

CHAPTER 5

RESULTS AND DISCUSSION

Overview

The purpose of this study was to get a better picture of the connection between the learning styles of adult learners enrolled in the EFL program in a foreign language faculty at one of the universities in Iran and the teaching styles of their instructors and its impact on student achievement. This chapter looks at the learning styles of Iranian students and their teachers at one of the universities in Iran.

Focus on learners and learners' needs in the classroom can be traced back to research done thirty years ago. Present literature on learners' learning styles preferences indicates that matching learners' learning styles and teachers' teaching styles is more productive and beneficial for students as well as teachers. Furthermore, it encourages the educators to teach in ways that meet their students' learning styles preferences. This suggestion can leave the teachers who have limited access to teaching material and resources with one essential question: How?

This study was designed to determine whether a match between lecturers' teaching styles and students' learning styles would foster students' success as evidenced by higher course grades and final exam scores. It then examines the effect of personal factors such as age, gender, parents' educational background and duration of learning English language on learners' achievements.

It then examines the style match and mismatch level between the lecturers and their students in the EFL context in a faculty of foreign languages in a university in Iran. Later, this study investigates the lecturers' experiences of accommodating to their students' learning style preferences and in terms of how their experiences can play a crucial role in shaping the proper teaching styles plan that is based on their students' learning styles preferences that will result in higher student achievement. Many researchers have discussed the relationship between learning styles and teaching styles and the impact of this relationship on students' achievement.

However, it is a rather controversial topic in the research domain because some of the researchers (Larkin-Hein & Budny, 2001; Dunn, 1996; Felder & Spurlin, 2005; Ford & Chen, 2001; Felder & Henriques, 1995; Garland & Martin, 2005; Montgomery, 1995; Minotti, 2005; Zhenhui, 2001) confirm that matching has an impact on higher achievement whereas other researchers (Becta, 2005; Coffield, Moseley, Hall, & Ecclestone, 2004; Doyle & Rutherford, 2003; Ellis, 2001) have found that mismatch will work better in terms of student achievement.

Many studies have recommended that matching lecturers' preferred teaching styles to their learners' preferred learning styles will result in higher academic success as measured by the final exam scores (Van Vuren, 1992; Zippert, 1985).

This study attempts to answer the following questions:

1. What are the learning style and teaching style preferences among the EMSs learners and lecturers in Iran?

2. How do personal factors, namely age, gender, number of years studying English and parents' educational background relate to learning style preferences for EMSs learners in a university classroom setting in Iran?
3. Does the match or mismatch of teaching and learning styles impact on the achievement of EMSs learners in a university classroom setting in Iran?
4. What is the impact of the independent variables on dependent variable on learners' achievements?
5. What are the accommodations of EMSs lecturers toward students' learning styles in a university classroom setting in Iran? (4 case studies)

Summarization

Four English lecturers and 310 students from one of the universities in Tehran which is the capital of Iran participated in this study. The age of the student participants ranged from 20 to 45, the average for participants' age was 33. All of the subjects have to take this course as their prerequisite and part of their major. Before the main study started, the pilot study was conducted with the student participants. The results indicated that there was no need for any change or modification in the questionnaires.

The Felder and Soloman (2006) learning styles inventory was used to ascertain the teaching styles of the English major lecturers and the learning styles of their students. The teaching styles of the instructors were assessed based on the hypothesis that teachers teach the way they learn (Brown, 2003); therefore the learning styles index of Felder and Soloman (2006) was used for the purpose of classifying the teachers'

teaching styles. The Felder and Soloman (2006) instrument consisted of 44 questions which assess the 4 different aspects of the learning styles; each question has two corresponding answers, a or b. The students selected the items which are closer to their preferences. The average time to complete this inventory was estimated at 30 minutes but most participants in this study took 25 minutes to complete the inventory. The inventories were scored through the online version of the inventory and the result was printed by the researcher for further analysis. The researcher had earlier explained the purpose of the study and instruments used to the lecturers as well as students in the study. Both the lecturers and the learners completed the inventories and the researcher collected the inventories, demographic questionnaires and the consent letter for each participant and checked them one by one to ensure that they were completed as directed. Other instruments used in this study are interview and observation which were scheduled for lecturers and based on the class availability and class time table and these were performed after conducting the Felder and Soloman (2006) inventory.

Analysis of the dominant learning styles of EFL students showed that students' preferred learning styles were reported as an active, sensing, visual and global style. However, the dominant learning style of the EFL lecturers were reported as active, sensing, visual and in the last dimension the preferences have been equally distributed between the Sequential and Global dimensions.

Based on the results, the students expressed major preferences for active learning styles; active learners like to comprehend the new information and be involved physically in the class activities. They like to study with one or more students in a group. Class interaction is considered as another success factor for these kinds of

learners. To recall the information learned in the class, these active learners need to work with one or more students to understand the subject matter, whereas reflective learners learn best when they study alone. The reflective learners obtain information easily if they are left alone to work on their own and in a very quiet environment and they like to study alone.

Another preference was the sensing learning style. Sensing learners like to be more practical, discover the possible chances, solve problems by established methods, like innovation and love to experience the facts through hands-on experience. They learn best when they have hands-on experience through trial and error. For these types of learners, it is recommended that the lecturer use problem solving activities and let them feel the situation and ask them for the possible solution, whereas for learners such as visual which are considered as a preference in the third dimension, they learn best by looking at the information, reading, observing and thus learn best through visual aids such as charts, schematics, diagrams or any type of visual presentation. Writing notes in the class will assist them to remember the material they have to learn.

Finally, for the preferences in the last dimension, the learners' preferences were equally distributed; it means the students have equal preferences for both ends of the dimension. Sequential learners are good in following the logical order of the information but they are unable to link the information with the different aspect of the subject learned in a class.

On the other hand, the sequential learners are more comfortable with the random information; it is difficult for them to explain to others what they have learned but they understand the concept and the subject matter clearly. For these types of learners, the

lecturers must use a kind of narrative activity to let them express what they understand and get them to be actively involved in the class.

In order to accommodate different learning styles in the classroom, lecturers need to take into consideration that different types of learners have their own specific needs and preferences. When EMSs learners' preferences were viewed based on their relation to gender, age, family educational background and years of experience in learning English language, surprisingly, these variables are shown to have little significance impact on their learning style preferences and their achievement. The Felder and Silverman (1988) learning style preferences questionnaire results seem to suggest that the sample in this study is fairly homogeneous in terms of their learning styles. In terms of gender, unlike studies such as Reid (1983), Philbin, Meier, Huffman, and Boverie (1995), Lincoln and Rademacher (2006), Sheorey (2006), Melton (1990) and Oxford (1993), yet more in line with Park (2000), Keri (2002) and Jones et al. (2003), this study found no difference in terms of gender among the EMSs learners. Nonetheless, the learning style differences between males and females have been highlighted as the factor that predicts the different academic performance, and work in favor of females (O'Brien, 1994).

The results of this study indicated that there is no significant relationship between learning style preferences and gender in all four dimensions in the Felder and Soloman inventory (LSP1: .47, LSP2: .70, LSP3: .43, LSP4: .27). The findings showed that there is no significant relationship between age and learners' learning styles preferences in LSP1: .47, LSP3: .81, LSP4: .50 but on the other hand there is a significant relationship between the LSP2: .0.58 and Age.

This study also found no significant relationship between years learning English and learners' learning style preferences in LSP1: .64, LSP4: .85 but on the other hand there is a significant relationship between the LSP2: .015 LSP3: .025 and years of learning English.

The findings showed that there is no significant relationship between family educational level and learners' learning style preferences in LSP1: .72, LSP3: .38, LSP4: .163 but on the other hand there is a significant relationship between learning style preference and family educational background (the LSP2: .008).

The importance of addressing bridging of the gap between the learning styles of EFL learners and the teaching styles of their lecturers was developed in this study through the use of the questionnaires, inventories, observation and interview. It is an advantage for the learners to broaden their learning style preference vision in all the areas. Individuals can benefit from their learning styles strengths to encourage other learners with different learning styles preferences to perform toward success.

Therefore, the tasks in this study were four- fold. The first was to find a way to determine a subject's learning styles preferences along the dimensions of active-reflective, sensing-intuition, visual-verbal and sequential-global. The second was to assess the impact of factors such as age, gender, number of years learning English language and finally parents' educational level on learning styles preferences. The third was to investigate the level of the match and mismatch between the EMSs learners and their lecturers and also the impact of this match on student achievement. The fourth one was to investigate the lecturers' efforts in accommodating learners' preferences in their teaching plan and the impact of such accommodation student learning.

Findings and Discussion

Findings of the study can be summarized through the following conceptual model:

However, before entering the territory of the teachers' practice to investigate whether they are addressing the learner's preferences or not in their class, it is crucial to highlight the EMSs learning style preferences in foreign language faculties in universities in Iran. This study found out that students at the foreign languages faculty most strongly preferred to learn in LSP1 through Active dimensions (Active=50.6 & Reflective=49.4) while in LSP2 their preferences shift to sensing dimensions (Sensing=76.1 & Intuitive= 23.9), in LSP3 their preference is visual (Visual=67.7 & Verbal=32.3) and in LSP4 they preferred global (Sequential =48.4 & Global = 51.6). Based on these learning styles frequencies we have defined the dominant students' (the most frequently cited) learning profile as active, sensing, visual and global. The learning style preferences for the instructors were reported as in LSP1 (Active=75.0 & Reflective=25.0), LSP2 (Sensing=75.0 & Intuitive=25.0), LSP3 (Vis=75.0 & Ver=25.0) and LSP4 (Seq=50.0 & Glo=50.0). Overall comparison between the students' and teachers' preferences in the EFL classroom indicated that learning styles preferences are similar among the learners and teachers based on index of learning styles (Felder & Soloman, 2006).

Of the 310 students who completed this survey, Active learners 157 (50.6%), Reflective learners 153 (49.4%), Sensing learners 236 (76.1%), Intuitive learners 74

(23.9%), Visual learners 210 (67.70%), Verbal learners 100 (32.3%), Sequential 150 (48.4%), Global 160 (51.6%) were the student overall learning style preferences. Of the four lecturers who completed this survey, the majority preferred the active, sensing, visual, and global/sequential rather than other styles. Final grades from the spring semester 2009 were collected from the four classes that participated in this study, and the grades were analyzed.

The findings of the research question 1 implied the frequencies of the dominant learners' preferences in this study which are: Active (50.6%), Sensing (76.1%), Visual (67.07%) and Global (51.6%). The comparison of student and teacher results from the ILS survey as shown in the studies done by Kovacic (2008) (Active, 56%, Sensing, 44%, Visual, 78%, Sequential, 22%), Zywno (2003a)(Active, 38%, Sensing, 42%, Visual, 94%, Sequential, 35%); and Fowler, McGill, Armarego, and Allen (2002) (Active, 27%, Sensing, 36%, Visual, 73%, Sequential, 45%) confirmed the findings of this study.

The findings of research question 2 pertained to the influence of age, gender, experience in learning English and parents' educational level on student learning style preferences. The results indicated that there is no significant relationship between learning style preference and gender in all four dimensions of Felder and Soloman (LSP1: .47, LSP2: .70, LSP3: .43, LSP4: .27). The finding showed that there is no significant relationship between age and learners' learning styles preferences in LSP1: .47, LSP3: .81, LSP4: .50 but on the other hand there is a significant relationship between the LSP2: .058 and Age. It also indicated that there is no significant relationship between years learning English and learners' learning style preferences in

LSP1: .64, LSP4: .85 but on the other hand there is a significant relationship between the LSP2: .015 LSP3: .025 and years of learning English. The finding showed that there is no significant relationship between parents' educational level and learners' learning style preferences in LSP1: .72, LSP3: .38, LSP4: .163 but on the other hand there is a significant relationship between the LSP2: .008 and family educational background.

The findings of research question 3 concern the Comparison in Achievement Scores between Matched Teaching-Learning Styles with Mismatched Teaching-Learning Styles across all Learning styles dimensions. The results showed the mean achievement scores for Match Groups 0, 1, 2, 3 and 4 are 13.47, 14.00, 14.78, 16.79 and 17.57 respectively. The results of the one-way analysis of variance, also pictured an existence of the significant difference in the means [$F(4, 305) = 22.22, p = .00$] Post-hoc multiple comparisons using the Tukey HSD tests showed significant differences between Match Group 0 with Match Groups 3 and 4, MD (Mean Difference) = -3.32, $p = .00$ and $MD = -4.10, p = .00$ respectively.

Significant differences were also recorded for Match Groups 1 and 2 with both Match Groups 3 and 4. However, no significant differences in achievement were found amongst Match Groups 1, 2 and 3 or between Match Groups 3 and 4. The results indicate that Match Groups 3 and 4 outperformed the other Match Groups in achievement scores but their performance did not differ from each other. In short, the results imply that generally if teaching styles are matched to learning styles, achievement of students will be significantly better up to a point. The results in this section are consistent with that in the section above where it was found that when

teaching and learning styles are matched for individual LSPs, performance would be much better than if they were not.

The findings of research question 4 indicated the impact of the independent variables (Age, Gender, English learning and Parents' educational background) on dependent variables (Achievement) on learners' achievements

As a whole, achievement is not significantly affected by the independent variables that are Age, Gender, English learning experience and parents' educational background. Among the four components of learning styles ACT/REF, SEN/INT, VIS/VER and GLO/SEQ, none are influenced by any one of the independent variables that are Age, Gender, English learning and parents' educational background. However, the sensing/intuitive dimensions among the learning style dimensions contribute only 10% of the total value.

The finding of the research question 5 indicated that the concept of learning style preferences in the EFL context is relatively new. The findings of this study implied that the teachers are willing to create the situation to optimize the learning outcomes in the class; therefore, they are concerned about meeting the learner's needs and preferences in order to improve their academic achievement. The fact that students learn in different ways and the possibility that instructors can adapt their instructional modes has come both as a surprise and a relief to many educators. Instructors whose previous education differed radically from the ways they are now being encouraged to teach in the EFL Program may benefit particularly from this deeper understanding of learning styles, style assessment instruments, and experience with alternative teaching styles that will help them function better as teachers in their university classrooms. Moreover, the deeper

understanding and use of different teaching styles by the instructors, as well as the awareness of individual learning styles by the students will influence success in the classroom. Scholar after scholar has found a positive relationship between the learning styles –teaching styles matching and learning achievement (in some studies achievement and performance have been used interchangeably). Research on student learning indicated that the lecture method is not considered as the best teaching approach in terms of accommodating the students' styles preferences (LeLoup & Ponterio, 1997). However, Jackson and Prosser (1995) suggested that despite the nature of the lecture method which sounds entertaining, students may not learn effectively through receiving a lecture compared to other approaches in learning.

They also stated that such approaches can be defined as the combination of the styles when it is noticed by the lecturer besides their ability to utilize some communication skills in their class.

Bliss and Ogborn (1977) stated that this kind of approach includes the lecturer's ability to interact with students in a way that tests their commitment and interest. The instructor's ability to change from the learner- centered position to treating students as individuals with unique style preferences is considered as another factor involved in matching teaching and learning styles (Ramsden, 1988).

It was hypothesized that subjects who received instruction that matched their learning styles preferences would obtain higher marks in their English major classes compared to those subjects who received instruction that mismatched their learning style preferences.

The results of Peacock's (2001) study implied that kinesthetic and auditory are the most favored styles, and the least favored ones are the group and individual styles among the students while for teachers the most favored styles were kinesthetic and group styles and the least favored were tactile and individual styles.

Regarding the matching and mismatching and its impact on student learning, 72% of the participants of the study felt unsatisfied when there was no match and 76% believed that their EFL learning was influenced by this mismatch. They were bored and lost their interest.

Dunn, Beaudry&Klavas(1989) stated that altering the educational planning based on the student's preferences could create noteworthy statistical improvement in the learner's grades and attitudes. However, the final results of this study showed that a mismatch between the teaching and learning styles causes learning failure. Furthermore, Marshall (1991) found that high achievers and low achievers have their preferences which have not been considered in the traditional school curriculum.

By implementing and expanding different teaching styles, lecturers can create the environment which caters for all the learners with different learning style preferences (Friedman & Alley, 1984). On the other hand, Gregorc and Ward (1977) suggested that lecturers should explore their students' learning styles, then identify their own teaching styles and then align their teaching styles based on the learning style versatility. Hyman and Rosoff (1984) mentioned that teaching style and learning style match and mismatch will influence learners' achievement.

Various researchers have confirmed that styles match between the students' learning styles and teachers' teaching styles will create higher academic achievement as

measured by final exam scores (Van Vuren, 1992; Zippert, 1985) and course grades (Carthey, 1993; Hunter, 1979; Matthews, 1995; Miglietti, 1994; Raines, 1976). Individuals have different styles and the teachers are responsible for gearing up their lesson plan to address those learning style preferences (Henson & Borthwick, 1984).

The findings of the study by Madden (2008) showed that Visual /Verbal learning styles were the first preferences among the learners; it can be explained through the nature of the study setting which was an online course. However, the result showed that the other three learning styles were equally being used by the learners.

Madden (2008) defined the teaching styles of the teachers by the CORD instrument and concluded that the teachers are adjusting their teaching styles based on the students' learning styles. Besides, the importance of considering learner diversity was confirmed by the results of the interview in this research which indicted that the teachers are adjusting their assignment to meet student needs.

However, the results from Madden (2008) were in line with the results of this study which indicated that addressing the learning styles of the learners in teaching design will improve learner achievement. One of the students' aims in joining the higher education program is to be efficient learners in "academic growth" while pursuing their degree. The Chickering and Ehrman (1996) study also confirmed the findings of the current study that proper "good" teaching style which matched the learners' learning styles yielded fruitful results. Wynn (2006) indicated that "as long as the strategy you select meets general guidelines for meeting different needs of different learners, it doesn't really matter which strategies you choose; just make sure that when you use them, students learn" (p. 82).

The majority of the lecturers' responses during the interviews indicated a need for utilizing diverse teaching styles in the class but lack of knowledge about the impact of congruent teaching styles and learning styles on learner achievement and also the impracticality of the concept make it somewhat difficult for teachers in practice. Number of the researches done on learners' and teachers' perceptions in instructional activities highlighted the fact that there is a lack of relationship between the two categories (Barkhuizen, 1998; Kumaravadivelu, 1991; Spratt, 1999).

Therefore, the finding of this study is similar to that of previous studies (e.g., Dunn, Bruno, & Gardiner, 1984; Agogino & His, 1995; Barbe & Milone, 1980; Carbo, 1997; Dunn & Dunn, 1993; Jenkins, 1991; Leaver, 1998; Sarasin, 1999; as cited in Klein, 2003; and Woolhouse & Blaire, 2003; Robotham, 2006; Bell, 2007; Xiao, 2006; Kovacic, 2008; Peacock, 2001).

The results that have been achieved in this study are similar to the other studies. The findings of this study indicated an important point for the teachers and lecturers who are involved in EFL education in Iran. Iranian teachers and lecturers may have to accept the fact that the traditional methods of language teaching can not be used for all types of learners; therefore they must expose themselves to different teaching styles to convey their message in classroom successfully.

The information on learners' learning preference will benefit the curriculum developers, syllabus designers and teachers. Barkhuizen (1998) indicated that if learner needs and preferences are taken into consideration by those authorities, they can plan and implement the material according to those preferences and it will assist the learning process and increase the educational outcomes.

On the contrary, various researchers have contended that there is no significant correlation between the learning style and teaching styles match and mismatch and student academic success (Battle, 1982; Campbell, 1989; Charkins, O'Toole, & Wetzel, 1985; Hunter, 1979; Lyon, 1991; Scerba, 1979). Furthermore, many of the researchers indicated that further study is needed before any conclusive statement can be made regarding the effect of match or mismatch between the learners' and teachers' styles on student academic achievement.

The purpose of conducting this study was to determine whether the match between the lecturers' teaching style and learners' learning style would foster learner achievement, and this was evidenced by their final exam scores. By conducting this study the researcher hoped that she has added to the growing body of literature on learning styles and teaching styles by testing the assumption that learning style and teaching style congruency augments students' academic success as indicated by the final exam scores whereas incongruency would not augment but hinder the learners' success.

Furthermore; this study also investigated the impact of the lecturers' styles match effectiveness on their students' achievement. Considering the fact that it is difficult to adjust the lesson plan to address the entire learner's learning preferences, it is more advisable not to use only one teaching style in the class. However, instruments such as the Felder and Soloman that enable classroom teachers to become more aware of their students' versatility in styles will encourage teachers to acquire more knowledge about the types of styles existing in their class, and promote variation of teaching style usage in their classroom.

Recommendations and Implications

Based on the findings of this study, two areas of recommendations shall be made: Practical applications and future research.

Recommendation for Practice

1. This study only discussed a few demographical factors and their impact on learning style preferences. The factors discussed in this study were age, gender, duration of the years learning English and parents' educational background.
2. If better learning style inventory test and better data collection instruments can be developed, the research performed in this study should be replicated to determine if the lack of significance seen in this study was a true representation of the current relationship between learning styles and teaching styles and its impact on student achievement, or if the lack of significance seen was the results of errors in the design or procedures of the study.
3. If the future researches find a positive correlation between the teaching styles and learning styles and student achievement in class, it will only answer half of the question. The other half is the issue of teacher acceptance and willingness toward this. Further research should be pursued to determine whether the level of benefit derived from matching the learning styles and teaching styles and its

impact on student achievement within a university classroom setting compensates for the increased burden on the teachers.

4. It is not the intention of this study to argue that Iranian EFL lecturers should strive for completely one to one lecture style or individualized instruction which sounds impractical due to the classroom size they teach. However, it does suggest that educators at all levels can and should adapt their teaching to better meet the learning style preferences of the majority of their students.
5. Friedman and Alley (1984) recommend that students can identify and utilize their preferred learning styles and take advantage of those preferences under their teacher's guidance. Grasha (1972) suggests that when the teacher is sharing the versatility of learning styles by picturing those styles in their teaching styles, it may assist the learners in fulfilling their tertiary education demands. Furthermore, considering the fact that one of the crucial goals of instruction is to assist the learners in identifying and evaluating their learning styles, the idea of conducting action research besides considering the students' learning styles as one of the teaching program major components sounds practical and beneficial. This will give teachers the chance to see the benefit of using the different teaching styles in their class and its impact on student learning.

Many studies have discussed learning styles and teaching styles and a growing body of literature addresses and evaluates learning styles. Based on the results of this study, the first implication of this study is the possibility of academic success growth by addressing the learner's needs in the teaching plan. The second implication is the

importance of the congruence between the learning styles and teaching styles in the classroom in facilitating the student's educational growth.

Recommendations for Future Research

Based on the results of this study, the following recommendations are offered for future research and future practice in the area of learning style preferences in the EFL setting in countries such as Iran:

1. The question of whether the Felder and Soloman (2006) instrument is the adequate test for determining the learning style preferences of subjects needs to be examined. If it is inadequate, then, for future research, there is a need for a test to be designed and validated which can explain all the learning style aspects.
2. Longitudinal study is recommended to have a chance to observe the students and how teachers in different semesters cope with the different subject matter and how they adjust to the existing different styles and make them work in the class. At the end of the course, students and teachers should reflect their ideas about the course to identify if learning style and teaching style combinations improved academic performance. Furthermore, the reflection could be represented by final grades of the course as well as weekly assignment presentation.
3. This study should be replicated on a larger scale within different universities in order to confirm the results or to identify if there is difference in the

connection of learning styles and teaching styles between the educators of private universities and public universities.

4. Since there were significant identification in the teaching styles of the teachers using the Felder and Soloman style inventory, it is advisable to conduct a similar study using different teaching style inventories to see the possible differences they may yield due to the change of inventory.
5. This research focused on the EFL students in a foreign language faculty only; it is recommended that future study will be conducted in different faculties with learners from different majors to see the possible differences in results.
6. More research is required to explain thoroughly what is the suitable content of the lesson that is designed for the different learners with different learning style preferences, to investigate deeply the different learners' needs.

Conclusion

The following conclusions were drawn from the findings of this research:

1. The findings of this study confirmed the theory which explains that the styles match will contribute to student success as assessed by the final exam in successful education environments (Van Vuren, 1992; Zippert, 1985) and course grades (Carthey, 1993; Hunter, 1979; Matthews, 1995; Miglietti, 1994; Raines, 1976).
2. The findings indicated that there is significant association between the styles match and student achievement as measured by their final scores in this study. In the present research, significant differences were found in final grades between students who matched their instructor's styles and those who did not. Table 5.1 is the summary of the findings.