Analyzing the Impact of Learning Styles on Academic Performance in the English Language Courses among Year 1 Undergraduate Students in UNITAR International University

Siti Nor Amira Binti Baharudin, Dehvanai A/P Tanarajan, Divashini Subramaniam, Livyaa Darashinni A/P Ganesh

UNITAR International University

Abstract

The purpose of this study is to examine the learning style preferences among year 1 undergraduate students at UNITAR International University. Besides that, this study examines the impact of learning styles on academic performance in English language courses through Grade Point Average (GPA) and Cumulative Point Average (CGPA) among year 1 undergraduate students at UNITAR International University. This study is important because it let future teachers and students to recognize their preferred learning styles, which can lead to academic success. This study also explores ways to adjust learning styles to improve undergraduate students' academic performance in English language courses. The VARK model by Neil Fleming was used in this study as the theoretical framework. The questionnaire was distributed in a survey form to 50 respondents, and an interview was conducted with 3 interviewees. The key findings revealed that there is a highly significant and positive influence between learning styles (visual, auditory, kinesthetic, and reading/writing) and academic performance in English language courses. The implication of the study highlights how crucial it is to accommodate various learning preferences.

Keywords: Learning Styles, Academic Performances, Academic Success

Introduction

This study examines the impact of learning styles on academic performance in English language courses among first-year undergraduate students. The first chapter gives an overview of the study. This chapter will discuss the background of the study, the problem statement, outline the research objectives and research questions, the significance of the study, the definition of terms, and lead towards a summary of the chapter.

Background of Study

Since learning styles can have a big impact on learning and academic success, researchers and educators are becoming more interested in studying students' learning styles. According to earlier research, creating productive learning environments requires an awareness of and ability to accommodate the three types of learning preferences—visual, auditory, and kinesthetic. This study specifically looked at undergraduate students' academic performance and the relationship between their preferred learning styles and their English education accomplishments. A small sample of 39 students' preferred learning styles were evaluated through a survey that recorded their preferences in addition to quantifiable academic results like Grade Point Average (GPA) and English Placement Test (EPT) scores. According to the results, a significant 49% of the students preferred visual learning, 31% preferred kinesthetic learning, and 20% said they were auditory learners. The results of the statistical analysis showed a significant influence of learning styles on students' academic success, with a strong correlation (0.697) between academic performance and preferred learning styles (Melani Dwi Ariastuti, Achmad Yudi Wahyudin; 2023).

"How do people learn?" is perhaps the shortest question with the most comprehensive answer. Different people have different ways of processing, organizing, remembering, and applying information. Some people learn with consideration, while others process information more superficially (Komarraju, M., Karau, S.J., Schmeck, R.R. and Avdic, A. 2011; Izekor and Ojeaga, 2021). Numerous factors, some intrinsic and some extrinsic, influence teaching-learning processes, according to research. Consideration had been given to external factors like classroom type, learning methods, school location, learning resources, teacher experience, and so forth. It is estimated that an individual's inner variables—their emotions, attitudes, and behavioral reaction patterns—have a significant impact on the teaching-learning process. Personality refers to a unique pattern of emotion, attitude, and behavioral response that is consistent throughout an individual's life and makes them unique. (Cherry, K. 2018; Dogara, Saud, Kamin, Abd Hamid and Nordin, 2020) Once more, learning style is a preferred method of information acquisition as well as an individual characteristic. Due to their close relationship, personality traits play a big role in learning styles (Ibrahimoglu, N., Yousuf, N.H., Razzak, N.A. and Norshahidi, N.D. 2018; Dogara, Saud, Kamin, Abd Hamid and Nordin, 2020).

Students' ability to think critically is essential to learning, and it may be possible to determine how well they are doing academically (Komarraju, M., Karau, S.J., Schmeck, R.R. and Avdic, A. 2011; Sadasivan, Vijayalakshmi and Balachander, 2021). Students, instructors, parents, school officials, and the general public all have serious concerns about educational attainment (Eyong, E., David, B. and Umoh, A. 2020; Sadasivan, Vijayalakshmi and Balachander, 2021).

The complexities of educational achievement have been attempted to be unravelled by researchers, and psychologists have proposed numerous explanations for achievement differences. According to the study, a student's cognitive ability alone is insufficient for academic success. Although improving students' self-concept may help them succeed academically, it is concerning that the majority of them currently have poor self-concepts and are also passive and negative (Ibrahim, N.S., Yusof, N.S.H.C., Razzak, N.F.A. and Norshahidi, N.D. 2023). According to a study by Chamorro-Premuzic and Furnam, students need more than just cognitive ability to succeed academically. These findings stoked the researchers'

curiosity about finding non-cognitive predictors of academic achievement (Chamorro-Premuzic, T. and Furnam, A. 2020). Both learning styles and personality are likely to have a significant impact on academic achievement.

Few studies have looked into particular language skills, despite the fact that a large body of academic research has examined language learning strategies (Semtin and Maniam, 2018; Muniandy and Shuib, 2020; Ting and Lau, 2016; Yunus and Saifudin, 2021). The literature on reading strategies used by Malaysian primary ESL students is lacking. Reading strategies are relevant when learning a second language because they help students improve their comprehension and give their reading process a clear goal. According to Sani and Ismail (2021), young Malaysian language learners employ both direct and indirect strategies (Sani and Ismail; 2021). This suggests that these learners can be trained to use a variety of strategies for both general and specific language skills.

Problem Statement

This study's goal is to investigate how teaching strategies affect students' performance while taking their preferred learning styles into consideration. Every academic discipline, including science, technology, and engineering, undergoes frequent changes as civilization advances, which increases the demand for supplemental education (Starc, Rodica, and Konda, 2020; Wan Muda, Burhanuddin, Ramlee and Ab Halim, 2021). Teachers should be able to compare, analyse, and assess the teaching modalities they plan to use in order to maximize student performance and make learning as efficient as possible because students' time is valuable (Boumová, 2019; Ardeljan, 2021). It's crucial to understand that different students may have varying capacities for understanding what is being taught. In fact, due to their lack of experience, students might not be able to determine whether the teaching style chosen by their tutor is the most appropriate for them (Sajjad, 2020; Jamaludin et al., 2023). A lecturer needs to be able to follow this if high student performance goals must be met.

Teachers utilize their teaching methods as a tool to impart knowledge to their students in order to stimulate their desire to learn and facilitate an efficient learning process (Njoroge, Changeiywo, and Ndirangu, 2019; Amos and Hassan, 2022). When selecting a specific teaching method, several factors are taken into consideration. When selecting a teaching method, factors such as the tutor's goal, the institute's teaching resources, learner differences, and—above all—the tutor's willingness and capacity to improvise in the event that traditional teaching aids are not easily accessible are all crucial (Ndirangu and Udoto, 2020; Demir, 2024). Depending on the teacher's vision and the student's attitude toward learning, the teaching strategies that should be used appear to vary from nation to nation.

Numerous studies have been carried out in the past that pertain to instructional strategies. For instance, one study found that the primary cause of students' poor performance is not their surroundings or the credentials of their tutors, but rather the teaching strategies employed by their instructors (Asikhia, 2020). Additionally, it is commonly maintained that teachers must be knowledgeable about the best practices to employ in order to support effective instruction, while also keeping in mind that the medium used to convey instructions has a direct bearing on the teaching modalities (Schwerdt and Wuppermann, 2023). Building a useful and improved understanding of the impact that teaching strategies and learning preferences have on student performance is the main goal of this study. This is important

because research indicates that there are still significant problems with the methods used to teach knowledge in many schools and educational institutions, and that these methods are typically insufficient or ineffective (Adunola, 2021). This study is also significant because teaching is underappreciated because it is not only the act of imparting knowledge but also plays a vital role in helping students grow as individuals and in putting what they have learned into practice their everyday existence as the only way to attain remarkable success (Munawaroh, 2020).

According to Andala and Ng'umbi (2020), teaching is a complicated, multifaceted activity that necessitates the teacher to manage several tasks and objectives at once. It's common knowledge that educators are expected to develop fresh hooks to attract the students' interest in a particular subject, so the emphasis should be on how to teach rather than what to teach (Coe, Aloisi, Higgins, and Major, 2021). Consequently, frequent workshops can help teachers enhance their teaching strategies (Weiner; 2020). According to Oxford Dictionaries (n.d.), the term "teaching method" refers to the standard pedagogy, management strategies, and principles that are employed to carry out classroom instruction. Another study claims that education is an ongoing process with an overall goal of changing the student, and the techniques employed should be appropriate for the subject matter (Ganyaupfu, 2020). Up to 40% of high school students have expressed interest in enrolling in an online course, indicating that the education sector has historically seen a trend toward online instruction that is continuously expanding to meet student demand (Watson, 2024).

It is typically carried out near the conclusion of the semester or teaching period to assess how well the students have learned the material. After that, the findings are combined to ascertain whether the pupil has been able to fulfil the educational objectives (Surgenor, 2021). Following an evaluation, a feedback function must be completed in order to provide information that will aid in future learning. The results of the assessment must serve as a performance indicator, so appropriate and moral feedback must be given (Knight, 2020).

Research Objectives
1) To examine the learning styles preferences among year 1 undergraduate students in UNITAR International University.
2) To examine the impact of learning styles on academic performance through Grade Point Average (GPA) and Cumulative Grade Point Average (CGPA) among year 1 undergraduate students in UNITAR International University.
3) To explore ways to adjust learning styles to improve undergraduate students' academic performance in English Language Course in UNITAR International University.

Research Questions
1) Do year 1 undergraduate students in UNITAR International University have learning styles preferences?
2) Does the impact of learning styles influence academic performance through Grade Point Average (GPA) and Cumulative Grade Point Average (CGPA) among year 1 undergraduate students in UNITAR International University?
3) What are the ways to adjust learning styles to improve undergraduate students' academic performance in English Language Course in UNITAR International University?

Literature Review
Theoretical Framework
The VARK learning styles divide people into four types based on their learning styles: Visual, Auditory, Reading/Writing, and Kinaesthetic. Visuals make sense of information if given in the form of pictures, charts, or diagrams. Auditory people learn through listening and discussion-verbalized stream of consciousness. Reading/Writing learners prefer the encounter of learning through material such as textbooks, notes, and instructions. Kinaesthetic learners understand concepts through hands-on work involving activity or movement and experiences (Kendra Cherry, MSEd, 2024).

Understanding the VARK learning styles is necessary to help educators modify their teaching to address the diverse needs of students for better understanding and retention. It further empowers students to recognize their strengths and adopt appropriate learning modes. The application of various styles also creates thus an inclusive lesson plan, which increases accessibility and engagement with learning (Kendra Cherry, MSEd, 2024).

The VARK learning model is useful because it shows that information processes differ from one individual to another, which allows teachers to develop teaching strategies that have a maximum impact on students. With this knowledge in mind about how a student learns best, the teacher has an opportunity to create a more inclusive and effective learning space for diverse needs. According to Mitchell, R the VARK model identifies the four main categories into which students could be classified: Visual, Auditory, Read/Write, and Kinaesthetic, for which different teaching approaches are required to maximize learning outcomes (Mitchell, 2022).

Visual learners receive assistance from charts, diagrams, and imagery to see the relationships that exist between concepts. These students process information efficiently when it is presented with examples, infographics, and other forms of graphical representation along with color-coded notes. Auditory learners receive information primarily through speech, including spoken explanations, discussions, and contributions between people in the same area of interest. They recall information best when concepts are reinforced through storytelling, verbal instructions, and group discussions. Read/Write learners prefer printed materials such as textbooks, articles, syllabuses, and guidelines related to their subject of study. They retain information effectively through detailed note-taking and extensive reading. Kinaesthetic learners grasp concepts best through movement and hands-on activities that involve real-world applications. They excel in learning experiences that include role-playing, experiments, and interactive learning activities (Mitchell, 2022).

Relationship between Variables
Undergraduate Students Academic Performance in English Language Courses and Visual Learning Style
The degree to which teaching strategies suit undergraduate students' preferred method of information processing determines the relationship between their academic performance in English language courses and their visual learning style. Written text, diagrams, videos, and pictures are all ways that visual learners take in information. To comprehend and remember information, they depend on visual aids. These students benefit from color-coded notes, charts, flashcards, and illustrated stories in an English language course. When words are

combined with images, they are better able to understand the vocabulary. Including visual cues in passages enhances reading comprehension. Mind maps and structured diagrams help make grammar rules more understandable. For these students, teachers who use visually stimulating materials foster a more productive learning environment. Their strengths might not be met by conventional teaching approaches that prioritize lectures, discussions, and only text-based materials (Ardeljan, 2021; Arifin, Rasdi, Anuar and Omar, 2024). Oral presentations and listening exercises can be difficult. They may perform worse on tests that mainly rely on auditory comprehension. Research shows that when teaching methods suit students' preferred methods of learning, they typically perform better.

Visual learners perform better when exposed to visual resources, according to research comparing various learning styles. When lessons incorporate multimedia components, their level of engagement rises. Their progress may be hampered by classroom settings that do not meet their needs. Teachers who create lessons with a variety of learning styles in mind give every student the chance to succeed. Visual learners are further supported by the incorporation of technology into the classroom (Jamaludin, Alias, DeWitt, and Ibrahim, 2020; Shklyar, 2023). Engaging content is provided by digital tools like educational apps, online videos, and interactive whiteboards. Gamified components are used in language learning platforms to increase motivation. Videos with subtitles strengthen vocabulary while enhancing listening comprehension. Infographics make difficult subjects simpler. Visual learners are able to communicate in writing through online discussion forums. The academic performance of students depends not only on the presence of visual resources but also on how effectively they are used in instruction. Effective lesson planning that integrates visual learning techniques ensures better understanding, active engagement, and long-term retention of knowledge (Bergmann and Sams, 2024). How well teaching strategies integrate visual elements determines how well visual learners perform academically in English courses. How well they understand, retain, and perform overall is greatly influenced by the instructional design (Ahmad et al., 2020; Sadasivan, Vijayalakshmi and Balachander, 2024).

Undergraduate Students Academic Performance in English Language Courses and Auditory Learning Style

The academic achievement of Malaysian undergraduate students in English language courses is closely linked to their auditory abilities. Since many Malaysian students do not speak English as their first language, their ability to comprehend and process spoken English has a big impact on their overall educational experience (Yarkoni, 2020; Geuter et al., 2023). For auditory learners, auditory communication or hearing is the most effective method of learning. Since they learn information through auditory representation, these students are adept at remembering what they hear. Tone, pitch, loudness, and other auditory elements are essential to their understanding and memory of information. Strong auditory learners typically do better in listening comprehension, which has a direct impact on their command of vocabulary, grammar, sentence structure, and pronunciation (Yarkoni, 2020; Desmond and Glover, 2021; Geuter et al., 2022; Turner et al., 2024; Suckling et al., 2023; Poldrack et al., 2024). They are more likely to pay attention in class, comprehend lectures, and accurately follow spoken instructions, all of which enhance academic performance.

Students with poorer auditory skills, on the other hand, might have trouble understanding spoken material, which could make it harder for them to write, speak, and understand

complex linguistic structures. Building longer, more complex sentences, talking a lot, being sensitive to sound and music, learning songs quickly and easily, learning by talking, having trouble with reading and writing, taking part in group discussions, and using audio recordings for language practice are all characteristics of learners who have an auditory learning style. This relationship depends on a number of variables, such as media exposure to English, individual listening preferences, and the efficiency of university teaching strategies (Appelbaum et al., 2022).

Students who frequently watch movies, listen to podcasts, and participate in conversations in English, for example, tend to improve their auditory skills, which enhances their academic performance. Furthermore, auditory comprehension is strengthened through classroom activities like group discussions, interactive listening exercises, and oral presentations. Without enough listening practice, students might have trouble pronouncing words correctly, misunderstand spoken directions, and have trouble remembering important lecture material. Teachers should include more listening-based activities in their lesson plans, such as audio recordings, real-world conversations, and language labs, to improve students' comprehension skills because auditory skills are crucial for learning English (Appelbaum et al., 2022). Through organized activities and exposure to various English dialects, universities could also encourage students to practice active listening. In the end, enhancing auditory skills can result in increased confidence when speaking English in academic and professional contexts as well as improved academic performance in English courses (Yarkoni, 2020; Geuter et al., 2023).

Undergraduate Students Academic Performance in English Language Courses and Kinesthetic Learning Style

Undergraduate students' learning styles, especially kinesthetic learning abilities, can have a big impact on how well they do academically in English language classes. Because they learn best through movement, hands-on activities, and real-world experiences, kinesthetic learners frequently find it difficult to learn in traditional classroom settings where reading, writing, and listening are the main teaching pillars. Students who have a strong preference for kinesthetic learning may find it challenging to stay engaged and retain information effectively in English classes, which usually consist of lectures, written assignments, and grammar drills. These students, however, typically do better academically when teachers include interactive activities like role-playing, group discussions with movement, drama, and practical exercises like sentence-building games (Beram, Awang, and Ismail, 2020).

Kinesthetic learners process language more naturally when they interact physically with learning materials, which facilitates their comprehension of grammar rules, vocabulary retention, and communication skills development. When it comes to moving and touching, they function best. Additionally, they have two sub-channels: tactile, which represents a learner's preference for touching, and kinesthetic, which involves movement. This relates to the previously emphasized point that tactile and kinesthetic are sometimes more appropriate than tactile alone. If there is little to no movement or outside stimulation, kinesthetic learners often become distracted. They frequently scan the reading material before actually reading it or take notes during lectures just to get their hands moving. In order to take notes, they typically use color highlighters and occasionally doodle or draw diagrams or pictures (Mohd

Noor Azman, Othman; Mas Anom; Abdul Rashid; Ida Rosnita, Ismail; Mohd Faiq Abd Aziz; Saifulrizan; Norizan and Sarah Artikah, Mohamad Saad; 2021).

According to the kinesthetic style, students can also process information more effectively when they rely on their actions, such as seeing, feeling, moving, touching, and listening (Othman and Amiruddin, 2020). Sadly, a lot of university curricula continue to use traditional teaching techniques that might not adequately meet the needs of kinesthetic learners. This can result in poorer academic performance and a decline in self-confidence regarding one's ability to speak English (Beram, S., Awang, M., and Ismail, R. 2020). Teachers can close this gap by implementing a more well-rounded teaching strategy that incorporates both conventional and movement-based learning strategies, resulting in a more welcoming and productive learning environment. Teachers can create strategies that help all students, regardless of learning style, achieve their full academic potential by acknowledging the influence of kinesthetic learning on English language acquisition (Othman and Amiruddin, 2020)

Research Methodology
Research Design
This study employs mixed methods which are quantitative and qualitative methods. It is more into quantitative data but will be supported by qualitative as well. Quantitative method of data collection through survey and interview from participants in impacts of learning styles at UNITAR. This study employs quantitative and qualitative research to analyze the impact of learning styles on academic performance in English Language among Undergraduate students in UNITAR International University. Statistical analysis can establish the extent to which active mentoring influences individuals' grades, confidence, and perseverance. The research methodology not only presents concrete values of mentoring, but it also expands the recognition of how mentoring components such as meeting frequency and academic relevance influence academic development results. By using mixed methods, quantitative data provide general vast statistical trends while qualitative data offers insightful details on experiences and reasons behind those trends. Combining both gives a more comprehensive and reliable understanding of research problems.

Location of the Study
The study was carried out on the main campus of UNITAR International University, located at Kelana Jaya. The selection of this location is mainly to focus on the year 1 undergraduate university students' impact of learning styles on academic performance in English language courses.

Population and Sample of Study
The target population of this research is the year 1 undergraduate student in the main campus of UNITAR International University in Kelana Jaya. They include students from foundation studies, diploma and bachelor's degrees. This study focuses on 50, year 1 undergraduate students in UNITAR International University as respondents in the survey and 3, year 1 undergraduate students in UNITAR International University for an interview.

Research Instrument

This study examines the effects of various learning styles on the academic achievement of UNITAR International University undergraduate students using both questionnaires and interviews. These techniques were selected because they work well together: questionnaires enable effective data collection from a larger group, while interviews offer in-depth insights through direct discussions. The study intends to gain a deeper understanding of students' learning preferences, academic performance, and engagement with different learning methods by integrating both approaches. Students can share their individual experiences and viewpoints through interviews, which provides a deeper understanding of how their learning styles affect their academic performance. In addition, surveys assist in collecting numerical data that can be statistically examined to find trends and connections. This combination enables both candid answers and in-depth personal input because questionnaires guarantee anonymity and interviews promote candid conversations. When combined, these two approaches offer a comprehensive understanding of students' educational experiences and how they affect their academic performance.

Sampling Technique

This study aims to analyze the impact of learning styles on academic performance among undergraduate students in English Language courses in UNITAR International University. To assure scientific validity, a stratified random sampling approach will be utilized. Stratified random sampling divides a population into smaller subgroups known as strata (Hayes, 2024). This sample strategy works since the target population for this study is first-year undergraduate students from various academic programs from faculties such as Faculty of Education and Humanities, Faculty of Business, School of Information Technology and School of Media Arts and Design. This study focuses on 50 survey respondents and 3 interviewees.

Table 3.3
Stratification of Respondents by Field and Year of Study

Stratum	Description
Field of study	Business, Education, Information Technology, Arts and other field
Year of study	Year 1

Data Collection Procedures

This study's quantitative and qualitative data will be gathered using some data collection techniques, including surveys, questionnaires, interviews, and follow-up with the undergraduate students from UNITAR International University's foundation program, diploma program and bachelor's degree program. Surveys and questionnaires will be used to collect data on the variables. To obtain the data, the survey will be distributed to a sample of 50 students to analyze the impact of learning styles on academic performance. The online survey data collection method might take around 1 to 2 weeks' time. Following that, there will be an interview conducted with 3 students to obtain qualitative data.

Result and Discussion
Mean and Standard Deviation of Questionnaire Items
Research Question 1: Do year 1 undergraduate students in UNITAR International University have learning styles preferences?

Table 4.7
VARK Learning Styles

Learning Styles	Mean
Visual	4.25
Auditory	4.22
Kinaesthetic	4.02
Reading and Writing	4.06

Table 4.7 displays the VARK learning styles of year 1 undergraduate students at UNITAR International University. The data indicate that the majority of respondents favoured visual learning styles, with a mean of 4.25. The second most preferred learning technique is auditory, with a mean of 4.22. Following that, respondents favoured reading and writing, with a mean of 4.06. The data suggest that less respondents favoured kinaesthetic learning techniques, with a mean of 4.02. Following is the further analysis that has done for each learning styles and the academic performances.

Visual Learning Styles
Table 4.8
Mean and Standard Deviation of Visual Learning Styles

Item	Mean	Standard Deviation
I learn more about English concepts when I watch instructional videos.	4.28	0.882
When I'm learning English grammar rules, I like to look at charts or diagrams.	4.02	1.097
When English vocabulary is presented with images or illustrations, I learn it more effectively.	4.38	0.901
I find it easier to study English when I highlight important terms in my notes.	4.24	1.041
I find that watching English-language films or lectures with subtitles aids in my learning.	4.38	0.878
Using visual flashcards helps me remember more words.	4.22	1.055

Table 4.8 shows the items of the first independent variable which is visual learning styles. The results were interpreted as high, moderate, and low scores. From the table above, the average mean score is 4.24 and standard deviation is 1.041. It can be observed that the highest mean is 4.38 for the item "When English vocabulary is presented with images or illustrations, I learn it more effectively." and "I find that watching English-language films or lectures with subtitles aids in my learning." It indicates that respondents are strongly agreeing that learning with images, illustrations is more effective and watching English-language films helps more in learning English. This finding align with the VARK model where it mentioned that visuals make more sense of information if given in the form of pictures, charts, or diagrams.

Respondents also learn English by watching instructional videos as the mean score is the second highest which is 4.28. The average mean score (4.24) for the item "I find it easier to study English when I highlight important terms in my notes." indicates that respondents are neutral with learning English by highlighting the notes. Moreover, the lowest mean score is 4.22 and 4.02 where respondents are not very fond with charts, diagrams, flashcards more than images. Respondents will highly prefer colourful images over charts and diagrams.

According to Jandhyala (2021), images are the simplest way to store information into your long-term memory. In contrast to text, images are processed 60,000 times faster, and therefore the students are more interested in visual learning habits to learn English since by viewing images, one can easily learn new words. Furthermore, emotional reactions and visual cues are linked together in a straightforward way, and these two join together to form long-term memories (Jandhyala, 2021).

Auditory Learning Styles
Table 4.9
Mean and Standard Deviation of Auditory Learning Styles

Item	Mean	Standard Deviation
I remember English lessons better when I discuss topics with my peers.	4.34	0.917
When English grammar is explained aloud, I find it easier to understand.	4.26	0.944
To strengthen learning, I like to say English words and sentences out loud.	4.14	1.069
I can remember better and apply new words when I hear them in a conversation.	4.44	0.861
Studying English while listening to background music or relaxing music helps me focus better.	3.92	1.275
Oral summaries of important points by lecturers are really helpful.	4.20	0.990

The assessment of auditory learning styles in relation to English language acquisition is displayed in the above table 4.9. The results showed that the scores fell into three categories: low, moderate, and high auditory learning styles.

The results for the high score demonstrated that when respondents hear new words in a conversation, they are better able to apply them and retain them. The average score was 4.44, followed by understanding grammar better when it is explained out loud (4.26) and remembering English lessons better when discussing topics with peers (4.34). According to Neil Fleming's VARK theory, this can be explained that auditory learners preferred learning through listening and discussion with peers. (Mitchell, 2022)

For the moderate score, respondents found oral summaries of important points by lecturers helpful with a mean score of 4.20 and liked saying English words and sentences out loud to strengthen learning with a mean of 4.14. With the lowest mean score of 3.92, there was only one item that was deemed to have a low auditory learning style score: studying English while listening to calming or background music to increase focus.

Auditory learning plays a significant role in English language acquisition by reinforcing memory through verbal and sound-based cues. Listening to conversations, discussions, and verbal instructions enhances comprehension, especially for learners who thrive in interactive settings. Moreover, auditory methods support pronunciation, tone, and rhythm awareness. However, too much reliance on this learning style might be a disadvantage for learners who struggle to follow spoken content or who benefit more from visual or practical engagement. In such cases, a blended approach would create a more inclusive learning experience.

Kinaesthetic Learning Styles
Table 4.10
Mean and Standard Deviation of Kinaesthetic Learning Styles

Item	Mean	Standard Deviation
Role-playing conversations are any preferred method of learning English	3.92	1.085
I find that moving around while studying improves my ability to concentrate on English lessons.	3.66	1.206
I like taking part in interactive language-learning exercises like storytelling and theater.	4.00	1.088
When English classes involve practical exercises like role-playing, I learn more quickly.	4.14	0.948
My comprehension is enhanced when I physically write words or sentences (for example, on a whiteboard).	4.12	0/849
When there are hands-on activities in addition to theory in English classes, I feel more involved.	4.30	0.735

Table 4.10 shows the evaluation of kinaesthetic learning styles in relation to learning English. The results were interpreted as high, moderate, and low scores.

The results indicated that students with high kinaesthetic learning style scores feel more engaged when theory and hands-on activities are included in English classes. This supports the idea that kinaesthetic learners understand concepts through hands-on work involving activity or movement and experiences. The average was 4.30. Learning more rapidly through hands-on activities such as role-playing (4.14) and improved understanding when writing words or sentences by hand (4.12) came next. For the moderate score, respondents liked taking part in interactive language-learning exercises such as storytelling and theatre (4.00), and preferred role-playing conversations as a learning method (3.92). For the low score, the only item with a lower mean was that respondents found moving around while studying improves concentration, with a mean of 3.66.

Kinaesthetic learning styles are effective in engaging learners through physical movement and interaction, which can lead to stronger memory recall and greater engagement in language activities. Role-playing, writing exercises, and interactive learning offer practical context that promotes language use in real-life situations. However, over-reliance on physical activity-based methods may hinder learners who excel in more traditional or reflective study

modes. Balancing kinaesthetic methods with auditory and visual strategies is essential for comprehensive language development.

Reading and Writing Learning Styles
Table 4.11
Mean and Standard Deviation of Reading and Writing Learning Styles

Item	Mean	Standard Deviation
I like to read books, articles, or essay to learn English.	4.04	1.049
I remember English lessons better when I take notes while studying.	4.14	0.969
I like to write essays or summaries to help me better understand English.	3.98	1.078
Rewriting or paraphrasing important passages from my study materials helps me learn the most.	4.06	1.038
I can better retain and apply new vocabulary when I write it down.	4.08	0.986
In English classes, I like written tests and quizzes better than oral presentations.	4.06	1.096

Table 4.11 shows the evaluation of reading and writing learning styles towards the reading and skills learning styles. Based on the findings, the scores were divided into high, moderate and low reading and writing learning styles scores. For the high score, the findings showed that respondents remember English lessons better when they take notes while studying. The mean was 4.14. For the moderate score, the findings showed that respondents can better retain and apply new vocabulary when they write it down with the mean score 4.08, followed by rewriting and paraphrasing important passages from respondents' study materials helps them learn the most and in English classes respondents like written tests and quizzes better than oral presentations with the mean 4.06, respondents like to read books, articles, or essay to learn English with the mean score 4.04. However, for the low reading and writing learning styles score, there was only one item where respondents like to write essays or summaries to help them better understand English. The mean was 3.98.

The reading and writing learning style has certainly got some benefits for English language learners. Text-related reading and writing provide an additional tool for learners to enhance comprehension and retention as learners work with textual materials, process information by organizing thoughts and articulating understanding (Maharshi Soni, 2024). This creates firm analytical skills and encourages learners to think critically, which are both important for mastering complex language structures and growing vocabulary. Basically, further and further reading will expose students to the diversity of writing styles and contexts that contribute to the language (Maharshi Soni, 2024).

On the other hand, too much emphasis on the reading and writing learning style might have some disadvantages. Over-relying on text-based methods will exclude engagement with auditory or kinaesthetic approaches, making the target language acquisition less holistic. Such limited exposure may further affect competence in professional oral communication and listening, entailing that learners may have insufficient practice in these skills. Additionally, the

preferential treatment accorded to reading and writing might slow down the learning process due to the time-consuming aspect of both approaches that may not allow for the immediacy that conversation would require (Maharshi Soni, 2024).

Undergraduate Students Academic Performance in English Language Courses
Table 4.12
Mean and Standard Deviation of Academic Performance

Item	Mean	Standard Deviation
I have faith that I can communicate clearly in English.	4.14	0.833
I actively participate in discussions and presentations conducted in English.	4.12	0.895
My success in English language classes in a result of my study habits.	4.16	0.792
I do well on tests of my written and spoken English.	4.30	0.678
I am happy with the way my English has improved since I started college.	4.26	0.922
I finish English assignments quickly and with little trouble.	4.20	0.926

Table 4.12 shows the academic performances towards undergraduate students' English Language Courses. Based on the results, there were high, moderate and low academic performances score. For the high academic performances score, the findings showed that the respondents do well on tests of their written and spoken English. The mean was 4.30. Besides, for the moderate score, the finding showed that majority of the respondents acknowledged that they are happy with the way their English has improved since they started college with the mean score 4.26, followed by respondents' finish English assignments quickly and with little trouble with the mean 4.20. Moreover, respondents' success in English language classes in a result of their study habits with the mean score 4.16. Furthermore, the respondents have faith that they can communicate clearly in English with the mean 4.14. Finally, for the low academic performances score, the findings showed that majority of the respondents acknowledged that they actively participate in discussions and presentations conducted in English. The mean was 4.12.

According to the findings, undergraduate students achieve high marks in the English language course and have done well in written and oral tests, getting an average score of 4.30. This indicates that students are fairly developing their English skills, which is very important in academic and career. On the other hand, moderate scores in satisfaction regarding language improvement, mean score 4.26, and efficient completion of assignments, mean score 4.20, show positive study habits and confidence in language use; thus, they help build a good learning environment for better academic performance. According to the theoretical framework, "teachers who integrated multiple instructional techniques can accommodate various learning styles, creating a more engaging and student-centered classroom environment." This supports the idea that using various learning styles to make a lesson can also help to build a better learning environment.

The mean score of 4.12 for active participation in discussions and presentations demonstrates it as an area of concern. Poor involvement in oral activities could restrict comprehensive skill training in language, especially in speaking and listening. This would become problematic for students, with real communication requiring cross-violation in the application of interactive language use. The gap thus needs to be filled to prepare students with a balanced language competency.

Correlation Analysis

According to Turney (2022), the Pearson correlation coefficient (r) is a number between -1 and +1 that measures the strength and direction of the relationship between two variables. If the correlation coefficient is between 0 and 1, it means it's a positive correlation. If it's 0, then there is no correlation, which means no relationship between the variables. If the correlation coefficient is between 0 and -1, it indicates a negative correlation. Besides, the significance value (sig. (2-tailed)) is the p-value (<0.001) that tells us if the correlation is significant. The correlation is statistically significant if $p < 0.05$ and even stronger if $p < 0.01$. N indicates the sample size of the analysis.

Correlations

		AcademicPerformances	Visual	Auditory	Kinaesthetic	ReadingWriting
AcademicPerformances	Pearson Correlation	1	.720**	.647**	.663**	.657**
	Sig. (2-tailed)		<.001	<.001	<.001	<.001
	N	50	50	50	50	50
Visual	Pearson Correlation	.720**	1	.798**	.613**	.572**
	Sig. (2-tailed)	<.001		<.001	<.001	<.001
	N	50	50	50	50	50
Auditory	Pearson Correlation	.647**	.798**	1	.749**	.541**
	Sig. (2-tailed)	<.001	<.001		<.001	<.001
	N	50	50	50	50	50
Kinaesthetic	Pearson Correlation	.663**	.613**	.749**	1	.585**
	Sig. (2-tailed)	<.001	<.001	<.001		<.001
	N	50	50	50	50	50
ReadingWriting	Pearson Correlation	.657**	.572**	.541**	.585**	1
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	
	N	50	50	50	50	50

**. Correlation is significant at the 0.01 level (2-tailed).

Figure 8: Correlation Analysis between Learning Styles and Academic Performances

Figure 8 shows the Pearson correlation coefficient (r-value) between the independent variables and the dependent variable of this study. The correlation coefficient and significant value for academic performances and visual learning styles is $r = 0.720$, $p < 0.001$, which means there is a strong positive correlation, and the correlation is highly significant.

The correlation coefficient and significant value for academic performances and auditory learning styles is $r = 0.647$, $p < 0.001$, which means there is a moderate to strong positive correlation and the correlation is highly significant.

The correlation coefficient and significant value for academic performances and kinaesthetic learning styles is $r = 0.663$, $p < 0.001$, which means there is a positive correlation, and the correlation is highly significant.

The correlation coefficient and significant value for academic performances and reading and writing learning styles is r = 0.657, p < 0.001, which indicates there is a strong positive correlation between the variables and the correlation is highly significant.

Based on the correlation analysis, all the r-value that shown on figure 6 are above 0.60 and statistically significant with the value of p < 0.001, all four independent variables have a strong positive correlation with the dependent variable. All three hypotheses that are stated in this study are supported by the data. The result revealed a strong positive correlation with high significant p-values (p < 0.001). Therefore, the hypotheses proposed in this study are accepted.

Interview Analysis
Research Question 2: Does the impact of learning styles influence academic performance through Grade Point Average (GPA) and Cumulative Grade Point Average (CGPA) among year 1 undergraduate students in UNITAR International University?
Research Question 3: What are the ways to adjust learning styles to improve undergraduate students' academic performance in English Language Course in UNITAR International University?

Interviews were conducted with 3, year 1 undergraduate students from UNITAR International University. Each interviewee has been asked 5 questions about learning styles and the respondents' academic performance in English language courses. The 3 respondents are chosen from each semester from semester 1 to 3. A label was given to each interviewee. Interviewees from semester 1 were labelled as Student 1, interviewees from semester 2 were labelled as Student 2, and interviewees from semester 3 were labelled as Student 3.

The main focus of this interview is to find out how learning styles made an impact on the interviewee's academic performance in English language courses and discover ways to adjust learning styles to learn even better in English language courses. Based on the theoretical framework in chapter 2, the idea promotes that teacher can modify instructional strategies to accommodate diverse learning styles (Mitchell, R, 2022). The findings of this study support this claim, as each respondent showed an advantage of different learning styles.

Based on the interview, the majority of the students preferred visual learning styles in improving English language courses. According to VARK theory, visuals do make sense of information if it is given in the form of images, charts and diagrams. Most of the interviewees also stated that having a preferred learning styles does boost their GPA and CGPA and leading to better academic success. The following are the results of the interview:

Table 4.13

Thematic Analysis of Interview Responses

Interviewee	Theme
Student 1: "Visual aids and practical experience are how I learn best. Videos, diagrams, and problem-solving techniques all aid in my understanding. I remember things better when I see and do them, so this works for me."	Preferred Learning Styles
Student 2: "My ideal learning style in preparing for my course is the visual learning style. I think it is the best one for me because the visualisation of the notes in colourful highlighters helps me to understand and remember the concepts easily. Also, doing mind maps for each topic gives me a deep understanding. It is really easy for me to practise this visual learning style to get better marks in the course."	
Student 3: "My ideal learning styles is visual and sometimes kinaesthetic because I learn best by seeing mind maps, diagrams and I love flashcard. Sometimes I will watch educational videos on YouTube which make me easier to understand. I love role-playing activities because it really helped me in real-life scenarios.	
Student 1: "My grades have improved as a result of my learning style. I learn better and perform better on tests when I use practice problems and visual aids. I forget things easily and get worse grades when I just read or listen."	Academic Impact of Learning Styles
Student 2: "I think it has a positive impact on my academic performance. I am really happy to get a GPA of 3.5 and above. I believe it is because of my learning style. When we know what learning style is suitable for us, it will be good as we are not only going to study hard but study smart."	
Student 3: "Having a preferred learning style have significantly improved my English comprehension. Like I said earlier, using flashcard to remember words, watching videos to learn new vocabulary, these techniques contributed to better performance in my English language courses. It also helped me improve my GPA each semester."	
Student 1: "I tried just listening and reading, but it wasn't very helpful. My comprehension and grades increased when I integrated visual,	Flexibility and Learning Adaptation

written, and experiential learning. I now employ a variety of styles based on the topic."	
Student 2: "I haven't tried different learning styles before, but after using visual learning techniques like mind maps, I practise kinaesthetic learning by walking around and revising my notes, which really helps reinforce my understanding and improve my retention."	
Student 3: "I have experienced with auditory learning styles. I tried to listen to the audiobook that prepared, and I found it effective because listening can improve my ability to understand and make me imagine scenarios. I learned grammar rules while listening and confidently express myself in English."	
Student 1: "I didn't have any trouble learning English, but I watch English-language videos with subtitles and practice speaking to get better. Learning pronunciation is another benefit of listening to English speakers."	Challenges in English Language Learning
Student 2: "The problem that I have with learning English is complex grammar and vocabulary. But I use visual techniques like flashcards and mind maps to help with memorization, and kinaesthetic learning through writing and speaking exercises to improve my understanding."	
Student 3: "The problem that I face while learning English Language courses is the complex words and my fluency speaking in English. That's why I watch more educational videos so I can learn more vocabulary and sometimes I practice a conversation in front of the mirror."	
Student 1: "I suggest mind maps and images which is useful tools for visual learners. Audiobooks and English-language conversations are recommended for auditory learners. Kinaesthetic learners can get experience speaking in authentic settings. The students who are learning to read and write should do so every day."	Strategies and Recommendations
Student 2: "I would suggest that students take a quiz to identify their preferred learning style, as this can help them study more effectively and achieve better results in the future. Once they understand their best learning style, they can study smarter. Additionally, watching YouTube and movies in English with English	

subtitles can improve both their writing and speaking skills, helping them become more fluent in the language."	
Student 3: "I would suggest students to find one learning styles they preferred because sometimes combining different learning styles can make the process hard. For example, a visual learner like me can have colour coded notes. Give a slight change on your regular black and blue notes to colourful one. Moreover, auditory learners can listen more English songs. It is fun and students can learn new words."	

Conclusion, Implications and Recommendations

Discussion

The discussion is about how the findings from the previous chapter is in relation with each of the research objectives from this study. The result and findings will also be link to the theories and literature reviewed in Chapter 2. This discussion aims to interpret the results, look at the significance, and show how each support or differ from the previous research.

Based on the first research objective, which is to examine the learning styles preferences among year 1 undergraduate students in UNITAR International University. The findings from the survey questionnaire revealed that each student have their own preferred learning styles and the majority of the students prefer visual and auditory learning style by looking at their mean 4.25 and 4.22. This supports the VARK model by Neil Fleming (1997). According to Mitchell, R (2022), the VARK model identifies the four main categories into which students could be classified: Visual, Auditory, Read/Write and Kinaesthetic. The result also aligns with Anjaria (2022), who found that visual and auditory learning styles were commonly preferred by university students to learn language. This shows that students who prefer visual learning styles process information efficiently when it is presented with images, graphs and charts. Students who prefer auditory learning styles recall information best when it involves listening.

Next, the second research objectives: To examine the impact of learning styles on academic performance through Grade Point Average (GPA) and Cumulative Grade Point Average (CGPA) among year 1 undergraduate students in UNITAR International University. Based on the findings from the survey questionnaire, the majority of the students have the CGPA of 3.00 and above which is a very good pointer. Moreover, there is an interview conducted to validate the findings which gives a strength to provide more understanding to the findings. The interviewees mentioned that their GPA got improved when they discover their preferred learning styles in which I can quote "My grades have improved as a result of my learning style. I learn better and perform better on tests when I use visual aids. I forget things easily and the grade tend to drop." Another interviewee also mentioned that their GPA improved by saying "I am really happy to get a GPA of 3.5 and above." This supports when Escuadro (2023), who said that when students study in their preferred learning styles, retention and understanding improve, leading to better academic outcomes.

The third research objectives are to explore ways to adjust learning styles to improve undergraduate students' academic performance in English Language Course in UNITAR International University. Based on the findings from the interview that has been conducted, students suggested to answer a learning style quiz where they can identify their preferred learning styles and based on the result they could start using tools like mind maps, flashcards and colour coded notes for a visual learner. Audiobook and watching YouTube videos for the auditory learners. Read/write learners can start with journaling, writing down notes and reading books. Then, kinaesthetic learners can look more into authentic materials. Moreover, one of the interviewee mentioned that for a beginner, go with one most preferred learning styles to see a better result rather than mixing multiple methods. According to Cherry K (2024), understanding the VARK learning styles empowers students to recognize their strength and adopt appropriate learning modes. It also helps the educators to modify their teaching to address the diverse needs of students. With the knowledge of how VARK model shows how a student learns the best, the teacher has an opportunity to create an effective learning space for diverse needs (Mitchell, 2022).

Conclusion

In the present study, the researcher used the theoretical framework, which is the VARK model by Neil Fleming (1987), to analyse the impact of learning styles on academic performance in English language courses among year 1 undergraduate students at UNITAR International University. The researcher also examines the significant relationship between each learning style from the VARK model (visual, auditory, kinaesthetic, and reading/writing) and undergraduate students academic performance in English language.

A survey was conducted among year 1 undergraduate students, where researchers examined the demographic and academic profile of the respondents. Besides, the researcher also examines the CGPA range of the respondents, which revealed that the majority of the respondents have a moderate CGPA. In order to analyse the learning styles that respondents prefer, the scores of mean and standard deviation were used. Based on the first research question, students do have preferred learning styles, and the result shows the majority of respondents prefer visual learning styles and auditory learning styles. Researchers also have done a correlation analysis to measure the strength and direction of the relationship between the independent and dependent variables. The overall relationship between each learning style and undergraduate student's academic performance is positively significant.

An interview was also conducted to gather more data from the interviewee. The researcher analysed that each interviewee provided both unique and common responses. A thematic analysis was done to analyse the responses from each interviewee. Based on the second research question, the impact of learning styles does influence the undergraduate student's GPA and CGPA. One of the interviewees mentioned that after identifying the most preferred learning styles and applying them to the academic context, there was a great improvement in results that the interviewee noticed, which was getting a GPA of 3.5 and above for the upcoming semesters. Another interviewee also mentioned that there was no improvement in the GPA and CGPA when she used read/write learning styles, for example, writing notes and reading them, but once the interviewee changed to auditory learning styles, the grades improved as a result of changing to the most preferred learning styles.

Based on the third research question, researchers have gathered the ways to adjust learning styles to improve students' academic performance in English language courses through the interview analysis. Interviewee number one stated that each learner can focus on specific tools to learn, such as mind maps and images for visual learners, songs and watching subtitles in movies for auditory learners, role-playing real-life scenarios for kinaesthetic learners, and journal writing or reading storybooks for read/write learners. The second interviewee mentioned the way to adjust learning styles is to attempt a VARK questionnaire online to identify the preferred learning styles and apply them to learning. Taking a learning style quiz or VARK questionnaire can introduce students to the study methods that align with the student's preferences (Bellassai, 2024). Another way to adjust learning styles to improve students' academic performance in English language courses that the third interviewee suggested is to find and try one learning style at a time and see the outcome. Mixing two or more learning styles can confuse the students, and students could not identify which one is the preferred learning style.

In conclusion, the study has successfully analysed the impact of learning styles on academic performance in English language courses among year 1 undergraduate students in UNITAR International University. The findings revealed that each student has a preferred learning style, and it significantly influences the students' academic performance in English language courses in year 1. These results support existing literature as presented in Chapter 2: Literature Review. Although the study was limited by time and sample size, it gives a significant insight to future educators on focusing on students learning styles in the classroom teaching to improve the students' academic performance through GPA and CGPA. According to Anjaria (2022), understanding of learning styles is important for both a teacher and a student. When a student is taught using a method that aligns with the student's learning style, they understand the material more and retain the information (Escuadro, 2023). Future studies could investigate the long-term impact of learning styles on academic performance outside the GPA and CGPA but also the motivation, other year groups, and different types of courses.

Recommendations

The results showed analysing the impact of learning styles on academic performance in English Language among undergraduate students in UNITAR International University. However, recommendations are needed in order to help the students to involve more in their academic performances as it gives effects to their English Language. So, it is recommended that:

- Future studies may include a larger and more varied sample of students from different years such as year 1 until year 3 and backgrounds, in order to have a much wider perspective.
- Researchers may also look into how motivation, peer support and teacher encouragement affect the academic engagement of students in learning the English language.
- Long-term studies will probably provide an understanding of continuous engagement into how it affects English proficiency levels over time
- Educators must engage students to use learning styles such as visual learning styles, auditory learning styles, read and write learning styles and kinaesthetic learning styles to have them practice English regularly.

References

Abdul Rashid, M., Abdul Rahman, N. A., & Samsudin, M. A. (2022). Predicting preferred learning styles on teaching approaches among Gen Z visual learner. https://www.researchgate.net/profile/Mas-Abdul-Rashid/publication/358633348_Predicting_Preferred_Learning_Styles_on_Teaching_Approaches_Among_Gen_Z_Visual_Learner/links/64c9dab77eacf602634db511/Predicting-Preferred-Learning-Styles-on-Teaching-Approaches-Among-Gen-Z-Visual-Learner.pdf

Amos, S., & Hassan, A. (2018). *Teaching methods and students' academic performance in selected secondary schools in Nigeria. Journal of Education and Practice, 9*(6), 1–6. https://files.eric.ed.gov/fulltext/EJ1286592.pdf

Anjaria, A. (2022, November 23). Importance of learning styles in teaching. https://www.linkedin.com/pulse/importance-learning-styles-teaching-anamika-anjaria

Anuar, M. M., & Omar, O. (2024). *The influence of materialism on socially responsible behavior*. Semantic Scholar. https://www.semanticscholar.org/paper/THE-INFLUENCE-OF-MATERIALISM-ON-SOCIALLY-Anuar-Omar/8065b325212ab01564b7c523caf9efc5f98de238

Appelbaum, L. G., Li, H., Boehm, S. G., & Woldorff, M. G. (2022). *The effects of task relevance and stimulus probability on neural processing of attended and unattended events. NeuroImage, 183*, 478–486. https://doi.org/10.1016/j.neuroimage.2018.08.041

Ardeljan, F. (2021). *Teaching methods: Pedagogical challenges in moving beyond traditionally separate quantitative and qualitative classrooms*. https://www.researchgate.net/publication/368801931_Teaching_methods_Pedagogical_challenges_in_moving_beyond_traditionally_separate_quantitative_and_qualitative_classrooms

Ariastuti, M. D., & Wahyudin, A. Y. (2022). Exploring academic performance and learning style of undergraduate students in English education programme. Journal of English Language Teaching and Learning, 3(1). https://jim.teknokrat.ac.id/index.php/english-language-teaching/article/view/1817 https://doi.org/10.33365/jeltl.v3i1.1817

Asikhia, O. A. (2020). *Students and teachers' perception of the causes of poor academic performance in Ogun State secondary schools, Nigeria: Implications for counselling for national development*. https://www.researchgate.net/publication/289769514_Students_and_teachers'_perception_of_the_causes_of_poor_academic_performance_in_Ogun_State_secondary_schools_Nigeria

Baharudin, S. N. A., Chandrasegaran, T. A., Rajasegaran, D. D., Balakrishnan, K. A., & Vendargon, K. S. D. (2024). Incorporating technology in classroom instruction: Challenges and strategies. International Journal of Academic Research in Business and Social Sciences, 14(11), 1708–1726. https://doi.org/10.6007/IJARBSS/v14-i11/23074

Barua, L., & Lockee, B. (2025). Flexible Assessment in Higher Education: A Comprehensive review of strategies and implications. TechTrends. https://doi.org/10.1007/s11528-025-01039-3

Bellassai, J. (2024, October 17). What is my learning style? quiz. Forage. https://www.theforage.com/blog/basics/learning-style-quiz#:~:text=Taking%20a%20learning%20style%20quiz%20can%20introduce%20you%20to%20study,notes%20through%20the%20paper%20shredder.

Boumová, V. (2019). *Traditional vs. modern teaching methods: Advantages and disadvantages of each* (Master's thesis, Masaryk University, Faculty of Arts). Available at: https://is.muni.cz/th/f62v8/MgrDiplomkaBoumova.pdf

Calderwood, B., Hultzman, R., & Chapel, L. (2023, November 21). Learning Styles | Definition, Types & Examples. Study.com. Retrieved March 9, 2025, from https://study.com/academy/lesson/what-are-learning-styles-types-lesson-quiz.html

Chamorro-Premuzic, T. and Furnam, A. (2020) Intellectual Competence and the Intelligent Personality: A Third Way Differential Psychology. Review of General Psychology, 10, 251-267.
https://doi.org/10.1037/1089-2680.10.3.251

Dantas, L. A., & Cunha, A. (2020). An integrative debate on learning styles and the learning process. Social Sciences & Humanities Open, 2(1), 100017. https://doi.org/10.1016/j.ssaho.2020.100017

Dawi, D. A., & Hashim, H. (2022). Preferred Learning Strategies among Malaysian Primary ESL Learners. Creative Education, 13(03), 941–951. https://doi.org/10.4236/ce.2022.133062

Demir, S. (2021). *The effect of teacher self-efficacy on learning engagement of secondary school students*. *Journal of Education and Learning, 13*(3), 1–10.
 https://files.eric.ed.gov/fulltext/EJ1286592.pdf

Escuadro, S. (2023). Learning styles and why they're important in learning and development. SC Training. https://training.safetyculture.com/blog/why-learning-styles-are-important/

Eyong, E. I., David, B. E., Umoh, A. J., Department of Education Foundation Guidance and Counselling University of Calabar, Department of Educational Foundations, Guidance and Counseling, University of Calabar, Calabar, & Department of Curriculum and Instructional Technology Cross River University of Technology Calabar. (2020). The influence of personality trait on the academic performance of secondary school students in Cross River State, Nigeria. IOSR Journal of Humanities and Social Science, 19(3), 12–19. https://www.iosrjournals.org/iosr-jhss/papers/Vol19-issue3/Version-1/C019311219.pdf

Faisal, R. A. (2019). Influence of personality and learning styles in English language achievement. Open Journal of Social Sciences, 07(08), 304–324. https://doi.org/10.4236/jss.2019.78022

Geuter, S., Reynolds Losin, E. A., & Wager, T. D. (2023). *The cognitive neuroscience of placebo effects: Concepts, predictions, and physiology*. *Annual Review of Neuroscience, 41*, 167–188. https://doi.org/10.1146/annurev-neuro-080317-061007

Hassan, I., Abdul Rahman, A. M., & Azmi, M. N. L. (2021). Development of English writing skills through blended learning among ESL learners in Malaysia. *Arab World English Journal (AWEJ)*, *7*(1), 377–389. https://doi.org/10.24093/awej/call7.26

Hassan, I., Ayuni, M. a. R., & Nazri, L. A. M. (2021). Development of English writing skills through blended learning among ESL learners in Malaysia. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3906325

Hayes, A. (2024, August 19). How stratified random sampling works, with examples. Investopedia. https://www.investopedia.com/terms/stratified_random_sampling.asp

Ibrahim, N.S., Yusof, N.S.H.C., Razzak, N.F.A. and Norshahidi, N.D. (2023) A Meta-Analysis of the Relationship between Big Five Personality Traits and Students' Academic Achievement. ICSSR E-Journal of Social Science Research, 2, 15-22. - References -

Scientific Research Publishing. (n.d.). https://www.scirp.org/reference/referencespapers?referenceid=2572122

Ibrahimoglu, N., Yousuf, N.H., Razzak, N.A. and Norshahidi, N.D. (2018) A Meta-Analysis of the Relationship between Big Five Personality Traits and Students' Academic Achievement. Social Science Research ICSSR, Kota Kinabalu, Sabah. - References - Scientific Research Publishing. (n.d.). https://www.scirp.org/reference/referencespapers?referenceid=2572119

Indeed Editorial Team. (2024, April 12). What is curriculum design? Indeed. https://www.indeed.com/career-advice/career-development/what-is-curriculum-design

Jamaludin, R., Abdullah, M. S., & Mahmud, M. (2023). Use of teaching methods at higher education institutions. *International Journal of Education and Practice, 8*(3), 1–10. https://www.researchgate.net/publication/323609113_USE_OF_TEACHING_METHODS_AT_HIGHER_EDUCATION_INSTITUTIONS

Jandhyala, D. (2021, May 12). Visual learning: 6 reasons Why Visuals are the most powerful aspect of eLearning. eLearning Industry. https://elearningindustry.com/visual-learning-6-reasons-visuals-powerful-aspect-elearning

Komarraju, M., Karau, S. J., Schmeck, R. R., & Avdic, A. (2011). The Big Five personality traits, learning styles, and academic achievement. Personality and Individual Differences, 51(4), 472–477. https://doi.org/10.1016/j.paid.2011.04.019

Lincă, F. I., & Matei, F. L. (2024). Learning styles and academic performance among students. Revista Academiei Forţelor Terestre, 29(1), 63–68. https://doi.org/10.2478/raft-2024-0006

Main, P. (2023, August 2). Adaptive teaching. Structural Learning. https://www.structural-learning.com/post/adaptive-teaching#:~:text=Adaptive%20teaching%20is%20about%20tailoring,is%20vital%20for%20student%20engagement.

Mitchell, R. (2022, February 22). Think VARK: why the four learning modes are important for thought leadership. https://www.linkedin.com/pulse/think-vark-why-four-learning-modes-important-thought-rob-mitchell

MSEd, K. C. (2024, December 3). Exploring VARK learning styles: Which one boosts your learning potential? Verywell Mind. https://www.verywellmind.com/vark-learning-styles-2795156

Muniandy, J., & Shuib, M. (2020). Learning styles, language learning strategies and fields of study among ESL learners. *Malaysian Journal of ELT Research*, *12*(1), 1–19. https://melta.org.my/journals/MAJER/downloads/majer12_01_01.pdf

Ndirangu, M., & Udoto, M. O. (2011). *Quality of learning facilities and learning environment: Challenges for teaching and learning in Kenya's public universities*. *Quality Assurance in Education, 19*(3), 208–223. https://eric.ed.gov/?id=EJ930939

Njoroge, G. N., Changeiywo, J. M., & Ndirangu, M. (2014). *Effects of inquiry-based teaching approach on secondary school students' achievement and motivation in physics in Nyeri County, Kenya*. *International Journal of Academic Research in Education and Review, 2*(1), 1– https://www.academicresearchjournals.org/IJARER/Full%20Text/2014/January/Njoroge%20et%20al.htm

Othman, M. N. A., Abdul Rashid, M. A., Ismail, I. R., Abd Aziz, M. F., Norizan, S., & Mohamad Saad, S. A. (2021). Predicting preferred learning styles on teaching approaches among Gen Z visual learners. *Turkish Journal of Computer and Mathematics Education*, *12*(6), 2969–2978. https://doi.org/10.17762/turcomat.v12i6.358633348

Owolabi, O. T. (2019). Effects of teaching methods and learning environment on students' academic performance in mathematics. Retrieved from https://d1wqtxts1xzle7.cloudfront.net/61394641/22-4120191201-94682-nnyic8-libre.pdf

Öztürk, M., & Çakıroğlu, Ü. (2021). Flipped learning design in EFL classrooms: implementing self-regulated learning strategies to develop language skills. Smart Learning Environments, 8(1). https://doi.org/10.1186/s40561-021-00146-x

Paze'h, A. (2015). The effects of auditory learning strategy on learning skills of language learners. https://d1wqtxts1xzle7.cloudfront.net/54929570/The_effects_of_Auditory_Learning_Strategy_on_Learning_Skills_of_Language_Learners-libre.pdf

Poldrack, R. A., Huckins, G., & Varoquaux, G. (2024). *Establishment of best practices for evidence for prediction: A review*. *JAMA Psychiatry, 74*(6), 561–569. https://doi.org/10.1001/jamapsychiatry.2017.0270

Potter, K. (2024, September 11). What Is a GPA and Why Is It So Important? Studyportals Masters. Retrieved April 15, 2025, from https://www.mastersportal.com/articles/2126/what-is-a-gpa-and-why-is-it-so-important.html

Ramakrishnan, S., Selvarajoo, P. C. B., & Govindarajoo, M. V. V. (2025). English language learning in Malaysian schools: A comparison between government and private schools teachers' teaching methodologies to improve student learning. Edelweiss Applied Science and Technology, 9(6), 976–988. https://doi.org/10.55214/25768484.v9i6.8005

Sadasivan, S., Vijayalakshmi, M., & Balachander, K. (2021). *Impact of innovative teaching methods on the learning outcomes of students in higher education*. *Journal of Educational Technology & Online Learning, 4*(2), 45–52. https://doi.org/10.1016/j.jetc.2021.04.005

Sajjad, S. (2020). Effective teaching methods at higher education level. *Pakistan Journal of Special Education, 11*(1), 29–43. https://scholar.google.com/citations?hl=en&user=gvAcgWkAAAAJ

Sani, S., & Ismail, H. H. (2021). Assessing the Use of Learning Strategies among Young Malaysian English as Second Language Learners. Creative Education, 12, 2124-2145. https://doi.org/10.4236/ce.2021.129163

Semtin, S., & Maniam, M. (2018). Reading Strategies among ESL Malaysian Secondary School Students. International Journal of Evaluation and Research in Education (IJERE), 4, 54-61. https://doi.org/10.11591/ijere.v4i2.4492

Soni, M. (2024). Mastering reading and writing learning styles in education. EducationalCraft. https://educationalcraft.com/articles/49670-reading-and-writing-learning-styles-in-education

Starc, J., Rodica, B., & Konda, I. (2015). The significance of teaching methods/forms and organizational forms as important elements for the professional development in the education and training of managers involved in tourism. *Informatologia, 48*(1–2), 48–61. https://hrcak.srce.hr/en/137728

Ting, S. H., & Lau, L. Y. (2016). Lexical and discourse-based communication strategies of Malaysian ESL learners. *Malaysian Journal of ELT Research*, *4*, 18–31. https://www.melta.org.my/journals/MAJER/downloads/majer4_03_ting_lau.pdf

Tuan Ab Hamid, T. M. H., Roslan, N. W., Zailani, N. Z., & Amirrudin, S. (2024). Observing the influence of learning styles on communicative strategies used by students inside a collaborative ESL/EFL university classroom: A discourse analysis. In M. R. Bakashmar, N. I. Ya'akub, & C. S. Keong (Eds.), Perspectives in business, information & human sciences (pp. 134–145). IKRAM Education Sdn. Bhd. https://iukl.edu.my/pdf/perspective_business_information_human_science_final.pdf

Turner, B. O., Paul, E. J., Miller, M. B., & Barbey, A. K. (2024). *Small sample sizes reduce the replicability of task-based fMRI studies*. *Communications Biology, 1*, 62. https://doi.org/10.1038/s42003-018-0073-z

Turney, S. (2022, May 13). Pearson Correlation Coefficient (r) | Guide & Examples. Scribbr. Retrieved April 13, 2025, from https://www.scribbr.com/statistics/pearson-correlation-coefficient/

Wan Muda, W. H. N., Burhanuddin, P. N. I., Ramlee, M. H. H., & Ab Halim, F. (2020). Relationship between soft skills and engineering graduates' employability at UTHM. *TVET@Asia*, (15), 1–15. https://tvet-online.asia/author/wan-hanim-nadrah-binti-wan-muda/

Yarkoni, T. (2020). *Big correlations in little studies: Inflated fMRI correlations reflect low statistical power—Commentary on Vul et al. (2020)*. *Perspectives on Psychological Science, 4*(3), 294–298. https://doi.org/10.1111/j.1745-6924.2009.01127.x

Yunus, K., & Saifudin, M. (2021). Vocabulary learning strategies among English as second language learners. *Qualitative Social Work*, *1*, 12–19. https://www.scirp.org/reference/referencespapers?referenceid=3203546