

# A Match or a Mismatch between Student and Teacher Learning Style Preferences

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## Abstract

The purpose of this study is to identify the learning styles of the students enrolled in an American affiliated Lebanese university who are currently registered in intensive English courses and to investigate whether there is a match between students' learning styles and teachers' teaching styles. The participants in this study were 103 students and five ESL teachers. A modified version of the PLSPQ has been used as an assessment instrument to determine the learning styles of the students. The results showed that Lebanese students have a preference for multiple learning styles, auditory, kinesthetic, tactile and visual and that age, gender, discipline and time spent studying English are variables that affect the learning styles of the students. The findings showed that there was no match between the teaching and learning styles of the teachers and students. Implications are made for the classroom.

**Keywords:** Learning styles, L1 Arabic learners, Language learning, Lebanon

## 1. Introduction

This study investigates the learning style preferences of students at one of the Lebanese universities, NHU, and their English as a Second Language teachers' teaching style preferences and the extent to which age, gender, discipline and time spent studying English affect students' learning styles preferences. Also, it investigates a match or a mismatch between teaching and learning style preferences in Intensive English (IE) classes and the effect on student achievement. Although there have been a few studies that examine the effect of such a match (Ehrman, 1996; Felder, 1996; Peacock, 2001; Reid, 1987; Stebbins, 1995;), there have been no studies conducted in the Arab world concerning this topic in particular. The study is important because academic failure, frustration, and demotivation are sometimes attributed to the differences between learning and teaching styles (Felder, 1996; Hsueh-Yu Cheng & Banya, 1998; Reid, 1987). Reid (1995) noted that "matching teaching style and learning style gives all students an equal chance in the classroom and builds student self-awareness" (p. 43). Peacock (2001) tested the above with experiential and experimental data and Ehrman (1996), Kinsella (1995), and Oxford (2001) propose that teachers are inclined to project their learning style preference through the teaching approaches and styles they use in their classrooms, but this is not necessarily conclusive.

Teachers should help students identify their own learning styles (Ehrman, 1996; Oxford, 2003; Reid, 1995), which may have three dimensions: cognitive, affective, and physiological (Keefe, 1987) and involve "perception,

cognition, conceptualization, affect and behavior” (Kinsella, 1995, p.171). Every individual has a specific learning style and strengths and weaknesses related to learning. Learning styles are not bipolar; they exist on a wide continuum and are value-neutral. Students need to be encouraged to stretch and expand their learning styles to be more effective and empowered in different and various learning situations.

The variety of learning style definitions has led to numerous instruments designed to measure and identify students’ learning styles (Kolb, 1985; Myers-Briggs & Briggs, 1987), but Keefe (1987) argues that no other instrument except the National Association of Secondary School Principals’ (NAASP) Learning Style Profile (LSP) is designed to measure the three learning style dimensions. The LSP recognizes four major variables: perceptual responses, cognitive skills, instructional preferences, and study preferences (Hsiu Chen, 2006).

Curry (1987) organized the learning style theories into three layers and used the onion’s layers analogy to represent the individual’s different levels of learning styles. These theories were used by researchers (Dunn, Dunn, & Price, 1998; Kinsella, 1995; Kolb, 1985; McCarthy, 1987; Reid, 1987; 1995) in designing their learning style models that focus on learners’ cognitive personality and information processing. According to Oxford and Ehrman (1995), “not everyone fits neatly into one or another of these categories [different learning styles] to the exclusion of the other, ... ” (p.9).

## 2. Language Learning Styles

Providing students with effective instruction in an EFL/ESL classroom requires the understanding and awareness of the learners’ individual differences such as language learning styles (Oxford & Ehrman, 1995). These “styles and strategies are among the main factors that help determine how – and how well- our students learn a second language or a foreign language” (Oxford, 2001, p. 359). Reid (1998) believes that language learners have preferred learning styles, and they use specific language learning strategies to acquire a language.

Reid was among the first researchers to design an instrument to identify the learning styles of non-native speakers of English in the ESL classroom. She used the sensory learning style dimension to categorize the diverse learning styles of the ESL students. Reid’s (1995) Perceptual Learning Style Preference Questionnaire (PLSPQ) was originally designed in 1984 and was used in the ESL classroom. The six learning style preferences in the instrument are the visual, auditory, kinesthetic, tactile, group, and individual learning. Ehrman (1996, p.163) claims that “...learning styles are often linked with personality and therefore difficult to change” and Kinsella (1995) supports that learning styles “persist regardless of teaching methods or content areas” (p.171). However, others (e.g. Reid, 1987) noted that preferences change with age and time. Moreover, Reid (1987) stated that although there has been no significant difference resulting from statistical analysis for age as a variable influencing the perceptual learning style preferences of the students, age is still an affecting variable and that the older the students are, the more they prefer the auditory, visual, tactile and kinesthetic learning styles.

Cornett (1983) and Oxford (1993) argue they do change with experience and age and that learning style preferences can be changed over time despite the fact that learners have initial preferences. Rossi-Le (1995) claims that the learning style preferences of the ESL students may change as their language proficiency level improves. She recommends choosing a learning style assessment tool and administering it at the beginning and then during the course to detect a change in the learning style preferences of the students.

Gender, discipline and years of studying English also impact students’ learning styles (Hofstede, 1986; Young, 1987). Gender has been found to differentiate among the different learning styles of the individuals (DePaula, 2002; Dunn, 2001; Dunn & Honigsfeld, 2003). Studies have documented that males and females learn in different ways due to their distinct emotional, environmental, sociological, perceptual and physiological attributes (Dunn & Honigsfeld, 2003).

Students’ learning styles also vary according to their undergraduate major. In 1984, Kolb found that business students tend to be more accommodators; engineering students tend to be convergers; history, English, psychology, and political science majors tend to be divergers; and mathematics, chemistry, economics and sociology majors tend to be assimilators while physics majors fall between convergers and assimilators. Although the cultural variable is not one of the foci of the present study, it is noteworthy to report that Oxford and Anderson (1995) believe that language teachers need to identify students’ learning styles along with the cross cultural and cultural factors that influence and shape those learning styles. Further, Nelson (1995) reports that culture is learned in addition to being shared and Singleton (1991, p.20) states that people “learn how to learn” all implying that social factors have an impact on shaping learning styles of people which could also be true of language learning situations. This is left for a future study to investigate.

Consequently, the study examines the variables of age, time, gender, and discipline as it investigates the students' learning styles preferences and their teachers' preferences learning styles.

### 3. Methodology/ Research Design

The study uses a survey type research design. The advantages of surveys lies in their ability to collect data from a large sample, and when the research aim is clear and administered seriously, surveys can be a feasible valid and reliable research instrument in obtaining respondents' feedback (Hatch & Lazaraton, 1991).

The research hypothesis to be tested in the current research is that students have different learning styles which may not be the same as those of their teachers and which may impact achievement as operationalized by the final course grade. This target population consists of students taking IE and enrolled in an American affiliated university in Lebanon, NHU. The selected sample is 45% (5 classes of out 11) of the IE students at NHU. A selected cluster random sampling technique was used (Fraenkel & Wallen, 2006) of five classes out of all the IE classes at NHU. This also led to a random selection of the teachers who are teaching these specific sections.

Out of the 103 students belonging to 5 classes taught by 5 teachers, 72.8% were between 19 and 21 years old, 56.3% were males and 43.7% females. Most of the students were Lebanese (93.2%). Almost all students considered Arabic as their L1 (95.1%) and the majority considered English (65.0%) as their L2. Only 16.5% said that they were studying English as a first language. The distribution of students according to the number of years that they have been studying English was uniform among the different categories with the exception of the category 21-24 which included only 5.8%. The majority (62.1%) were studying business as their major field and they were almost uniformly distributed among the 5 teachers. All the teachers were Lebanese females. Twice as many (40%) were between the ages of 43 and 48 as compared to each of the other age groups (25-30, 31-36, and 37-42).

Reid's (1987) PLSPQ instrument is used in this study as a means to identify and measure the ESL learners' preferences in six perceptual learning styles (auditory, visual, tactile, kinesthetic, individual and group). It is a user-friendly instrument that consists of 30 randomly ordered statements for six learning style preferences: visual, auditory, kinesthetic, tactile, group learning, and individual learning. It uses 5-point Likert scale items ranging from "strongly agree" to "strongly disagree", focusing on behavioral preferences.

As this research focuses on the learning styles of the ESL students in the IE class, an adaptation and slightly different version of Reid's PLSPQ had been chosen as a reliable and valid instrument to gather data about the participants' learning styles.

The PLSPQ consists of 30 statements that randomly measure the six perceptual learning style preferences. Respondents self report their agreement or disagreement on a five point Likert scale. Each five statements measure a specific learning style.

The PLSPQ is the most widely used self reporting instrument designed to identify the learning styles of non native speakers of English. Many research studies have used it as a valid and reliable instrument as the validity of the PLSPQ "was done by the split-half method" (Reid, 1987, p. 92). Thus a correlation analysis was done on the original instrument that included 60 statements, 10 for each learning style, determining the five statements for each learning style that remained in the final draft of the instrument. The validity of the instrument reported a coefficient of less than 0.6. Consequently, Reid investigated the reliability of the instrument further and simplified the language to lessen the possibility of having the language proficiency influence the questionnaire psychometric properties.

#### 3.1 Modified Version of the PLSPQ

Wintergerst, DeCapua, and Ann Verna (2003) conducted several studies between 1998 and 2003 directly related to the reliability and validity of the instrument. The studies reveal that the internal validity of the PLSPQ is not consistent. Factor analysis was utilized on the PLSPQ to investigate its dimensionality. The results revealed that some of the items in the questionnaire were not compatible with their specified learning styles. However, these results didn't invalidate the model itself but showed that there is a reliability and validity problem. Some statements were ambiguous and yielded a varied range of interpretations. For those reasons, six items out of the original 30 that have a reliability coefficient of less than (0.35) were removed from the PLSPQ. Moreover, the Likert scale was reduced from a five-point scale to a four point scale thus limiting the participants' tendency to pigeon hole their responses and choosing the undecided.

The modified version of the questionnaire was piloted on a random sample of twenty students and made more reliable by refining some of the questions in relationship to its users' demographic background and language proficiency. Ethical concerns were considered in obtaining permission to conduct the study, ensuring that students

participated voluntarily after being informed of the objective of the study and receiving assurance of confidentiality.

The students were asked to fill a background questionnaire and the PLSPQ. The background questionnaire contained information related to age, gender, major, years studying English, and their native and second language. Teachers participated by filling their own background questionnaire and the PLSPQ that contained some information about gender, age, and number of years teaching English. At the end of the semester, the grades of the students who participated in this study were collected as a factor to determine their performance or achievement in English. Two hundred questionnaires were distributed to the teachers to administer to students with a return rate of 125, but 22 questionnaires with unanswered items were disregarded thus leaving a total of 103 questionnaires to analyze statistically.

### 3.2 Data Analysis

Descriptive statistics were computed using frequency distributions of the variables. The 24 questions on learning methods were divided into 6 learning styles: visual (4 questions), tactile (4 questions), auditory (2 questions), group (5 questions), kinesthetic (5 questions), and individual (4 questions). Each question had 4 possible answers: strongly agree (4), agree (3), disagree (2), and strongly disagree (1).

For each learning style a total score was obtained by summing the double of the scores of the questions that constitute that learning style. The total score for each learning style was classified into three categories: major, minor, and negligible. The cut off points for the categories were based on the total possible score on each leaning style. In particular, a student score on a learning style is considered negligible if it was below the 50% of the maximum possible score on that leaning style, minor if it was between the 50% and 74%, and major if it was above the 74%. For example, the three categories for a measured learning style measured using 4 questions were negligible (0-15), minor (16-23) and major (24-32) and categories for a learning style measured using 5 questions were (0-19), minor (20-29) and major (30-40). Preferences for learning styles were compared among the different demographic variables. This was done separately for each learning style using the Chi-squared test of Fisher's exact test when cell counts were small.

To determine whether each of the following groups age 16-18, age 19-21, age 22-24, Lebanese students, Lebanese male students, Lebanese female students subpopulation, business students, students with English as second language, students with French as second language, and students who have studied English for 1-4 years, 5-8 years, 9-12 years, 13-16 years, 17-20 years and 21-29 years prefer one learning style over another, the prevalence among the different learning styles were compared within each group using Cochran's Q test.

Finally, for each student and each teacher the average score in each learning style was computed along with the maximum of all 6 learning styles. This was used to detect the preferred learning style of a student or a teacher. Note that in case the maximum value was the same for two or more styles all such styles are considered as the preferred styles. Following this, the match between the student's preference for learning style and the teacher's preferred method was obtained. Two groups were created. Group 1 consisted of students whose preferred learning styles matched that of their teacher's and group 2 whose learning styles did not match their teacher's. Grades on the course (pass or fail) were compared between the two groups using the chi-squared test. Significance was set at the 5% level. All analyses were done using Statistical Package for Social Sciences, SPSS. (Version 16, Chicago, Illinois, USA).

## 4. Results and Discussion

### 4.1 Preference in Learning Styles

Preferences for learning styles of students and teachers were as follows. Only about half of the students had a "major" preference in the individual (55.3%) and group (53.4%) learning styles as compared to 64.0%, 76.7%, 78.6%, and 87.4% in the visual, tactile, kinesthetic and auditory learning styles respectively. On the other hand, very few students had "negligible" preference in the different learning styles. The highest percentage of "negligible" was found for the group learning style (8.9%). All the teachers had a major preference for kinesthetic, and individual learning styles, a large proportion (80%) had a major preference for visual and tactile learning styles, while only 60% and 40% had major preference for auditory and group learning styles respectively.

### 4.2 Preferences in Learning Styles by Demographics

Preferences for the different learning style by the different demographic variables were summarized as follows.

Preferences for the visual learning style did not differ by gender (p-value=0.82), age (p-value=0.89), first native language (p-value=0.51), second language (p-value=0.77), purpose of studying English (p-value=0.50), or number

of years studying English ( $p$ -value=0.80). Similarly, none of the demographic variables was associated with difference in preferences of the tactile learning style, individual learning style, group learning style, and kinesthetic learning style (see Table 1)

Preferences for auditory learning style differed only according to the native language of the students ( $p$ -value =0.041. In particular, only 33% of those with English as their first native language had a major auditory learning style as compared to 89% of those whose first native language is not English.

#### *4.3 Preference of the Different Learning Styles among Different Groups*

The preference among the different leaning styles within each of the groups: age 16-18, age 19-21, age 22-24, Lebanese student, Lebanese male students, Lebanese female students, business students, students with English as second language, students with French as second language and students who have studied English for 1-4 years, 5-8 years, 9-12 years, 13-16 years, 17-20 years, and 21-29 years were summarized as follows.

In particular, except for students in the age group 16-18 and those who studied English for 13-16 years, the highest preferred learning style was auditory followed by tactile and then kinesthetic. This difference in preference was significant among age group 19-21 ( $p$ -value=0.014), Lebanese students ( $p$ -value=0.0004), Lebanese male students ( $p$ -value=.0073), Lebanese female students ( $p$ -value<.001), and those with English as a second language ( $p$ -value=0.0024). For business students and those with French as a second language, the trend was the same but statistical significance was not reached ( $p$ -values =.054 and .55 respectively). Moreover, those who studied English for 13-16 years had the highest preference for kinesthetic style followed by auditory with the lowest being the individual style ( $p$ -value=.01).

Insert Table 1

#### *4.4 Matching Teaching and Learning Styles*

The effect of the match between the preferred student and the teacher's learning styles on the grade of the student in the course showed that about half of the students (52%) had the same style of learning as their teacher's (see Table 2). Although statistically not significant ( $p$ -value=0.22); possibly due to the small sample size especially that there were only 5 teachers; a trend was observed where around a quarter of the students whose preferred learning styles did not match with that of their teacher (24.5%) as compared to only 15% for students whose learning style matched with their teacher's learning style.

Insert Table 2

The results show that a match between the preferred teaching and learning styles impact the students' achievement in the intensive English classes operationalized by the course final grade. They also indicate that students' learning styles are affected by age and gender. Although other variables such as discipline, and number of years studying English have not shown statistically significant results, a trend was observed.

#### *4.5 Perceptual learning style preferences of NHU's Lebanese students*

Results indicate that the majority of the Lebanese students at NHU have major preferences for four learning styles, visual (66.7%), tactile (77.1%), kinesthetic (79.2%), and auditory (87.5%). However, only half of the sample has a major preference for group learning (53.1%) and individual learning (56.2%). This indicates that the Lebanese ESL students have a preference for tactile, kinesthetic and auditory learning and that the Lebanese ESL students prefer to learn through listening to spoken and oral explanations. They tend to remember information better by reading it out loud or by moving their lips as they read and memorize a lot of the material for official exams, the Brevet (Grade 9) and the Baccalaureate (Grade 12). The curriculum requires a lot of memorization especially for subjects such as history, geography, and Arabic literature. The results indicate that the Lebanese ESL students have a preference for kinesthetic learning. They prefer to learn by experience and by being involved physically. They remember information by being actively engaged in real live learning experiences. They also have a preference for tactile learning whereby they learn best by doing hands-on activities and by experimenting and manipulating things.

The findings are similar to some extent to findings in other studies. Reid (1987) had found that most of the participants, among whom were Arabic speaking learners, choose tactile and kinesthetic learning preferences as their preferred learning styles similar to that of our students. The study showed that Arabic speaking learners have a strong preference for an auditory learning style. Reid (1987) also reveals that Chinese, Korean and Arab students have a preference for multiple learning styles. In 1995, Stebbins replicated Reid's (1987) study and found that kinesthetic and tactile learning styles were strongly preferred by ESL students, including Arabic speakers. In addition, the results showed that group learning was indicated as the least preferred learning style. Our study

similarly showed that Arabic speaking students indicated a preference for multiple learning styles and exhibited a preference for auditory, visual, kinesthetic and tactile learning styles. Hadi (2007) investigated the learning of Lebanese students enrolled in remedial English classes and found that they have a preference for kinesthetic and tactile learning styles and a minor preference for the visual and the auditory. The group and individual learning styles are the least two favored ones. Thus, the results of our current study confirm the above research findings.

The fact that the Lebanese ESL students in this study identified four learning styles as major learning style preferences and that most of the students have a preference for more than one learning style indicates that the learning styles of these students are not bipolar but exist on a wide continuum and confirms some research in the field (Dornyei, 2005, Ehrman, 1996, & Reid, 1995). According to Oxford and Ehrman (1995), not all individuals could be sorted and placed neatly in one category, but some may fit in more than one learning style.

#### *4.6 Teaching style preferences of NHU's ESL teachers*

Although the number of teachers that participated in this study is low and thus the sample will not enable us to generalize these findings to all the ESL teachers at NHU, there seemed to be a trend that needs to be highlighted. The identified preferred teachers' teaching/learning were matched with the students' learning styles in order to examine and investigate the impact of this match. In this study, all teachers reported that they have a major preference for kinesthetic and individual learning styles. A major proportion, 80%, of the teachers exhibited a preference for visual and tactile learning styles, and they disfavored auditory and group learning styles. The results of this study are similar to Peacock's (2001). They showed that most of the teachers preferred kinesthetic, group and auditory learning styles and they disfavored tactile and individual learning styles. However, Western teachers disfavored auditory learning style. This shows that the teachers who participated in the current study and who were all Lebanese, have different preferences than Asian and Western teachers. This difference could be traced to cultural differences which needs to be investigated in future studies. It could also be attributed to the teaching methodology whereby teachers mostly follow the traditional practice of heavy emphasis on class lecturing and rote memorization; group work and cooperative learning not being favored (personal communication with teachers). However, future studies would do well to investigate such practices according to learning styles.

#### *4.7 Impact of age, gender, discipline and time spent studying English on students' perceptual learning styles preferences*

Age is an affective variable that can alter or modify the learning style of the learner (Kinsella, 1995; Reid, 1987). Although the results of this study are not statistically significant, a trend can be noticed and observed. The results show that students between the age of 16 and 18 favored kinesthetic (88.2%), auditory (82.4%), and tactile (70.6%) learning styles, more than the visual (58.8%), individual and group learning styles (47.1%). Although the students in the 19-21 year old group have a preference for auditory (88.0%), kinesthetic (78.7%), and tactile (81.3%), the percentage of those who prefer kinesthetic is less than those who prefer group learning style. It is also apparent that the students who exhibited a preference for the auditory learning style in group one constitute 82.4% of the sample while this percentage is higher (88.0%) in group two who are older. The third group, (22-24 years old), has a preference for auditory (90.9%) followed by both kinesthetic and visual learning styles and, both constitute 63.6% of the sample. The results indicate that the auditory learning style is more dominant with older students. They also show that the percentage of the students who exhibited a preference for auditory is increasing as the age group increases. The results also indicate that the percentage of the students who prefer kinesthetic learning decreases as the age group increases.

These results, although not statistically significant, are similar to the results of other studies. Reid (1987) found no significant differences resulting from statistical analysis for age; however, age is a variable that needs to be considered. Her findings showed that the older the students the more they prefer the auditory, visual, kinesthetic and tactile learning styles. According to Keefe (1987) and Kineslla (1995), children have a strong preference for kinesthetic and tactile learning styles, but they develop a preference for auditory and visual as they grow older.

Gender has been identified (DePaula, 2002; Dunn and Honigsfeld, 2003; Reid, 1987) as one of the characteristics that differentiates learning styles of individuals. These researchers agree that females learn differently than males due to biological, environmental and social attributes. The findings of this study reveal that although both Lebanese males and Lebanese females favored auditory, kinesthetic and tactile learning styles, females showed a significant higher preference for auditory, kinesthetic, and tactile learning styles than Lebanese males; whereas Lebanese males showed a significantly higher preference for visual and group learning styles than Lebanese females. This may indicate that females learn differently than males. The results correlate with those of other studies. Jenkins (1991) confirms that females are more kinesthetically and auditory oriented than males. Roberts

(1984) found that females prefer to learn individually more than males, the later having a preference for group learning.

In this study, the majority of the sample were business students. They constituted 62.1% of the entire sample, while the rest of the students were majoring in different fields. The current study discusses only the business students since the other majors constitute a small sample that does not provide enough information to generate results. According to Reid (1987), business students exhibited a preference for kinesthetic and auditory learning styles while they showed negative preference for group learning. Similar to Reid's study, our findings show that the Lebanese business students prefer auditory (85.9%), kinesthetic (79.7%), and tactile (73.4%) learning styles, more than visual (59.4%) and individual and group, (both 54.7%) learning styles. The findings related to the effect of the years of studying English on students' preferred perceptual learning styles did not match Reid's (1987) results. She showed that the more the students spent time in the United States the more their learning styles become similar to those of the native speakers of English. Our findings of this study showed that the students have a high preference for kinesthetic, visual and auditory learning styles disregarding the number of years spent studying English.

#### *4.8 Effect of a match/ mismatch between the teaching and the learning styles on students' achievement in IE classes*

Reid (1987) hypothesizes that a match between teacher's teaching style and student's learning style could result in better achievement, equal educational chances and positive attitude towards learning. Stebbins (1995) suggests that a mismatch between the teaching and learning styles could have a negative impact on the students' attitude and thus learning process. Moreover, matching learning and teaching styles improves the students' attitudes, behavior, motivation and accordingly their learning. All teachers preferred kinesthetic and individual learning styles; whereas, the individual learning style is disfavored by 45% of the students. Moreover only 60% of the teachers show a preference for auditory learning style; whereas, 87.4% of the students exhibited that it is their main preferred learning style. This shows that there is a mismatch between teachers' preferred teaching styles and students' preferred learning styles.

The results further revealed that 24% of the students whose learning styles do not match the teaching styles of their teachers failed, while only 15% of the students whose learning styles match the teaching styles of their teachers failed. This indicates that a match between the learning and teaching styles could have impacted the achievement level as operationalized through the final course grade. However, these results can not be generalized nor are they conclusive as an experimental control research design is necessary as well as other factors need to be considered. The finding does, however, give some indication that similar teaching and learning styles could be considered as one factor to consider in learning a language.

## **5. Major Findings**

The major results showed that Lebanese students have a preference for auditory, kinesthetic, tactile and visual learning styles; that is, preference for multiple learning styles. The second major finding is that although Lebanese males and females have similar preferences, females have more preference for group learning than males do who prefer to learn individually. The third major finding is that the older the students become the less they prefer the kinesthetic modalities and the more they prefer the auditory modalities. Another finding and on which the research was generated is that there is no match between the learning and the teaching styles which may impact achievement. This is considered an important finding which has implications for the teaching/learning situation in language classrooms. It is left for future research to confirm findings in the field that a mismatch between teachers and students in learning styles may negatively affect student performance and achievement in the classroom.

### *5.1 Implications for the Classroom*

A teacher could be very knowledgeable, creative, caring and enthusiastic yet fail to facilitate learning for students whose strengths or learning styles are not acknowledged or addressed by the teaching methods in the classroom. Results of students whose learning styles do not match those of their teachers, might be mediocre or even not up to the level and thus frustration and demotivation would build up. Therefore, it is crucial for teachers and students to identify and understand their preferred learning styles, respect others' styles and respond to different learning styles by accommodating some strategies that could help promote learning.

The first step towards incorporating and benefiting from this research is to realize the effect of learning styles on students' learning in the ESL classroom. For teacher and students to become aware of their preferred teaching and learning styles, a learning style questionnaire or an assessment tool should be administered once the students start the course. Thus, teachers and students should familiarize themselves with the different learning styles by addressing their strengths and weaknesses, likes and dislikes in relation to how they learn best. Moreover, the

identification of the learning styles would help teachers and students select and implement more effective instructional methods and materials. This should not imply extensive individualized instruction for every student but rather providing strategies and learning experiences to help students stretch their learning styles. This also entitles teachers to give challenging yet attainable activities that go beyond the comfort zone of the students. Oxford (2001) believes that the more the students are exposed to different strategies the more they gain tools to use in different and various situations.

Since an ESL classroom is found to be a heterogeneous one that consists of a diverse population of students with respect to discipline, gender and age, teachers cannot use specific teaching methods to address each of these variables but in light of the research in the field would find it perhaps better to modify their teaching to meet the different learning styles of the students.

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Table 1. Different Styles of Learning within Several Groups

Group	Visual	Tactile	Individual	Auditory	Group	Kinesthetic	p-value
<b>Age 16-18</b>							0.22
Major	10(58.8%)	12(70.6%)	8(47.1%)	14(82.4%)	8(47.1%)	15(88.2%)	
Minor	7(41.2%)	5(29.4%)	7(41.2%)	3(17.6%)	8(47.1%)	2(11.8%)	
Negligible	0(0.0%)	0(0.0%)	2(11.8%)	0(0.0%)	1(5.9%)	0(0.0%)	
<b>Age 19-21</b>							*0.014
Major	49(65.3%)	61(81.3%)	43(57.3%)	66(88.0%)	42(56.0%)	59(78.7%)	
Minor	25(33.3%)	14(18.7%)	28(38.7%)	9(12.0%)	28(37.3%)	16(21.3%)	
Negligible	1(1.3%)	0(0.0%)	3(4.0%)	0(0.0%)	5(6.7%)	0(0.0%)	
<b>Age 22-24</b>							0.11
Major	7(63.6%)	6(54.5%)	6(54.5%)	10(90.9%)	5(45.5%)	7(63.6%)	
Minor	4(36.4%)	4(36.4%)	4(36.4%)	1(9.1%)	3(27.3%)	4(36.4%)	
Negligible	0(0.0%)	1(9.1%)	1(9.1%)	0(0.0%)	3(27.3%)	0(0.0%)	
<b>Lebanese</b>							*0.0004
Major	64(66.7%)	74(77.1%)	54(56.2%)	84(87.5%)	51(53.1%)	76(79.2%)	
Minor	31(32.3%)	21(21.9%)	36(37.5%)	12(12.5%)	37(38.5%)	20(20.8%)	
Negligible	1(1.0%)	1(1.0%)	6(6.2%)	0(0.0%)	8(8.3%)	0(0.0%)	
<b>Leb. males</b>							*0.0073
Major	37(69.8%)	39(73.6%)	29(54.7%)	46(86.8%)	32(60.4%)	39(73.6%)	
Minor	15(28.3%)	13(24.5%)	18(34.0%)	7(13.2%)	19(35.8%)	14(26.4%)	
Negligible	1(1.9%)	1(1.9%)	6(11.3%)	0(0.0%)	2(3.8%)	0(0.0%)	
<b>Leb. Females</b>							*<0.001
Major	27(62.8%)	35(81.4%)	25(58.1%)	38(88.4%)	19(44.2%)	37(86.0%)	
Minor	16(37.2%)	8(18.6%)	18(41.9%)	5(11.6%)	18(41.9%)	6(14.0%)	
Negligible	0(0.0%)	0(0.0%)	0(0.0%)	0(0.0%)	6(14.0%)	0(0.0%)	
<b>Business Sts.</b>							0.054
Major	38(59.4%)	47(73.4%)	35(54.7%)	55(85.9%)	35(54.7%)	51(79.7%)	
Minor	25(39.1%)	16(25.0%)	25(39.1%)	9(14.1%)	25(39.1%)	13(20.3%)	
Negligible	1(1.6%)	1(1.6%)	4(6.2%)	0(0.0%)	4(6.2%)	0(0.0%)	
<b>ESL</b>							*0.0024
Major	39(61.9%)	49(77.8%)	30(47.6%)	58(92.1%)	35(55.6%)	50(79.4%)	
Minor	23(36.5%)	13(20.6%)	29(46.0%)	5(7.9%)	21(33.3%)	13(20.6%)	
Negligible	1(1.6%)	1(1.6%)	4(6.3%)	0(0.0%)	7(11.1%)	0(0.0%)	
<b>FSL</b>							0.55
Major	24(70.6%)	25(73.5%)	24(70.6%)	28(82.4%)	17(50.0%)	26(76.5%)	
Minor	10(29.4%)	9(26.5%)	9(26.5%)	6(17.6%)	16(47.1%)	8(23.5%)	
Negligible	0(0.0%)	0(0.0%)	1(2.9%)	0(0.0%)	1(2.9%)	0(0.0%)	
<b>1-4 Years Study English</b>							0.33
Major	15(78.9%)	14(73.7%)	12(63.2%)	18(94.7%)	12(63.2%)	16(84.2%)	
Minor	4(21.1%)	5(26.3%)	7(36.8%)	1(5.3%)	7(36.8%)	3(15.8%)	
Negligible	0(0.0%)	0(0.0%)	0(0.0%)	0(0.0%)	0(0.0%)	0(0.0%)	
<b>5-8 Years Study English</b>							0.42
Major	13(65.0%)	15(75.0%)	10(50.0%)	16(80.0%)	9(45.0%)	15(75.0%)	
Minor	7(35.0%)	5(25.0%)	9(45.0%)	4(20.0%)	11(55.0%)	5(25.0%)	
Negligible	0(0.0%)	0(0.0%)	1(5.0%)	0(0.0%)	0(0.0%)	0(0.0%)	
<b>9-12 Years Study English</b>							.08
Major	12(52.2%)	19(82.6%)	11(47.8%)	21(91.3%)	14(60.9%)	17(73.9%)	
Minor	10(43.5%)	3(13.0%)	8(34.8%)	2(8.7%)	8(34.8%)	6(26.1%)	
Negligible	1(4.3%)	1(4.3%)	4(17.4%)	0(0.0%)	1(4.3%)	0(0.0%)	

<b>13-16 Years Study English</b>							.01*
Major	9(64.3%)	12(85.7%)	8(57.1%)	12(85.7%)	6(42.9%)	13(92.9%)	
Minor	5(35.7%)	2(14.3%)	6(42.9%)	2(14.3%)	5(35.7%)	1(7.1%)	
Negligible	0(0.0%)	0(0.0%)	0(0.0%)	0(0.0%)	3(21.4%)	0(0.0%)	
<b>17-20 Years Study English</b>							.051
Major	13(61.9%)	15(71.4%)	12(57.1%)	17(81.0%)	12(57.1%)	15(71.4%)	
Minor	8(38.1%)	6(28.6%)	8(38.1%)	4(19.0%)	8(38.1%)	6(28.6%)	
Negligible	0(0.0%)	0(0.0%)	1(4.8%)	0(0.0%)	1(4.8%)	0(0.0%)	
<b>21-29 Years Study English</b>							.08
Major	4(66.7%)	4(66.7%)	4(66.7%)	6(100.0%)	2(33.3%)	5(83.3%)	
Minor	2(33.3%)	2(33.3%)	2(33.3%)	0(0.0%)	2(33.3%)	1(16.7%)	
Negligible	0(0.0%)	0(0.0%)	0(0.0%)	0(0.0%)	2(33.3%)	0(0.0%)	

\*significant at the 5% level

Table 2. Course Grade: A Match Between Student's Learning Styles and Teacher's Teaching Styles

Group	Grade		p-value
	Pass	Fail	
Student and Teacher learning styles Match	46 (85.2%)	8(14.8%)	0.22
Student and Teacher learning styles Do Not Match	37 (75.5%)	12(24.5%)	