

# Preferred Learning Styles of Monolinguals and Bilinguals: A Comparative Study

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## Abstract

The preferred learning styles of Monolinguals in comparison to Bilinguals were investigated through this study. To this end, Index of Learning Styles (ILS) provided by Silverman (1988) was modified, its reliability and validity were checked and was put into practice. ILS assessed the preferred learning styles in four different dimensions. The modified version also investigated the effects of Age, Sex, Marital Status, Paternal Language and Maternal Language. Participants were selected through convenient sampling from students and teachers of EFL context in Iran and in four cities, namely Kazeroun, Qaemiyeh, Firooz Abad, and Nour Abad. Filling questionnaires were done mostly in groups in Language institutes or Salman Farsi university of Kazeroun. Data analysis was done in two phases. First the questionnaires filled were analyzed through the web version of the questionnaire and then the data were analyzed using SPSS. At the end, results indicated that regarding the variable of Age, the differences between the learning styles of monolinguals and bilinguals were statistically insignificant. However, on the whole and regarding the variables of Sex, Marital Status, Maternal/Paternal Languages of the participants, there were significant differences between the learning styles of Bilinguals and Monolinguals in four dimensions included in ILS (Felder & Solomon, 2006) questionnaire. Particularly, the researchers found that the effect of paternal/maternal languages on the learning styles - of monolinguals and bilinguals in comparison - is greater than sex differences, marital status or age differences.

**Key words:** Bilingualism, Bilinguals, Cognitive styles, Iran, Monolinguals, Learning styles

## INTRODUCTION

### Learning/Cognitive Styles

Researches about cognitive styles is derived from studies connected with psycho-cognitive, social, and physiological aspects of the process of education. Identification and comprehension of the models related to learning styles is one of the rudimentary developments of the 20<sup>th</sup> century.

Learners, in any classroom context, bring to the task of learning various attributes, some of which are age, gender, personality, motivation, self-concept, life experience, and background knowledge. The mentioned characteristics influence the way of thinking/learning in which the learners go about learning. It is, thus, over-simplistic to presume all

the learners should be taught in the same way. This is to say that there are various cognitive styles among learners. According to Pham (2000) learning style refers to the learner's fixed method of responding to and working with existing stimulus in learning contexts.

Through many studies, the role of bilingualism on the learning styles of individuals and possible effects of bilingualism and learning styles on learning success has been noted (e.g., Cooper, 1981 and Emamipour & Shams Esfandabad, 2010). Troike (2006) discusses this subject with caution. She points that an individual's preferred way of processing information like way of perceiving, conceptualizing, organizing and recalling the information is referred to as Cognitive style. Unlike factors like age, aptitude, and motivation, the role of cognitive style to spell out why some learners are more successful than others is yet to be established; nevertheless, exaggerated claims have sometimes been made which need to be viewed with caution and skepticism. Whatever its relation to success of a learner in L2 learning, it remains poorly understood - a complex interaction with specific L2 social and learning context.

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Even so, learning styles have been classified in different ways and the one applied in current study is based on the learning styles and strategies provided by Silverman (1988), in which learning styles fall into four categories:

1. Active/Reflective
2. Sensing/Intuitive
3. Visual/Verbal
4. Sequential/Global

### Objectives

As the difference is noted in many researches and books, it has been a big question that why educational system in Iran instructs all the students in the same way. Now the claim is that this may serve some and ignore the others, in a way that may result in the success of some and failure of others. So the aim of this study is to find if the strategies, approaches and methods applied in the field of EFL context are practical and the most appropriate ones chosen or not. And to see if there may be a marked difference regarding how successful a learner might be.

To meet the objectives, the researchers formulated the following hypotheses:

- H1. There is no significant difference in the preferred learning styles of bilingual EFL learners/teachers and that of monolingual EFL learners/teachers in four dimensions included in ILS (Felder & Solomon, 2006) questionnaire.
- H2. There is no significant relationship between the learning styles of the mentioned groups regarding their ages, in four dimensions included in ILS (Felder & Solomon, 2006) questionnaire.
- H3. There is no significant difference between the preferred learning styles of the mentioned groups regarding their sexes, in four dimensions included in ILS (Felder & Solomon, 2006) questionnaire.
- H4. There is no significant difference in the preferred learning styles of the mentioned groups regarding their Marital Status, in four dimensions included in ILS (Felder & Solomon, 2006) questionnaire.
- H5. There is no significant difference between the learning styles of the mentioned groups regarding their Paternal/Maternal Language, in four dimensions included in ILS (Felder & Solomon, 2006) questionnaire.

## REVIEW OF LITERATURE

There are various classifications through which experts have defined learning/cognitive styles and strategies. Through this part some of them are presented, explained and compared. Interest in Learner strategies began in 1970s with research done on the “good language learner” The premise behind was that the link between strategy use and

learning success could be established (Naiman, Frohlich, Todesco, & Stern 1978).

Shortly after researches on strategies learners use, researchers noticed the connection between learners’ success and their general or preferred way of learning. Rubin (1975) noticed that extrovert learners seemed to be good language learners and Stern (1975) came to understand that differential success in learning a SFL might be influenced by the learners’ ability to handle emotions.

Williams and Burden (1997) differentiate between strategies and styles. Learners are actively involved in the process of learning. When a learner faces a learning task, different resources are available at his disposal and the learner makes use of them in different ways.

Brown (2001) discusses this in the same way – a distinction is made between styles and strategies that a learner adopts. According to Brown, Styles related to personality are extroversion, self-esteem, and anxiety. Styles related to cognition are left/right brain orientation, ambiguity tolerance, and field-sensitivity. Brown further explains that styles are consistent traits, preferences, tendencies that differentiate a learner from other learners. Strategies are specific methods of dealing with a problem for controlling a certain piece of information. In comparison, styles are more consistent and predictable, for a learner may simultaneously use many strategies like dictionary look-up, asking somebody else for interpretation, and the list could go on. Brown defines a successful learner one who knows how to manipulate styles (as well as strategies) levels.

And regarding learning styles, on the check-list of the learning styles provided by Brown (2001) most learners tend to lean too far to the right side of the check-list which he interprets it’s not the best learning style. He states that no one side is necessarily good/bad. Plus that, if learners are too dominant on one side (e.g. prefer working alone), they may profit by allowing the other side of the continuum to operate (prefer working with people in groups). Celce-Murcia (2014) also distinguishes between strategies and styles. Styles refers to habitual modes of perceiving, remembering, organizing, processing, and presenting information. These involve consistent clustering of strategies that a learner uses while encounters a task.

Taking into account the possibility that learners’ style might increase or decrease challenges to learning and influence success (Ehrman & Leaver, 2003; Oxford, 1993; Reid, 1995) several researches have investigated the nature and range of preferred/habitual styles. Based on given taxonomies by the mentioned researchers, Celce-Murcia (2014) proposes the category of learners’ style thoughts the following way:

Common learning styles are Perceptual (auditory, visual, Kinesthetic), Personality (Introverted, extroverted), and processing (Global/detail oriented, inductive/deductive, synthetic/analytic, Field in/sensitive) which is similar to Brown's categorization to some extent.

Troike (2006) discussed that Classifications of cognitive styles are commonly recognized in pairs of attributes on reverse ends of a continuum. Individuals rarely fall in one side or the other. Some of the traits explored are listed in Table 1 below. This categorization is, to a great extent, similar to Learning Styles model provided by Silverman (1988).

Researches based on the models provided by experts indicate that the learning styles of monolinguals and bilinguals are different. There are differences between the learning styles of monolinguals and bilinguals in the context dependent and independent learning style and bilinguals are more dependent to the background. Studies indicated that the African-American bilinguals had a more holistic-viewer and kinesthetic style. Some studies (e.g. Cooper 1981) show that the main cause of this is the language that the black use.

Grasha (1996) indicated that learning styles are different between the two sexes. Women lean more toward and emphasize on sympathy, collaboration, and careful listening. Also, other researchers, Wherwein, Lujan, & DiCarlo (2007), found that males and females have different learning styles.

And finally in a comparative study, Emamipour and Shams Esfandabad (2010), compared the learning styles among monolingual (Persian) and bilingual (Turkish-Persian) secondary school students. Participants of the study were five hundred individual students of both sexes, including 250 monolinguals and 250 bilinguals. They put into practice the Learning Styles Inventory (Felder-Solomon, 2006) and the results indicated that learning styles among the two aforementioned groups were significantly different. Bilingual students, in comparison to monolinguals, showed higher tendency for verbal and sensitive learning styles. Monolingual students, on the other hand, showed higher tendencies for intuitive and visual learning styles. They also

suggested that the learning styles of males and females are different. Visual and Global learning styles were more common among male students and Sequential and Verbal Learning Styles were common among female students.

## MATERIALS AND METHODS

### Participants

The criteria according to which the participants of the current study were chosen was those EFL students/teachers who were bilingual/monolingual were chosen quite randomly including male and female students of language institutes, universities, and EFL teachers as the participants of the current study. Participants' age ranged from 14 to 44. The participants were the inhabitants of Kazeroun, Firouz Abad, Nour-Abad and Qaemiyeh City. Added variables were Gender, Age, Marital Status and their parents' background languages. After excluding some of the participants because of their unwillingness in participation or their insufficiency of ability in English, at the end, the participants remained included 38 single and 10 married. The participants included 16 males and 32 females. And they were 16 Monolinguals and 32 Bilinguals remained. Bilinguals included 22 homogeneous (whose paternal and maternal languages are the same=both parents speak Turkish and are from Turkish background) and 12 heterogeneous bilinguals (whose paternal and maternal Languages are different one of the parents is from Turkish background and speaks Turkish and the other one is from Persian background and speaks Persian).

### Instrument

The research tool was the "Index of Learning Styles (ILS)", which is designed based on the learning styles Model provided by Silverman (1988). This questionnaire includes 44 questions with forced-choice items with two options – a and b (Felder & Solomon, 2006). The survey contains questions related to four domains: Active/Reflective, Sensitive/Intuitive, Sequential/Global and Visual/Verbal. The questions do not have cultural dependency and are selected keeping simplicity for responding in mind. Felder, Lit zinger, Lee, & Wise (2005) found estimates of reliability score from 0.56 to 0.77 using the Cornbrash's Alpha

**Table 1: Cognitive styles, Troike (2006)**

<b>Field-dependent</b>	—	<b>Field-independent</b>
<b>Global</b>	—	<b>Particular</b>
<b>Holistic</b>	—	<b>Analytic</b>
<b>Deductive</b>	—	<b>Inductive</b>
<b>Focus on meaning</b>	—	<b>Focus on form</b>

statistical technique. In an unpublished study, Felder and Spurlin (2005) examined the Index of Learning Styles and found Cronbach's alpha coefficients to be in the range of 0.55 to 0.76. In the present research, reliability of the four domains of the scale were assessed through a four-week test retest. Reliability coefficients for Active-reflective was 0.87, for visual-verbal it was 0.77, for intuitive-sensitive the reliability was 0.77 and finally for sequential-global the estimate was 0.61.

### Procedure

The difficulty of learning for some students in different situations in learning process, was the cause to conduct a research and so the literature related were reviewed and much helpful information was gathered. This included both practical and theoretical sense. Different interpretations of styles and strategies were studied and different categories provided by experts were analyzed. As noted in Literature Review of this study, some of these classifications were to a great extent the same. After comparing the questionnaires, Index of Learning Styles (ILS) provided by Silverman (1988) was chosen. As the aim of the study was to assess some other variables more than those provided, the questionnaire was modified only in case of adding some other variables, which were as follow: Age, Sex, Marital Status, Mother's first language and Father's first language. Then the validity and reliability of the questionnaire were examined and three of the subject experts at Salman Farsi University of Kazeroun approved the validity of the questionnaire. What is more, it was put into practice for the sake of more detailed and accurate classification and that it was in line with the objectives of the current study. Then the participants of the study were chosen as mentioned earlier, from among students and teachers of English in 4 cities namely – Kazeroun, Firouz Abad, Qaemiyeh and Nour Abad. 52 questionnaires were distributed and 49 were back. One of the questionnaires was omitted for in most parts, it included missing data. So, at the end the data were gathered through 48 questionnaires. The process of answering was done in groups in language institutes or university classes and other situations. There were only a few cases in which participants filled the questionnaire individually. And in one case the questionnaire was sent through email and then it was filled and sent back. In all the situations and for all the participants, they were informed of the directions and process and were asked to fill the questionnaires carefully. The data gathered were analyzed in two steps then. First through the web version of the questionnaire provided by Silverman at <http://www.engr.ncsu.edu/learningstyles> the data were analyzed and results for each participant were saved. Then the data gathered were analyzed in SPSS, adding other factors in the modified version of the questionnaire.

## RESULTS

### Learning Styles of Monolinguals and Bilinguals Based on ILS (Felder & Solomon, 2006)

In this part of the research, the results and analyses of the data gathered, plus their interpretations are presented. As an independent samples t-test requires approximately normal data, the Shapiro-Wilk test of normality was employed and the normality of distributions were ensured. The researchers conducted an independent samples t-test for each part to assess the difference between the learning styles of the monolinguals against that of Bilinguals based on the ILS provided by Silverman (1988) and in terms of variables defined. Table 2 provides the details of the analyses done using SPSS:

It should be noted that, the data were gathered in two directions, like 11 could be assigned to Active or Reflective learners on each side of the continuum and to analyse the two and make a distinction between them, the researchers chose to use positive and negative digits for each side – negative digits showed Active learners on the left side and Positive digits showed Reflective learners on the right side. The same strategy was used for the rest of categories. Then the data obtained could be analysed.

#### Active or reflective

This part of the questionnaire involves the first eleven questions – 1 to 11 – and assess if the participants are Active learners or Reflective learners. The researchers conducted an independent samples t-test for this part and the results obtained indicated that the difference between Monolinguals ( $M=3.50$ ,  $SD=2.87$ ) and Bilinguals ( $M=.75$ ,  $SD=4.11$ ) was statistically significant [ $t(46) = 2.389$ ,  $p=.021$ ].

However, means for both groups showed that they were fairly well balanced on the scale provided through Web version of the questionnaire, the difference was meaningful and indicated that Monolinguals had a moderate preference for Reflective dimension of the scale, while Bilinguals were fairly balanced in between.

**Table 2: Results of independent samples tests- monolinguals vs. bilinguals**

	Monolingual	Bilingual	df	t	Significant
Active or reflective	3.50 (2.87)	0.75 (4.11)	46	2.389	0.021*
Sensing or intuitive	-0.50 (3.96)	-2.87 (3.48)	46	2.127	0.039*
Visual or verbal	0.25 (4.25)	-2.25 (4.97)	46	1.720	0.092
Sequential or global	4.75 (2.40)	-0.62 (4.26)	46	4.668	0.000*

\* $p \leq 0.05$ , standard deviations appear in parentheses below means

**Sensing or intuitive**

The second eleven questions on the questionnaire – 12 to 22 – assessed if the participants were to the left side, meaning that they were sensing learners, or to the right side of the continuum, meaning that the participants were Intuitive learners. Results for an independent samples t-test in this part indicated that the difference between the learning styles of Monolinguals (M=-.50, SD=3.96) and Bilinguals (M=-2.87, SD=3.48) was statistically significant [t(46)=2.127, p=.039]. The difference in this part is meaningful, meaning that Monolinguals tend more to remain in between, while Bilinguals are fairly well balanced on the scale and tend more to the Sensing dimension of the scale.

**Visual or verbal**

The third part of the questionnaire included questions – 23 to 33 – which assessed whether the participants were of the Visual learners or Verbal Learners. As the result in the independent samples t-test suggested, the difference between Monolinguals (M=. 25, SD=4.25) and Bilinguals (M=-2.25, SD=4.97) was statistically insignificant [t(46)=1.720, p=.092]. It means that both groups are fairly well balanced and in between. Neither of the groups tend to one side or the other.

**Sequential or global**

The last questions in the questionnaire, namely questions number 34 to 44, assessed if the participants are of the type Sequential learners or global learners. The results in this independent samples t-test indicated that the difference between Monolinguals (M=4.75, SD=2.40) and Bilinguals (M= -.62, SD=4.26) was statistically significant [t(46)=4.668, p=.000]. Monolinguals appear to have a moderate preference for Global dimension of the scale, while Bilinguals are fairly well balanced and in between.

**Learning Styles of Monolinguals and Bilinguals Based on Variables Added to ILS (Felder & Solomon, 2006)**

**Age**

The researchers also investigated the effect of another variable – Age – and ran an independent samples t-test for all dimensions. In all the categories, the statistics indicated that the difference for the variable Age was insignificant. So the researchers just avoid further discussing this variable and the results obtained for it.

**Gender**

**Monolinguals and bilinguals**

Regarding the differences between Bilinguals and Monolinguals in case of Sex or Gender, the researchers conducted an independent samples t-test. Results obtained in all the categories showed that the difference between the two groups – Bilinguals and Monolinguals – is insignificant. Thus, the researchers avoid discussing the results for this variable.

**Gender and bilinguals only**

The researchers conducted an independent samples t-test in each dimension, to investigate the effect of the variable sex on the learning styles of bilinguals only. In this case the data related to monolinguals were excluded, and the remained data for bilinguals included 10 males and 22 females. Again, the results indicated that the differences in all the dimensions were insignificant.

**Gender and monolinguals only**

Results in this part indicated that the difference between the male monolinguals and female monolinguals, regarding their learning styles was statistically significant in two dimensions, namely Sensing/Intuitive and Visual/Verbal, and the summary is provided through the Table 3.

Results obtained for Sensing/Intuitive dimension suggest that male monolinguals are fairly balanced on the right side of the scale and are intuitive learners while female monolinguals are fairly balanced on the left side and are Sensing learners. On the other hand, results for Visual/Verbal dimension, indicate that male bilinguals are Verbal learners on the right side of the scale and have a moderate tendency toward verbal dimension while female monolinguals are fairly well balanced on the scale and are Visual learners on the left side of the scale.

**Marital status**

**Monolinguals and bilinguals**

Another variable the effects of which was investigated through this research, was Marital Status. The analyses from an independent samples t-test done by the researchers, indicated no significant difference between the aforementioned groups – Bilinguals and Monolinguals. Therefore, there is no point in further discussing the results obtained for this variable.

**Marital status and single/married bilinguals only**

However, the researchers conducted an independent samples t-test to investigate the effect of the variable entitled Marital Status on single/married bilinguals only. To this end, the data gathered for monolingual were excluded and the data for participants left included 26 single bilinguals and 6 married bilinguals. The results obtained

**Table 3: Results of independent samples t-test for male and female bilinguals**

	Male monolinguals	Female monolinguals	df	t	Significant
Sensing/Intuitive	2.33 (2.73)	-2.20 (3.67)	14	2.605	0.021*
Visual/Verbal	3.66 (2.73)	-1.80 (3.67)	14	3.142	0.007*

\*p<0.05, Standard Deviations appear in parentheses below means

indicated that the difference between single bilinguals (M=-2.07, SD=3.16) and married bilinguals (M=-6.36, SD=2.76) was statistically significant [t(30)=3.037, p=.005]. It means that, single bilinguals are fairly balanced and are sensing learners, and married bilinguals show a moderate tendency toward sensing dimension of the scale. Table 4 provides the summary of the results obtained in this part.

**Marital status and single/married monolinguals only**

Results obtained from an independent samples t-test in this part indicated that the difference between single monolinguals (M=4.00,SD=2.00) and married monolinguals (M= 7.00, SD= 2.30) was statistically significant [t (14) =-2.510, p=.025] only in Sequential/Global dimension. The summary is provided in Table 5.

That is, on the whole both single and married monolinguals are Global learners, and single monolinguals show a moderate preference for Global dimension and are closer to fairly balanced domain on the scale but married monolinguals show a stronger preference for the Global dimension and are closer to strong preference domain.

**Paternal Language (Father's First Language) Monolinguals and bilinguals**

To investigate the effects of another variable which was Paternal Language, the researchers conducted an independent samples t-test for each style and analyzed the results; the summary is provided in Table 6 below.

In Active/reflective dimension the difference between Monolinguals and Bilinguals - whose Father's first language was Persian, including Monolinguals and heterogeneous Bilinguals (M=3.50,SD=2.87) and whose Father's first language was Turkish, including homogeneous Bilinguals (M=.75, SD=4.11) is statistically significant [t(46)=2.389,p=.021]. It means that those (Monolinguals and heterogeneous Bilinguals) whose Paternal Language is Persian are leaning toward the Reflective dimension of the continuum and are moderately balanced but those (homogeneous Bilinguals) whose Paternal language is Turkish are well balanced in between.

In Sensing/Intuitive dimension the difference between Monolinguals and Bilinguals - whose Father's first language was Persian, including Monolinguals and heterogeneous Bilinguals (M=-.50,SD=3.96) and whose Father's first language was Turkish, including homogeneous Bilinguals (M=-2.87,SD=3.48) is statistically significant [t(46)=2.127,p=.039]. It means that those (Monolinguals and heterogeneous Bilinguals) whose Paternal Language is Persian are Sensing Learners but well balanced in between, however those (homogeneous Bilinguals) whose Paternal language is Turkish are fairly balanced and leaning toward sensing dimension.

**Table 4: The result of independent samples t-test for marital status of bilinguals only**

	Single bilinguals	Married bilinguals	df	t	Significant
Sensing/intuitive	-2.07 (3.16)	-6.36 (2.76)	30	3.037	0.005*

\*p<.05, Standard Deviations appear in parentheses below means

**Table 5: The result of independent samples t-test for marital status of monolinguals only**

	Single monolinguals	Married monolinguals	df	t	Significant
Sequential/Global	4.00 (2.00)	7.00 (2.30)	14	-2.510	0.025*

\*p<.05, Standard Deviations appear in parentheses below means

**Table 6: The results of independent samples t-test for parental language**

	Persian	Turkish	df	t	Significant
Active/Reflective	3.50 (2.87)	0.75 (4.11)	46	2.389	0.21*
Sensing/Intuitive	-0.50 (3.96)	-2.87 (3.48)	46	2.127	0.039*
Visual/Verbal	0.25 (4.25)	-2.25 (4.97)	46	1.720	0.092
Sequential/Global	4.75 (2.40)	-0.62 (4.26)	46	4.668	0.000*

\*p<.05, Standard Deviations appear in parentheses below means

Regarding Visual/Verbal dimension, the difference between Monolinguals and Bilinguals in case of the effect of their Paternal Language on their Learning Styles was statistically insignificant, as indicated in Table 6.

The last dimension was Sequential/Global and results indicated that the difference between Monolinguals and Bilinguals - whose Father's first language was Persian, including Monolinguals and heterogeneous Bilinguals (M=4.75,SD=2.40) and whose Father's first language was Turkish, including homogeneous Bilinguals (M=-.62, SD=4.26) is statistically significant [t(46)=4.668,p=.000]. That is, those (Monolinguals and heterogeneous Bilinguals) whose Paternal Language is Persian are Global learners and have a moderate preference for the global dimension of the scale, however those (homogeneous Bilinguals) whose Paternal language is Turkish are Sequential learners but well balanced in between.

**Paternal language and bilinguals only**

The researchers also tried to investigate the effect of paternal language and its possible effects on bilinguals separately, but the data could not be computed because the data included no participant whose father's first

language was Persian. Paternal language of all 32 bilingual participants was Turkish.

**Paternal language and monolinguals only**

The data related to bilinguals were excluded, and the data related for 16 monolinguals were left. The data could not be computed for the number of participants whose paternal language was Turkish equaled zero.

**Maternal language (Mother’s First Language) Monolinguals and bilinguals**

To investigate the effects of another variable which was Maternal Language, the researchers conducted an independent samples t-test and analyzed the results the summary of which is provided through Table 7.

Data analysis indicated that regarding Active/reflective dimension the difference between Monolinguals and Bilinguals - whose Mother’s first language was Persian, including Monolinguals and heterogeneous Bilinguals (M=2.84, SD=3.95) and whose Mother’s first language was Turkish, including homogeneous Bilinguals (M=.27, SD=3.52) is statistically significant [t(46)=2.360, p=.023]. This means that there is a significant difference in the preferred learning styles of the Monolinguals and Bilinguals regarding the differences in the languages that their parents speak with. It shows that those (Monolinguals and heterogeneous Bilinguals) whose Maternal Language is Persian are leaning toward the Reflective dimension of the continuum and are fairly balanced but those (homogeneous Bilinguals) whose Maternal language is Turkish are well balanced in between.

Also, the difference between Monolinguals and Bilinguals - whose Mother’s first language was Persian, including Monolinguals and heterogeneous Bilinguals (M=3.15, SD=3.34) and whose Mother’s first language was Turkish, including homogeneous Bilinguals (M=-1.18, SD=4.65) is statistically significant [t(46)=3.745, p=.001]. That is, those (Monolinguals and heterogeneous Bilinguals) whose Maternal Language is Persian are leaning toward the Global dimension of the continuum and are

fairly balanced but those (homogeneous Bilinguals) whose Maternal language is Turkish are fairly well balanced leaning toward Sequential dimension. Results, as indicated in Table 7, suggested that the differences were insignificant regarding the two other dimensions – Sensing/intuitive and Visual/verbal.

**Maternal language and bilinguals only**

The researchers also tried to investigate the effects of maternal language on bilinguals separately. The data related to monolinguals was excluded. Bilingual participants whose maternal language was Persian was 10 and bilingual participants whose maternal language was Turkish was 22. Results indicated that the difference regarding the maternal language was insignificant in case of bilinguals only.

**Maternal language and monolinguals only**

The data related to bilinguals was excluded, and the data related for 16 monolinguals were left. The data could not be computed for the number of participants whose maternal language was Turkish equaled zero.

**DISCUSSION**

Earlier in this paper, it was mentioned that ILS questionnaire developed by Felder and Silverman (1988) was put into practice, to meet the objectives of this study. The data were collected through the analyses of scores given through Web version of the questionnaire and then analyzing the results obtained was done using SPSS. Participants selected one of the two options available to them. Selected options showed their tendencies and finally their preferred learning styles.

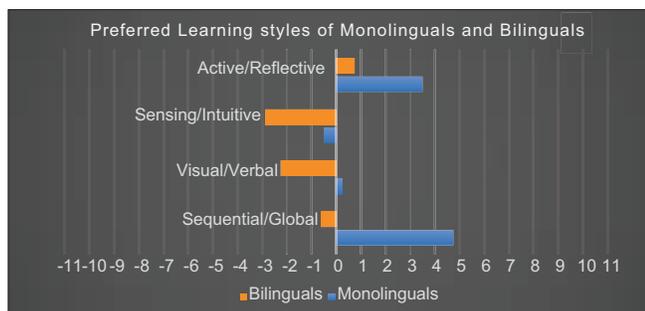
The findings of this study indicated that the difference between Monolinguals and Bilinguals, regarding their learning styles, in 3 parts are significant; Except for the third category, which is Visual/Verbal, in other categories namely Active/Reflective, Sensing/Intuitive, and Sequential/Global the differences were significant. As in the application of ILS Felder & Spurlin (2005) explained, becoming aware of these differences in learning styles can obviously help teachers decide on choosing the appropriate teaching methods and materials to be used in classes regarding the learning styles of the majority of the class or even in individual cases.

The findings of this study also indicate that differences are statistically significant in case of being a male or female, single or married and even in the case of the maternal/paternal languages in relation with being a monolingual/bilingual, which sheds light on the findings of the researches done before. Chart 1 above depicts the differences between the learning styles of monolinguals and bilinguals clearly.

**Table 7: Independent samples t-tests for maternal language of bilinguals and monolinguals**

	Persian	Turkish	df	t	Significant
Active/Reflective	2.84 (3.95)	0.27 (3.52)	46	2.360	0.023*
Sensing/intuitive	-1.30 (3.90)	-3.00 (3.49)	46	1.569	0.123
Visual/verbal	-1.30 (4.72)	-1.54 (5.09)	46	0.168	0.868
Sequential/Global	3.15 (3.34)	-1.18 (4.65)	46	3.745	0.001*

\*p<0.05, Standard Deviations appear in parentheses below means



**Chart 1: Differences between the learning styles of monolinguals and bilinguals**

As it is clear from Chart 1, the majority fall between -3 and 5, which are less than indicating strong preference for any given side, and this is different from the results provided by Brown (2001) on the check-list of learning styles in which he pointed out the majority fall to the right side. The findings are in line with the findings of the study done by Emamipour and Shams Esfandabad (2010) in that bilinguals are sensitive learners but different in that bilinguals in this study were found to be visual learners.

Regarding two of the variables added in the modified version of the questionnaire, in particular paternal/maternal language, there were significant differences between the learning styles of monolinguals and bilinguals in current study which appear to be quite new to the field. And this is while in Iranian EFL context, all the students are considered of the same type and these differences are ignored.

Unlike the findings of the studies done by Grasha (1996), and Wherwein, Lujan, & DiCarlo (2007), in this study it was found that between learning styles of monolinguals and bilinguals the difference was not statistically significant regarding their sexes. Yet results obtained indicated that only when monolingual males and females are compared to each other, the differences in their learning styles are statistically significant regarding their sexes.

In theoretical sense, The findings of this study appear to resemble to what previously mentioned in introduction and literature review of this study, like Troike (2006), proving that there is significant difference between the learning styles of individuals and these are influenced by many factors. Some of these studies mentioned before are like Williams and L. Burden (1997) Psychology for Language Teachers, quoted parts from Brown (2001) Teaching by Principles. However it is different from the aforementioned studies in that, monolinguals and bilinguals are different as well, which was not pointed to in the mentioned parts. And also, the results appear to resemble to that of Ehrman and Leaver (1993), Reid (1995) because it indicates the differences in learning styles brings challenges to the task

of learning. This could be as Celce-Murcia (2014) proposes own categories, because of the learning style thoughts differences.

Based on the results obtained the researchers confirm/reject the hypotheses formulated:

- H1. Data analysis indicated that there were significant differences in the preferred learning styles of bilinguals and that of monolinguals in three categories, except for the category assessing Visual or Verbal dimension. Thus, the hypothesis is rejected.
- H2. Analyses done depicted that there was no significant relationship between the learning styles of the mentioned groups regarding their ages. The hypothesis formulated is confirmed.
- H3. Analysis of the data obtained suggested that there was statistically significant difference only in case of male and female monolinguals, but on the whole there was statistically no significant difference between Monolinguals and bilinguals. Thus, the hypothesis is confirmed.
- H4. Data analysis in this part indicated that, however the differences were statistically significant on Sensing/Intuitive dimensions for the comparison between single/married bilinguals, and also the differences were statistically significant on Sequential/Global dimensions for the comparison between single/married Monolinguals, on the whole the differences were statistically insignificant and therefore the hypothesis is confirmed.
- H5. Data analysis done separately for each of the mentioned groups – bilinguals or monolinguals – depicted that regarding maternal language there were statistically insignificant differences between homogenous and heterogeneous bilinguals and regarding Paternal language the data could not be computed. However, analysis regarding the data obtained in this part indicated that on the whole in case of both Paternal and Maternal Languages the differences were statistically significant between bilinguals and monolinguals. In particular, in three of the dimensions, except for Visual/verbal dimension, results indicated significant difference between bilinguals and monolinguals regarding paternal language. And in only two dimensions – Active/reflective and Sequential/Global – the differences were statistically significant regarding maternal language. Thus, the hypothesis formulated is rejected.

## CONCLUSION

The results of the current study showed that there are marked differences regarding the learning styles of

Monolinguals and that of Bilinguals in three of the categories included in ILS questionnaire and in case of variables related to maternal/paternal language. Therefore the hypotheses related are rejected. Other hypotheses related to the effects of variables namely age, sex, and marital status were confirmed, meaning that the differences between monolinguals and bilinguals, however with statistically significant differences in comparisons made separately for each group, were insignificant on the whole. Also, results indicated that the effect of background languages – paternal or maternal – is greater than marital status, sex differences, or age differences. The significance of this study is that it assesses the difference between the learning styles of Monolinguals and Bilinguals and their educational achievement in EFL context. The result is hoped to help teachers and learners, better decide on teaching methods or learning strategies and by becoming aware of the differences, help themselves to profit from the other side of the continuum. Considering that no one group has strong preference for one given dimension of the scale, on the whole there's not much difference between the two groups but in some cases mentioned for each group, which needs to be taken into account in Teaching/learning process. However, there are a number of limitations through which future researchers can do away with the same shortcomings. As a matter of fact, it is suggested that forthcoming researchers make use of a larger number of participants and take into account other variables, like obtaining the results for both couples, in order to achieve more comprehensive and reliable results.

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