

LEARNING STYLES AND ACADEMIC PERFORMANCE OF STUDENTS IN ENGLISH AS A SECOND-LANGUAGE CLASS IN IRAN

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Abstract. The purpose of this study was to investigate the relationship between learning styles and the academic performance of students who attend an English class to learn English as a second language in Iran. A randomly selected group of 488 high school students (248 male and 240 female) participated in this study. They were asked to fill out the Kolb's Learning Styles Inventory to identify four basic learning types: *Accommodating*, *Diverging*, *Assimilating*, and *Converging*. Academic performance evaluated by achievement test in the English language. The survey results indicated significant relationships between the different learning styles and the performance in an English test, and the performance resulted differently in four groups with different preferred learning styles. The results also indicated gender differences in the performance in English test for convergent and divergent and did not accommo-

date and assimilate preferred learning styles. These results lead us to conclude that learning styles can be considered as a good predictor of any second language academic performance, and it should be taken into account to enhance students' performances specifically in learning and teaching the second language, and also showed that individual differences in learning styles play an important role in this domain.

Keywords: learning styles, Kolb's learning style theory, academic performance, English language, second language

Introduction

In recent years the number of English language learners enrolled in the English (as a second language) classes has been on the rise among high school students in Iran, and it has been leading to expand the need to provide special language instructions. Students are different based on their ability in learning motivation levels, and how they respond to instructional practices. The more the students understand the differences the better chance they have to meet their different learning needs. There are two different categories that have had important implications in teaching and learning, including: *different learning styles*, and *different methods* (in taking in and processing information), learning approach, and intellectual development levels. In this paper our focus is on the differences in learning styles.

A learning style is a student's consistent way of responding to and using stimuli in the context of learning. Keefe (1979) defines learning styles as the "composite of characteristic cognitive, affective, and physiological factors that serve as relatively stable indicators of how a learner perceives, interacts with, and responds to the learning environment". Stewart & Felicetti (1992) define learning styles as those "educational conditions under which a student is most likely to learn." Thus, they are not really concerned with what learners

learn, but rather how they prefer to learn. Learning styles are points along a scale that help us discover the different forms of mental representations; however, they are not good characterizations of what people are or are not like. When people try to learn something new they prefer to learn it by listening to someone talk to them, or perhaps they prefer to read about a concept to learn it, or perhaps see a demonstration.

Learning styles can be defined, classified, and identified in many different ways. It can also be described as a set of factors, behaviors, and attitudes that enhance learning in any situation. How the students learn and how the teachers teach, and how the two interact with each others are influenced by different learning styles. Each person is born with certain tendencies toward a particular style, and these biological characteristics are influenced by external factors such as: cultures, personal experiences, and developments. Each learner has different and consistent preferred ways of perception, organization and retention. These learning styles are the indicators of how learners perceive, interact with, and respond to the learning environments. Students have different styles of learning, and they learn differently from one another.

“Learning style” is generally used to explain an individual's natural or habitual pattern of acquiring and processing information in learning situations. Many articles have been written about this concept, yet there is no consensus on its definition; however, a core concept is that individuals differ in how they learn (James & Gardner, 1995).

Proponents for the use of learning styles in education said: teachers should assess the learning styles of their students and adapt their classroom methods to best fit each student's learning needs. Although there are ample evidences for differences in individual thinking and ways of processing various types of information, only few studies have reliably tested the validity of using different learning styles in education, and shown that students will learn best if taught in a method deemed appropriate for their learning style (Pash-

leret al, 2008). In contract critics said there is no evidence that identifying an individual student's learning style produces better outcomes (Klein, 2003).

David Kolb's model

David A. Kolb (1984) styles model is based on the Experiential Learning Theory (ELT) as he explained Experience as the source of learning and development. The (ELT) model outlines two related approaches toward grasping an experience: Concrete Experience and Abstract Conceptualization, as well as two related approaches toward transforming experiences: Reflective Observation and Active Experimentation. According to Kolb's model, the ideal learning process engages all four of these modes in response to situational demands. In order to have an effective learning, all four of the above approaches must be incorporated. As individuals attempt to use all four approaches, however, they tend to develop strengths in one experience-grasping approach and one experience-transforming approach. The learning style results are combinations of the individual's preferred approaches. These learning styles include: *Converger*, *Diverger*, *Assimilator*, and *Accommodator*.¹⁾ *Convergers* are characterized by abstract conceptualization and active experimentation. They are good at making practical applications of ideas and using deductive reasoning to solve problems. *Divergers* tend toward concrete experience and reflective observation. They are imaginative and are good at creating ideas and seeing things from different perspectives. *Assimilators* are characterized by abstract conceptualization and reflective observation. They are capable of creating theoretical models by means of inductive reasoning. *Accommodators* use concrete experience and active experimentations. They are good at actively engaging with the world and actually doing things instead of merely reading and studying about them.

Kolb's model rose the Learning Style Inventory, an assessment method was used to determine an individual's learning style. An individual may exhib-

it a preference for one of the four styles—Converging, Diverging, Assimilating, and Accommodating—depending on (his/her) approach to learning via the experiential learning theory model (Kolb, 1984).

Students are characterized by different learning styles, preferentially focusing on different types of information and tending to operate on perceived information in different ways (Schmeck, 1988). To improve learning English as a second language we need more information about the learning styles that students prefer in second language classes. Therefore, in this research we investigated relationship between learning styles and academic performances of students in English as a second language class in Iran.

Method

Participants, design, and procedure

A group of 488 high school students in Iran (248 male and 240 female) who attended an English course, were randomly selected and participated in this study. Participants were asked to fill out Kolb's Learning Styles Inventory, and participate to an achievement English test that was designed by their English instructor to assess their academic performance in learning English as a second language.

Instrument: Kolb's Learning Styles Inventory

Perhaps one of the best-known and most widely used questionnaires is the Learning Style Inventory (LSI) based on Kolb's learning styles. The LSI can be used purely for self-knowledge so individuals can understand and manage their learning preferences; and is also useful for facilitators/educators, so they can design learning events to appeal to all learning style preferences. The LSI enables people to identify which phases in the learning cycle they prefer and which they avoid. It also helps them to develop practical strategies for completing the full cycle in order to strengthen their overall learning abili-

ties. Each of us has a tendency to operate from a preferred phase. But we learn most effectively – and completely- when we work through a full cycle, phase by phase. This will enhance our learning and make it have a long term sustained impact on our capabilities. The Learning Style Inventory is a statistically reliable and valid, 12-item assessment tool, developed by David A. Kolb Based on Experiential Learning Theory; it introduces four preferred learning styles: Diverging, Assimilating, Converging, and Accommodating. Kolb Learning Style Inventory which was used in this study is a Self-report, paper-based in Persian language.

Academic performance

Academic performance evaluated by achievement test in English (Cronbach's $\alpha = 0.82$). The test designed and made by the teacher of English course.

Results

From the two measurements, five measures were extracted for each participant: Accommodating, Diverging, Assimilating and Converging score in learning style inventory, and academic performance in achievement test in English. From the measures extracted from learning style inventory for each participant one of the four different styles was dominant. So, based on the dominant style we had four groups of subjects with four different learning styles. Table 1 provides an overview of descriptive information of four styles as measured by LSI. As we can understand from Table 1 there are four groups based on the higher score in one of the sub-group of learning styles (preferred style). Preferred learning style for groups 1 to 4 were Accommodating, Diverging, Assimilating, and converging respectively.

Table 1. Frequency, means and standard deviations for four different learning styles: Accommodating (AC), Diverging (DI), Assimilating (AS), Converging (CO)

Group	Descriptive Statistic Index	Learning Style				English Test
		AC	DI	AS	CO	
		(n=84)	(n=174)	(n=140)	(n=91)	
1	M	21.2	12.7	12.9	13.9	14.47
	SD	1.9	2.6	2.3	2.9	3.1
2	M	13.4	21.3	12.8	14	15.64
	SD	3.1	1.8	2.8	2.3	2.8
3	M	12.6	12.9	20.9	12.9	16.04
	SD	2.7	2.5	2	2.7	2.8
4	M	12.7	12.6	13.5	21.2	14.75
	SD	2.9	2.5	3.1	1.2	3.5

Note: English test score are out of 20.

The three major questions in this research were: (1) whether the four learning styles would pre-form differently in association with English Test; (2) whether performance in English test is significantly different in subjects associated with four different preferred learning styles; and (3) a) whether there are any significant differences between males and females in preferred learning styles; and b) performance in English test.

To answer to the first question, relationships between these measures were assessed by means of correlation coefficients. As the results (coefficients) reported in Table 2 shows performance in English score significantly and negatively correlated with learning styles of accommodating, assimilating, and positively with converging, but not significant correlation with diverging.

Table 2. Coefficients and significance levels (** for $p < .01$ and * for $p < .05$) for test of relationships (fits) between performance in English test and four learning styles: Accommodating (AC), Diverging (DI), Assimilating (AS), Converging (CO)

	Learning Style			
	AC	DI	AS	CO
English Test	-0.15**	0.07	0.1*	-0.16**

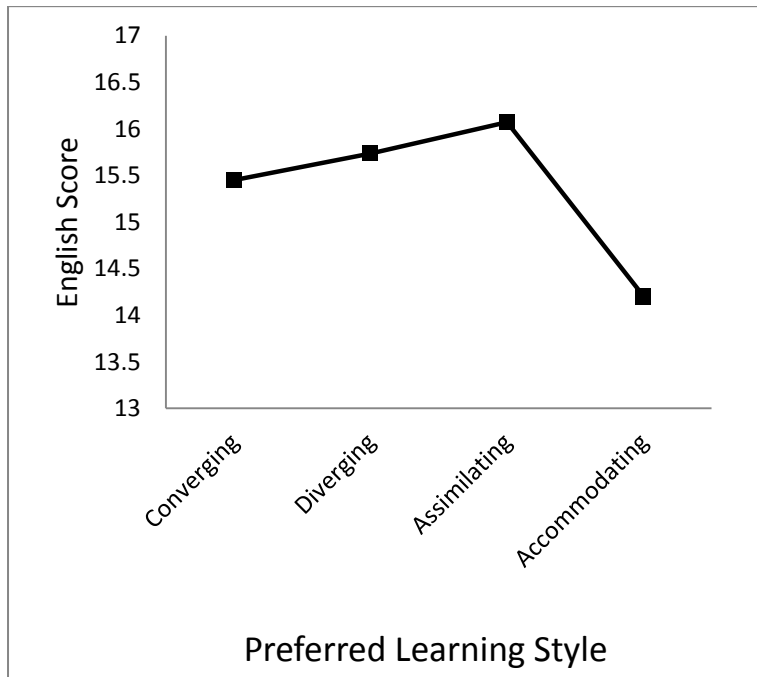


Fig. 1. Performance in English test as a function of four preferred learning styles

To answer to the second question a one-way ANOVA was used to test the differences in English test in four preferred learning styles. Results revealed that performance in English test was significantly different among the four groups, $F(3,485) = 6.43, p < 0.01$. Post-hoc Turkey's HSD tests showed that three comparisons were significant: subjects with preferred learning styles

of assimilating were significantly better than accommodating and converging, and also diverging was better than accommodating style in English test (Fig. 1).

Gender differences in preferred learning styles and performance in English test was tested by means of a two way ANOVA. The results showed that there was significant interaction between gender and preferred learning styles, $F(3, 481) = 3.6$, $MSE=32.7$, $p < 0.05$, $\eta^2=0.02$, as we can see in Fig. 2 no significant main effect for gender was observed, $F(1,485)=1.4$, $MSE=12.59$, $p > 0.05$, $\eta^2=0.003$. There was a significant main effect of preferred learning styles, $F(3, 481) = 3.45$, $MSE=31.2$, $p < 0.05$, $\eta^2=0.021$.

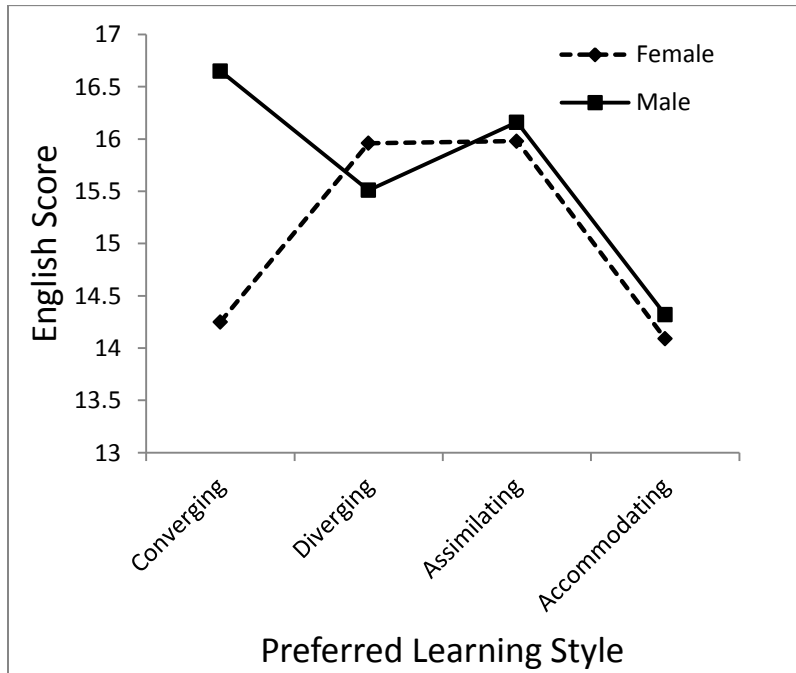


Fig. 2. Performance in English test as a function of four preferred learning styles for males and females

Conclusion

It is clear now, that people use different ways to learn new things in their daily lives. And a big group of people who spend a big part of their time in learning are students.

There is ample evidence to indicate that matching teaching styles to student's learning styles can significantly develop academic performance, student attitudes, and student behavior at the primary and secondary school level (Griggs & Dunn 1984; Smith & Renzulli 1984), at the college level (Brown 1978; Charkins et al. 1985), and specifically in foreign language instruction (Oxford et al. 1991; Wallace & Oxford 1992). The goal of this study was to investigate relationship between learning styles and academic performance in learning English as a second language in Iranian students. What we have found here lead us to conclude that students use different preferred learning styles to learn a second language. Learning styles also can be considered as a good predictor of academic performance and it should be taken into account to improve students' performance specifically in learning a second language. As Smith & Renzulli (1984) concerned that stress, frustration, and burn out may occur when students are subjected to over extended periods of time to teaching styles inconsistent with their learning style preferences. Considering that there are at least four groups students with different learning styles; it is impossible to put them in different classes and teach them with different instructors, so what must be done to improve foreign language learning is to balance teaching methods, and consider all learning styles simultaneously or at least sequentially in the class (Oxford 1990).

It is not clear why the performance of some students in English class in this research was better - maybe teaching styles was much with their style of learning accidentally. As a result of these findings, further research is recommended in this area.

NOTES

1. <http://infed.org/mobi/david-a-kolb-on-experiential-learning/>

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