

Learning Styles of Elementary School Students in EFL Contexts: A VAK-Based Analysis

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Abstract

Understanding students' learning preferences is essential for designing developmentally appropriate and meaningful English instruction at the elementary level, particularly in English as a Foreign Language (EFL) context. However, empirical evidence on learning style tendencies of elementary EFL learners within the Visual–Auditory–Kinesthetic (VAK) framework remains limited, especially in the Indonesian context. This study aimed to identify dominant learning styles among upper-grade elementary school students and to compare these tendencies across grade levels. A descriptive cross-sectional survey design with comparative descriptive analysis was employed. The participants were 56 fourth-, fifth-, and sixth-grade students from a public elementary school in Indonesia during the 2025/2026 academic year. Data were collected using a 30-item VAK-based learning styles questionnaire and analyzed using descriptive statistics, including frequencies and percentages. The findings revealed that visual learning style was the most dominant preference, accounting for 70% of the participants. Visual tendencies were consistently observed across grade levels, with 75.0% in fourth grade, 68.2% in fifth grade, and 66.7% in sixth grade. These results indicate that visual input plays a significant role in supporting English learning among upper-grade elementary students. This study provides empirical support for learner-responsive and visually supported instructional practices to promote meaningful EFL instruction in elementary school contexts, while acknowledging limitations related to sample size and self-reported data

Keywords: *EFL classroom, elementary school students, learning styles, meaningful teaching, VAK framework*

Introduction

Effective instruction in basic English classrooms necessitates that educators comprehend the unique attributes of kids, encompassing their learning preferences and developmental requirements. In English as a Foreign Language (EFL) settings, novice learners gain advantages from pedagogical methods that are developmentally suitable and attuned to their learning input processing. Prior research suggests that differentiated instruction—characterized by the modification of instructional content, processes, and learning media to accommodate learner variances—can improve engagement and facilitate significant learning experiences in elementary English classrooms (Achmad et al., 2024; Hu, 2024; Spyropoulou et al., 2025).

Differentiated education underscores the congruence between instructional design and learners' sensory modalities, including visual, aural, and kinesthetic preferences. Studies indicate that instruction tailored to various modalities might enhance engagement and educational results, especially in language acquisition settings (ben Hassen et al., 2025; Clinton-Lisell & Litzinger, 2024; Dinsmore et al., 2022; Perrem, 2024).

Instructional tactics, along with learner-related and contextual factors, influence learning efficiency in elementary English classrooms.

Learning outcomes are influenced by internal elements, including motivation, interest, readiness, and cognitive development, as well as external factors such as teacher competency, family support, and the educational environment (Bich et al., 2025; Qian & Saidin, 2025). These elements interact dynamically and are especially significant at the elementary level, where students are still cultivating core learning habits.

From a developmental standpoint, elementary school students benefit from learning enhanced by tangible representations and facilitated engagement. Piaget's theory of cognitive development asserts that upper-grade elementary students predominantly operate within the concrete operational stage, where learning is facilitated through tangible and visually supported experiences rather than abstract concepts (Cerovac & Keane, 2025; De Simone & Ruggeri, 2022; Kwon et al., 2024). Furthermore, Vygotsky's sociocultural theory emphasizes the significance of instructional mediation, scaffolding, and learning aids in facilitating learners' meaning-making processes (Kamrani et al., 2024; Tabib, 2022; You et al., 2025). In EFL courses, visual aids, gestures, and organized activities function as mediational tools that facilitate language comprehension.

A significant learner-related element in educational research is learning style, which denotes the preferred methods by which learners receive and process information. Recognizing learning style preferences can aid educators in crafting instruction that is more adaptive and stimulating for elementary students (Çilogullari et al., 2021).

Primary education extensively utilizes the Visual–Auditory–Kinesthetic (VAK) framework among diverse learning style models. This paradigm classifies learners according to the predominant sensory modalities that facilitate their information processing (Fallace, 2023; Herliana et al., 2025). Empirical research indicates that visual learning preferences frequently prevail among elementary kids, especially in language acquisition settings (Çilogullari et al., 2021; Herliana et al., 2025; Kurnia, 2022). Nonetheless, the majority of current research concentrates on secondary or higher education, whereas investigations on learning style preferences among elementary EFL learners—particularly across several upper-grade levels—are few in the Indonesian context.

Under the Merdeka Curriculum, Indonesian schools are urged to adopt learner-centered and differentiated instruction that takes into account students' characteristics and learning requirements (Kemendikbudristek, 2022). Notwithstanding this policy orientation, English instruction in numerous elementary schools persists in employing relatively standardized teaching methodologies, with minimal empirical regard for children's learning style preferences (Achmad et al., 2024; Gao et al., 2024; Guo & Li, 2025; Lena & Nikolov, 2025). Despite criticisms of the VAK framework for its oversimplification of learning processes (Fallace, 2023; Istiqomah & Suryadarma, 2023; Mayer, 2024), it continues to serve as a valuable descriptive tool for examining learning preferences in primary EFL settings.

This study seeks to examine the learning style preferences of upper-grade primary pupils in English language acquisition through the VAK framework. This study specifically examines the following research questions:

1. What learning style characteristics do upper-grade elementary kids exhibit in their English language acquisition?
2. In what ways do these learning style tendencies differ among fourth, fifth, and sixth graders?

The results are anticipated to furnish empirical information to assist educators in crafting differentiated, developmentally suitable, and learner-centered English instruction at the elementary level.

Method

This study employed a descriptive cross-sectional survey design with comparative descriptive analysis, which is commonly used to describe learners' characteristics and tendencies based on numerical data collected at a single point (Alsulami, 2023; Cvetkovic-Vega et al., 2021; Li et al., 2025; Ziauddin et al., 2023). The descriptive approach was applied to identify students' learning style preferences as they naturally occurred, without manipulating instructional variables or testing causal relationships.

The cross-sectional nature of the design allowed the researcher to capture a snapshot of upper-grade elementary students' learning style tendencies in an English as a Foreign Language (EFL) context during the 2025/2026 academic year. In addition, a comparative descriptive analysis was employed to compare the distribution of learning style tendencies across grade levels (fourth, fifth, and sixth grades), focusing on identifying patterns and similarities rather than statistically significant differences. This design was considered appropriate for the exploratory purpose of the study, which aimed to describe dominant learning style tendencies and their distribution across grade levels in elementary EFL classrooms. Participants The participants consisted of 56 upper-grade elementary school students, comprising 16 fourth graders, 22 fifth graders, and 18 sixth graders, enrolled at a public elementary school during the 2025/2026 academic year. A total sampling technique was employed, in which all students from the targeted grade levels were included to obtain a comprehensive representation of learning style tendencies within the population (Abdollahi et al., 2025; Andrade, 2021).

Instrument

Data were collected using a learning styles questionnaire adapted from the Learning Styles Survey: Assessing Your Learning Styles developed by Cohen, Oxford, and Chi (2001). The instrument was designed to examine students' learning preferences based on the Visual–Auditory–Kinesthetic (VAK) framework, which conceptualizes learning styles as learning tendencies rather than fixed or rigid learner traits.

The questionnaire consisted of 30 items, evenly divided into three sections: Visual (10 items), Auditory (10 items), and Kinesthetic (10 items). Each item employed a five-point Likert scale, ranging from 0 (never) to 4 (always), allowing students to indicate the frequency with which each statement reflected their learning behavior in English learning activities.

To ensure linguistic appropriateness and comprehensibility for elementary school students, the questionnaire was translated into Indonesian through a forward translation process. Wording adjustments were made to align the items with students' language proficiency levels and cognitive development. The adapted instrument was then evaluated through an expert judgment process involving two experts in English language education. The experts independently reviewed the questionnaire to assess content clarity, age appropriateness, and relevance to the elementary EFL learning context. Following the independent review, the experts discussed their feedback to resolve discrepancies and reach a consensus on item suitability. Minor revisions were made based on this consensus process to improve clarity and contextual relevance. Consensus was achieved through discussion rather than numerical agreement coefficients, as the purpose of expert judgment was qualitative content validation rather than statistical reliability estimation (Creswell & Creswell, 2018).

Data Collection Procedure

The school administration gave permission for data collection to take place during regular school hours. The questionnaire was administered in students' respective classrooms. Prior to completion, the researcher explained the purpose of the study and provided clear instructions on how to respond to the questionnaire items.

Students completed the questionnaire individually. For fourth-grade students, brief assistance was provided to clarify instructions and unfamiliar terms without influencing their responses. Fifth- and sixth-grade students completed the questionnaire independently. The average time required to complete the questionnaire ranged from 20 to 25 minutes.

Data Analysis

Students' responses in each learning style category were summed to obtain total scores for Visual, Auditory, and Kinesthetic learning preferences. The learning style with the highest total score was identified as the student's dominant. When two learning style categories obtained equal or nearly equal scores, with a difference of no more than one point, the student was categorized as having a combined learning style.

Data analysis was conducted using descriptive statistical techniques, including frequencies and percentages, to identify overall learning style tendencies and to compare their distribution across grade levels. This analytical approach is widely recommended in survey-based educational research aimed at describing patterns and trends rather than testing causal relationships or statistical significance (Fraenkel et al., 2012).

Ethical Considerations

Prior to data collection, permission was obtained from the school, and students' participation was voluntary. All responses were treated confidentially, and participants' identities were anonymized to ensure that ethical research standards were upheld throughout the study.

Methodological Consideration

Although the VAK framework has received criticism regarding the rigid classification of learners, it was employed in this study as a descriptive analytical tool to explore students' learning preferences rather than as a prescriptive instructional model. The framework was used to identify learning style tendencies that may inform instructional planning in elementary EFL classrooms, consistent with previous educational research practices (Dinsmore et al., 2022; Papadatou-Pastou et al., 2021; Tozlu Kılıç & Balaman, 2023).

Results

An analysis of 56 completed questionnaires identified four learning style preferences among upper-grade primary school students in the EFL context: Visual (V), Auditory (A), Kinesthetic (K), and a combined Visual-Auditory (V-A) style. We determined an individual's learning style by analyzing their cumulative results across all three areas. The highest score indicated their predominant learning method. This technique perceives learning preferences as relative trends rather than immutable characteristics of the learner.

A total of 39 students (70%) indicated a preference for visual learning, making it the predominant choice. Nine students (16%) favored auditory learning, six students (11%) chose kinesthetic learning, and a small number of students (3%) exhibited a combined

visual-auditory inclination. The significant score range within each category suggests that learning preferences exist on a continuum, reflecting varying levels of modality dependence rather than uniform groups.

Table 1 illustrates the distribution of learning styles among children in the fourth, fifth, and sixth grades. This facilitates the comparison of learning style tendencies across different grade levels.

Table 1.
Comparative Distribution of Learning Styles Across Upper-Grade Levels

Learning Styles	Grade 4 (n=16)	Grade 5 (n=22)	Grade 6 (n=18)	Total (n=56)	Percentage (%)
Visual (V)	12 (75.0%)	15 (68.2%)	12 (66.7%)	39	70%
Auditory (A)	3 (18.8%)	3 (13.6%)	3 (16.7%)	9	16%
Kinesthetic (K)	1 (6.2%)	3 (13.6%)	2 (11.1%)	6	11%
Visual-Auditory (V-A)	–	1 (4.6%)	1 (5.5%)	2	3%
Total	16 (100%)	22 (100%)	18 (100%)	56	100%

Table 1 indicates that the visual learning preference consistently emerged as the predominant choice, with the highest percentage of pupils in fourth grade (75.0%), followed by fifth grade (68.2%) and sixth grade (66.7%). Despite the consistency in visual preference, the gradual decline across grade levels indicates an increasing diversity in learning styles as pupils progress through upper elementary school.

Figure 1 illustrates the distribution of learning styles to enhance data readability and facilitate comparisons across various grade levels.

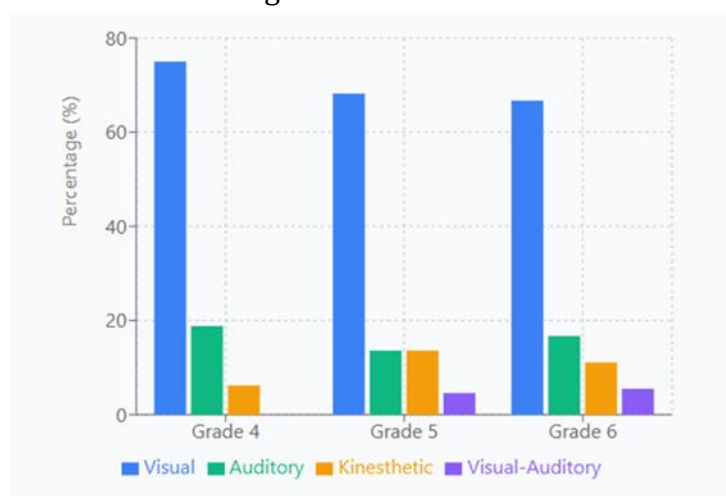


Figure 1. Distribution of Learning Styles Across Upper-Grade Elementary Students

A combined Visual–Auditory learning method was seen exclusively in the fifth and sixth grades. Auditory and kinesthetic learning preferences were observed across all grade levels, though in markedly lower proportions compared to visual preference.

Discussion

The prevalence of visual learning preferences across all upper-grade levels can be examined from a developmental standpoint. Piaget's cognitive development theory asserts that upper-grade primary students primarily operate within the concrete operational stage, where learning is enhanced through observable and visually mediated stimuli (Cerovac & Keane, 2025; De Simone & Ruggeri, 2022). Visual aids such as images, diagrams, and textual examples facilitate students in organizing knowledge, connecting

new linguistic input to existing understanding, and enhancing the acquisition of English. The little decline in visual dominance from fourth to sixth grade may indicate that pupils are gradually transitioning towards more abstract processing and increased linguistic demands, necessitating greater attention to auditory input and the utilization of multiple communication modalities.

The emergence of a Visual–Auditory learning style in fifth and sixth grades reinforces this interpretation. Students with combination preferences had equal ability in visual and auditory modalities, indicating the flexible use of several sensory channels rather than reliance on a single dominating mode. This conclusion aligns with sociocultural theories positing that learning is enhanced by tools, interaction, and instructional context (Vygotsky), and that learners adapt their learning strategies based on instructional demands (Kamrani et al., 2024; Tabib, 2022). Children may demonstrate increased engagement with both auditory and visual stimuli as pedagogical approaches in advanced grades increasingly integrate verbal explanations, discussions, and collaborative activities.

The relatively low incidence of kinesthetic learners may be associated with limited opportunities for movement-based and experiential learning in Indonesian elementary EFL programs. In public schools, English instruction frequently emphasizes the use of textbooks, board writing, and visually oriented materials. This situation is due to insufficient time, an excess of pupils, and inadequate teacher training (Achmad et al., 2024; Huda et al., 2022; Tárraga-Mínguez et al., 2021).

Contextual factors in the Indonesian EFL setting highlight the dominance of visual learning preferences. Exposure to English outside the classroom is limited, as it is rarely utilized in everyday communication, hence reducing learners' opportunities to improve auditory sensitivity through natural interaction (Menggo et al., 2025; Permana & Rohmah, 2024). Numerous public elementary schools lack sufficient resources, leading them to prioritize printed and static visual materials over interactive or kinesthetic learning approaches. These instructional conditions likely influence student learning and the development of their learning preferences.

The frequency of visual learning preferences supports trends identified in previous studies (Çilogullari et al., 2021; Herliana et al., 2025; Kurnia, 2022). This study's value lies in its context-specific and grade-level analysis of learning style trends among upper-grade primary EFL learners in Indonesia. The findings indicate that visual support remains crucial, particularly in the early upper-grade levels. As students enhance their linguistic and cognitive abilities, they should also incorporate more auditory and interactive elements. These results underscore the imperative of employing flexible, multimodal pedagogical approaches rather than rigidly conforming education to a particular learning style categorization. Visual methods like pictures, charts, and videos are helpful, but they should be combined with organized listening activities, storytelling, simple role-playing, and physical response tasks that can be done in Indonesian elementary schools. This approach aligns with the learner-centered and differentiated principles advocated by the Merdeka Curriculum (Kemendikbudristek, 2022).

This study possesses limitations notwithstanding its contributions. The use of a single-school sample limits the generalizability of the findings, and reliance on self-reported questionnaire data reflects learners' perceived preferences rather than actual learning behaviors. It is advisable for future research to utilize mixed-method designs, including classroom observation and performance-based assessments, to investigate the relationship between learning preferences, instructional strategies, and learning outcomes over time. This study provides contextual empirical data on learning style preferences among upper-grade primary EFL students and raises the issue of

developmentally suitable and multimodal instructional design in elementary English classes.

Conclusion

This study improves the understanding of learning style patterns among upper-grade elementary students in EFL contexts by providing a grade-level analysis inside the Indonesian educational system. Previous research has demonstrated the prevalence of visual learning preferences in elementary students; this study expands on existing findings by showing that visual dominance remains relatively stable through fourth, fifth, and sixth grades, while gradually giving way to more integrated learning preferences, particularly Visual–Auditory combinations. This trend suggests that primary kids begin to utilize numerous senses as they progress to higher grades, rather than relying on a single sense. This study provides context-specific data regarding the distribution and evolution of learning style preferences among upper-grade levels in Indonesian basic EFL classes, rather than exclusively emphasizing visual learning dominance as the primary contribution. The findings indicate that visual support remains crucial, particularly in fourth-grade instruction. The progressive transition toward integrated learning preferences indicates the necessity of incorporating additional auditory and interactive components as students become increasingly linguistically and cognitively prepared.

The findings suggest that English educators in Indonesian public elementary schools, often hampered by restricted instructional time and large class sizes, can utilize differentiated instruction by strategically sequencing learning activities. For example, visual media can be employed to present new linguistic input, followed by structured speech practice and fundamental movement-based exercises that facilitate comprehension with minimal resources. This approach aligns with the principles of the Merdeka Curriculum and facilitates learner-centered pedagogy. The single-school sample and reliance on self-reported data, which reflect perceived learning preferences rather than actual learning activities, limit this valuable study. Future study ought to encompass several schools, employ mixed-method or longitudinal designs, and examine the effects of learning style-responsive instruction on English learning outcomes throughout elementary grade levels.

Future study should employ larger and more diverse samples across different elementary school environments to enhance the generalizability of findings related to learning style inclinations in EFL programs. Comparative studies across different geographies or types of schools may clarify the contextual effects on children's learning choices. To improve methodological rigor, future studies may utilize mixed-methods or experimental designs to examine the effects of learning style-responsive or multimodal training on English learning outcomes. These methods align with constructivist principles, emphasizing that learners actively construct their knowledge through real-world experiences (Cerovac & Keane, 2025; De Simone & Ruggeri, 2022; Kwon et al., 2024) and social interaction within meaningful learning contexts (Kamrani et al., 2024; Tabib, 2022; You et al., 2025).

In light of ongoing critiques of the VAK framework, subsequent scholars are encouraged to integrate learning style analysis with more holistic pedagogical models, such as Universal Design for Learning (UDL), which promotes instructional flexibility and accessibility for a varied spectrum of learners. This integration may provide a theoretically sound and complete framework for understanding learning preferences in elementary EFL instruction, guided by research findings for future studies or other researchers.

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