

## **Learning Style Preferences Among Male and Female ESL Students in Universiti-Sains Malaysia**

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### **Abstract**

Individuals preferentially process information in different ways. This includes the varied learning style preference of the individuals in any study program, including English as a Second Language (ESL). However, one of major concerns is, do the ESL students have different preferred way to learn? Past studies have given mixed results including pertaining to Malaysian students. To address this issue, this study sought to identify whether there are differences in learning style preferences between male and female students who undertook ESL courses in the Universiti Sains Malaysia (USM). To achieve the study objective, Felder-Silverman Learning Style Model (FSLSM) was selected to gather data on the respondents' learning style preference due to its validity, widespread use and suitability to the scope of the study. The responses gathered from FSLSM were tallied and assessed for gender difference in LSP. Results indicated that, there is a strong representation of visual learners from both male and female respondents. On the other hand, the respondents, irrespective of the gender difference, are well-balanced in the dimensions of sensing/intuitive, active/reflective, and sequential/global. In addressing the gender difference, it was found in this study that there is no significant difference between male and female ESL students in their preferred learning

styles on each of the FSLSM dimension. Thus, this study revealed that, gender does not help differentiate students' learning preferences. The findings lend support to several past studies on LSP.

**Keywords:** ESL, gender, Felder-Silverman Learning Style Model (FSLSM), learning styles, learning preferences, undergraduate, language learning

## INTRODUCTION

Learning is a complex lifelong educational process of how human absorbs information and experiences; memorizes and processes them to be further transformed into knowledge, skills, behaviour and attitudes. In today's knowledge economy, education is considered a vital key that sets the individual's career path and ensures the economic prosperity and advancement. Having the necessary knowledge is thus seen as possessing a power for people to survive and thrive in meeting the society needs and economic demands for the current and future generations (Zu, 2009).

Nevertheless, with much emphasis given to the importance for an individual to gain education, the issue on whether students are learning in the way they prefer is still debatable. Extensive research has documented that the way people learn differ in how they see, interpret, understand, and conceptualize information (e.g. Teele, 2006; Zacharis, 2011; Kang, 1999). The learning environment has changed to become more interconnected and learner-centred. Technology is continuously altering the students' relationship to information and changing the way students learn. Thus, lessons that employ the 'one-size-fits-all' approach of teaching and learning no longer seem to be practical. With the evolvement of technological learning environment, the 21<sup>st</sup> century learners would have diverse requirements and preferences from their learning environment. They would have a particular learning preferences and styles due

to their upbringing background and technological experiences (Bennett, Maton, & Kervin, 2007).

In language learning, an individual might have his or her own preferred learning style preferences due to certain factors, such as personal characteristics, as well as ethnic, cultural and educational background (Kang, 1999). In the learning of English as a Second Language (ESL), learning styles are more and more incorporated to enhance the teaching and learning whereby a lot of research work has been conducted in this area (Kang, 1999; Putintseva, 2006; Wu, 2010; Park, 2002; Xiao & Tianjin, 2006; Jhaish, 2010; Karthigeyan & Nirmala, 2013). For instance, the importance of learning style in ESL was highlighted in a study by Putintseva (2006) who urge that a variety approaches to learning styles need to be considered when the teaching and learning of ESL is concerned.

In Malaysia, research found that there are significant differences in terms of the ESL students' preferred learning styles (Atef & Munir, 2009; Nurul Amilin et al., 2011; Almasa, Parilah, & Fauziah, 2009). In Universiti Sains Malaysia (USM), four undergraduate programmes on ESL are offered at the academic schools, namely the English Language and Literature Studies (ELLS), English Language Studies (ELS), English for Professionals, and Bachelor of Education (TESOL). Like other undergraduate degree programmes in USM, the USM ESL courses encompass various face-to-face contacts through classroom lectures, tutorials, practical, fieldwork, seminars, and workshops (Universiti Sains Malaysia Web Portal, n.d.).

However, with the evolvement of technology nowadays, the students might have a variety of preferences in learning languages. For instance, a study involving 300 undergraduate students in USM indicated the students' preferences towards utilizing the social networking website, i.e. Facebook as an online environment to facilitate their learning of the English

language (Muhammad Kamarul, Norlida, & Mohamad Jafre, 2010). Moreover, according to Sarjit Kaur (as cited in Atef & Munir, 2009), even though the learner-centred approach has been employed in the ESL courses at USM, the teaching activities still need to be aligned to the students' preferences. Thus, it is no exception that the ESL students would also have certain preferences in learning. Therefore, from a practical standpoint, understanding differences in learning style preferences among the ESL learners would help the teacher or instructor to bring more variety into the approach of teaching ESL to cater for those diverse needs.

However, one issue that has been debated many times in the literatures is whether gender difference may affect an individual's preferences in learning. Since the past few years, there has been a renewed interest in studies related to gender differences among students in higher learning institutions in Malaysia (Zainora et al., 2011; Muralidhara, Nordin, & Mohamad Nasir, 2013; Yi, Hui, & Jasmine, 2011). This is due to the wide discrepancy in the male and female students' enrolment in higher learning institutions (Nadia et al., 2010; Nazmil, 2012; Tham, 2011). For the case of English language learning, researches conducted to study gender influence on students' learning style preferences have reported mixed findings (Nadia et al., 2010; Vaseghi, Ramezani, & Gholami, 2012; Adi Afzal, 2011; Mohamed Ismail & Yusof, 2012). For instance, Vaseghi et al. and Nadia et al. (2010) found that gender difference exists in learning style preferences among students. Adi Afzal (2011) and Mohamed Ismail and Yusof (2012), on the other hand, reported that gender did not seem to influence the learning style preferences among students. The inconsistency of findings on gender difference in students' LSP suggests that more studies are needed in this area of research. Other scholars also have argued that it is important to address the gender disparity in language learning nowadays, considering that research in this area is rather limited (Tatarintseva, 2002; Llach & Gallego, 2012). Nadia et al. (2010) highlighted that, accommodating gender differences in learning styles would be able to bridge the gender gap in education.

Few studies focused specifically on the learning style preferences among English majors. While some studies did look into the gender gap among ESL students, there were deficiencies in terms of respondents' profile, data reliability and scope of learning style model being chosen. In line with such needs, this study sought to identify whether gender difference could influence the learning style preferences among students undertaking ESL courses in USM. The Felder-Silverman learning style model (FSLSM) was adopted in this study in order to analyse male and female ESL students' learning style preferences from each of the FSLSM dimension. It is hoped that the findings of this study could shed further light on the relationship between gender and LSP.

## **LITERATURE REVIEW**

### **Theoretical Framework**

Second language acquisition is a complex process that cannot be explained by language learning theories alone. Therefore, the theoretical setting that underpins this study involves both language learning and learning style theories.

#### *Language Learning Theories*

According to Demerezen (2014), there are some basic theories to describe how a first or second language is acquired, learnt, and taught in which these include the Behaviorist theory, Mentalist theory (Innatism), Rationalist theory (otherwise called Cognitive theory), and Interactionism theory. Demerezen (2014) also noted that Behaviorist and Mentalist theories are mainly used for native language acquisition, while the other two theories can be applied for foreign language acquisition. However, these four basic theories of language acquisition are closely interrelated (Demerezen, 2014).

From the context of ESL, English language is spoken in a certain society as their official language or the communication medium among people of different nationalities. Fitzgerald (1994) explained about second-language learning theories for ESL teaching and learning. According to McLaughlin (1984, as cited in Fitzgerald, 1994), out of several theories on second-language learning, two theories that mostly dominate the field are the Monitor model and the Cognitive Theory. According to Fitzgerald, The Monitor model, originally developed by Krashen (1977), emphasizes on the whole learning setting which links between learners and the environment. According to the model, learners learn a new language by making efforts to understand and be understood in meaningful situations (Fitzgerald, 1994).

As for cognitive learning theory, it was originated by Jean Piaget (1971) and “it is based on the assumption that information should be acquired and retained for use in the future if learning is to become learner-constructed, relevant, and built upon prior knowledge” (Almasa et al., 2009, p. 12). Almasa et al. added, psychologists began to put emphasis on cognition rather than behavior since behavioral theory focuses on behavior and neglects certain cognitive aspects of learning. In cognitive learning, learners are seen as thinking beings whereby learning will only take place when the matter to be learnt is meaning to them (Atef & Munir, 2009).

Constructivist theory is also applicable for second-language learning. Lavadenz (2010) stated that, the combination of constructivist and sociocultural theories provide a powerful construct that helps inform instructional practices for English learners. In the constructivist learning theory, the learning process happens as the learner construct information through his or her own experiences, and then selects, interprets, and analyzes the information with the existing knowledge. Almasa et al. (2009) stated, this learning theory asserts that learners do not simply absorb and store information, but they actively interpret experiences and draw sound independent conclusions. This theory is applicable to this study because it involves ESL

learners who are learning in an environment with cooperative learning or social interaction, which is one of the key constructivist techniques. Therefore, based on this theory, language learning is largely a social activity (Li & He, 2012).

### *Learning Styles Theories*

Learning style refers to learners' preferences in learning. It is a subset of a wider concept of personality. Experts define learning style in various ways. According to Pashler, McDaniel, Rohrer, and Bjork (2008), the term "learning styles" refers to the concept that individuals differ in regard to what mode of instruction or study is most effective for them. Determining students' learning style is important in order to facilitate students in identifying the most effective way for them to gain a deeper understanding on certain subjects and make the learning process easier for them. Felder and Silverman (1988) pointed out that, learners with strong preference for a specific learning style may have difficulties in learning if the teaching style does not match with their learning style.

The theories of learning style emerged in early 1900s. Wu (2014) explained that there are conflicting accounts concerning the ultimate origin of learning style. For instance, according to Buboltz et al. (2001, as cited in Wu 2014) traced the origin of learning or cognitive styles to Allport (1937). Fazarro, Pannkuk, Pavelock, and Hubbard (2009) on the other hand claimed that Thelen (1954) was the first to use the term 'learning style' in describing how people learn and interact in a certain environment. Nevertheless, the renewed interest in learning style research was said to begin since the last four decades (Cassidy, 2004). Thronson (1984) stated that the biggest movement of learning style research at that moment was recorded by Dunn and Dunn (1978), Kolb (1979), McCarthy (1982), and Gregorc (1982). Keefe (1979, as cited in Thronson, 1984) explained that there were two lines of renewed efforts in learning

styles, which are: 1) applied models of learning style, and 2) strong preference for the cognitive style dimension.

There have been a myriad of learning style models which have been proposed by scholars to describe learners' learning styles. According to Wu (2014), one of the earliest models was the "Group Embedded Figures Test" (GEFT) developed by Witkin, Oltman, Raskin, & Karp (1971). Other models include David Kolb's model (Kolb, 1976), Honey and Mumford's model (Honey & Mumford, 2000), Neil Fleming's VARK model (Fleming & Mills, 1992), and Felder-Silverman's model (Felder & Silverman, 1988). These models may be classified into four categories based on whether they focus on external conditions or personality (Claxton & Murrell, 1987). These four groups of learning style models' classification are: 1) instructional and environmental preference (such as Neil Fleming's VARK model), 2) social interaction (such as Grasha-Reichmann Learning Styles' model), 3) information processing (such as Kolb's learning style inventory and Felder-Silverman's Model), and 4) personality level (such as Myers-Briggs's model). Each of these models of learning style analyzes different characteristics and how they impact a person's learning perspective.

For instance, the Felder-Silverman Learning Style Model (FSLSM), developed by Richard Felder and Linda Silverman in 1988, is a learning style model that is often used in technology-enhanced learning and that is designed for traditional learning (Graf, Viola, Leo, & Kinshuk, 2007). According to Carver (1999, as cited in Kanninen, 2008), the FSLSM is considered the most appropriate learning style model to be used in a computer-based educational system. The FSLSM has advantages in terms of its ability to describe learning styles in more detailed by characterizing learners according to four dimensions (Graf, Kinshuk, & Liu, 2009). Furthermore, Graf et al. (2009) adds, unlike other models, the FSLSM considers



learning styles as tendencies rather than obligatory types. For these reasons, FSLSM was chosen as a reference to guide the direction of this study.

### **Felder-Silverman Learning Styles Model (FSLSM)**

Unlike other models which categorized learning style by group, Felder and Silverman distinguished learning style preferences on four dimensions, whereby learners with high preference at certain end of a dimension will learn differently from others who are fairly balanced in the dimension. Felder (1993) and Felder and Soloman (2006) explained each of the FSLSM learning style dimensions in detailed.

The first FSLSM dimension is Sensing/ Intuitive. This dimension specifies the type of information that students prefer to receive: 1) in the forms of sensory input, such as sights, sounds, and physical sensations, or 2) in the forms of intuitive input, such as memories, ideas, and insights. Sensing learners are practical learners who like hands-on works and patient with details. They are careful persons and learn better if the information is factual, or is presented in such a way they can see, touch and apply. Sensing learners will face problems when learning something abstract and theoretical. Meanwhile, intuitive learners have abstract and innovative thinking. They are impatient with details, dislike repetition, have tendency towards learning new concepts and are more comfortable with mathematical formulations.

The second dimension is Visual/ Verbal. This dimension refers to through which sensory channel of the external information is most effectively perceived by the students; either in the form of visual, such as pictures, diagrams, graphs, demonstrations, or in the form of verbal, such as sounds, written and spoken words and formulas. Visual learners prefer visual

representation of presented materials because they would understand better when visual aids, such as pictures, images, diagrams, and demonstration are used to present the information. Meanwhile, verbal learners learn better through words and explanations that are written or spoken.

The third dimension is Active/ Reflective. This dimension represents how the student processes the information; either actively, i.e. through engagement in physical activities and discussions, or reflectively, i.e. through self-reflection. Active learners are social-oriented and have tendency towards trying things out and doing active things such as discussing, applying and explaining to others. Reflective learners, on the other hand, are impersonal oriented who learn alone by thinking things through. They would prefer thinking about something first before applying any action.

Finally, the fourth dimension is Sequential/ Global. This dimension shows how the student progresses toward understanding: sequentially, i.e. in a logical progression of small incremental steps, or globally, i.e. holistically in large jumps. Sequential learners learn in linear and logical orders. As for global learners, they are system thinkers who would learn in large jumps and put things together in novel ways once they get the big picture (Felder, 1993; Felder & Soloman, 2006).

In measuring each of the FLSM dimensions, Richard M. Felder, and Barbara A. Soloman developed a questionnaire instrument, called as The Index of Learning Styles (ILS) in 1991 which was then installed on the World Wide Web in 1996. ILS is a 44-item questionnaire in which there are eleven questions designated for each of four FLSM dimensions. The ILS scales are bipolar, with mutually exclusive answers to items, i.e. either (a) or (b). Respondents' preferences were indicated with values between +11 (answer option 'a') and -11 (answer option 'b') per dimension, whereby this range originates from the 11

questions that are posed for each FLSM dimension. Analytically, +1 or -1 is summed up to the value of each dimension after a question is answered. Answer option 'a' corresponds to respondent's preference for the first pole of each dimension, i.e. active, sensing, visual, and sequential; while answer option 'b' refers to the second pole of each dimension, i.e. reflective, intuitive, verbal, or global (Graf et al., 2007).

### **Gender Issue in Learning Styles**

One of the issues that have been the subject of debate is whether differences in gender could affect students' preferences in learning. Many studies have indicated that gender differences exist in learning style preferences (Chuang, 2009; Wehrwein, Lujan, & DiCarlo, 2007; Lau & Yuen, 2010; Choudhary, Dullo, & Tandon, 2011; Middleton, Ricks, Wright, & Grant, 2013). For instance, Lau and Yuen (2010) who used the 'Gregorc Style Delineator' found that gender factor does affect the learning style preferences of students. Choudhary et al. who used the VARK questionnaire identified a significant difference in learning styles preferences of male and female college students. In Chuang's study, (2009) even though both genders were found to favour active learning method most, difference still exists between males and females' preference for passive and group learning method.

In language learning too, various studies have shown that students of different genders have different learning style preferences (e.g.: Tatarintseva, 2002; Tercanlioglu, 2004; Viriya & Sapsirin, 2014). For instance, Tatarintseva concluded that gender differences in LSP were found in many countries around the world. This also applies to the learning of English language among the English majors whereby some researchers have theorized that gender differences play a significant role in determining the English majors' learning style preferences (e.g.: Tabanlıoğlu, 2003; Karthigeyan & Nirmala, 2013; Yi, Hui, & Jasmine, 2011; Vaseghi, Ramezani, & Gholami, 2012). Tabanlıoğlu studied the gender difference in the perceptual modality preferences among students studying English for Academic Purposes (EAP) at the

University of Bahçeşehir. He found a statistically significant gender difference in the preference of the tactile learning styles category between females and males. Tabanlıoğlu claimed that his study is parallel with Reid (1987) who also concluded that there was a difference in the use of tactile learning style category between males and females. However, some studies found no significant gender difference in LSP. For example, Zokaee, Zaferanieh, and Naseri (2012) studied on the impacts of perceptual learning style and gender on Iranian undergraduate English as Foreign Language (EFL) learners' choice of vocabulary learning strategies. The study found that there was no statistically significant difference between the vocabulary strategy preferences or learning styles of the two genders.

Similarly, there are also mixed findings pertaining to gender difference in learning style preferences among Malaysian students. There are some studies which reported on gender difference (e.g. Almasa et al., 2009; Zarina Ashikin & Norhana, 2009). For instance, Almasa et al. (2009) assessed the learning style preferences among 540 ESL students from a private university through the Perceptual Learning Style Preference Questionnaire (PLSPQ) by Joy Reid. It was reported in their study that there was a significant difference between male and female students regarding auditory and kinesthetic learning styles. Meanwhile, Zarina Ashikin and Norhana distributed a questionnaire adapted from 'A Learning Style Survey for College' by Catherine Jester to 180 ESL learners from one Malaysian college university to study their types of preferred learning style. The researchers reported that the male group prefers kinesthetic learning style while the female group prefers visual learning style. On the contrary, there are also other studies which reported on no gender difference (e.g. Mohamed Ismail, Yusof, Zaleha, & Ainon Jariah, 2013; Anis, Mahani, Latisha Asmaak, & Surina, 2009). For instance, Mohamed Ismail et al. (2013) investigated the patterns of language learning strategies (LLS) through the Strategy Inventory for Language Learning (SILL) among 312 undergraduates undertaking English subject in a public university. It was observed in the study

that there was no statistically significant relationship between respondents' LLS and gender. Anis et al. (2009) studied 35 undergraduates' preferences for collaborative learning activities in their English classes through the use of Cantwell & Andrews' Feelings toward Group Work Questionnaire and Reid's Perceptual Learning questionnaire. Similarly, it was reported in their study that there was no significant difference in the respondents' preference towards collaborative learning style.

## **RESEARCH QUESTIONS**

The aim of this study is to identify whether there is a gender difference in USM's ESL students' preferences on learning style. The research questions are as follows:-

1. What is the type of information male and female ESL students in USM preferentially perceive?
2. Which sensory channel of external information is most effectively perceived by male and female ESL student in USM?
3. How do male and female ESL students in USM prefer to process information?
4. How do male and female ESL students in USM progress toward understanding information?
5. Is there any significant gender difference in learning style preferences among ESL students in USM?

## **METHODOLOGY**

### **Research Design**

In order to achieve the objectives of the study, a quantitative approach through questionnaire method was undertaken to gather the data. Felder-Silverman Learning Style Model (FSLSM) was adopted as the conceptual framework of the study.

## Research Sample

The research sample consisted of English major undergraduates in Universiti Sains Malaysia (USM), Penang, Malaysia in the academic year of 2013/2014. There were a total of 211 respondents from four different English language programs namely English Language and Literature Studies (ELLS), English Language Studies (ELS), Teaching English to Speakers of Other Languages (TESOL) and English for Professional Communication. English majors in USM are taught various linguistics, literature and English language proficiency courses throughout their three year programme (Atef & Munir, 2009), such as Contemporary English Grammar, Introduction to English Language Studies, Writing for Professional Communication, Language and Literature, English for Specific Purposes, and Sociolinguistics (USM Course Guideline, n.d.).

The respondents were from different years of study, ranging from first year to third year. They were selected by using the stratified convenience sampling procedure. This sampling method was used to ensure that the respondents were representative of the students' composition in the ESL courses in USM. Moreover, it helps to increase the credibility of convenience sampling by ensuring that respondents are representing each of several categories (Vogt, Gardner, & Haeffele, 2012). First, strata of undergraduates from USM were derived from the four ESL programs in USM. Then, samples were obtained conveniently from each strata with numbers that correspond to the students' composition in each ESL course. In each strata, only those who agreed to take part in the research were considered for participation in the convenience sampling process.

## Research Instrument

The Index of Learning Styles (ILS) questionnaire developed by Felder and Soloman based on the Felder-Silverman Learning Style Model (FSLSM) was used in this study to assess

the preferred learning style among the USM ESL students. The questions were employed into the main questionnaire to determine the extent and percentage of the ESL students' preferences in learning style vary by gender in the four dimensions of FSLSM.

The main questionnaire that was constructed in this study comprised of two sections; Section A and Section B. Section A elicited respondents' demographic data such as gender, age, ethnicity, year of study, program of study, current CGPA and English achievement level. Section B consisted of 44 questions from the ILS questionnaire. This section aimed to assess the respondents' preferred learning styles in the context of English language learning.

The FSLSM was chosen because of its appropriateness and feasibility for language learning (Al-Jojo, 2012; Wang, 2007). Moreover, the Index of Learning Styles (ILS) questionnaire, which is based on the model, was found to be valid, reliable and suitable in identifying learners' learning styles (Felder & Spurlin, 2005). Since that this model's questionnaire is free and can be completed online, the answers given by the respondents were then evaluated using the online form at <http://www.engr.ncsu.edu/learningstyles/ilsweb.html>. The validity and reliability of the research instrument in this study were made through pilot studies and were proven based on constructing validity and expertise judgments in a related research conducted by the previous researchers (Atef & Munir, 2009).

### **Data Collection**

The questionnaires were administered in person to the respondents. Of the 211 surveys sent out, all completed forms were returned, providing the researchers with a 100% response rate.

### **Data Analysis**

All responses from the questionnaires were statistically organized and analyzed by using the Statistical Package for Social Science (SPSS) version 20. Descriptive statistics, such as means, standard deviations, frequencies, and percentages were used to analyse the demographic profiles. For the purpose of the research questions, the data analyses focused on two aspects; the overall learning style preferences among the respondents based on the FSLSM dimensions, and the learning style preferences according to gender. Thus, in addressing those questions, frequency, Pearson correlation, and one-sample independent t-test analyses were performed.

## RESULTS

### Demographic Profiles

The demographic section in the questionnaire included seven questions on the respondents' personal background, which are gender, age, ethnicity, year of study, programmes of study, current Cumulative Grade Points Average (CGPA), and English achievement level. The frequency statistics of respondents' demographic profiles are summarized in Table 1.

As can be seen from Table 1, majority of the respondents were female (82.5%) and most (82.9%) were between 20 to 29 years old. A survey conducted by the Malaysian Ministry of Higher Education (MOHE, 2012) showed that students' enrolments in the public universities until 2012 were dominated by female. This explains the unequal distribution of male and female respondent groups in this study in which there are more female respondents than the male respondents. More than 50% of them were Malay (62.6%), followed by Chinese (17.5%), Indian (14.2%) and other ethnicities (5.7%). 30.3% of respondents were in Year 1, 33.2% in Year 2 and 36.5% in Year 3. In terms of programme of study, 32.7% were undertaking the English for Professionals programme, followed by English Language and Literature Studies (28%), Bachelor of Education (TESOL) (28%), and English Language Studies (11.4%). As for



academic achievement, majority of the respondents (47.0%) managed to score a CGPA of 3.00 to 3.49, and as for the English achievement level, most respondents (74.9%) achieved Band 4 level in the Malaysian University English Test (MUET).

**Table 1. Demographic Profiles**

<b>Variables</b>	<b><i>n</i>(%)</b>
<b>Gender</b>	
Male	37 (17.5%)
Female	174 (82.5%)
<b>Age</b>	
Below 20 years	34 (16.1%)
20 to 29 years	175 (82.9%)
30 to 39 years	1 (0.5%)
40 years and above	1 (0.5%)
<b>Ethnicity</b>	
Malay	132 (62.6%)
Chinese	37 (17.5%)
Indian	30 (14.2%)
Others	12 (5.7%)
<b>Year of Study</b>	
Year 1	64 (30.3%)
Year 2	70 (33.2%)

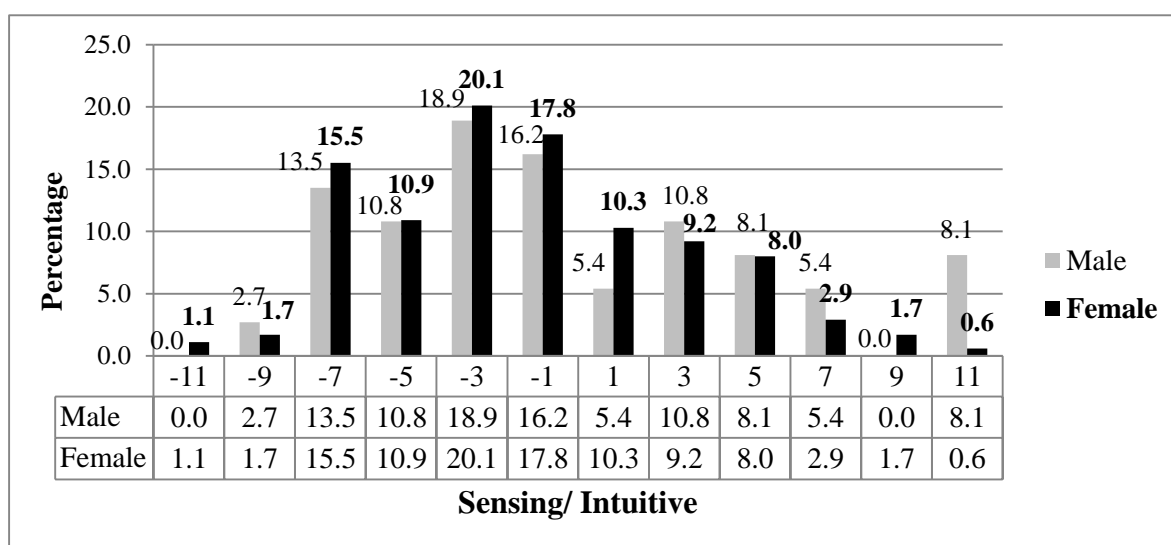
	Year 3	77 (36.5%)	
	<hr/>		
	Programme of Study		
	English Language and Literature Studies	59 (28.0%)	
	English Language Studies	24 (11.4%)	
	Bachelor of Education (TESOL)	59 (28.0%)	
	English for Professionals	69 (32.7%)	
	<hr/>		
	Current CGPA		
	Below 2.00	1 (0.5%)	
	2.00 to 2.49	3 (1.5%)	
	2.50 to 2.99	50 (25.0%)	
	3.00 to 3.49	94 (47.0%)	
	3.50 to 4.00	52 (26.0%)	
	<hr/>		
	English Achievement Level		
	MUET Band 2	3 (1.5%)	
	MUET Band 3	24 (11.8%)	
<b>Respondents' Preferences</b>	MUET Band 4	152 (74.9%)	<b>Learning Style</b>
	MUET Band 5	19 (9.4%)	
Research aim to see the distribution	IELTS Score 6	4 (2.0%)	Questions 1 to 5
	TOEFL Score 507	1 (0.5%)	patterns of
	<hr/>		based on gender

pertaining to the respondents' preferences in four dimensions of FSLSM. Learning styles for each dimension were calculated with scores ranging from -11 to -1 (representing the first learning style in the dimension) and 1 to 11 (representing the second learning style in the

dimension). Data were tabulated and analysed graphically by using column charts and results were depicted in figures as follows.

*a) Type of Information Male and Female ESL Students in USM Preferentially Perceive*

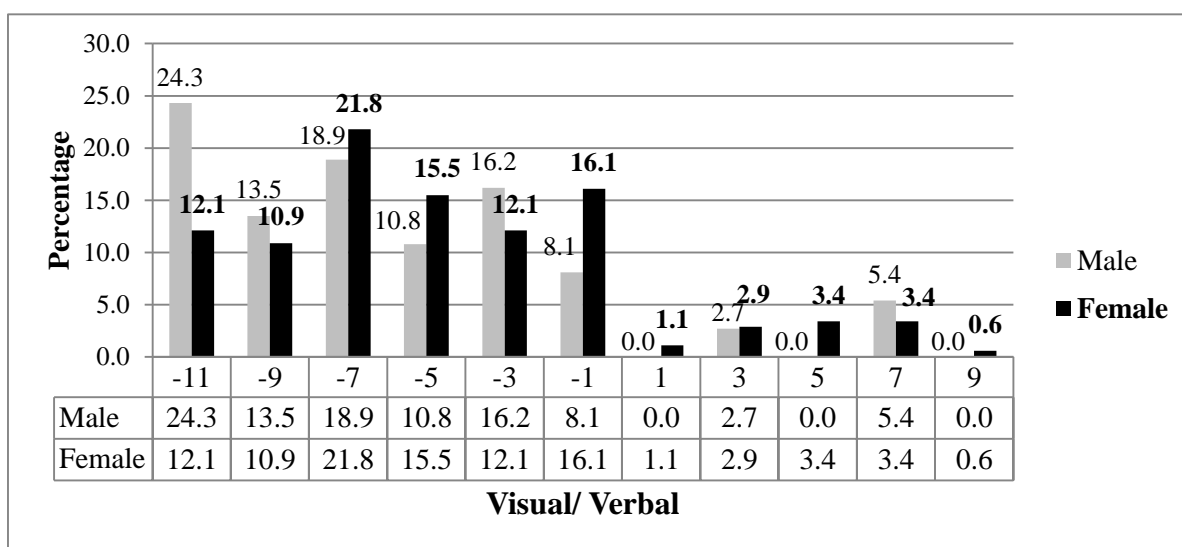
The sensing/ intuitive scale in Figure 1 displays similar distribution between male and female respondents whereby majority of both male and female respondents are well-balanced between sensing and intuitive learning styles (male = 51.3%, female = 57.4%). 27% of male respondents are sensing learners and 21.6% of them are intuitive learners. However, 8.1% of male respondents seem to have strong preference towards intuitive learning style. As for female, 29.2% of them are sensing learners and 13.2% are intuitive learners. Thus, for both male and female respondents, majority of them indicated that they prefer to perceive the information in both forms: sensory and intuitive inputs.



**Figure 1:** The Sensing/intuitive Learning Style Preference between Male and Female USM ESL Students

*b) Sensory Channel of External Information Most Effectively Perceived by Male and Female ESL Student in USM*

Figure 2 illustrates the distribution of male and female respondents' preference in the second dimension, i.e. visual/verbal learning styles. The figure indicates that more than 50% of respondents for both genders are visual learners (male = 67.5%, female = 60.3%). As the figure indicates, very few of the respondents preferred verbal learning. Only 5.4% of male respondents are verbal learners, while only 7.4% of female respondents are verbal learners. Thus, majority of the male and female ESL students in this study were found to equally prefer the visual sensory channel in receiving external information.



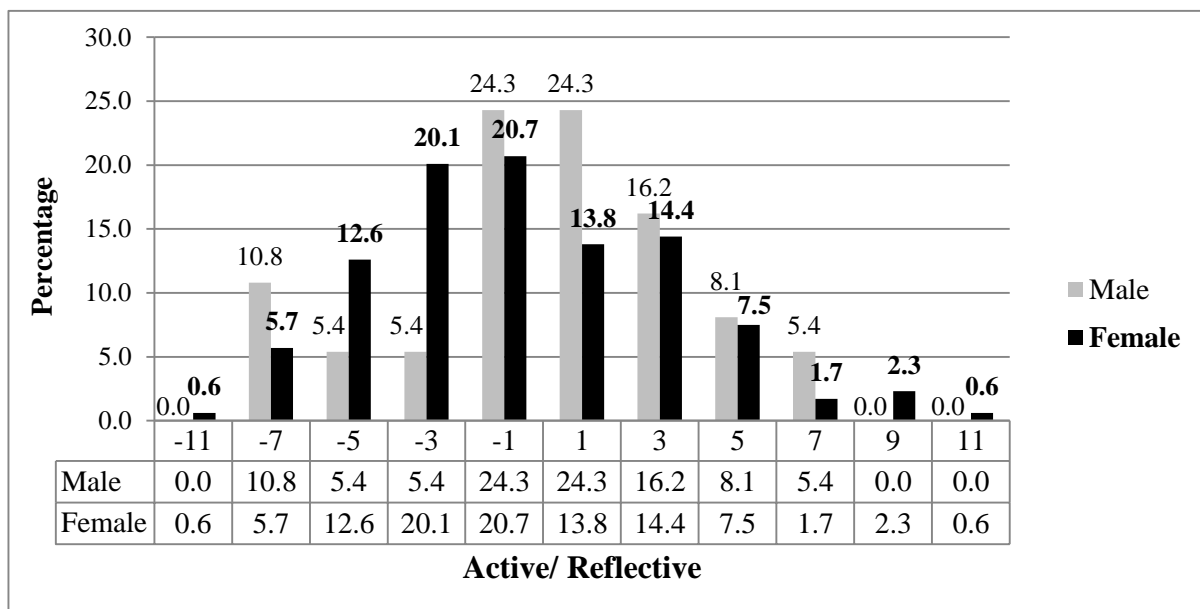
**Figure 2:** The Visual/ Verbal Learning Style Preference between Male and Female USM ESL Students

*c) Preferences to Process Information*

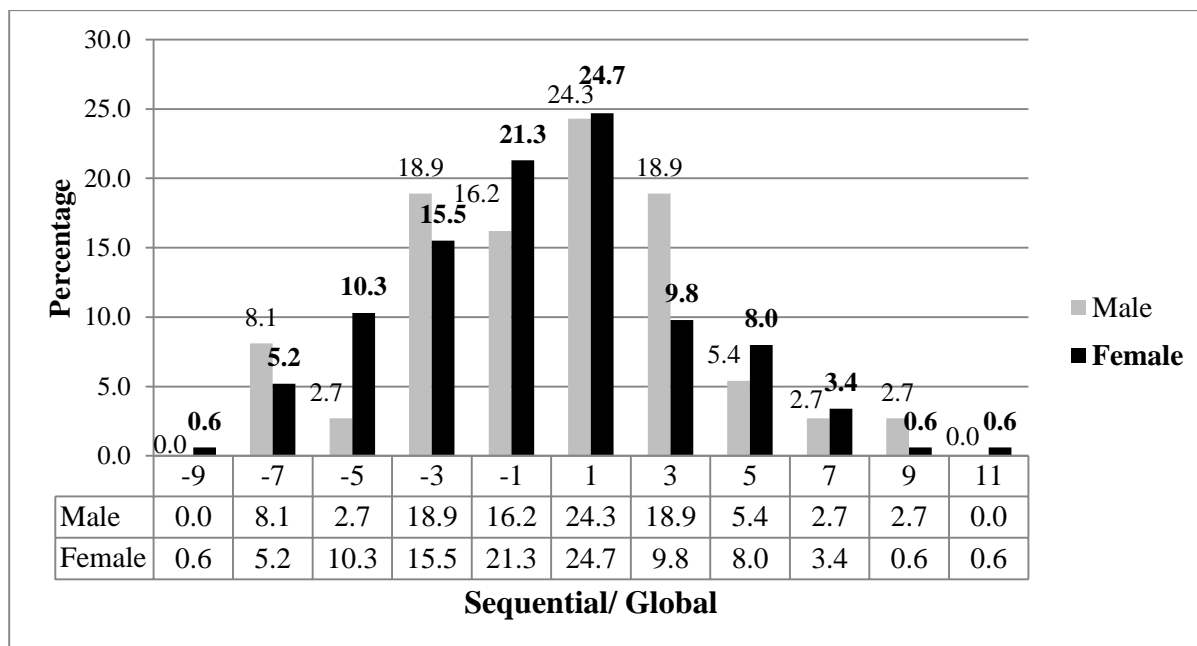
Figure 3 depicts that 70.2% of male respondents are well-balanced between active and reflective learning styles as they are located within the range of -3 to 3 on scale. Only 16.2% of male respondents are active learners, while the remaining 13.5% are reflective learners. Similar distribution can be observed for female respondents, whereby 69% of them are well-balanced in the learning style dimension, 18.9% are active learners and the remaining 12.1% are reflective learners. This result indicates that for both genders, most of them are well-balanced in terms of how they prefer to process information; either actively or reflectively.

*d) Learning Preferences toward Understanding Information*

As depicted in Figure 4, it can be seen that majority of male respondents (78.3%) are well-balanced between sequential and global learning style. The remaining preferred either sequential or global learning styles (10.8% for each learning style). As for female respondents, 71.3% are well-balanced in this learning style dimension. 16.1% are sequential learners and 12.6% are global learners. Thus, these results suggest that the male and female ESL students in this study progress toward understanding equally through sequential and global learning style.



**Figure3:**The Active/Reflective Learning Style Preference between Male and Female USM ESL Students



**Figure 4:** The Sequential/Global Learning Style Preference between Male and Female USM ESL Students

*e) Gender Difference in Learning Style Preferences among ESL Students in USM*

Research Question 5 was formulated to identify whether the respondents’ preferences in particular dimensions of learning style differed by their gender. A Pearson correlation analysis was conducted to study the relationship between learning styles’ dimension and gender. Then, independent t-test was performed to examine the differences between male and female respondents in the mean values for each of the learning styles.

Pearson correlation analysis was firstly performed to measure the relationship between each dimension of Felder-Silverman’s learning style and gender. Results from the analysis were reported in Table 2. As can be observed from the table, there are no significant relationships between any of the four dimensions of learning style and gender. To provide further insights into the gender influence on respondents’ preferred learning styles, an independent t-test analysis was performed to confirm the findings as obtained in the correlation. As can be observed from Table 3, there are no significant differences between male and female respondents with respect to all four dimensions of Felder-Silverman’s learning style. The

respondents' preferences on each of the learning style dimensions may be said to be equally distributed irrespective to their gender.

**Table2:** Correlation between Learning Styles' Dimension and Gender

Learning Style Dimension	Mean	Standard Deviation	Pearson Correlation	Sig. (2-tailed)
Active/Reflective	0.08	3.759	-0.065	0.350
Sensing/Intuitive	-0.41	5.434	-0.090	0.193
Visual/Verbal	-6.03	4.413	0.110	0.110
Sequential/Global	0.08	3.700	-0.041	0.553

**Table3:** One-Sample T-Test (N=211)

Learning Style Dimension	Gender	Mean	Standard Deviation	Mean Difference	t	Sig. (2-tailed)
Active/Reflective	Male	0.08	3.759	0.656	0.936	0.649
	Female	-0.57	3.892			
Sensing/Intuitive	Male	-0.41	5.434	1.089	1.307	0.079
	Female	-1.49	4.408			
Visual/Verbal	Male	-6.03	4.413	-1.245	-1.604	0.769
	Female	-4.78	4.264			
Sequential/Global	Male	0.08	3.700	0.391	0.594	0.901
	Female	-0.31	3.628			

## DISCUSSION

### Type of Information USM ESL Students Preferentially Perceive

The finding indicated that majority of both male and female respondents are well-balanced between sensing and intuitive learning styles, while few of the male respondents seem to have strong preferences towards intuitive learning style. However, from a general perspective, it can be inferred that regardless of the gender difference, majority of USM ESL students in this study prefer to perceive information in both forms of input: sensory and intuitive. This finding is similar to another study by D'cruz, Rajaratnam, and Chandrasekhar (2013) who also reported that the students were fairly well-balanced in the sensing/ intuitive learning style dimension. This finding concurs with another study by Wang(2007) who also reported that a large number of English learners in the study are well-balanced in both learning styles in the dimension and there is no significant gender difference in their learning style preferences. Mimi Mohaffyza et al. (2013) explained that sensing learners like to solve problems with standard approaches and tend to be patient with details, while intuitive learners like to discover possibilities and relationship and tend to be more innovative and creative than sensing learners. According to Tuan (2011), the key to teaching both sensing and sequential learners is to offer learning variety and choice for the learners: sometimes a highly organized structure for sensing learners and at other times multiple options and enrichment activities for the intuitive ones.

### Sensory Channel of External Information Mostly Perceived as Effective by USM ESL student

In terms of sensory channel of external information, majority male and female respondents in this study were found to prefer visual to verbal. An earlier study by Atef and Munir (2009) also revealed that English majors in USM were more keen towards visual



learning. A substantial body of research proclaimed that gender difference exists in language learning, whereby males are generally more visual and less auditory than females (Cavanaugh, 2002; Tuan, 2011; Karthigeyan & Nirmala, 2013). This study, on the contrary, found that most of the USM ESL students, regardless of the gender, in general are visual learners. This notation is consistent with Jones and Healy (2014) who reported that there were no differences between the sexes in memory for the visual features of an object. Similarly, Noguera (2013) also found that most students, regardless of the gender, process information visually in learning foreign languages. Visual learners understand better when information is received in the forms of visual aids, such as picture, image, diagram, and demonstration. On the other hand, according to Shepard (2013), they will struggle with merely text-based modules or tasks on the course that require a significant amount of directed reading.

### **USM ESL Students' Preference in Information Processing**

In terms of preference in information processing, finding in this study depicted that most of male respondents are well-balanced in the active/reflective learning style dimension. Similarly, majority of female respondents seem to equally prefer active and reflective learning styles for information processing. Thus, it can be concluded that, USM ESL students preferred to process information either actively or reflectively. This study's finding contradicts with an earlier study by Oxford (1993) which claimed that, reflective learners are always concerned with answering correctly and they are mostly constituted by female. However, it is somewhat congruent with another study by Wang (2007) who reported that, even though there was a mild preference for reflective learning style among both male and female EFL learners, they could not be strictly classified as having a preference for one style in the dimension and thus, they were considerably well-balanced in the active/reflective dimension. Mimi Mohaffyza et al. (2013) explained that active learners learn best by working with the learning materials and

trying things out, while reflective learners prefer to think about and reflect on the learning materials.

### **Progress of USM ESL Students toward Understanding Information**

This study also found that majority of both male and female respondents are well-balanced between sequential and global learning in progressing toward understanding information. Thus, regardless of the gender, the USM ESL students in this study were found to be able to understand information through both sequential and global learning style. Similarly, Wang (2007) also did not find any strong preference for either global or sequential learning styles and the same patterns were observed for both male and female. However, some other studies reported a contradicting finding whereby female students in their study were found to be more global in learning preferences than male students (Zhang & Evans, 2013; Mohammad & Nasrin, 2011; Ku & Shen, 2008). Wang (2007) explained that, in language learning, “global learners prefer holistic understanding of the broad context of knowledge and ignore trivial details, while sequential learners feel comfortable when the teacher divides passages and sentences into parts dealing with lexicon, grammar and structure, respectively” (p. 410).

### **Gender Difference in USM ESL Students’ Learning Style Preferences**

The Pearson correlation and t-test analyses confirmed that there are no statistically significant differences between male and female respondents with respect to all four learning style dimensions. Thus, this study shows that, the learning style preferences among the USM ESL students do not differ by their gender. The study lends support to previous studies on undergraduate ESL students that have found non-significant difference between males and females in their LSP. For instance, this finding is consistent with Mohamed Ismail and Yusof (2012) which explored the English language learning styles among undergraduates in a Malaysian public university, whereby it was reported that gender does not help differentiate

the students' preferences of learning orientations. Kashefian-Naeeni et al. (2011) also revealed that gender did not have any effect on Malaysian ESL learners' language learning strategies.

The findings in this study strengthen some scholars' argument that it may not be necessary for ESL educators or module providers to implement a gender-sensitive approach in designing ESL learning materials. For example, as suggested by Paechter (2004), educational providers need to find ways to show that gender-marking is not necessary to enable both male and female students to involve in all aspects of the curriculum. The similar modality of learning style preferences between male and female ESL learners in this study could be partly due to the changing learning environment with increasing technological influences where students are more and more adapting themselves to such changes, regardless of their gender difference. This is supported by Rosseni et al. (2012) who observed that there was no difference between Malaysian male and female undergraduates when it comes to their ability in gaining meaningful learning experiences through technology. Another reason could also be due to students' prior learning exposure since they have adapted themselves and come to term with the predominantly didactic lectures throughout their learning process. As Alghasham (2012) have suggested, "students' long exposure to traditional approach in education where didactic method of teaching is dominating may suppress any gender differences in learning process" (p.5). Regardless of the gender, Malaysian students are now resilient in striving for own excellence in this fast-growing developing country (Rosseni et al., 2012).

Therefore, in this technological era, the so-called gender factor might not be enough to optimize and develop a conducive learning environment for language learners as there are other dimensions as well that need to be considered, such as technological proficiency, prior learning exposure, as well as social and cultural influences.

## CONCLUSION

Diagnosing students' learning styles is no doubt, important from pedagogical aspect. Whilst there are ongoing debates relating to how educators should consider students' preferences in learning styles and also take into account the gender factor when designing any instructional material, this study on the other hand has revealed that, learning style preferences among the ESL students in USM are not sensitive to gender difference. Moreover, the study found that both male and female ESL students in USM have a strong preference for visual learning style as compared to verbal. Apart from that, the result obtained also indicated that, most of the male and female respondents are well-balanced along the active/reflective, sensing/intuitive, and sequential/global learning style dimensions. Thus, there were relatively balanced learning preferences amongst the USM ESL students along the three dimensions of Felder-Silverman learning styles, and gender difference does not influence these preferences. As an implication, this study has shed lights on the learning needs among Malaysian ESL learners in this study who, regardless of their gender, are in favour for various forms of instructional strategies, with a major preference for visual form of learning materials.

The findings of this study, however, need to be considered with caution as it is based on ESL students from one university only. A larger scale study involving students from other universities is needed before any conclusive claims can be made. Further, this study is fully quantitative in nature. In future, it is desirable to conduct some in-depth interviews with ESL students to gain deeper understanding on the nature of their learning style preferences. Second, this study only analyzed the ESL students' preferences from the perspective of information processing through the Felder-Silverman's four dimensions of learning styles. Other models of learning styles might well provide fruitful findings from various perspectives of learning style, such as from sensory perspective through the VARK learning style by Neil Fleming. Lastly,

this study managed to identify that gender gap might not be a crucial issue for the ESL learners nowadays, which is a contradictory evidence to a more popular belief on gender difference in learning style preferences. Thus, such discrepancy necessitates future investigation. Further large scale studies might be required to investigate the influences of other demographic and cultural differences on their learning style preferences. Future work in this field could perhaps address the identified gaps so that more comprehensive research findings on the differences in learning style preferences among ESL student, particularly from the Malaysian perspective, can therefore be generalized.

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