



កាលិកបត្រស្រាវជ្រាវមនុស្សសាស្ត្រនិងវិទ្យាសាស្ត្រសង្គម  
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## Demystifying Perceptual Learning Style Preferences in English Academic Achievement: A Case Study of Finance and Banking Undergraduates in Cambodia

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### ABSTRACT

*In the past few decades, extensive research on learning styles has been paid attention to since effective students' learning is empirically attributable to them. However, the studies on learners' learning styles have been scarce and marginalized in Cambodia. Ergo, this quantitative study investigated the learning style preferences of 108 undergraduate students at a private business school in Cambodia and whether the preferences somehow influence English achievement, which was operationalized as the results of English course scores. Using a questionnaire of Perceptual Learning Style Preference (PLSPQ) first designed by Reid (1987), the results revealed that the students preferred group style the most, followed by kinaesthetic, auditory, visual, tactile, and individual style, respectively. Even though the language learning styles preferences of the respondents were major ones, the Spearman correlation results showed that the language learning styles did not affect their English performance. The researchers concur with Peacock (2001) that instruction with balanced style-oriented should be pedagogically considered to accommodate various language learning styles.*

**KEYWORDS:** PLSPQ; Perceptual Learning Styles; English Achievement

**សង្ខេប**

ក្នុងរយៈពេលប៉ុន្មានទសវត្សចុងក្រោយនេះ ការសិក្សាស្រាវជ្រាវយ៉ាងទូលំទូលាយលើរបៀបរៀនសូត្រ (*Learning Styles*) ត្រូវបានគេយកចិត្តទុកដាក់ដោយសារវាគឺជាមូលហេតុបណ្តាលឱ្យការរៀនសូត្ររបស់សិស្សមានភាពជោគជ័យ។ យ៉ាងណាមិញការសិក្សាអំពីរបៀបរៀនសូត្រផ្សេងៗរបស់សិស្សនៅប្រទេសកម្ពុជានៅខ្លះខាត នឹងមិនត្រូវបានយកចិត្តទុកដាក់នៅឡើយ។ ដូច្នោះការសិក្សាបែបបរិមាណវិស័យនេះសង្កេតស្វែងរកចំណង់ចំណូលចិត្តរបៀបសិក្សារបស់សិស្សកម្រិតបរិញ្ញាបត្រចំនួន១០៨នាក់នៅសាលាពាណិជ្ជកម្មឯកជនមួយនៅកម្ពុជា នឹងថាគឺចំណង់ចំណូលចិត្តនេះមានឥទ្ធិពលយ៉ាងណាលើលទ្ធផលសិក្សាកាសាអង់គ្លេសរបស់ពួកគេដោយផ្អែកលើលទ្ធផលពិន្ទុនៃមុខវិជ្ជាសិក្សាកាសាអង់គ្លេស។ ការស្រាវជ្រាវនេះបានផ្អែកលើកម្រងសំណួរនៃចំណង់ចំណូលចិត្តរបៀបរៀនសូត្របែបការយល់ឃើញ (*PLSPQ*) ដែលបង្កើតដំបូងដោយលោក Reid (១៩៨៧)នឹងបានបង្ហាញលទ្ធផលថាប្រភេទចំណង់ចំណូលចិត្តនៃរបៀបរៀនសូត្រមានកម្រិតខ្ពស់ជាងគេគឺរបៀបរៀនសូត្រជាក្រុម (*Group Style*) និងជាបន្តបន្ទាប់គ្នាដោយរបៀបរៀនសូត្របែបសរីរាង្គ (*Kinaesthetic Style*) ស្តាប់ (*Auditory Style*) មើលឃើញ (*Visual Style*) ប៉ះពាល់ (*Tactile Style*) និងបុគ្គល (*Individual Style*)។ ទោះបីជាចំណង់ចំណូលចិត្តរបៀបរៀនសូត្រភាសារបស់សំណាកគម្រូត្រូវបានរកឃើញនៅកម្រិតខ្ពស់ក៏លទ្ធផលនៃការសិក្សាស្វែងរកទំនាក់ទំនងរបស់ Spearman បានបង្ហាញថារបៀបរៀនសូត្រភាសាមិនបានជះឥទ្ធិពលលើលទ្ធផលសិក្សាកាសាអង់គ្លេសរបស់ពួកគេទេ។ អ្នកស្រាវជ្រាវយល់ស្របជាមួយលោក Peacock (២០០១) ដែលធ្លាប់បានណែនាំពីការបង្រៀនផ្ដោតលើតុល្យភាពនៃរបៀបរៀនសូត្ររបស់សិស្សគួរតែត្រូវបានយកមកពិចារណាដើម្បីជួយសម្រួលរបៀបរៀនសូត្រភាសាផ្សេងៗ។

**ពាក្យគន្លឹះ:** (១) កម្រងសំណួរនៃចំណង់ចំណូលចិត្តរបៀបរៀនសូត្របែបការយល់ឃើញ (២) របៀបរៀនសូត្របែបការយល់ឃើញ (៣) លទ្ធផលសិក្សាកាសាអង់គ្លេស

**1. INTRODUCTION**

**1.1. Background of the Study**

It is a truism that language learning is a problematic activity faced by learners; moreover, it embraces its association with professional and educational guidance, individual system, consciousness, and attention in the second language. Individual reflection is critical for foreign language proficiency (Tabatabaei & Mashayekhi, 2013). Thus, educators should discern individual differences of learners (Matthews, 1995).

It is undeniable that learning style, which is a cognitive factor throughout the learning process, has been shown by a plethora of studies until now (Reid, 1995). Celce-Marcia (2001) asserted that learning style is a primacy that supports students in mastering a second or foreign language. Learners learn a foreign language differently at their own pace, and they tend to employ any favoured learning style to complete their learning tasks. That is, variation can be due to biological and psychological factors (Reiff, 1992). For example, some learners preferentially learn new vocabulary through flashcards. Because of

varied acts of preference for acquiring and processing information, Reid (1995) indicated that learning preference affects how learners conclude and their appropriate learning tasks. In this respect, learning style should be a focal sphere in learning (VanPatten & Benati, 2010).

Since learning styles have been accentuated, different features have been empirically explored, such as classifications, definitions, and relationships with diverse variables, including gender, age, learning achievement, and culture. Chen (1999) pointed out that there has been extensive discussion on the correlation between learning styles and academic performance. Similarly, in the past few decades, a surge in research has been carried out on the possible link between learning styles and academic achievement. For instance, previous studies reported positive relationships between them (Barzegar & Tajalli, 2013; Cimermanová, 2018; Gohar & Sadeghi, 2015; Peacock, 2001; Renou, 2008; Tabatabaei & Mashayekhi, 2013; Tuan, 2011). Besides, research findings revealed that mean scores of learners with learning styles differed remarkably (Abidin et al., 2011; Barzegar & Tajalli, 2013;

Cutolo & Rochford, 2007; Hou, 2009; Melese, 2018; Moeinikia & Zahed-Babelan, 2010; Reid, 1987; Tuan, 2011).

## 1.2. Research Problem

Given that learning styles act as a catalyst for learners' learning process and are associated with learning achievement, they are perceived to be successful with learning style use (Ellis, 1997; Oxford, 1990; Rubin, 1975, as cited in Hou, 2009). With rigorous and reliable literature, there has been a scarcity of research studies on the learning styles of Cambodian students, even though English has been a dominant foreign language in Cambodia from the early 1990 to the present (Moore & Bounchan, 2020). Cambodian learners may not consciously think of their preferred learning styles for the sake of English achievement, so they are hardly able to apply their learning styles in doing English learning activities.

Additionally, vis-a-vis the researchers' wealth of English teaching experience, most Cambodian university lecturers neglect their students' English language learning styles. Two convincing reasons are rationally and hypothetically presumed. First, most of them persistently ignore students' learning style exploration concerning incompetence in classroom research. Second, in practice, they cannot discover their students' learning styles without proper instruments, especially a multidimensional learning style inventory (Dunn, 1993).

## 1.3. Significance of the Study

The researchers alluded to a pressing need for this study's findings, which is on the horizon, and implicatively inform English teachers, educators, and curriculum developers, particularly those working in the research setting.

Empirical evidence to suggest the research implication was shown. Firstly, understanding learners' learning styles will hopefully guide English teachers on the right track to effectively and appropriately use any teaching approach, diluting learning anxiety and increasing more positive motivation (Hou, 2009).

Secondly, teachers and educators should realize that environmental and psychological

contexts are created because of students' learning, wherefore learners can accommodate learning that aligns with any learning style (Barzegar & Tajalli, 2013).

Thirdly, Kubat (2018) contended that teachers regard the learning style as an effective and productive learning-teaching process that can be planned by focusing on it. From Griggs (1991), the teaching implication is that instructors can increase student learning achievement and positive learning attitudes using learning styles. "They claim that not only can students identify their preferred learning styles, but that students also score higher on tests, have better attitudes, and are more efficient if they are taught in ways to which they can more easily relate. Therefore, it is to the educator's advantage to teach and test students in their preferred styles." (Dunn & Dunn, 1978, as cited in Gilakjani, 2012, p. 108).

## 1.4. Definitions of Learning Styles

According to Keefe (1979, p. 4), learning styles are referred to as "cognitive, affective, and physiological traits that are relatively stable indicators of how learners perceive, interact with, and respond to the learning environment." Learning styles refer to "individual natural, habitual, and preferred way(s) of absorbing, processing, and retaining new information and skills" (Reid, 1995, p. viii). Learning styles can be "ways in which individuals perceive, organize, and recall information in their environment" (Scarpaci & Fradd, 1985, p. 184). *Learning* is defined explicitly as "your preferred way of learning." (Thornbury, 2006, p. 116). Owing to Celce-Marcia (2001, p. 359), "Learning styles are the general approaches – for example, global or analytic, auditory or visual – that the students use in acquiring a new language or in learning any other subject." Dag and Geçer (2009, p. 863) concisely concluded the meaning of learning styles: "common expression in all of them is that learning speed, learning form and comprehension form for the information are different among the individuals." However, the definitions of learning styles vary regarding scope and depth (Tuan, 2011).

### **1.5. Perceptual Learning Styles**

Based on Reid's learning style classification (Reid, 1995), learning styles are categorized into three main types: cognitive learning style, sensory learning style, and personality style. Reid's (1995) classification of learning styles should be appraised accordingly (Khmakhien, 2012). First, it deals with distinct categories of learning behaviour and environment in diverse settings (Chen 1999, as cited in Khmakhien, 2012). Second, it can be employed with the context of students across cultures and languages (Khmakhien, 2012).

Among the three kinds of Reid's learning style classification as mentioned above, sensory learning styles are specifically divided into three categories: perceptual learning style, environmental learning style, and personality learning style (Reid, 1995). Perceptual learning style, the subject of this study, refers to much information that learners learn depending on their five senses (Davis, 2007). Perceptual learning styles have auditory, visual, tactile, kinaesthetic, and haptic learners. These sub-categories are deployed to ensure effective learning using ear (hearing), eyes (seeing), touch (hands-on), body experience (whole-body movement), and touch and whole-body involvement, respectively (Reid, 1995). All the above-mentioned perceptual learning styles, except for the haptic style, were underscored in this paper.

### **1.6. Previous Studies of Perceptual Learning Style and Learning Achievement Based on Reid's Perceptual Learning Style Preferences Questionnaire (PLSPQ)**

In recent years, many researchers have paid considerable attention to the studies on identifying learning styles and the likely existence of various learners' characteristics on their learning success. VanPatten and Benati (2010) stated that the research studies about learning styles had been undertaken for various purposes, such as exploring their classifications and meanings, the methods of determining learning styles, and the association between learning styles with academic achievement. Nolting (2002, as cited in Moayyeri, 2015) emphasised students' awareness of learning styles because these correlate with their learning achievement.

Peacock (2001) researched to verify Reid's hypothesis that a mismatch between teaching and learning styles results in failure, dissatisfaction, and demotivation throughout the learning process. Reid's perceptual learning style preference questionnaire, interviews, and tests were administered to 206 EFL students and 46 EFL teachers. The results revealed that the most popular students' learning styles were kinaesthetic and auditory, while the least desired ones were individual and group. The association between learning style and EFL proficiency was computed, and it was found that the learners whose style was working in groups were significantly less proficient.

Tuan (2011) conducted a study in Vietnam to investigate EFL students' preferred learning styles and the relationship between those preferences and English proficiency level. One hundred seventy-two students completed a questionnaire survey. The findings indicated that most learners preferred kinaesthetic and tactile learning styles. There were statistically significant associations between English proficiency level and preferred learning style.

Abidin et al. (2011) investigated students' learning styles and their effect on overall academic attainment in Malaysia. A questionnaire survey was used based on Reid's Perceptual Learning Style Preference (1987). Academic success and learning styles were shown to have a significant positive association. High, moderate, and low achievers all demonstrated a comparable preference for learning styles.

Barzegar and Tajalli (2013), in a similar vein, undertook a study investigating the language learning styles of Iranian EFL students and academic accomplishment. A language learning styles questionnaire by Reid (1987) was administered to gather data. The findings showed that the students applied various learning styles. In addition, it exhibited kinaesthetic and group learning styles that were mainly favoured among the participants. Their learning styles positively influenced their learning achievement.

Al-Zayed (2017) examined the effect of learners' preferred learning styles on their English learning success. The data collection instrument was a questionnaire on learning style preferences. The two significant findings were disclosed in this

manner. The auditory style was the most favoured, followed by the group, kinaesthetic, and visual styles. Second, there was no effect of learning style on English performance.

Melese (2018) examined the relationship between students' perceptual learning styles and academic achievement at an Ethiopian institution. This quantitative study used a correlational methodology to analyse data collected through a questionnaire. The finding indicated a positive correlation between students' preferences for perceptual learning styles and their academic achievement. Additionally, visual learning was favoured over auditory and kinaesthetic learning.

Nge and Eamoraphan (2020) released a report examining the perceptual learning styles favoured by Burmese EFL students and the relationship between their preferred learning styles and academic performance. One hundred fifty-five individuals completed the PLSPQ. According to the data, students favoured mixed learning styles, followed by group, kinaesthetic, auditory, visual, tactile, and individual learning styles. Besides, there was no significant association between academic achievement and learning styles.

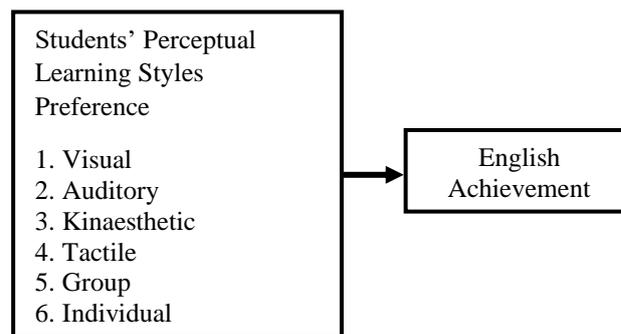
Vu and Tran (2020) investigated Vietnamese freshmen's preferences for perceptual language learning styles. The researchers collected data using a modified version of Reid's (1984) learning style questionnaire. The findings indicated that the learners were engaged because their primary learning modes were the tactile, auditory, group, and kinaesthetic. The visual and individual ways of learning were both minor. English achievement was shown to be strongly related to learning styles.

### 1.7. Conceptual Framework

Reid's perceptual learning style model (Reid, 1984, as cited in Hou, 2009) was adopted as the backbone of the present study because it is the well-known learning style theory in educational study. As depicted in Figure 1, perceptual learning style preference theory is broken down into visual, auditory, kinaesthetic, and tactile and two subdivisions of sociological style, including group and individual. In the context of this study, the use of the terms perceptual learning style, learning style, and language learning style are interchangeable.

**Figure 1**

*The Conceptual Framework of the Study*



### 1.8. Research Objectives

Based on what was said above, the main objectives of this paper are:

- (1) to determine the language learning styles of Cambodian EFL learners.
- (2) to explore the relationships between their language learning styles and English achievement of course content.

### 1.9. Research Questions

As stated by the objectives of the study, the following research questions are generated.

- (1) What kinds of language learning styles do Cambodian EFL students frequently employ when learning English?
- (2) Is there any relationship between individual language learning style preferences and English achievement?

## 2. METHODOLOGY

### 2.1. Setting and Participations

The setting of the study was a private business school providing tertiary education in Phnom Penh, Cambodia. The sample consisted of 108 students who voluntarily took part in this study. They were from the six classes recruited from all year-one classes via convenient sampling. They were composed of 92 female (85%) and 16 male (15%) first-year students majoring in finance and banking enrolled in the first year of the 2021-2022 academic year. They are all Khmer native speakers, and their ages ranged from 17 to 27 years old, with an average of 19 in age.

## 2.2. Instrumentation

The sole instrument employed in this study was a well-tested questionnaire called Perceptual Learning Style Preference (PLSPQ), initially developed by Reid (1987). Peacock (2001) recommended that it has generated substantial attention and has been a focal point of investigation in many studies. Given that the Covid-19 pandemic has been far from over during the data collection timeline, the authors contextually decided to create an online questionnaire entirely based on the PLSPQ.

The primary purpose of this self-reporting questionnaire is to investigate students' preferred learning styles when learning English as a foreign language and the possible relationship between their language learning styles and English achievement. The online questionnaire was classified into six sub-kinds of language learning style preference, including visual, tactile, auditory, group, kinaesthetic, and individual learning styles. Each questionnaire item explores a particular learning style.

The questionnaire was firstly written in English and then translated into Khmer to minimize second language misunderstanding. It is structured in two parts: 1) part A: background information; and 2) part B: a survey of perceptual learning styles.

- Part A was devoted to collecting demographic information. It comprises a few close-ended questions about each participant's age, gender, and class.
- Part B contains the 30 questionnaire items. The respondents rated each item in person on a five-point Likert scale, with scores ranging from 1 to 5 (1= strongly disagree; 2= disagree; 3= undecided; 4= agree, and 5= strongly agree). The authors restructured all questionnaire items by sequentially placing each category's item to simplify the data analysis. The PLSPQ has measured the internal consistency reliability. The alpha coefficient for the overall language learning style items was 0.903, which is described as reliable (Taber, 2018).

In addition, the researchers used English test scores as English achievement from the samples that learned English as a compulsory foreign language

course in the research setting during semester one of the aforementioned academic year. The scores allowed the researchers to determine an association between students' language learning styles and English achievement.

## 2.3. Data Collection

After the researchers had been granted consent, the online questionnaire was separately introduced in the six chosen classes. The respondents have online guided the study's primary purpose and the survey procedures. In particular, they were made aware that they would respond to the questionnaire about learning English. The authors allowed the participants to complete the questionnaire online at any convenient time and voluntarily.

## 2.4. Data Analysis

After the screened data were encoded, it was analyzed using the IBM SPSS Statistics 23. This study involved the analysis of descriptive and inferential statistics. For the case of correlation, the independent variable (IV), in this case, is students' language learning style score, and the dependent variable DV is students' English score. Descriptive statistics, such as item mean scores (*Mean*), standard deviations (*SD*), were employed to explore the information of learners' language learning styles.

Table 1  
*Tests of Normality*

Variables	Shapiro-Wilk		
	Statistic	<i>df</i>	<i>Sig.</i>
Scores	.959	108	.002<0.05
Learning styles	.956	108	.001<0.05

### a. Lilliefors Significance Correction

According to the results from the Shapiro-Wilk test in Table 1, the distribution of English scores and learning styles suggested a deviation from normality,  $W(108) = .959, p = .002$  and  $W(108) = .956, p = .001$  respectively. Thus, Spearman correlation was utilized to seek the possible relationships between the students' language learning styles and their English performance. Significance was set at  $p < .05$ .

### 3. RESEARCH FINDINGS

#### 3.1. Research Objective One

The first objective of this study is to determine the language learning styles of Cambodian EFL learners. As clearly seen from Table 2, the mean score interpretation of learning styles preference was made (Peacock, 2001).

Table 2  
The Mean Score Interpretation

Level of the Mean Score	Interpretation
13.5 and above	major learning styles
11.5-13.49	minor learning styles preference
11.49 or less	negative learning style preference

Table 3 shows the means, standard deviations, ranking, and type of the six perceptual learning style preferences. Based on the general tendency of the distribution, the results showed that the most preferred language learning style was group learning ( $Mean = 20.12, SD = 3.71$ ) followed by kinaesthetic learning ( $Mean = 19.74, SD = 3.51$ ), auditory learning ( $Mean = 19.05, SD = 2.83$ ) and tactile learning ( $Mean = 17.6, SD = 3.28$ ) while individual learning style was the least popular one ( $Mean = 16.87, SD = 3.28$ ). Interestingly, students' learning style preferences to kinaesthetic ( $Mean = 19.74$ ) and auditory learning style ( $Mean = 19.05$ ) appeared more similar. The results also displayed nearly similar learning style preferences toward visual ( $Mean = 17.64$ ) and tactile ( $Mean = 17.6$ ) learning style. Taking Table 2 in its entirety, we can see a feature standing out is that all six distinct types of perceptual learning styles were comparably

constituted major language learning styles. However, their mean scores were closely different.

Table 3  
Means, Standard Deviations, and Perceptual Learning Style Preferences (N=108)

Learning styles	Mean	SD	Rank	Type
Group	20.12	3.71	1	Major
Kinaesthetic	19.74	3.51	2	Major
Auditory	19.05	2.83	3	Major
Visual	17.64	2.87	4	Major
Tactile	17.60	3.28	5	Major
Individual	16.97	3.57	6	Major

#### 3.2. Research Objective Two

The second purpose of the present study is to explore the possible relationships between their language learning styles and English achievement.

A Spearman correlation was run to seek the relationship between students' learning styles and English achievement scores. A two-tailed test of significance showed a similar non-significant correlation between the English scores and each channel of perceptual learning styles, as glimpsed from Table 4. In other words, English competency did not relate to perceptual learning styles, or the more kinds of styles a student prefers to learn English have nothing to do with how well she or he did on it. The result provided support for the previous findings (Al-Zayed, 2017; Isemonger & Sheppard, 2003; Moo & Eamoraphan, 2018; Naserieh & Sarab, 2013; Nge & Eamoraphan, 2020; Palabiyik, 2014; Reid, 1987), which encapsulated the association between perceptual learning styles and learning outcomes.

Table 4  
Spearman Correlation Matrix

	1	2	3	4	5	6	7
1. Student's English Scores	1.0	-.091	-.064	.116	.004	-.037	.122
2. Visual Learning Style		1.0	.347**	.313**	.338**	.282**	.318**
3. Auditory Learning Style			1.0	.488**	.499**	.592**	.305**
4. Kinaesthetic Learning Style				1.0	.565**	.556**	.354**
5. Tactile Learning Style					1.0	.367**	.390**
6. Group Learning Style						1.0	.202*
7. Individual Learning Style							1.0

## **4. DISCUSSION**

### **4.1. Perceptual Learning Style Preferences**

The study's findings indicated that all perceptual learning modes were highly favoured. In general, the findings indicated that students have diverse language learning style preferences, which two underlying factors may explain. To begin, students are active learners, and they often express a variety of preferred forms of learning to aid and facilitate their foreign language acquisition. Second, they may be impacted by a variety of learner-centered instructional strategies or activities. Indeed, there has been a change from teacher-centered education toward a learner-centered approach in Cambodian foreign language classrooms.

Also, the group learning style was the most popular among other learning styles. Such the result was consistent with the findings of the previous studies on perceptual learning styles, namely [Hou \(2009\)](#); [Nge and Eamoraphan \(2020\)](#). An avenue of explanation is that the students habitually and commonly try their best to learn English through communicating with other people, especially teachers and classmates. Furthermore, the learners might be assumed to be familiar with the communicative approach, including pair or group work. However, the result contradicted other former studies ([Alsafi, 2010](#); [Peacock, 2001](#); [Naserieh & Sarab, 2013](#); [Palabiyik, 2014](#); [Reid, 1987](#); [Riazi & Mansoorian, 2008](#)), which revealed that group learning style was the least favoured learning style. In practice, teachers are advised to develop cooperative assignments and learning activities ([Bhattacharyya & Sarip, 2014](#); [Hallin, 2014](#); [Khaki et al., 2015](#); [Tee et al., 2015](#); [Wong, 2015](#), as cited in [Vu & Tran, 2020](#)).

As presented thereof, the kinaesthetic learning style was the second dominant preferred style. In line with reviewed learning styles, as consistently revealed in past studies, the kinaesthetic modality was most favoured by learners. The finding of the present study was parallel with the previous research ([Alnujaidi, 2019](#); [Isemonger & Sheppard, 2003](#); [Khalil, 2019](#); [Li & He, 2016](#); [Moradkhan & Mirtaheri, 2013](#); [Naserieh & Sarab, 2013](#); [Palabiyik, 2014](#); [Peacock, 2001](#); [Sun & Teng, 2017](#); [Vu & Tran, 2020](#)). For this respective, it implies that the Cambodian learners seem active and participatory in

relevant English learning activities; therefore, to the extent that they can boost their understanding and knowledge ([Vu & Tran, 2020](#)). The hands-on activities, namely grouping, pairing, role-playing, problem-solving, game playing, or note-taking, are physically practised in their English classrooms. In teaching methodology, an active learning environment should be examined in response to the students' needs ([Vu & Tran, 2020](#)).

### **4.2. The Association between Perceptual Learning Styles and Learning Achievement**

Notwithstanding the negative correlation between language learning styles and English achievement reported, the trends in learning style preferences with high levels should be a mismatch, as displayed in Table 3. Hence, it seems a dichotomy. [Castro and Peck \(2005\)](#) authored a longitudinal exploration investigating university students' learning styles and learning difficulties. They pointed out that the students' favourite learning styles might be a double-edged sword that maximizes or minimizes their foreign language achievement. To some extent, the authors echoed [Naserieh and Sarab \(2013, p. 131\)](#), who suggested that "more research employing multiple measures of proficiency is, thus, needed to resolve the inconsistencies in this area." The subsequent possible explanation is that English teachers seemingly neglect various students' learning styles, resulting in improper or ineffective teaching materials or activities that mismatch students' learning styles. Last but not least, learning achievement can be disparate concerning whether learning styles are correctly practised or not in classrooms while the student who can optimize their academic performances attain varied learning style applications ([Moo & Eamoraphan, 2018](#)). Apropos the initial premise, the learners in this survey research might be inferred that they are not familiar with applying any appropriate learning style to learn best.

## **5. CONCLUSION**

### **5.1. Implications and Conclusion**

This present study aimed to examine the influence of learning styles on English academic performance. The key results denoted that each

perceptual learning style belongs to major preference, and no significances between language learning styles and academic achievement were observed. The authors took the liberty of expressing, with caution, the likely assorted students' preferred learning English styles, especially communicative-approach and active experienced orientation.

Unquestionably teachers should determine students' language learning styles through classroom survey conduction; therefore, they can cautiously and contextually develop, adopt, or modify teaching materials, lesson plans, and classroom activities that finely accommodate students' learning styles (Alnujaidi, 2018; Moo & Eamoraphan, 2018; Khalil, 2019; Vu & Tran, 2020). In a similar vein, teachers should employ interviews or classroom observations to dig deeper into students' learning styles. Furthermore, students themselves should adjust their learning styles regarding familiarity with teaching activities (Khmakhien, 2012; Khali, 2019; Vu & Tran, 2020). The authors reckoned much to Peacock (2001), who implicatively suggested that teachers find out their students' learning styles and accommodate multi-learning styles by presenting new information and materials in different modes and applying various activities. As stated in the preceding result section, the multiple learning style preferences should be pedagogically taken into account by Peacock (2001)'s recommendation on balanced styles as follows:

- For the visual style learners: using handouts, videos, encouraging note-taking and reading, and writing key information on the board
- For the auditory style learners: using class or group discussions, individual conferences, lectures, tapes, peer tutoring, and giving oral explanations and instructions
- For the kinaesthetic style learners: using problem-solving activities, role-play and drama, and encouraging active participation
- For the tactile style learners, encouraging hands-on work, e.g., giving students hard copies and allowing them to handle class material
- For the group style learners, using small group activities and encouraging them to meet other students outside class
- For the individual learners, giving individual attention, using individual conferences, and

encouraging independent and self-directed study

## **5.2. Limitation and Directions for Further Study**

Within this study, the results should be interpreted under consideration of the following limitations. This study was undertaken using the PLSPQ. Since it is a self-reporting and reflects learners' perception and preference, the findings are limited to the willingness and ability of the participants to complete and return the survey to the researchers accurately. In addition, since the research results cannot be generalized to the other populations, they do not represent all Cambodian university learners.

Further researchers should acknowledge the mixed methods approach and other methods, such as interview and think-aloud protocol, to obtain more dependable results on learners' language learning preferences. Age, cultural background, and learning context possibly impact language learning styles (Dörnyei 2005; Wenden 1999, as cited in Khamkhien, 2012). Future studies examining other variables, namely gender, age, major, language learning strategy, and learning experience, strongly suggest filling such a research gap.

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- Access to justice
- Right to education



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- Literacy studies
- Grammar teaching

**APPENDIX**

**Learning Style Questionnaire**

**Introduction:**

Hello students: First, I appreciate your participation and cooperation. The purpose of this survey is to explore the language learning styles of year-one students in Cambodia. The survey responses are strictly confidential. Also, there is no absolutely right or wrong answer within this survey. Please respond to all the questions depend on your situation. Thanks for your collaboration in assisting me with this study.

This questionnaire has been designed to help you identify the way(s) you learn English best; the way(s) you prefer to learn English.

ស្នើសុំនិស្សិតទាំងអស់គ្នា៖ ជាដំបូងខ្ញុំសូមកោតសរសើរចំពោះការចូលរួមនិងកិច្ចសហការរបស់អ្នកទាំងអស់គ្នា។ គោលបំណងនៃការស្ទង់មតិនេះគឺដើម្បីស្វែងរករបៀបនៃការសិក្សាភាសារបស់និស្សិតឆ្នាំទីមួយក្នុងប្រទេសកម្ពុជា។ ការឆ្លើយតបរបស់ប្អូនៗក្នុងការស្ទង់មតិនេះនឹងត្រូវបានរក្សាការសម្ងាត់យ៉ាងតឹងរឹងបំផុត។ ដូចគ្នានេះផងដែរមិនមានចម្លើយណាមួយដែលត្រឹមត្រូវឬខុសទេនៅក្នុងការស្ទង់មតិនេះ។ សូមមេត្តាឆ្លើយតបរាល់សំណួរទាំងអស់ដោយអាស្រ័យលើស្ថានភាពផ្ទាល់ខ្លួនរបស់ប្អូននិស្សិតៗទាំងអស់គ្នា។ សូមអរគុណចំពោះការសហការរបស់ប្អូនៗទាំងអស់គ្នាក្នុងការជួយខ្ញុំបាទលើការសិក្សាស្រាវជ្រាវនេះ។

កម្រងសំណួរនេះត្រូវបានរៀបចំឡើងដើម្បីជួយប្អូនៗនិស្សិតក្នុងការកំណត់របៀបនានាដែលប្អូនៗរៀនភាសាអង់គ្លេសបានល្អបំផុត ក៏ដូចជាមធ្យោបាយផ្សេងៗដែលប្អូនចូលចិត្តក្នុងការរៀនភាសាអង់គ្លេស។

**Part 1: Background Information**

Gender:  Female  Male  
 Age: \_\_\_\_\_  
 Name (please provide your name or ID here): \_\_\_\_\_  
 Choose your classroom

- Prasat Kork Romeat ( បន្ទប់ប្រាសាទគោករមៀត )       Prasat Kro Lanh ( បន្ទប់ប្រាសាទក្រឡាញ់ )
- Prasat Pre Rup ( បន្ទប់ប្រាសាទប្រែរូប )       Prasat Kompong Preah ( បន្ទប់ប្រាសាទកំពង់ព្រះ )
- Prasat Kravan ( បន្ទប់ប្រាសាទក្រវ៉ាន់ )       Prasat Kpob ( បន្ទប់ប្រាសាទខ្ពប់ )

**Part 2: Learning Style Preferences**

Please respond to each statement carefully, 5= Strongly Agree; 4= Agree; 3= Undecided; 2= Disagree; 1= Strongly Disagree.

សូមមេត្តាឆ្លើយតបនឹងសំណួរនីមួយៗដោយយកចិត្តទុកដាក់ដោយ៖ លេខ5=យល់ស្របយ៉ាងខ្លាំង; លេខ4=យល់ស្រប; លេខ3=មិនទាន់សម្រេចចិត្ត; លេខ2=មិនយល់ស្រប; លេខ1=មិនយល់ស្របខ្លាំង

Visual (មើលឃើញ)					
Learning Style Statement	1	2	3	4	5
1. I learn better by reading what the teacher writes on the board. ១. ខ្ញុំរៀនកាន់តែប្រសើរដោយការអានអ្វីដែលគ្រូសរសេរនៅលើក្តារខៀន។	<input type="checkbox"/>				
2. When I read instructions, I remember them better. ២. នៅពេលខ្ញុំអានសេចក្តីណែនាំ ខ្ញុំចងចាំវាកាន់តែល្អ។	<input type="checkbox"/>				
3. I understand better when I read instructions.	<input type="checkbox"/>				

៣. ខ្ញុំយល់កាន់តែច្បាស់នៅពេលខ្ញុំអានសេចក្តីណែនាំ។					
4. I learn better by reading than listening to someone. ៤. ខ្ញុំរៀនកាន់តែប្រសើរដោយការអានជាជាងការស្តាប់នរណាម្នាក់។	<input type="checkbox"/>				
5. I learn more by reading textbooks than listening to lectures. ៥. ខ្ញុំរៀនកាន់តែបានច្រើនតាមរយៈការអានសៀវភៅច្រើនជាងការស្តាប់ការបង្រៀន។	<input type="checkbox"/>				

<b>Auditory (ស្តាប់)</b>					
<b>Learning Style Statement</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
6. When the teacher tells me the instructions, I understand better. ៦. នៅពេលគ្រូប្រាប់ខ្ញុំពីសេចក្តីណែនាំ ខ្ញុំយល់កាន់តែច្បាស់។	<input type="checkbox"/>				
7. When someone tells me how to do something in class, I learn it better. ៧. នៅពេលអ្នកណាម្នាក់ប្រាប់ខ្ញុំពីរបៀបធ្វើអ្វីមួយក្នុងថ្នាក់រៀន ខ្ញុំយល់កាន់តែច្បាស់។	<input type="checkbox"/>				
8. I remember things I have heard in class better than things I have read. ៨. ខ្ញុំចងចាំរឿងដែលខ្ញុំធ្លាប់បានឮនៅក្នុងថ្នាក់ជាងអ្វីដែលខ្ញុំធ្លាប់បានអាន។	<input type="checkbox"/>				
9. I learn better in class when the teacher gives a lecture. ៩. ខ្ញុំរៀនកាន់តែប្រសើរនៅក្នុងថ្នាក់នៅពេលគ្រូបង្រៀន។	<input type="checkbox"/>				
10. I learn better in class when I listen to someone. ១០. ខ្ញុំរៀនកាន់តែប្រសើរនៅក្នុងថ្នាក់នៅពេលខ្ញុំស្តាប់អ្នកណាម្នាក់។	<input type="checkbox"/>				

<b>Kinaesthetic (សរីរាង្គកាយ)</b>					
<b>Learning Style Statement</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
11. I prefer to learn by doing something in class. ១១. ខ្ញុំចូលចិត្តរៀនដោយការធ្វើអ្វីមួយនៅក្នុងថ្នាក់។	<input type="checkbox"/>				
12. When I do things in class, I learn better. ១២. នៅពេលខ្ញុំធ្វើអ្វីនៅក្នុងថ្នាក់ ខ្ញុំរៀនកាន់តែប្រសើរ។	<input type="checkbox"/>				
13. I enjoy learning in class by doing experiments. ១៣. ខ្ញុំចូលចិត្តរៀននៅក្នុងថ្នាក់ដោយធ្វើពិសោធន៍។	<input type="checkbox"/>				
14. I understand things better in class when I participate in role playing. ១៤. ខ្ញុំយល់អ្វីមួយប្រសើរជាងមុននៅក្នុងថ្នាក់នៅពេលដែលខ្ញុំចូលរួមក្នុងសកម្មភាពសម្តែងក្នុងថ្នាក់។	<input type="checkbox"/>				
15. I learn best in class when I can participate in related activities. ១៥. ខ្ញុំរៀនបានល្អប្រសើរបំផុតនៅក្នុងថ្នាក់នៅពេលខ្ញុំអាចចូលរួមក្នុងសកម្មភាពដែលទាក់ទង។	<input type="checkbox"/>				

<b>Tactile (ប៉ះពាល់)</b>					
<b>Learning Style Statement</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
16. I learn more when I can make a model of something. ១៦. ខ្ញុំរៀនកាន់តែច្រើននៅពេលដែលខ្ញុំអាចបង្កើតគម្រូរអ្វីមួយ។	<input type="checkbox"/>				
17. I learn more when I make something for a class project. ១៧. ខ្ញុំរៀនកាន់តែច្រើននៅពេលដែលខ្ញុំអាចបង្កើតអ្វីមួយសម្រាប់គម្រោងរបស់ថ្នាក់។	<input type="checkbox"/>				

18. I learn better when I make drawings as I study. ១៨. ខ្ញុំរៀនកាន់តែប្រសើរនៅពេលខ្ញុំគូររូបនៅពេលសិក្សា។	<input type="checkbox"/>				
19. When I build something, I remember what I have learned better. ១៩. នៅពេលខ្ញុំសាងសង់អ្វីមួយខ្ញុំចងចាំអ្វីដែលខ្ញុំធ្លាប់បានរៀនកាន់តែប្រសើរ។	<input type="checkbox"/>				
20. I enjoy making something for a class project. ២០. ខ្ញុំចូលចិត្តបង្កើតអ្វីមួយសម្រាប់គម្រោងក្នុងថ្នាក់។	<input type="checkbox"/>				

<b>Group (ក្រុម)</b>					
<b>Learning Style Statement</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
21. I get more work done when I work with others. ២១. ខ្ញុំអាចបំពេញការងារបានកាន់តែច្រើននៅពេលដែលខ្ញុំធ្វើការជាមួយអ្នកដទៃ។	<input type="checkbox"/>				
22. I learn more when I study with a group. ២២. ខ្ញុំរៀនកាន់តែច្រើននៅពេលខ្ញុំសិក្សាក្នុងក្រុម។	<input type="checkbox"/>				
23. In class, I learn best when I work with others. ២៣. នៅក្នុងថ្នាក់ ខ្ញុំរៀនបានល្អបំផុតនៅពេលខ្ញុំធ្វើការជាមួយអ្នកដទៃ។	<input type="checkbox"/>				
24. I enjoy working on an assignment with two or three classmates. ២៤. ខ្ញុំចូលចិត្តធ្វើកិច្ចការសាលាណាមួយជាមួយមិត្តរួមថ្នាក់ចំនួនពីរឬបីនាក់។	<input type="checkbox"/>				
25. I prefer to study with others. ២៥. ខ្ញុំចូលចិត្តសិក្សាជាមួយអ្នកដទៃ។	<input type="checkbox"/>				

<b>Individual (បុគ្គល)</b>					
<b>Learning Style Statement</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
26. When I study alone, I remember things better. ២៦. នៅពេលខ្ញុំសិក្សាតែម្នាក់ឯង ខ្ញុំចងចាំអ្វីៗបានប្រសើរ។	<input type="checkbox"/>				
27. When I work alone, I learn better. ២៧. ពេលខ្ញុំធ្វើការតែម្នាក់ឯង ខ្ញុំរៀនកាន់តែល្អប្រសើរ។	<input type="checkbox"/>				
28. In class, I work better when I work alone. ២៨. នៅក្នុងថ្នាក់ ខ្ញុំធ្វើការកាន់តែប្រសើរនៅពេលខ្ញុំធ្វើការតែម្នាក់ឯង។	<input type="checkbox"/>				
29. I prefer working on projects by myself. ២៩. ខ្ញុំចូលចិត្តធ្វើការលើគម្រោងផ្សេងៗដោយខ្លួនឯង។	<input type="checkbox"/>				
30. I prefer to work by myself. ខ្ញុំចូលចិត្តធ្វើការដោយខ្លួនឯង។	<input type="checkbox"/>				

Student's Score: \_\_\_\_\_