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Exploring language learning styles and academic achievement among Iranian senior high school EFL students

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Abstract

This study aimed to investigate the relationship between language learning styles and academic achievement among Iranian senior high school EFL students. The study addressed a gap in the literature regarding the impact of learning styles on EFL students' performance in Iran, as few studies have explored this connection in this specific educational context. The target sample consisted of 40 randomly selected 11th-grade students from two public schools in Kazerun, Fars province, Iran. The VARK Learning Style Index was used to identify the students' preferred learning styles, and their final exam achievement test scores were used to measure academic performance. Descriptive statistics were employed to analyze the data. The results revealed that the majority of students were auditory learners, followed by kinesthetic and reading/writing learners, with visual learners making up the smallest group. Notably, auditory learners achieved the highest mean test scores, indicating a potential link between auditory learning preferences and academic success. These findings suggest that recognizing and adapting to individual learning styles, particularly auditory preferences, can enhance student engagement and academic achievement. The study provides valuable insights for educators aiming to optimize language instruction based on students' learning style profiles.

Keywords: Academic achievement; EFL learner; learning style.

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1. INTRODUCTION

Over the past few decades, the world has experienced profound cultural, social, political, and technological transformations. In response to these changes, individuals have had to adapt to new demands, with language learning emerging as a critical necessity in modern life. Motivated by factors such as studying at English-medium universities or living abroad, people around the globe are increasingly striving to acquire additional languages, making it imperative for societies to foster and support language learning.

Learning styles play a pivotal role in language acquisition by shaping how individuals process and analyze information. These styles are believed to influence academic performance as instructional strategies tailored to students' preferred learning methods have been shown to enhance learning outcomes. Empirical evidence suggests that aligning teaching practices with individual learning preferences can improve academic performance, particularly as students who struggle often exhibit learning styles that differ markedly from those of high achievers.

Historically, the importance of individual learning preferences has gained recognition within foreign language education. Educational authorities are now advocating for learner-centered approaches rather than traditional teacher-centered methods. A thorough understanding of individual learning style preferences not only helps students recognize their learning processes but also contributes to improved academic performance and broader educational outcomes. Furthermore, the field of second language acquisition generally assumes that varying instructional strategies can yield different learning outcomes, thereby accelerating the language learning process while conserving time and energy.

In the context of English as a Foreign Language (EFL), it is essential for educational institutions and instructors to explore the factors that contribute to academic success. One critical area of inquiry is the relationship between learning styles and performance on achievement tests among Iranian EFL learners. Although previous research has primarily focused on differences among learners at similar proficiency levels, there remains a notable gap in understanding how differentiated learning styles impact academic performance in the Iranian context.

1.1. Literature review

1.1.1. Learning styles

Studying can be conceptualized as a cognitive process that involves receiving information and then processing it. The way a student learns is influenced by a variety of factors, which can be understood as dimensions of learning styles. These styles can be broadly categorized into four general dimensions. First, the cognitive dimension pertains to how individuals process information as they comprehend, retain, solve problems, and interact with others. Second, the affective dimension relates to the personal aspects of learning, encompassing characteristics such as attention, emotion, motivation, curiosity, boredom, anxiety, and feelings of defeat. Third, the physiological dimension considers the biological factors that affect learning, while the psychological dimension involves the inner intensity and identity of the learner.

Recognizing and catering to diverse learning styles is critical because these styles are fundamental in determining how effectively students acquire a second or foreign language. Learning styles represent the overall patterns that guide learning behavior, underscoring individual differences in learning strategies. Some scholars define learning style as a pervasive quality in an individual's learning behavior, reflecting how students support and utilize the stimuli they encounter during the learning process. Others emphasize that learning style involves the integration, organization, and processing of received information. Additionally, aspects such as information analytics and lateralized brain functions further influence how learners respond to their educational environment, both abstractly and concretely.

1.1.1.1 VARK Learning Style

The VARK model, developed by Fleming & Vark (2009), categorizes students based on their interaction with and response to the learning environment. This model divides learners into four distinct types: Visual learners,

who learn best through observation and visual presentations such as diagrams, pictures, and figures; Auditory learners, who absorb information most effectively through listening and verbal instructions, such as lectures and discussions; Reading/Writing learners, who excel by taking notes during lectures or engaging with written texts like books and articles; and Kinesthetic (Practical) learners, who learn best by doing, through hands-on experiences and the manipulation of objects in physical tasks. These categories help to identify the different ways in which students prefer to process and engage with new information, ultimately enhancing the effectiveness of their learning experiences.

1.1.2. Academic achievement test

Assessing students' proficiency in the English language and identifying areas for improvement are essential components of the evaluation process in teaching English to non-native speakers. This process not only measures students' skill levels but also evaluates the effectiveness of the language instruction provided. Once these aspects are assessed, educators can design curricula that cater to the specific needs of their students. Consequently, assessment and evaluation must be conducted with precision and high quality (Meidasari, 2017).

Teachers can gauge students' comprehension and application of information through various assessment methods. These tools help identify students' weaknesses, enabling targeted interventions to address those areas, which is fundamental to effective teaching. In the educational context, measurement refers to determining the accuracy of a student's knowledge, skills, and abilities (Kim et al., 2019). Evaluation involves making judgments about a student's knowledge and abilities based on established standards (Andrade & Brookhart, 2020). Both measurement and evaluation are essential for tracking academic progress, identifying strengths and weaknesses, supporting student development, and evaluating the quality of education. These processes can be carried out using a range of tools, including tests, exams, projects, performance assessments, and others. Achievement tests are among the most widely used measurement tools. These tests assess students' knowledge and skills in a specific subject (Borghans et al., 2016). Typically, these tests serve as instruments that quantify the level of educational development attained by students through their coursework over a specified period, encompassing their acquired knowledge, competencies, and attitudes based on prior learning experiences (Reynolds et al., 2021).

1.2. Purpose of study

A large number of learning style models have been widely used to explain individual differences in learning. This paper utilized the VARK language learning styles questionnaire designed by Fleming & Vark (2009) to record the students' current styles of learning, including Visual (V), Auditory (A), Read/Write (R), and Kinesthetic (K) learning styles. However, the current study aims to have a closer look at the learning style preferences and academic achievement of Iranian senior high school EFL students. Therefore, the following research questions were raised.

1. What are the major and minor sensory modality preferences of the students – Auditory, Visual, Read/Write, Kinesthetic?

2. Which modality of learning styles outperforms others in academic achievement tests?

2. METHOD AND MATERIALS

2.1. Research design

This study employed a descriptive research design to investigate the overall language learning styles and academic achievement scores among Iranian senior high school EFL students. The sample consisted of 40 randomly selected 11th-grade students from two public schools in Kazerun, Fars Province, Iran. The VARK Learning Style Index was used to identify students' learning preferences, while their overall language achievement was measured using final exam scores. Descriptive statistics were utilized to analyze the data and assess the potential differences between learning styles and academic achievement.

2.2. Participants

A total of 40 male 11th-grade EFL (English as a Foreign Language) students were randomly selected from two classes (20 students per class) at Shahid Alipour Golestan High School, a public institution located in the metropolitan city of Kazerun, Shiraz, Iran, to participate in the survey. The mean age of the student participants was 17 years, with ages ranging from 16 to 18 years. The students came from diverse educational backgrounds, including both private and public-school graduates. However, for this study, the influence of demographic variables on learning styles and strategies was not considered.

The participants had been exposed to the English language during both their previous (middle school) and current (high school) education. All students, regardless of their major, were required to take English as a compulsory subject in their current studies. Additionally, none of the participants had any prior experience of living or studying abroad.

In accordance with ethical guidelines, all participants were fully informed about the purpose of the study. Participation was entirely voluntary, and students were assured that their decision to participate or not would not impact their grades or the support they received from the high school. The participants' names and identities were not included on the questionnaires or answer sheets, ensuring anonymity. All completed questionnaires were kept confidential, and all computerized data were securely stored on a password-protected computer.

2.3. Data collection instruments

The first instrument used to assess learning style preferences was the VARK learning styles questionnaire (Fleming & Vark, 2009). This instrument examines four primary aspects of learning styles: visual, auditory, read/write, and kinesthetic. The questionnaire consists of 16 multiple-choice items, each with four possible answers. Participants were instructed to select more than one option if multiple responses applied. Completion of the questionnaire was considered as obtaining informed consent. The distribution of VARK preferences was then calculated according to the guidelines provided on the VARK website (https://vark-learn.com).

The second instrument used in this study was the official final written standard achievement test, which is administered at the end of each academic year in the Iranian General Ministry of Education system. This standardized test, developed annually, is widely recognized for its reliability and validity. The test was based on the content of the official textbooks, the regulations of the Department, and the rules enforced by Iran's Ministry of Education for 11th-grade students in Khordad 1403.

The achievement test is divided into five distinct sections, with a total score of 40 points. Each section measures different aspects of English language proficiency: vocabulary (6 points), listening comprehension (9 points), grammar and structure (7 points), reading comprehension (10 points), and writing (8 points). The test requires students to answer questions within a total time limit of 120 minutes, thus evaluating their overall proficiency in the English language.

2.4. Data collection procedures

Before administering the questionnaires, the participants were informed two months before their final exams that participation in the study was voluntary and they had the right to decline. They received brief instructions on how to respond to the scale items to ensure clarity and understanding of what was expected. Additionally, participants were assured that their data would be stored anonymously. Confidentiality and anonymity were maintained throughout the analysis and reporting of the data. Furthermore, participants were informed of their right to withdraw from the study at any time without any consequences.

The academic achievement test was administered on the 24th of Khordad, 2024. Qualified administrators and supervisors from the Ministry of Education oversaw the test administration, data collection, and

subsequent analysis. This process was designed to assess the test's effectiveness and to support the intended inferences and decisions regarding student performance.

The achievement scores derived from students' academic records served as an objective measure of their English language proficiency and academic performance. By comparing these scores with the results from the learning style questionnaire, the researcher conducted a comprehensive analysis to explore potential correlations between students' learning style preferences and their performance on the academic achievement tests.

2.5. Data analysis

This study utilized quantitative data, which was analyzed using SPSS software (version 27). The data analysis was conducted at a descriptive level. To address the first and second research questions, descriptive statistics were employed to examine the differences in students' learning style preferences and their corresponding scores on the achievement tests.

3. RESULTS

The first research question aimed to identify the primary and secondary sensory modality preferences of Iranian senior high school EFL students. To assess the participants' learning style preferences, the original version of the VARK Test was administered. Descriptive statistics, including the mean scores and standard deviation of the learners' responses, were used to determine the dominant and least preferred sensory modalities. The data revealed a significant difference in the learning style preferences among the participants. The majority of students preferred the auditory learning style (40%), followed by read/write (22.2%), kinesthetic (17.8%), with the visual learning style being the least preferred at 8.9%.

Table 1

Descriptive Statistics of VARK Learning Styles for the Total Participants

		Frequency	Percent	Valid Percent	Cumulative Percent
VARK Learning Styles	Visual	4	8.9	10.0	10.0
	Auditory	18	40.0	45.0	55.0
	Read/Write	10	22.2	25.0	80.0
	Kinesthetic	8	17.8	20.0	100.0
	Total	40	88.9	100.0	

The second research question sought to determine which modality of learning styles outperforms others in academic achievement tests. For this purpose, the researcher runs descriptive statistics aiming at comparing means.

Descriptive statistics in Table 2 revealed that students with an auditory learning style had the highest mean achievement score of 14.33, suggesting they may perform better academically compared to other learning style groups in this study.

Table 2

Descriptive statistics for achievement test scores by learning styles

VARK Learning Styles	Mean	N	Std. Deviation
Visual	9.85	5	3.42
Auditory	14.33	19	4.03
Read/Write	12.72	12	4.60
Kinesthetic	10.62	8	4.50
Total	12.71	44	4.42

4. DISCUSSION

Using the VARK questionnaire to identify students' preferred learning styles is a vital strategy for enhancing the quality of the teaching and learning process. Self-awareness of individual learning styles enables students to select study techniques that align with their personal preferences. The VARK philosophy is grounded in the

belief that all individuals can learn effectively if their unique learning style is recognized. By understanding students' learning preferences, teachers can shift from their style to that of the students, avoiding the common pitfall where all students are expected to adopt one uniform learning approach. This shift helps to create more effective teaching structures that consider students' perspectives.

In this study, the majority of students were identified as auditory learners, while visual learners represented the smallest group. This distribution indicates a possible preference for auditory learning methods among the participants. Understanding these preferences is essential for educators aiming to adapt their teaching strategies to better engage students. A similar study conducted by Liu and Ginther (1990) on American students revealed that 20-30% preferred auditory learning, 40% favored visual learning, and 30-40% showed a preference for reading/writing and kinesthetic styles, either independently or in combination.

Further research could investigate why auditory learners outperformed others and explore whether specific teaching practices or elements of the curriculum contributed to their success.

5. CONCLUSION

In summary, the current study revealed that most students were identified as auditory learners, while a smaller group was categorized as visual learners. Furthermore, auditory learners outperformed their peers in terms of academic achievement test scores. It is important to note that successful learners often utilize multiple learning styles. In general, each student shows a certain preference for different learning styles, with one or more styles typically dominating their approach. The study also found that the learners strongly favored a physiological learning style, which integrates visual, auditory, and kinesthetic elements.

This research offers valuable insights into the learning style preferences of Iranian senior high school EFL students and their correlation with academic performance. The superior performance of auditory learners suggests promising areas for further exploration. These findings emphasize the need for educators to design instructional strategies that cater to a variety of learning preferences while also addressing other key factors influencing student success. Future research should aim to include larger and more diverse samples, investigate additional variables affecting academic performance, and consider longitudinal studies to track the long-term impact of learning styles on students' educational outcomes.

Further research could explore additional variables such as motivation, career orientation, emotional intelligence, and personality traits, which may act as intervening factors influencing learning and academic achievement. These factors could provide deeper insights into individual differences and their effects on achievement test scores. Additionally, longitudinal studies that track the same cohort of students over time could offer valuable insights into how learning styles and academic achievement evolve, helping to identify long-term trends and the potential impact of changing educational environments on student outcomes.

Conflict of Interest: The authors declare no conflict of interest.

Ethical Approval: The study adheres to the ethical guidelines for conducting research.

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