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The role of learning styles in second language learning among distance education students

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Abstract

This paper reports on a research done to study learning styles and their roles on the second language learning of the students of Payame Noor University (PNU), Ardabil center, Iran. The statistical population involved all of the Ardabil Payame Noor University English language students (N = 457). From these, 112 students are selected as sample via random sampling. The questionnaire memletics is used to collect data about learning styles with using Cronbach's alpha ($\alpha=0.81$). Students' scores in TOEFL exam including 4 sections (listening, writing, structure, reading) are taken as a criterion for second language learning. Data analyzed by using ANOVA test. Findings showed that: Listening, writing, structure and reading mean scores of students with different learning styles was different significantly.

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Keywords: Learning styles; second language learning; distance education.

1. Introduction

Language learning strategies are the often-conscious steps or behaviors used by language learners to enhance the acquisition, storage, retention, recall, and use of new information (Oxford, 1990; Rigney, 1978). Strategies can be assessed in a variety of ways, such as diaries, think-aloud procedures, observations, and surveys. Research both outside the language field (e.g., Brown, Bransford, Ferrara, & Campione, 1983) and investigations with language learners (see reviews by Oxford 1989; Oxford & Crookall, 1989; Skehan, 1989) frequently show that the most successful learners tend to use learning strategies that are appropriate to the material, to the task, and to their own goals, needs, and stage of learning according individual differences. Cognitive approach is one of the important theories of learning which emphasizes the individual differences in learning. In this theory, the importance of individual differences in learning is recognized (Loo, 2004).

Learning styles indicate that how a learner perceives, interacts with, and responds to the environment. In fact, learning style is a criterion for individual differences (carson, & longhini, 2000). Kolb (1984) defines learning styles as the ways through which people produce concepts, rules and principles which directs them in new situations (cited

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in Loo, 2004) and Peirce (2000) defines learning style as the way student prefers in learning materials (cited in Seif, 2001).

In summary, learning style is a group of interrelated characteristics in which the general is larger than the specific i.e. learning style is Gestalt in which internal and external operations are derived from individual's neural biology. It combines his personality and growth and shows them as a behavior (Keefe & Ferrell, 1990). Language learning styles and strategies appear to be among the most important variables influencing performance in a second language. Many investigations is necessary to determine the precise role of styles and strategies, but even at this stage in our understanding we can state that teachers need to become more aware of both learning styles and learning strategies through appropriate teacher training. Teachers can help their students by designing instruction that meets the needs of individuals with different stylistic preferences and by teaching students how to improve their learning strategies (Oxford, 1990). Moreover, the identification of learner's learning styles helps educational planners and teachers provide learners necessary educational support and supplies (Anderson, & Elloumi, 2004) because learning styles are influential factors in learners' learning. Individuals acquire learning styles and techniques according to their individual differences like other abilities through experience (Seif, 2001).

Kolekston and Morel (1988) believe that matching between teaching and learning activities with educational goals are especially valuable when dealing with fresh students in the university or dealing with those who are less prepared for learning (cited in Moenikia, Alipour, & Ghaderi, 2009). Therefore, the least educational decline and the most influential learning take place when the learning style is in harmony with lesson goals. But, mismatching of lesson goals with learning styles is also valuable because students can learn how to learn using new methods and they can develop their potential abilities in different fields.

Lindsay (1999) found that the harmony between learning style and teaching style increased academic achievement and satisfaction with learning. It is emphasized in most of researches that individual preferences of the teacher and educational planners in presenting topics should be based on the learners' learning styles because learning styles can influence the efficiency of educational materials, their models, and methods (Montgomery & Grout, 1998; Goold & Rimmer, 2000). Therefore, it is better to make the content of electronic learning include activities appropriate for various learning styles so that learners can choose suitable activities based on their preferred style.

As mentioned before, most of specialists believe that information should be presented in different ways to become adaptable with individual differences in processing information and to be transferred easily to the long term memory. Information should be presented textually, orally, and visually as far as possible to make feasible better coding. According to the dual coding theory (Paivio, 1986), information acquired through different methods (textual and pictorial) are processed better in comparison with the information presented in one way (textual). Dual encoded information is processed in different parts of brain and leads to more coding (Anderson, & Elloumi, 2004).

In foreign language, style learning is very important. In this background had done many researches, but in some researches learning style seems that two dimensions. The first fundamental dimension of cognitive style is a verbal-imager structure which reflects the process of mental representation or thinking. The existence of this style dimension in groups of learners was first suggested by Galton (1983) and James (1980). Class – based research in SL lessons has also suggested that students who are verbalizes often achieve good pronunciation, which is easily transferable to new topics. They tend to enjoy activities which emphasize discussion. On the other hand, visual learners have been indentified as students who are typically proficient in pattern recognition and emphasize meaning in language work. They do, however, seem to experience varying levels of difficulty with pronunciation (Banner, & Rayner, 1997).

As earlier mentioned, there are different classifications for learning styles. One of these new classifications is seven-style classification (www.memletics.com) based on memletics. From this point of view individuals may have these learning styles:

Visual (spatial): These people prefer using pictures, imageries, and spatial perceptions.

Aural (auditory- musical): These people favor using sounds and music.

Verbal (linguistic): They prefer using words in speaking and writing.

Physical (kinesthetic): They favor using body, hands, and tactile sense.

Logical (mathematical): They prefer using logic, reasoning, and systems.

Social (interpersonal): They favor learning in groups or with other people.

Solitary (intrapersonal): They prefer to work alone and to be a self reader.

In this view, people often have one or two preferred prominent styles although they use other styles, too. An important point is that it is possible to make learners' learning styles appropriate to the educational materials and use the tools to present them through necessary education. Therefore, learning styles of male and female students in high school are studied and the prominent styles are identified in this research. Moreover, the effect of learning styles on second language learning is studied.

2. Method

2.1. Participants

The statistical population involved all of the Ardabil Payame Noor University English language students (N = 457) in 2008-9 academic year. From these, 112 students (40 male and 72 female) are selected as sample via random sampling.

2.2. Materials

The instrument of this research is a learning style questionnaire with 70 items. The reliability this instrument by using Cronbach's alpha calculate ($\alpha = .81$). Ten questions are assigned to each style. Participants choose one of alternatives 1, 2, 3, 4, and 5 for each question. Students' scores in TOEFL exam including 4 sections (listening, writing, structure, reading) are taken as a criterion for second language learning.

2.3. Procedure

Research method was pos facto. The questionnaire was distributed among participants and gathered data was analyzed by using ANOVA test.

3. Results

As a result of the analysis of the data concerning the learning styles - gender of the students are presented in Table 1.

Table 1. Percentage of participants according to sex / learning style

gender	Learning style							Total
	verbal	solitary	social	aural	physical	visual	logical	
Male	15	27.5	12.5	25	2.5	7.5	10	100
Female	27.8	1.4	16.7	31.9	11.1	6.9	4.2	100
Total	23.2	10.7	15.2	29.5	8	7.1	6.3	100

According to Table 1, from females 31.9 % were aural and 27.8 % of them were verbal. But 27.5 % of male were solitary and 25 % of them were aural.

Table 2. Mean scores of students' language skills based on learning style

	verbal	solitary	social	aural	physical	visual	logical
listening	11.5	10.1	16.2	16.5	13.8	11.2	13.7
writing	16.3	12.9	11.3	12	13.2	12.6	13.3
structure	11.6	11	14.8	10.7	11.4	16.6	11.1
reading	16.8	13.7	16.2	11.4	12.3	12.8	11.8

According to Table 2, among the students with aural and social learning style, mean score of speaking is high. Among the students with verbal learning style, mean score of writing is high. Among the students with visual and social learning style, mean score of structure is high. And among the students with verbal and social learning style, mean score of reading is high.

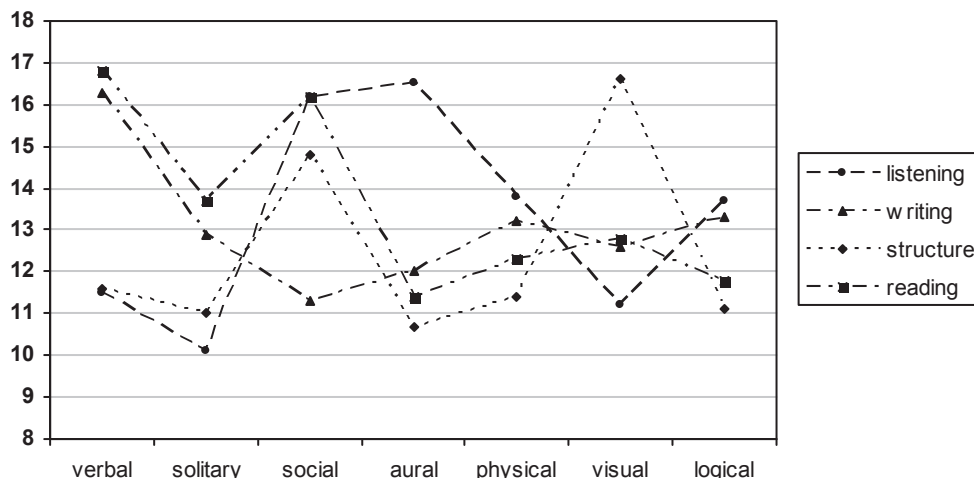


Figure 1. Profile of students' means score in for skills based on learning styles

The comparison of mean score of students with different learning styles via analyzes of variance (ANOVA) presented in Table 3.

Table 3. Test of between subject effects

Skill	source	sum of squares type III	df	mean square	F	sig
listening	Between Groups	691.7	6	115.2	26.8	.000
	Within Groups	451.2	105	4.3		
	Total	1142.9	111			
writing	Between Groups	370.2	6	61.7	11.4	.000
	Within Groups	565.2	105	5.3		
	Total	935.4	111			
structure	Between Groups	203.5	6	33.9	8.6	.000
	Within Groups	413	105	3.9		
	Total	616.5	111			
reading	Between Groups	570.8	6	95.1	18.2	.000
	Within Groups	548.6	105	5.2		
	Total	1119.5	111			

Depend variable: students' language skill

According to Table 3, in comparing the listening score of students with different learning styles, the obtained $F(6,105) = 26.8$, $P < .01$ is significant. It can be concluded that the listening score of students with different learning styles is different. In comparing the writing score of students with different learning styles, the obtained $F(6,105) = 11.4$, $p < .01$ is significant. It can be concluded that the writing score of students with different learning styles is different. In comparing the structure score of students with different learning styles, the obtained $F(6,105) = 8.6$, $p < .01$ is significant. It can be concluded that the structure score of students with different learning styles is different. In comparing the reading comprehension score of students with different learning styles, the obtained $F(6,105) = 18.2$, $p < .01$ is significant. It can be concluded that the reading comprehension score of students with different learning styles is different.

These differences is examined two by two by using post hoc test (LSD) and comparison indicated that: listening mean score of students with social and aural learning style from other students was significantly high ($p < .01$). Writing mean score of students with verbal learning style from other students was significantly high ($p < .01$). Students with social learning style were high mean score of structure from other students significantly ($p < .01$).

Reading comprehension means score of students with social and verbal learning style from other students was significantly high ($p < .01$).

4. Discussion

Findings of present study showed that students with different learning styles in four skills (listening, writing, structure, and reading) differed from each other. So, students with verbal learning style on speaking, is better from other student, student with verbal learning style have good progress in writing from other student, student with social learning style have good progress in structure from other student, and then, student with verbal and social learning style have high progress in reading from other student. At least social, verbal and aural learning styles have suitable performance in second language learning. These results are in compliance with the findings of Ashmore (1980), Loo (2004), and Riding (1991) in based on success of verbally people in good pronunciation and easily transferable to new topics. So these results are in compliance with the findings of finding of Banner and Rayner (2000) in based on success of socially persons in communicative, words learning and using admit this findings.

As there are students having different learning styles in the classroom setting, second language learning programs should be designed in such a way as to cater to the different styles. Designing learning experiences according to learning styles contributes to fulfilling the objectives.

References

- Anderson, T., & Elloumi, F. (Eds.). (2004). *Theory and practice of online learning*. Athabasca, CA: Athabasca University.
- Brown, A.L., Bransford, J.D., Ferrara, R., & Campione, J.C. (1983). Learning, remembering, and understanding. In J.N. Flavell & E. M. Markham (Eds.), *Carmichael's manual of child psychology*. New York, NY: Wiley.
- Slavin, R.E. (1991). *Educational psychology*, (3rd ed.). Prentice: Hall International.
- Moenikia, M., Alipour, A., & Ghaderi, E. (2009). Study of learning styles and their roles in the academic achievement of the students of Payame Noor University. *Turkish Online Journal of Distance Education-TOJDE*, 10 (2), 17–28.
- Loo R. (2004). Kolb's learning styles and learning preferences: is there a linkage? *Educational Psychology*, 24(1), 99-108.
- Carson, Joan G., Longhini, Ana (2002). Focusing on learning styles and strategies: A Diary study in an immersion setting. *Language Learning*, 52(2), 401- 438.
- Seif, A. (2001). *Educational psychology: Learning and education*. Tehran: Agah.
- Goold, A., & Rimmer, R. (2000). Factors affecting performance in first-year computing. *SIGCSE Bulletin*, 32(2), 39–43.
- Lindsay, E.K. (1999). An analysis of matches of teaching style and the uses of education technology. *The American Journal of Distance Education*, 13(2), 113–119.
- Montgomery, S., & Grout, L. (1998). *Student learning styles and their implications for teaching*. Michigan: Centre for Research on Learning and Teaching (CRLT), University of Michigan.
- Banner, G., & Rayner, S. (1997). Teaching in style: Are you making the difference in the classroom, *Support for Learning*, 12(1), 15–18.
- Riding, R.J. (1991). *Cognitive styles analysis*. Birmingham: Learning and Training Technology.
- Keefe, J. W., & Ferrell, B. G. (1990). Developing a defensible learning style paradigm. *Educational Leadership*, 2, 57–61.
- Oxford, R. (1990). "Language learning strategies: What every teacher should know." New York: Newbury House/ Harper & Row.
- Oxford, R., & Crookall, D. (1989). Research on six situational language learning strategies: Methods, findings, and instructional issues. "Modern Language Journal," 73(4).
- Skehan, P. (1989). *Individual differences in second language learning*. London: Edward Arnold.
- Paivio, A. (1986). *Mental representations*. New York: Oxford University Press.
- Rigney, J. W. (1978). Learning strategies: A theoretical perspective. In H.F. O'Neil, Jr. (Ed.), "Learning strategies," 164–205. New York: Academic Press.
- James, W. (1980). *The principles of psychology*. London: Macmillan.
- Galton, F. (1983). *Inquiries into the human faculty and its development*. London: Macmillan.