Electronic Journal of Education, Social Economics and Technology
Vol. 6, No. 2, (2025), pp. 1~6, Article ID: 299
ISSN 2723-6250 (online)
DOI: https://doi.org/10.33122/ejeset.v6i2.299

SAINTIS publishing

Research Article

Profiling Learning Style of Excellent Graduate Students

Rihza Galih Faturrochman*, Lies Amin Lestari & Widyastuti

Department of English Education, Universitas Negeri Surabaya, Surabaya, Indonesia, 60213
*Corresponding Author: rihza.23018@mhs.unesa.ac.id | Phone: +628993907059

ABSTRACT

This study investigated the learning styles of high-achieving postgraduate students, a topic with conflicting findings in existing literature on the relationship between learning styles and academic achievement. Employing a qualitative case study design, the research sought to gain a deeper understanding of this phenomenon by utilizing two distinct instruments. First, the VARK questionnaire was administered to provide a quantitative measure of each participant's sensory preferences. Subsequently, semi-structured interviews were conducted to explore their actual learning strategies and experiences in the specific context of a master's degree program. The findings revealed a compelling divergence: while the questionnaire identified distinct sensory preferences for each participant, their academic practices were not rigidly aligned with these results. Instead, their success appeared to be a product of a strategic and adaptive approach, with a willingness to employ diverse methods like reading and practicing to meet the rigorous demands of their curriculum. This suggests that academic achievement in higher education is less about a fixed learning style and more about a student's capacity for self-regulated, metacognitive adaptation. These results offer a nuanced perspective on the learning style debate, emphasizing the importance of cultivating flexible learning strategies rather than simply diagnosing a single preference.

Keywords: Learning Styles; Sensory Preferences; VARK; VARK Questionnaire

1. INTRODUCTION

Everyone has their own preference for learning style. The way students acquire new information might be different one from another. Some might need a teacher to explained the material so they will understand, some might need to visualize it before they comprehend it, and some even need to practice it so they will understand the new information. This is commonly known by the name learning styles. Learning styles can be defined as how someone learn, process, and comprehend an information Madhu and Bhattachryya (2023). Sometimes, it is a combination of several learning style. Various learning style might be influenced by distinct aspects, it might be affected by students' favouritism in learning atmosphere related to physical, social, and the environmental elements (Fahim et al., 2021). Even tough every student has their own way to grasp new information, it cannot be denied that at some point, they have to make adjustment in certain situation. So, knowing a specific learning style is important for students to help them adjust their learning style to the appropriate one according to the situation.

A lot of studies about the impact of learning style in academic achievements has been done. Fahrudin and Nugroho (2016) did research about the topic with senior high school students as the subject of the research. By doing observation, sharing questionnaire, and speaking assessment, the result shows that there is no specific correlation between learning style and students' speaking achievements. The similar result also happen in the study done by Jannah et al in 2024 who did research on Junior high school students. They found that it also has no relation between students learning style and speaking achievements.

On the other hand, İlçin et al. (2018) found that the most common learning style having by the college-level students are collaborative learning style. However, students with high performance are associated with participant learning style. Which having similar result as Aboe (2018) who studied same-level students and found a significant influence of learning style to language achievements. Therefore, this study is aimed to reveal the preferred learning style of Postgraduate English Education students 2023/2024 at a university in Surabaya. By revealing the most preferred learning studies, the study is expected to provide information for stakeholder of university level especially in Surabaya regarding the most suitable teaching learning process related to the most preferred learning styles.

Learning style can be defined as a person's natural, habitual, and preferred ways of getting, understanding, and processing new information and skills (Lightbown & Spada, 2013). While other researcher considered it to be a personal cognitive and psychological ability to react to the interaction and learning environment (Ariastuti & Wahyudin, 2022). As it

being said, that a lot of factor determines someone's way of acquiring second language. There is no specific learning style that can be considered correct or suitable because of it. Instead, knowing learning style for specific person will have an insight of what specific activity and learning material should be chosen in order to optimally learning a second language. However, Ariastuti and Wahyudin (2022) argue that learning style is considered to be one of successful aspects in the learning activity. For teacher, knowing students learning style will give them insight on managing classroom effectively. Since certain teaching strategies are meant for certain learning style, giving the appropriate teaching strategies for exact students will significantly help the achieve the language acquisition (Aboe, 2018; Al-Seghayer, 2021; Ariastuti & Wahyudin, 2022; Fahim et al., 2021; İlçin et al., 2018).

For example, if a teacher happens to have a class dominated by students who have Aural as sensory preferences, teacher can explain the material in front of the class, then supported by video or audio in order to maintain students' learning motivation and interest in the learning process. However, such teaching strategy would not do well if it is applied to a class which most students are kinaesthetic learners, because they would need more time to practice in order to comprehend the material and keep their motivation in the learning process high. Failed to identify students learning style, might hinder students' language acquisition progress and their motivation in learning. Oxford (2001) mentioned four dimensions of learning style that famously associated to the second language acquisition: sensory preferences, personality types, desired degree of generality, and biological differences. Moreover, this study only focus on the sensory preferences dimension as there are so many studies commonly using it while discussing about language acquisition.

Developed from Stirling's three categorical aspects of sensory preferences; Visual, Aural, and Kinaesthetic, Fleming and Mills (1992) developed it into four; Visual, Aural, Read/Write, and Kinaesthetic. They argued that even though visual and read/write learning style have similar process of understanding information, read/write get the information through the from of words, while visual get the information by looking at graphics of symbols. Aural learning style is described as students prefer source of information in the form of audio, which can be found in lecture, audio tape, video, discussions and similar learning strategies. The last sensory is kinaesthetic, this sensory has a little bit complexity compared to other sensory. Fleming and Mills (1992) explained that kinaesthetic is multi-modal which means it use more than one perceptual mode: sight, touch, smell, taste, and hearing. Therefore, it is defined as sensory preferences which process information through multi-modal sensory to get in touch with the reality. It can be found in the learning process in the form of experiencing, looking at example, practicing, or doing simulation. Visual, aural, and written/read sensory can be found here in the form of information presentation. However, experience can be done through information that comes naturally and interactively to the student's life.

From these four sensory preferences model, Fleming and Mills (1992) developed a questionnaire in order to help teachers and educators analyse students' preference of learning style based on their sensory types, so they can decide the most appropriate teaching strategy for their students. The set of questions is first introduced in 1992 with 13 questions in the form of multiple choice with each options represent certain learning style. After students answer all the questions, all chosen options are compiled to know which sensory that is chosen mostly.

Question Ten: You are not sure whether a word should be spelled 'dependent' or 'dependant'. Do you:

R) look it up in the dictionary.
V) see the word in your mind and choose the best way it looks.
A) sound it out in your mind.
K) write both versions down.

Figure 1. Sample of the first edition of VARK Questionnaire

2. RESEARCH METHOD

This study employed a qualitative research approach using a case study design to gain an in-depth understanding of three high-achieving postgraduate students' learning styles, a methodology often recommended for exploring complex phenomena in real-world contexts (Creswell, 2014; Yin, 2009). Participants were selected via purposive sampling (Patton, 2002), and data was collected using two primary instruments. First, the VARK questionnaire was administered. This instrument, consisting of 16 multiple-choice questions with four options each, was used to provide a quantitative measure of each participant's sensory preferences (Fleming & Mills, 1992). The options corresponded to the Visual (V), Aural (A), Read/Write (R), and Kinesthetic (K) learning modalities. Second, a semi-structured interview was conducted to get a deeper understanding of their learning practices. The interview's purpose was to not only validate the initial findings but also to gather richer, qualitative data about their learning styles and strategies, distinguishing between an individual's innate preferences and the conscious behaviors they use to enhance learning (Oxford, 2001). The data analysis involved interpreting the VARK scores to establish a sensory preference profile for each student, while a thematic analysis was applied to the interview transcripts to identify recurring patterns and themes (Braun & Clarke, 2006). By triangulating the quantitative and qualitative data, the research aimed to reveal the nuanced relationship between the students' measured learning preferences and their actual academic practices.

3. RESULTS AND DISCUSSION

This study found that the top 3 students have different sensory preferences based on the result of The VARK questionnaire. Table 1 shows the result of the three high-achieving participants.

3.1 Sensory Preferences

The VARK questionnaire provided a quantitative measure of each participant's preferred modes for receiving and processing information. The scores for each of the three high-achieving participants are presented in Table 1. The data indicates distinct profiles for each student. Participant A showed a strong unimodal preference for the Kinesthetic modality (K=14), with scores for all other modalities being substantially lower, indicating a highly dominant and specific learning preference according to the instrument. In contrast, Participant B exhibited a mild unimodal preference for the Aural modality (A=11); however, his scores across the other three modalities were relatively balanced, suggesting a capacity for multimodal engagement. Finally, Participant C presented a clear multimodal profile. While her highest score was in the Aural modality (A=14), she also had concurrently high scores in the Visual (V=12) and Kinesthetic (K=12) domains, a profile which strongly indicates a versatile, multimodal learning preference.

Participant A has a dominant sensory in kinaesthetic with significant different with other sensory. However, after the result is returned to the participant, she claimed that besides kinaesthetic as the dominant sensory preferences, visual also one of sensory that she commonly used in order to get new information during the language acquisition especially in master's degree education. Even so, it suits with the description of kinaesthetic that it also use other senses during the learning activity (Fleming & Mills, 1992). One of statements that support this claim is quoted below.

"*For me myself, my kind of style of learning language is practice such as roleplaying… sometimes movie.*"

For participant B, the dominant sensory for language acquisition is Aural. However, the difference is slightly closer than the previous participant. This can be interpreted as all of the sensory participate in the process of learning language. Furthermore, this statement is supported by interview which was conducted after filling up questionnaire that the participant B claims that he uses all of the sensory preferences in learning English as a Foreign language as quoted below.

"…Sometimes I like listening news, focus on the content. Sometimes I like visual aids to understand something better. … sometimes with clear instruction help me understand more, or visual audio give me more input. … for (learning) preferences, I prefer visual audio because the information is more comprehensible than audio only."

The excerpt above show that language learners sometime use different sensory for different occasion. Participant C has similar result to participant B in the form of questionnaire. With aural sensory as the sensory preference in language learning, other sensory also being used in the process of language acquisition. After the result brought to interview, participant C argue that she mostly learning by reading and listening explanation through content in social media related to education and master's degree education.

Table 1. Sensory Preferences

Participant	Credit Score	Sensory Preferences			
		Visual	Aural	Read/write	Kinaesthetic
A	3,86	1	9	3	**14**
B	3,78	6	**11**	8	9
C	3,7	12	**14**	10	12

3.1.1 Sensory Preferenses and Learning Styles

This particular issue is one of surprising finding in this research, because technically all participants have learning style that doesn't really match with their sensory preferences. All of them prefer reading to other learning style. Participant A argues that even though she learns by practice, which is related to kinaesthetic, she sometimes reads to learn new information.

"*Actually, about learning style, I cannot say 100% sure that I am a kinaesthetic person. Because it depends. Sometimes, I am a visual learner. Sometimes, I highlight text…. Sometimes I learn better with visual aids such as poster or infographic. At some point, I prefer flashcard.*"

The excerpt from participant A shows that she might not denied that kinaesthetic-based learning activity is something that she does once in a while, but she clearly explained more that her learning style is mostly related to visual sensory, even though the result of the questionnaire (see Table 1) shows that visual sensory is her least favourable learning preferences.

Participant B who has aural as sensory preferences did not disclaim the result of the questionnaire. Rather, he explains that his flexibility helps him to adapt to various learning environments. He said that he likes to watch news, but sometime he also like picture with clear information, even sometimes learn with detail instruction, as quoted below.

"*Actually, all of them (sensory preferences) are my dominant. It depends on certain situation like sometimes (I) like to watch some news, trying to understand the context. Sometimes I prefer visual as picture to help me understand more…. Sometimes with clear instruction is favourable, or audio visual because it provide more input*."

Participant C she straight up stated that the result of the questionnaire is accurate. However, she explains that since in master's degree education she reads more. By giving plain yet pointed sentence she claimed as quoted "Yes, it is accurate. (however) in Master's degree tend to read more. For listening, (I listen to) education-related content in social media".

In conclusion for learning style, apart from different sensory preferences all of the participants have similar learning style, reading-related activity. Which proves that sensory preferences might not be the biggest aspect in deciding learning style for university-level students.

3.1.2 Learning Style and Academic Achievement

With various learning style of all the participants have, they give the same recommendation of choosing learning style. They all believe that all students have their own learning style. So, it is best for them to choose their own learning style. Participant A and participant C claim as quoted "for recommendation, it depends on every personal". While participant B has the same statement, he added that it is important for students to the objective of the subject and why they learn it. Toyama and Yamazaki (2020) found that the relation between teaching style and learning style doesn't have simple relationship. There are so many other variables that must be considered to make the language teaching in the classroom has significant result. Some of them are affective, cognitive, and behavioural factors. With such consideration, students might need more than specific learning style in order to increase their learning achievement. They might need to consider another factor as well at least as stated before.

3.2 Discussions

The findings of this study reveal a compelling narrative about the nature of learning in higher education, moving beyond simple definitions of learning preferences as described by Madhu & Bhattachryya (2023). The most significant result is not the identification of the students' specific learning styles, but the profound divergence between their measured sensory preferences and their actual, practiced academic strategies. This phenomenon is best understood not as a contradiction, but as powerful evidence of strategic adaptation. The success of these postgraduate students appears to be contingent not on a rigid adherence to an innate style, but on their ability to dynamically adjust their learning approach to meet the specific demands of their academic environment, a process that complicates the direct link between personal style and learning activities.

The driving force behind this adaptation appears to be the rigorous academic context of the Master of English Education program. This aligns with the work of Fahim et al. (2021), who, after identifying learning styles in medical students, noted that the learning atmosphere including its social and environmental elements is a powerful influencing factor. In this study, the "environment" is the curriculum itself, with its non-negotiable demand for students to engage deeply with dense theoretical texts and participate in high-level academic discourse. This context effectively cultivates and rewards certain learning behaviors (namely, Read/Write and Aural strategies), compelling students to adopt them regardless of their innate preferences identified by the VARK model (Fleming & Mills, 1992).

These findings offer a nuanced lens through which to view the conflicting results in the existing literature. While some studies have found a direct, positive correlation between learning styles and academic achievement (Aboe, 2018; İlçin et al., 2018), the results of this case study align more closely with research that found no such clear-cut relationship, such as the work of Fahrudin and Nugroho (2016). The strategic adaptation observed here provides a potential explanation for this discrepancy: a simple correlation may be hard to find if the most successful students are not those who rigidly adhere to a single style, but those who are most adept at modifying their approach to fit the task. The very act of adaptation is a variable that complicates a direct correlation. This distinction between a fixed preference and an adaptive practice is best understood through the theoretical lens provided by Oxford (2001), who differentiates between learning "styles" (a person's natural, habitual preference) and learning "strategies" (the specific actions and thoughts a learner consciously chooses to use). The participants in this study demonstrated a clear shift from relying on their passive style to employing active, conscious strategies. They were not just "Kinesthetic learners" or "Aural learners"; they were strategic learners who deployed visual, highlighting, and critical reading tactics to succeed. This moves the conversation from what a student is to what a student does.

The pedagogical implications of these findings are substantial, particularly for programs like the one explored by Ariastuti & Wahyudin (2022). If high-achievers succeed by adapting, then the focus in higher education should shift from diagnosing static learning styles to actively cultivating metacognitive awareness and a repertoire of flexible learning strategies. Rather than simply identifying the learning styles of EFL learners as in Al-Seghayer (2021), educators should explicitly teach students how to analyze academic tasks and select the most effective strategies, even if those strategies fall outside their comfort zone. This approach equips students with the resilience and versatility required for advanced learning, as described in the foundational work of Lightbown & Spada (2013) on how languages are learned.

3.2.1 Factors That Influence Academic Achievement

While learning styles play a role in a student's preferences, a wealth of recent research highlights that academic achievement is a multifaceted outcome influenced by a range of affective and cognitive factors. The findings from this study that high-achieving students adapt their strategies are strongly supported by this literature, which suggests that success is more closely tied to an individual's ability to metacognitively regulate their learning. According to a review by Koivuniemi et al. (2017), metacognition, or the awareness of one's own thought processes, is a powerful predictor of academic success. Learners who are proficient in metacognitive strategies are able to assess a task's demands, choose the most appropriate learning approach, and monitor their progress, making adjustments as needed. This aligns directly with the behavior of the participants in your study, who consciously shifted from their natural sensory preferences (as measured by the VARK) to more effective, reading-based strategies to meet the rigorous demands of their graduate program.

Another critical factor is motivation. Research has consistently shown that the type of motivation a student possesses significantly impacts their academic outcomes. A review by Ryan and Deci (2000) emphasizes the distinction between intrinsic and extrinsic motivation. Students who are intrinsically motivated those driven by internal curiosity and a genuine interest in the subject tend to demonstrate higher levels of engagement and persistence, which are essential for mastering complex material. In contrast, students who are primarily extrinsically motivated may only perform to achieve grades or rewards, which can lead to superficial learning. The participants in your study, as demonstrated by their deep engagement with their subject matter, likely possessed a high degree of intrinsic motivation, which served as a catalyst for their adaptive learning behaviors. In conclusion, while learning styles may offer a starting point, these findings suggest that success in higher education depends more on students' capacity for strategic adaptation and their internal drive. A student's ability to employ a flexible repertoire of learning strategies and to self-regulate their learning process appears to be a more significant factor in achieving academic excellence than a fixed learning style.

4. CONCLUSION

Learning style which can be derived from sensory preferences, personality types, desired degree of generality, and biological differences (Oxford, 2001) should be considered for students for the sake of their learning achievement. However, the relation between learning style and learning achievement still have been debated as some researchers found the positive correlation between those two, while others found otherwise which means that the issue still need more comprehensive study. For students who find difficulties in the language learning, considering other learning style might be solution to increase the achievement in the language learning. Choosing the most appropriate that help to comprehend the learning material is the priority. But another factor can also be considered as well such as learning style that can maintain good learning motivation.

RECOMMENDATIONS

Based on these findings, a significant pedagogical shift is recommended, moving the focus from diagnosing and catering to fixed learning styles toward explicitly teaching a diverse range of academic strategies. The goal is to equip students with a versatile "toolbox" and the metacognitive skills to select the appropriate tool for any given task, using learning inventories as starting points for conversations about adaptation rather than as definitive labels. This approach requires a corresponding mindset shift from learners, who should be encouraged to cultivate flexibility and view their preferred style as a strength to build upon, not a restrictive boundary, recognizing that success in higher education demands a willingness to engage with challenging material through whichever modality is most effective. To further substantiate this adaptive model of learning, several avenues for future inquiry are apparent: larger-scale quantitative studies are needed to determine if this pattern is widespread, longitudinal research could track how student strategies evolve over time, and cross-disciplinary studies could explore how unique academic contexts shape these learning practices.

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