for developing teaching strategies that support their academic success.

3.2 The dominant learning styles possessed by outstanding students

The outstanding students who became informants in this study were representatives from each faculty at UIN Ar-Raniry Banda Aceh. The documentation can be seen in the following table:

Table 1. Number of outstanding students in each faculty at UIN Ar-Raniry Banda Aceh

No	Faculty	Amount
1.	Faculty of Sharia and Law (FSH)	2 students
2.	Faculty of Education and Teaching (FTK)	9 students
3.	Faculty of Adab and Humanities (FAH)	2 students
4.	Faculty of Da'wah and Communication (FDK)	2 students
5.	Faculty of Usuluddin and Philosophy (FUF)	2 students
6.	Faculty of Islamic Economics and Business (FEBI)	2 students
7.	Faculty of Science and Technology (SAINTEK)	1 student
8.	Faculty of Psychology (FP)	2 students
9.	Faculty of Social Sciences and Government (FISIP)	2 students

The learning styles of outstanding students at UIN Ar-Raniry (visual, auditory, and kinesthetic) were identified through direct interviews using questions focused on their learning preferences.

Table 2. Student Learning Style Data

No	Faculty	Amount	Student name	Grade point Cumulative	Conclusion of Learning Style Dominance
1.	Faculty of Sharia and Law (FSH)	2 students	S	3.82	Visual
			A	3.67	Kinesthetic
2.	Faculty of Education and Teaching (FTK)	9 students	R	3.77	Audio
			R	3.86	Kinesthetic
			S	3.88	Audio
			W	3.84	Audio
			K	3.80	Audio
			Q	3.90	Visual
			A	3.97	Kinesthetic
3.	Faculty of Adab and Humanities (FAH)	2 students	F	3.80	Kinesthetic
			L	3.90	Audio
4.	Faculty of Da'wah and Communication (FDK)	2 students	R	3.90	Kinesthetic
			U	3.87	Visual
5.	Faculty of Da'wah and Communication (FDK)	2 students	H	3.86	Visual
			A	3.85	Visual
5.		2 students	Z	3.69	Audio

No	Faculty	Amount	Student name	Grade point Cumulative	Conclusion of Learning Style Dominance
	Faculty of Usuluddin and Philosophy (FUF)		ATP	3.80	Audio
6.	Faculty of Islamic Economics and Business (FEBI)	2 students	W	3.70	Audio
			W	3.79	Visual
7.	Faculty of Science and Technology (SAINTEK)	1 student	A	3.61	Visual
8.	Faculty of Psychology (FP)	2 students	D	3.68	Visual
9.	Faculty of Social Sciences and Government (FISIP)	2 students	FTA	3.61	Kinesthetic
			S	3.69	Visual
			M	3.67	Kinesthetic

*) This data was obtained from the results of interviews with outstanding students at UIN Ar-Raniry Banda Aceh on September 5–November 7, 2023.

Based on the table above, the summary of the total data on student learning styles identified from interview answers is as follows:

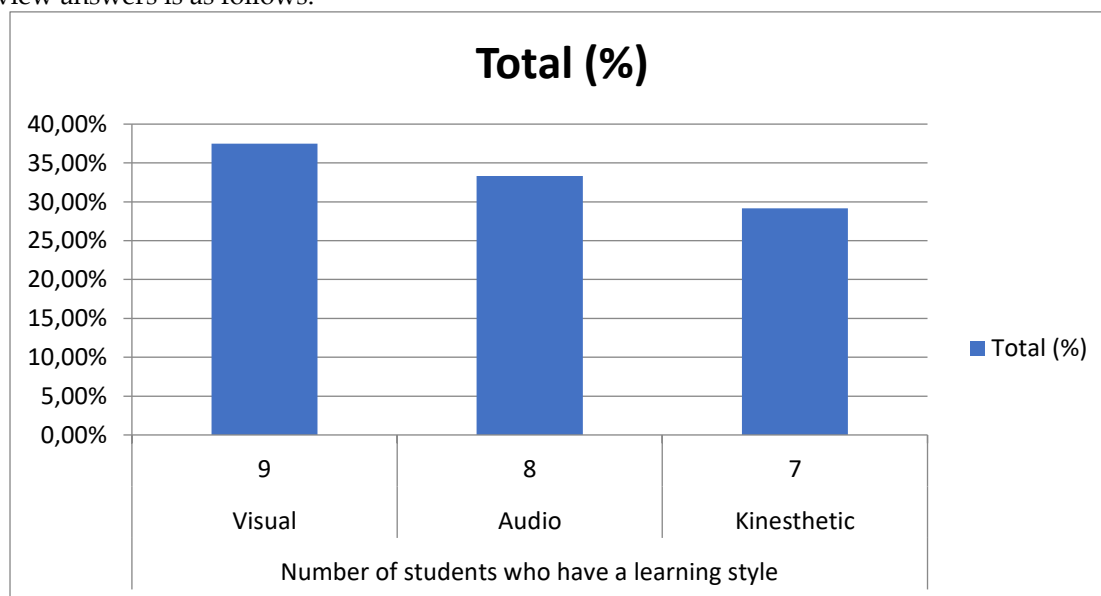


Figure 1. Summary of Total Data on Student Learning Styles

Based on the data, 37.5% of UIN Ar-Raniry students prefer visual learning, making it a dominant learning style compared to auditory (33.33%) and kinesthetic (29.16%).

Discussion

Based on the analysis of interview data, this study identified the distinct characteristics of visual, auditory, and kinesthetic learning styles among high-achieving students at UIN Ar-Raniry Banda Aceh. Each learning style manifests in unique ways, shaped by the students' preferred modality of absorbing information, their interests, innate talents, and observable attitudes. Together, these elements contribute to both academic and non-academic achievements.

The visual learning style emerged as the most dominant among high-achieving students in this study. Visual learners primarily absorb information through their sense of sight. They exhibit preferences for activities such as reading, writing, and rewriting content to reinforce memory. These students often engage with learning materials by utilizing visual aids, including diagrams, charts, mind maps, and infographics. Their interests typically lie in reading and written expression, and they respond well to lecturers who integrate visual materials into their instruction. Visual learners in this study also showed talents in areas such as drawing, writing, and creative design. Their behavior during lectures often included attentive observation and note-taking, indicating an active engagement with visual content. These findings align with the VARK model proposed by Fleming and Mills (1992), which emphasizes that visual learners benefit most from graphic representation of ideas. Educational theorists such as Dunn and Dunn (1978) and Gardner (2011) also support this view, noting that visual learners tend to excel when instruction includes visually oriented methods. Consequently, educational environments that incorporate image-based teaching tools—such as videos, illustrated handouts, and written summaries—can greatly enhance comprehension and retention for visual learners.

Auditory learners, who made up a significant proportion of participants, process information primarily through listening. These students benefit from spoken instruction, such as lectures, discussions, and verbal repetition. In this study, auditory learners demonstrated a strong preference for interactive classes where they could discuss, debate, or hear detailed explanations. They exhibited talents in verbal expression, including Qur'an recitation, public speaking, and storytelling. Their interest in discussions and verbal interaction reflects their reliance on auditory input to internalize content. During class, auditory learners often appeared focused while listening and frequently engaged in dialogue to clarify ideas. These findings are consistent with the VARK model, which highlights the effectiveness of audio-based input for these learners (Fleming & Mills, 1992). Dunn and Dunn (1978) further emphasized that auditory learners respond well to varied voice intonations, verbal repetition, and oral feedback. Thus, to support auditory learners, instructors can adopt teaching methods such as interactive lectures, podcasts, debates, and audio recordings to reinforce key concepts.

Kinesthetic learners, while the smallest group among the three styles, presented distinctive characteristics as well. These learners prefer learning through physical activity and hands-on experiences. They tend to absorb information while engaged in movement or through the use of tactile objects. In this study, kinesthetic learners reported a tendency to memorize while moving, doodling during lectures, and repeating information by writing or speaking aloud. They expressed interest in physical activities such as sports, practicums, or interactive learning experiences. Their talents often lay in areas that require physical coordination, such as public speaking, leadership in student organizations, and technological tasks involving manual engagement. The observations align with Fleming and Mills' (1992) description of kinesthetic learners, who retain information better when learning is connected to physical movement or direct experience. Additionally, Dunn and Dunn (1979) stress the importance of incorporating physical activity into instruction for kinesthetic learners, while BlueJurnes and Gardner (1995) point to kinesthetic individuals often having strong communication skills and high bodily-kinesthetic intelligence. Instructors can support these students through experiential learning, such as simulations, project-based assignments, laboratory work, and role-playing activities.

When analyzing the distribution of learning styles among outstanding students at UIN Ar-Raniry, visual learning was the most prevalent (37.5%), followed by auditory (33.33%) and kinesthetic (29.16%). This pattern reflects global trends where visual learners typically constitute the majority. According to Fingerprint Consulting Labs (2013), approximately 60% of the population are visual learners, followed by 30% auditory, and only 10% kinesthetic. The results from this study, although with slightly different proportions, support these general findings. This trend may be influenced by

several factors, including the academic environment, cultural traditions, and the evolution of educational technology.

The academic environment at UIN Ar-Raniry, which integrates Islamic and modern sciences, also supports the dominance of visual learning styles. Many courses—particularly those in Islamic studies, jurisprudence, and the interpretation of classical texts—require extensive reading and memorization. Visual tools such as diagrams, charts, and colored annotations help students to process complex information. As noted by Gunawan (2012), the visual modality enhances comprehension of abstract content, especially in text-heavy disciplines. Moreover, the teaching approach at UIN Ar-Raniry often involves the use of visual aids such as PowerPoint presentations, learning videos, and written handouts, which reinforces students' reliance on visual strategies (Putra & Purwasih, 2015).

Cultural factors in Aceh also play a role in shaping learning preferences. Traditional Qur'anic education in Aceh often emphasizes visual memorization using colored mushafs and handwritten exercises, fostering early familiarity with visual-based learning (Gade & Sulaiman, 2019). Exposure to calligraphy and visual arts further contributes to the development of visual literacy among students. These educational and cultural experiences may explain the strong preference for visual learning styles in this population.

The implications of learning styles for student achievement are significant. High-achieving students at UIN Ar-Raniry demonstrated a strong correlation between their preferred learning style and their areas of academic and extracurricular excellence. Students with a visual learning style tended to achieve in areas such as writing, design, drawing, and Qur'anic memorization. This corresponds with the ability of visual learners to process symbolic and textual information effectively (Fleming & Baume, 2006). In contrast, auditory learners showed strengths in speech-related activities, including poetry readings, public lectures, Qur'an recitation, and tajweed. Their success stems from their ability to comprehend auditory cues and perform confidently in verbal contexts (Dunn, Dunn, & Price, 1981; Papilaya & Huliselan, 2016).

Kinesthetic learners demonstrated achievement in technology, leadership, and religious studies, including reading classical texts and memorizing the Qur'an. Their preference for experiential learning allows them to excel in dynamic environments that involve movement, application, and real-time interaction. As Hernacki (2010) emphasizes, kinesthetic learners thrive when they are actively engaged in the learning process through direct participation and manipulation of learning materials.

The effectiveness of learning is strongly influenced by the alignment between the teaching method and the learner's preferred modality. Students who are taught using strategies that correspond to their learning style show improved understanding, retention, and performance. For example, visual students benefit from charts and written notes; auditory learners gain from discussions and oral explanations; and kinesthetic learners thrive in project-based or lab-oriented tasks (Fleming, 1995; Kolb, 2014). This alignment not only enhances academic performance but also boosts student motivation and engagement. When students experience learning in a mode that feels natural to them, they are more likely to stay focused, participate actively, and enjoy the learning process.

The role of motivation and interest in learning cannot be overstated. Students who are taught in ways that align with their learning preferences tend to exhibit greater enthusiasm and effort. Visual learners are more motivated when tasks involve visual presentations; auditory learners become more engaged in oral discussions; and kinesthetic learners show more interest in active and participatory assignments (Fleming & Baume, 2006; Gunawan, 2012; Hernacki, 2010). Increased motivation, in turn, contributes to better academic outcomes and personal development.

These findings suggest that higher education institutions should take learning styles into account when designing instructional strategies. A flexible, multimodal approach that incorporates visual, auditory, and kinesthetic elements can create a more inclusive learning environment. For example, combining lectures with visual presentations and practical applications allows students of different

learning styles to benefit simultaneously. Integrating technology — such as multimedia tools, interactive platforms, and simulation software—can also help accommodate diverse preferences, thereby promoting both academic and non-academic success.

To place these findings within a broader context, comparisons with previous studies further validate the dominance of visual learning styles. Fleming and Mills (1992) noted that a large proportion of students preferred visual or multimodal learning in their original VARK model. Gilakjani (2012) also observed the visual learning style to be most common across various educational institutions, followed by auditory and kinesthetic. Pashler et al. (2008), while cautioning against overemphasis on tailoring instruction solely based on learning styles, acknowledged that students exhibit identifiable preferences that can influence how they respond to different teaching methods. Thus, the results of this study are consistent with global trends while emphasizing the need for balanced and adaptive pedagogy.

Despite these insights, challenges remain in implementing learning style-based instruction. Not all instructors are equipped to deliver multimodal teaching effectively, and some classrooms may lack the resources for visual media or practical engagement. Students themselves may not be fully aware of their learning styles, limiting their ability to adopt strategies that suit their strengths. Additionally, rigid course structures and dense curricula often restrict the use of differentiated instruction. These barriers call for increased faculty training, investment in educational technology, and a more learner-centered curriculum design.

In conclusion, this study highlights the importance of recognizing and supporting diverse learning styles among high-achieving students at UIN Ar-Raniry. Visual learning was found to be the most dominant, followed by auditory and kinesthetic, consistent with broader research. Learning styles were shown to influence academic and non-academic achievement, motivation, and engagement. Therefore, by adopting instructional approaches that accommodate various learning preferences, educational institutions can foster a more inclusive and effective learning environment that promotes success for all students.

4. CONCLUSION

This study concludes that the dominant learning style among outstanding students at UIN Ar-Raniry Banda Aceh is visual (37.5%), followed by auditory (33.33%), and kinesthetic (29.16%). Visual learners absorb information best through reading, writing, and seeing; auditory learners through listening and verbal interaction; and kinesthetic learners through movement, touch, and physical activity. The effectiveness of each learning style in supporting student achievement depends on the alignment between individual learning preferences and the instructional methods used, as well as students' adaptability and use of appropriate strategies. These findings highlight the importance of integrating varied teaching methods into the curriculum — such as visual aids, discussions, and hands-on activities — to accommodate different learning styles and maximize student potential. However, the study is limited by its small sample size of 24 students, which may not fully represent the broader population of high-achieving students, and by its descriptive design, which does not examine other influential variables such as socioeconomic background, instructional quality, or environmental factors. Future research should involve a larger and more diverse sample using a mixed-methods approach to provide deeper insights into how learning styles interact with other factors to influence achievement. Additionally, further studies are encouraged to evaluate the effectiveness of learning style-based interventions when systematically integrated into the educational process.

REFERENCES

- Chamorro-Premuzic, T., & Furnham, A. (2008). Personality, intelligence and approaches to learning as predictors of academic performance. *Learning and Individual Differences*, 19(1), 49–53. <https://doi.org/10.1016/j.lindif.2008.07.001>
- Coffield, F., Moseley, D., Hall, E., & Ecclestone, K. (2004). Learning styles and pedagogy in post-16 learning: A systematic and critical review. Learning and Skills Research Centre. <https://dera.ioe.ac.uk/5829/>
- DePorter, B., & Hernacki, M. (2000). *Quantum learning: Unleashing the genius in you*. Dell Publishing.
- Dunn, R., & Dunn, K. (1978). *Teaching students through their individual learning styles: A practical approach*. Reston Publishing.
- Dunn, R., & Dunn, K. (1993). *Teaching secondary students through their individual learning styles: Practical approaches for grades 7–12*. Allyn & Bacon.
- Dunn, R. S., Dunn, K., & Price, G. E. (1981). *Learning style inventory*. Price Systems.
- Fingerprint Consulting Labs. (2013). *Dermatoglyphics multiple intelligence test manual*. Fingerprint International.
- Fleming, N. D. (1995). I'm different; not dumb. Modes of presentation (VARK) in the tertiary classroom. In A. Zelmer (Ed.), *Research and Development in Higher Education*, 18, 308–313.
- Fleming, N. D. (2001). *Teaching and learning styles: VARK strategies*. Christchurch, New Zealand: Neil Fleming.
- Fleming, N. D., & Baume, D. (2006). Learning styles again: VARKing up the right tree! *Educational Developments*, 7(4), 4–7.
- Fleming, N. D., & Mills, C. (1992). Not another inventory, rather a catalyst for reflection. *To Improve the Academy*, 11(1), 137–155.
- Gade, A., & Sulaiman, T. (2019). Islamic education in Aceh: Tradition and transformation. *Indonesian Journal of Islamic Education Studies*, 3(1), 35–48.
- Gardner, H. (1999). *Intelligence reframed: Multiple intelligences for the 21st century*. Basic Books.
- Gardner, H. (2011). *Frames of mind: The theory of multiple intelligences*. Basic Books.
- Gilakjani, A. P. (2012). Visual, auditory, kinaesthetic learning styles and their impacts on English language teaching. *Journal of Studies in Education*, 2(1), 104–113.
- Gunawan, H. (2012). *Pendidikan karakter: Konsep dan implementasi*. Alfabeta.
- Hernacki, M. (2010). *Quantum learning*. Kaifa.
- Kolb, D. A. (2014). *Experiential learning: Experience as the source of learning and development* (2nd ed.). Pearson Education.
- Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis: A methods sourcebook* (3rd ed.). SAGE Publications.
- Papilaya, P. M., & Huliselan, E. K. (2016). Learning style and its impact on student academic achievement. *International Journal of Educational Research Review*, 1(2), 96–101. <https://doi.org/10.24331/ijere.309963>
- Pashler, H., McDaniel, M., Rohrer, D., & Bjork, R. (2008). Learning styles: Concepts and evidence. *Psychological Science in the Public Interest*, 9(3), 105–119. <https://doi.org/10.1111/j.1539-6053.2009.01038.x>
- Putra, Z. A., & Purwasih, R. (2015). Pengaruh penggunaan media pembelajaran terhadap hasil belajar siswa. *Jurnal Pendidikan dan Pembelajaran*, 22(2), 112–118.
- Sardiman, A. M. (2011). *Interaksi dan motivasi belajar mengajar*. Jakarta, Indonesia: RajaGrafindo Persada.

Zhang, L. F., & Sternberg, R. J. (2005). A threefold model of intellectual styles. *Educational Psychology Review*, 17(1), 1–53. <https://doi.org/10.1007/s10648-005-1635-4>