

Learning Styles and Motivations in Learning English amongst English as Second Language Foundation Students at a Public University in Selangor, Malaysia.

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Abstract: The reformation of education is a dynamic process that requires a constant investigation and research particularly in the 21st century. In view of performance in the second language (L2), various variables were measured consistently by many scholars globally and among them, are learning styles, self-efficacy, and motivations. However, these variables are normally measured individually in past studies. Also, due to the pandemic of COVID-19 worldwide, the study of motivations amongst ESL learners is paramount in facing the challenges of online learning. Drawing from an in-depth study investigating the relationship of learning styles and self-efficacy toward motivations amongst the ESL Foundation students in public universities in Malaysia, this paper focuses only on measuring the statistical relationship between learning styles and motivations in learning English amongst the ESL foundation students at one of the public universities in Malaysia. A mixed-methods research design was employed in the current study. Guided by four research questions using a descriptive-correlational research design, mainly the study explored the relationship amongst 117 ESL respondents. Reid's PLSPQ and Gardner and Lambert's AMTB instruments were used to collect the quantitative data. Findings indicated that most of the students rated themselves as having flexible learning styles and high level of motivations. Also, there was a significant and positive relationships between learning styles and motivations ($R=.464$) and the simple regression test showed that 21.5% ($R^2=.215$) of the variance in Motivations score was predicted from learning styles dimensions. Lastly, qualitative findings tend to corroborate the quantitative findings. Thus, all these findings lead to some various important implications to stakeholders.

Keywords: ESL Foundation Students, Learning Styles, Motivations, Public Universities.

1. Introduction

The English language has reached great influence worldwide and is significant in many fields. English is commonly used as an international language of communication for various purposes globally. Following as such, English language education is emphasized and taught all over the world. To confront the challenges of unifying its multilingual society, Malaysia has experienced several shifts in language policy (Muftah & Rafik-Galea, 2013). With English being important to academic studies, professional success, and personal development, almost every university in Malaysia has implemented an English

language program as (a second language, besides the national language) to prepare the graduates for the local and wider international workforce. Even though English is considered indispensable, it is still a foreign language and therefore, tremendous efforts are required for students to acquire it. In order to prepare competitive and skilled graduates, it is imperative for universities in Malaysia to centre the attention on factors that enhance English language learning. In short, it is crucial to ensure that the teaching and learning process of English as a second language is streamlined at the foundation level in tertiary education. In view of this, variables such as learning styles and motivations of students in learning English as a second language are to be researched thoroughly especially during the pandemic of COVID-19 since teaching and learning were mostly transformed using the online platform in an instant of time since the beginning of the pandemic in early 2020. Thus, this study aims to explore and measure the statistical relationship between learning styles and motivations in learning English amongst the ESL Foundation students at one of the public universities in Malaysia. The followings are the four research questions that guided the study:

- 1) What are the mean scores of learning styles amongst ESL students at a public university in Selangor, Malaysia?
- 2) What are the mean scores of motivations in learning English amongst ESL students at a public university in Selangor, Malaysia?
- 3) Is there any significant relationship between learning styles and motivations in learning English amongst ESL students at a public university in Selangor, Malaysia?
- 4) What is the relative contribution of learning styles as the independent variable towards dependent variable of motivations in learning English amongst ESL students at a public university in Selangor, Malaysia?

2. Literature Review

There are many contributing factors in determining the success of learning a language. In the recent years, there has been a great attention on the factors affecting the learners' abilities. Various studies were carried out in the past to discuss some of these factors. However, there is a paucity of information in the correlational studies of these variables of learning styles and motivations particularly in L2 learning at the higher education level.

Learning styles and motivations have received much attention from researchers. Kamiluddin (2019) noted that numerous studies were carried out in the past, revealing that ESL students were more likely to achieve better improvement in learning English as a second language when they were well-motivated, and their learning preferences were accommodated proportionally. The researcher also added that there was a relationship between learning styles and motivations in learning English language ($r=.456$). Hence, it could be implied and established that the students' learning styles were correlated with motivation orientation in English language learning.

Next, Tai (2013) showed that there were significant relationships between kinesthetic, tactile, and auditory learning styles toward motivations in the acquisition of English language learning. Moreover, the findings indicated that respondents' learning styles had 38.9% effect possibility on motivations in learning English as a second language. This is also paralleled to findings by Naserieh (2009) which demonstrated kinesthetic ($M=14.49$), tactile ($M=14.36$) and auditory ($M=13.71$) as the highest mean scores obtained from the ESL respondents. Similarly, Huang, Ka & Teo (2018) highlighted that visual, auditory, and kinesthetic are the most preferred learning styles by university students in mainland China in learning English. Hamzah, Sueb, Alias, Syed Mustafa, and Mohd Yusof (2021) found that students who are highly motivated performed better in their studies, and they strived towards achieving their learning goals. Hence, the compiled data correlates that active involvement in their language learning is strongly preferred by most participants. Therefore, students can apply diverse learning styles to maximize their learning efficiency. In addition, this will also be useful for language instructors to plan their lesson to increase students' engagement and motivations in L2 acquisition.

Further, Kho (2018) recorded that kinesthetic learning style was rated as the highest mean score ($M=20.34$) making it the most preferred learning style in learning English for students at a Polytechnic institution in Malaysia. Meanwhile, another research by Mohamad and Rashid (2013) showed that ESL students preferred kinesthetic (42%) as their learning style of choice. These can be explained when majority of the respondents were more inclined towards active learning style rather than passive ones.

In quite a recent study by Razali, Sulaiman, Mohd Ayub, and Abdul Majid (2022), it is found that learning styles had a direct effect on learning environment amongst ESL higher education students during the COVID-19 pandemic phase. Moreover, Raniafari, Riharidini, and Wiradimadja (2021) showed that 69% of Foundation students at a public university preferred to participate actively in a language class. Indeed, learning styles tend to contribute to teaching and learning via technology.

Based on the past studies discussed above, there were various correlational studies between learning styles and some other dependent variables as the outcome performance including motivations which were conducted during pandemic time. Hence, this has justified the establishment of the conceptual framework of the current study that positioned learning styles as the independent variable and motivations as the dependent variable. Thus, Figure 1 illustrates the conceptual framework of the current study.

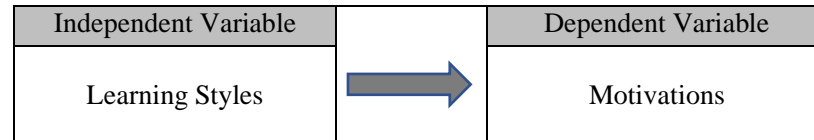


Fig. 1 The Conceptual Framework of Learning Styles and Motivations in learning English amongst ESL students at a public university in Selangor, Malaysia.

3. Problem Statement

Several problems have been identified in this current study with regards to the relationship of learning styles and motivations in learning English amongst ESL Foundation students at a public university, Selangor, Malaysia.

Firstly, the reformation in Malaysian Education Blueprint is necessary to provide quality education fairly to the nation. The concept of ‘equal opportunities’ in education is an important principle of modern education (Ministry of Education, 2013). It is believed that education reformation must be built on this very same principle for the nation to reap the full potential of its benefits. Thus, higher educational institutions should aim for the graduates to be more competitive linguistically at international standards. Due to the decline in English performance of university graduates in MUET results as highlighted by Suyansah and Gabda (2020), this has a detrimental implication on the marketability and employability of graduates in the workforce. Thus, in aligning the education system with current needs, English language proficiency can be further enhanced in the education reformation.

Secondly, motivation is always seen as an outcome for a successful second language acquisition. Thus, it became an evergreen variable in the research of language learning globally. On the other hand, the lack of motivations amongst ESL learners could gravely influence the success of second language learning. Past studies by Gardner, (2006), Jain and Sidhu, (2013), and Vahdany, Sabouri & Ghafarnian, (2015) emphasized that ESL students with positive attitudes in language learning tend to have higher motivations that leads to the successful L2 learning. Xiang Yang (2012) pointed out that there is a significant positive correlation between the level of motivations and English performance. As the level of motivations increased, the English performance amongst the students increased as well. Further, Oletic and Illic (2014) as well as Ng and Ng (2015) revealed that both intrinsic and extrinsic motivations are the best predictors for L2 acquisition. Based on this past literature it can be implied that motivations are seen to be a crucial outcome to the success of second language learning. Indeed, motivations are found to be more relevant particularly in the phase of COVID-19 pandemic since teaching and learning sessions in physical classrooms have been abruptly replaced to online platform. Monitoring the decline in the level of motivations amongst ESL learners particularly at the foundation level has created an urgency to embark upon this research.

Thirdly, past studies also indicated that there are contributing factors which affect the level of motivations in L2 acquisition. Based on observation, learning styles are seen to be the contributing factors which could affect the level of motivations amongst the ESL foundation students. As Banner and Rayner (2000) put forth, by identifying students’ learning styles it would contribute to more efficient, relevant, and meaningful learning especially in the acquisition of English as a second language. Xu (2011) postulated that there are over seventy learning style models and some of these

models are more frequently used in the success of L2 acquisition. Moreover, Wong and Nunan (2011) are of the opinion that teachers and ESL students need to maintain the adaptability of learning styles in their language acquisition. The inflexibility of learning styles preferences for ESL foundation students posed an issue in students' attaining the understanding of English. In doing so, teachers need to find well suited practices for different students with diverse learning styles. Hence, it is vital to explore the learning styles preferred by the ESL foundation students towards the success of teaching and learning of English language.

Lastly, there was a research gap conducted in measuring relationships between learning styles and motivations in the past decades. For instance, Zhenhui (2001) conducted a study measuring students' learning styles and teachers' teaching styles which explored the mismatches between the two. Thus, language learning can be more effective to further motivate them in grasping the knowledge of English learning significantly. Further, Huang, Ka & Teo (2018) conducted a study on the relationship between students' learning styles and English achievements. A significant relationship was found in their findings indicating the contribution of learning styles towards English achievements. In contrast to the above studies, other researchers embarked on individual variable only. For instance, Dilshad, Nausheen and Ahmed (2019) investigated on motivation and demotivating factors in learning English across learners' demographic profiles amongst ESL learners in schools. Findings indicated that low confidence, problem in speaking English and poor grammar knowledge were major factors that demotivated students in learning English. In short, it can be observed that there is a research gap between what have been studied for the past 20 years and researched concerning learning styles and motivations in the recent years especially amongst the foundation students particularly in pandemic of COVID-19 worldwide setting. Due to the problems and research gap presented above, this study embarks on bridging the knowledge gap for both learning styles and motivations, amongst ESL foundation students at a public university in Malaysian setting.

4. Methodology

This study employed a descriptive correlational research design using a mixed-methods approach comprising both quantitative and qualitative research approaches to explore the relationship between learning styles and motivations in Learning English amongst the ESL foundation students in a public university in Selangor, Malaysia.

The population of this study consisted of a group of ESL Science Foundation students studying at Universiti Putra Malaysia, Selangor Malaysia. In total there were 775 students embarked on the foundation program and simple random sampling technique was used in selecting the respondents. The rationale for this technique is to ascertain that every Science Foundation student has the equal opportunity of participating in this study as respondents. However, the constraints of collecting data during the COVID-19 pandemic resulted to only 117 completed the questionnaires.

The instruments measuring learning styles by Reid (1984) and motivations by Gardner and Lambert (1972) were adapted into six-point Likert scale. For the independent variable of learning styles, there are six dimensions with 29 items. As for dependent variable of motivations, there are five dimensions with 29 items. The reliability index for all the dimensions in both variables showed high reliability with Cronbach's Alpha value reading between 0.802 to 0.917. The items were benchmarked according to the reliability classification by DeVellis (1991).

Statistical Package for the Social Sciences (SPSS) version 26 was used to analyze the quantitative findings. The data was analysed using descriptive analysis to find the mean score and standard deviation. To assist the interpretation of quantitative data, findings on the interval six-point Likert scale of learning styles and motivations were collapsed into high, moderate, and low categories. For both variables, data which were rated as "1=Strongly Disagree, 2=Moderately Disagree" with the mean score of 1.00 to 2.99 were collapsed as low level while data which were rated as "3=Slightly Disagree, 4=Slightly Agree" with the mean score of 3.00 to 4.00 were collapsed as moderate level and data which were collapsed as "5=Moderately Agree and 6=Strongly Agree" with the mean score of 4.01 to 6.00 were collapsed as high level of learning styles and motivations.

Inferential Statistics using Pearson Product Moment Correlation Coefficient test analysis was employed to measure the relationships between the two variables. Linear Regression Analysis was also employed to measure the relative contributions between the two variables. In addition, qualitative data

were also collected via interviews and categorized in accordance with the quantitative dimensions with the aim to triangulate the overall findings. The summary of the research questions, statistics type and data analysis techniques are illustrated in Table 1 below.

Table 1: Summary of research questions, statistical tests and data analysis techniques

No	Research Questions	Statistics	Data Analysis Techniques
1	What are the mean scores of learning styles amongst ESL students at a public university in Selangor, Malaysia?	Descriptive statistics	Frequency, Mean, Percentage
2	What are the mean scores of motivations in learning English amongst ESL students at a public university in Selangor, Malaysia?	Descriptive statistics	Frequency, Mean, Percentage
3	Is there any significant relationship between learning styles and motivations in learning English amongst ESL students at a public university in Selangor, Malaysia?	Inferential statistics	Pearson Product Moment Correlation Coefficient. (r)
4	What is the relative contribution of learning styles as the independent variable towards dependent variable of motivations in learning English amongst ESL students at a public university in Selangor, Malaysia?	Inferential statistics	Linear Regression Analysis (r^2)

In addition to data analysis, Pearson Product Moment Correlation Coefficient test analysis was employed to measure the statistical relationship between the two variables. It was conducted to investigate whether there was any significant relationship between learning styles (independent variable) and motivations in learning English (dependent variable). In order to determine the degree of strength in relationship, Cohen's rule of thumb (1998) was referred as in Table 2 for the interpretation of the correlation coefficients.

Table 2. Cohen's rule of thumb

Pearson Coefficient (r)	The Strength of Relationship
0.10 – 0.29	Weak relationship
0.30 – 0.49	Moderate relationship
0.50 – 1.00	Strong relationship

Cohen (1998)

5. Findings

Findings of the study are divided into three sections which are demographic profile, quantitative findings based on research questions and qualitative findings.

5.1 Demographic profile

Findings from demographic profile is presented in terms of gender, first language of respondents, and respondents' level of English proficiency. Table 3 summarizes the demographic profile of the respondents accordingly.

Table 3. Demographic profile of respondents (frequency and percentage)

Gender	Frequency (n)	Percentage (%)
Male	41	35.0
Female	76	65.0
First language	Frequency (n)	Percentage (%)
Malay	103	88.0
Chinese	9	7.7
Tamil	5	4.3
Level of English Proficiency	Frequency (n)	Percentage (%)
Poor	6	5.1
Average	71	60.7
Good	38	32.5
Excellent	2	1.7
Total	117	100

5.2 Quantitative Findings

Research Question 1

What are the mean scores of learning styles amongst ESL students at a public university in Selangor, Malaysia?

Table 4 illustrates the overall mean scores of learning styles ($M=4.58$, $SD=.50$) amongst the ESL students at a public university in Selangor, Malaysia indicating that most of them agreed with the different learning styles were applied in English language learning as the mean scores ranged between 4.18 to 4.90 indicating that students “slightly agree” to “agree” with all the six dimensions; Visual, Tactile, Auditory, Kinesthetic, Individual and Group. In addition, the highest mean score was obtained from Kinesthetic dimension ($M=4.90$, $SD=1.02$) whereas Individual dimension ($M=4.18$, $SD=1.07$) was rated as the lowest.

Table 4: Mean Scores of Learning Styles Dimensions.

Dimensions	N	Mean	SD
Visual	117	4.43	.68
Tactile	117	4.68	.93
Auditory	117	4.77	.81
Kinesthetic	117	4.90	1.02
Individual	117	4.18	1.07
Group	117	4.54	1.09
Overall Mean Score	117	4.58	.50

1=Strongly Disagree, 2=Disagree, 3=Slightly Disagree, 4=Slightly Agree, 5=Agree, 6= Strongly Agree

Research Question 2

What are the mean scores of motivations in learning English amongst ESL students at a public university in Selangor, Malaysia?

Table 5 illustrates the mean scores of motivations ($M=5.24$, $SD=.51$) in learning English amongst ESL students at a public university in Selangor, Malaysia indicating that generally the respondents agreed that they rated somehow high level of motivations in learning English language at higher learning institution. The mean scores ranged between 4.87 to 5.56 indicating that students almost “agree” to almost “strongly agree” with all the five dimensions; Motivational Intensity, Integrative Orientation, Instrumental Orientation, English Teacher Evaluation and English Course Evaluation. In

addition, the highest mean score was obtained from Integrative Orientation dimension (M=5.56, SD=.59) whereas the lowest mean score was obtained from Motivational Intensity dimension (M=4.87, SD=.72).

Table 5: Mean Scores of Motivations in Learning English Dimensions.

Dimensions	N	Mean score	SD
Motivational Intensity	117	4.87	.72
Integrative Orientation	117	5.56	.59
Instrumental Orientation	117	5.34	.70
English Teacher Evaluation	117	5.36	.67
English Course Evaluation	117	5.10	.78
Overall Total Mean Score	117	5.24	.51

1=Strongly Disagree, 2=Disagree, 3=Slightly Disagree, 4=Slightly Agree, 5=Agree, 6= Strongly Agree

Research Question 3

Is there any significant relationship between learning styles and motivations in learning English amongst ESL students at a public university in Selangor, Malaysia?

The Pearson Product Moment Correlation Coefficient was employed to analyze the statistical relationship between the two variables. Table 6 showed that there was a significant and positive relationship between Learning Styles and Motivations in Learning English amongst ESL students at a public university in Selangor, Malaysia ($r=.464$, $p=.000$). Based on Cohen (1998), the current social science-based relationship can be categorized as having moderate correlation indicating that the higher the learning styles, the higher the motivations level in learning English amongst the respondents.

Table 6. Correlation between Learning Styles and Motivations

Variables		Learning Styles	Motivations
Learning Styles	Pearson Correlation	1	.464**
	Sig.(2-tailed)		.000
	N	117	117
Motivations	Pearson Correlation	.464**	1
	Sig. (2-tailed)	.000	
	N	117	117

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

Research Question 4

What is the relative contribution of learning styles as independent variable towards dependent variable of motivations in learning English amongst ESL students at a public university in Selangor, Malaysia?

Simple regression statistical test was conducted to measure the relative contributions of Learning Styles as independent variable towards dependent variable of Motivations in Learning English amongst ESL students at a public university in Selangor, Malaysia. Table 7 indicated a significant equation [$F(1,115) = 31.565$, $p=.000$] with R^2 of .215. The respondents predicted that Motivations was equal to $y=3.110$ (constant) $+ .465$ (Learning Styles). These findings indicated that 21.5% ($R^2 = .215$) of the variance in Motivations can be predicted from the independent variable of Learning Styles. Therefore, it can be inferred that the remaining of 78.5% was due to other factors that were not taken into consideration in this study.

Table 7. Relative Contribution of Learning Styles towards Motivations in Learning English

Model Summary					
Model	R	R square	Adjusted R square	Std. Error of the Estimate	
1	.464 ^a	.215	.209	.451	
a. Predictors: (Constant), Learning Styles					
ANOVA ^a					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	6.448	1	6.448	31.565	.000 ^b
Residual	23.493	115	.204		
Total	29.941	116			
a. a. Dependent Variable: Motivations, b. Predictors: (Constant), Learning Styles					

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
Constant	3.110	.382		8.145	.000
Learning Styles	.465	.083	.464	5.618	.000
a. Dependent Variable: Motivations					

5.3 Qualitative Findings

In view of the mixed-methods research approach, qualitative data were also gathered and analysed from interviews amongst the respondents as part of the triangulation and validation measures to the quantitative findings. The qualitative data were gathered through the following questions:

1. Do you apply any learning styles in your learning English as a second language? Yes or No? If Yes, kindly rate low, moderate, or high and explain why is that so?

Qualitative findings indicated various opinions from respondents who rated 6 (Strongly Agree) and 4 (moderate) on applying learning styles in learning English. Among them are:

Respondent 2 which rated 6 for Visual, Auditory and Kinesthetic stated that,

“Dynamic learning style makes me understand better and enjoy being in class. However, Visual, Auditory and Kinesthetic are impactful learning styles to me especially for English subject because language needs to be spelled and listened carefully. These elements should be first comprehended for further learning.”

Respondent 4 also rated Tactile, Auditory, Kinesthetic and Group as 6 (Strongly Agree). The respondent affirmed that,

“Knowing my learning style can increase my confidence and self-respect, which can help me to achieve my personal and professional objectives without doubting myself or my own abilities. Having to listen to the lecturer and taking notes simultaneously is a must to me. Further, I strongly believed that I have to be the hands-on person such as getting involved in various activities, in order to master English language in order to be able to operate in it.”

As for respondent 6, Visual, Auditory and Kinesthetic were rated as 6 (Strongly Agree) and further clarified that,

“For Visual, I am able to learn better as I jot down my notes and understand it as a whole. I make sure that I am able to explain all by making notes or mind map. For Auditory, I am keen to listen more as it helps me to increase my level of focus and attention. I like to listen to lectures and jot down notes as well. It helps a lot for me to get a deeper understanding. It also helps me to ask questions related when I put it that way. For Kinesthetic, I believe by implementing what you have learned and do hands-on activities, all will be stamped in your brain memory and physical memory about what you have learned, will be a very good for future references or to answer tests let say.”

Do you think motivation is important in learning English as a second language?
Yes or No? If Yes, kindly rate low, moderate, or high and explain why is that so?

Findings indicated various opinions from respondents who rated 6 (Strongly Agree) on having high motivation in learning English. Among among them are:

Further, Respondent 2 mentioned that,

“Motivation drives you. If you are not motivated, you don’t know the purpose of learning something, it can hinder you from achieving your objective in learning English language. Hence, motivation is important... Further, I think that motivating myself in staying focus in class will influence my English language learning and also boost my motivation to get the knowledge taught by the lecturer during English classes.”

Respondent number 4 said that,

“Motivation is so much needed now than before in learning English especially in this Pandemic Covid19 period. So many changes have taken place when English language learning has to be done online. Teachers are trying to motivate us more than before. But whether we are engaged in the classroom will depend on ourselves. As for me, this may be a new experience when online learning has taken place in a glimpse of time. Nobody can imagine English language learning is conducted online. I have to keep reminding myself to be focused with my aim that is to finish my foundation program so that I can proceed with my first degree of education in university soon. With all these in mind, I have to motivate myself to go on. In fact, I would call this as instrumental kind of motivation, or I don’t make it.”

Lastly, respondent number 6 said that,

“Motivation fosters creativity and critical thinking. So, when the level of motivation is high, it positively impacts on the learning of English language.”

3. Do you think there is a relationship between between learning styles and motivations in learning English as a second language? Yes or No? If Yes, kindly rate low, moderate, or high and explain why is that so?

Findings indicated that most respondents rated high relationship whereas only one respondent rated as moderate. Among them are:

Respondent 2 responded that,

“Learning styles will help us to improve English Language and motivation is the base for us to fight to keep learning in this Pandemic COVID19 time. Thus, every person has different learning styles.”

Learning through a specific learning style will pique interest and motivate us. For example, if I were the visual learner, then learning through visual will make English language learning process much more fun and interesting which cause me to be motivated.”

Respondent number 4 mentioned that,

“There is a significant relationship between learning styles and students' learning motivation. As per, the highest correlation belongs to Kinesthetic learning styles, students have high motivation for English learning.”

Respondent number 5 shared that,

“For me I would say that learning styles do influence my motivations to learning English. For instance, having to conduct my English language learning activities in group really helps to sustain my motivation. Having to do things together with some fluent group members can really boost my motivation to be excellent in the language. Group discussion, choral speaking and drama are some of the activities that could help to sustain my high motivation in learning the language. On the other hand, if I am not able to have a consistent way of leaning the language, I just feel I could not perform well in the language thus affect my overall language motivation. All in all, I would rate moderate to high relationship between learning styles and motivation to learning English.

Further, respondent number 6 mentioned that,

“Wrong learning styles or low learning styles will definitely not be a big help to increase your level of motivation. If you have your own learning styles that suit you, I believe your motivation will be high because you can see your own improvements from there.”

However, respondent number 3 rated ‘moderate’ and mentioned that,

“I would say moderate relationship between learning styles and motivation in learning English. Some could have limited styles in learning English. Thus, they are not motivated to learning English language.”

6. Discussion and Conclusion

The major aim of this study is to investigate the statistical relationships of learning styles and motivations amongst the ESL Foundation students in a public university, Selangor, Malaysia. Overall findings indicated that there was a significant, positive and moderate ($r=.464$, $p=.000$) relationship between learning styles and motivations. The findings implied that the higher the learning styles of learning English being embraced by the ESL students, the higher the motivations in learning English are. In addition, it can also be inferred that learning styles in learning English contributed significantly to motivations when linear regression finding signifies that 21.5% ($R^2 = .215$) of the variance in motivations can be predicted from the independent variable of learning styles. These findings seem to be paralleled to a similar study conducted by Kamiluddin (2019) indicating that there was a significant correlation between learning styles and motivations ($r=0.456$) in learning English. Further, these findings seemed to be aligned with another study conducted by Tai (2013) that showed learning styles had 38.9% of effect possibility on motivations in learning English as a second language.

As part of the triangulation and validation to the quantitative findings, the qualitative findings were analysed, presented and collected from interview protocol conducted amongst a small group of respondents taken from the sample of the study. Various questions concerning learning styles in learning English, motivations in learning English and their relationship were posted to the students. Generally, qualitative findings tend to corroborate the quantitative findings in many ways. Having flexible learning styles in learning English, motivated in learning English and having to rate significant relationship between the two variables were mainly heard and recorded. However, there were various levels of magnitude found concerning all the three aspects of the subtopics interviewed amongst the respondents.

Thus, the richness of both the quantitative and qualitative data were incorporated in the findings making the current study quite rigorous and all these lead to a set of implications of the study.

The mixed-methods research design and findings of the study could raise some implications. Firstly, the study could extend the corpus of knowledge in the areas of learning styles and motivations in learning English as a second language amongst ESL foundation students, particularly the science-based program and during the pandemic COVID-19 period which resulted in an online learning platform. Prior to this study, the variables were observed exclusively and mainly correlated with some other variables and conducted prior to any pandemic cases. Thus, the study lays the groundwork for future research into the relationship of learning styles and motivations in learning English amongst ESL foundation students at a public university in Malaysia particularly during the phase of pandemic COVID-19. There was a positive and significant relationship between the two variables and consequently, this study was able to bridge the gap of learning styles and motivations in English language learning using online platform.

Secondly, the empirical findings in this study also highlight the pedagogical implications on instructional leadership in L2 learning. The results of the current study can assist instructional leaders cum language teachers in foundation programs to lead, build and develop strategic planning in enhancing initiatives of learning styles towards motivations in English language learning. The findings could be beneficial for instructional leaders in providing some understandings pertaining to their pedagogical aspects to suit the variables under study; various learning styles and sustaining the level of motivations in learning English amongst the ESL foundation students. More effective and meaningful lessons or assessments can be designed by instructors to suit various learners' learning styles (six dimensions) that were investigated in the current study.

Finally, since the conceptual framework of the study was tested and confirmed the findings could provide some policy and training implications to the English language teachers.

The contextualization of learning styles in this study enriches the understanding of the strategy selection and reflective teaching practices to the teachers at tertiary level. Training should be given to the teachers to equip them with valuable knowledge on learning styles and its flexibility which could affect students' motivations in learning English as L2. The findings could also contribute to the local education scenario as an awareness of these variables allowing instructors to evaluate and modify their strategies to adapt to the students' needs in learning English as a second language at science-based foundation level. Through understanding of the students' learning styles, teachers can plan well ahead to strengthen students' motivations. Thus, this assisted in matching between students' learning styles and teacher's teaching styles which can increase students' engagement especially during online learning in the COVID-19 phase.

In conclusion, the current study measuring the statistical relationship between learning styles and motivations in learning English amongst ESL Foundation students in a public university, Selangor, Malaysia is timely and could be a benchmarking for future investigation concerning learning English as a second language using the online platform during difficult time such as the pandemic COVID-19 era.

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8. Co-author contributions

The authors declared that there is no conflict of interest in the paper. Author 1 wrote and revamped the whole structure of the paper such as the introduction, research methodology, findings, discussion, conclusion and overlooked the write-up of the whole

article. Author 2 carried out the fieldwork, did the data analysis and interpretations. Author 3 strengthened the paper in terms of formatting and editing the whole paper.

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