pictures in place of text, wherever possible. If they do not use the computer, they should make sure they have at least four different color pens.

● Systems diagrams can help them visualize the links between parts of a system, for example major parts of the body. Replace words with pictures, and use color to highlight major and minor links.

This study might prove useful to both language teachers and learners because it might raise teachers' awareness concerning their own learning and teaching styles. It is known that most teachers tend to teach in the way they were taught or in the way they preferred to learn. Sometimes conflicts might arise because of a mismatch between the teacher's teaching style and learner's learning styles, which might have negative consequences both on the part of the learner and teacher.

It is the hope of the present researchers to investigate this study qualitatively to back up this quantitative study and it is also recommended to use other instruments like MBTI questionnaire to identify the learners' learning style.

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probably keep them on the safe side.

**The notion of learning style, which encompasses mental, physiological and affective elements, refers to 'an individual's natural, habitual, and preferred way(s) of absorbing, processing, and retaining new information and skills' (Reid, 1995; p.34)**

All perceptual learning styles proved to affect language learning strategy use except group learning style. It should be mentioned that the correlations between the five learning styles and strategy use were weak ones. The correlation between auditory, visual, tactile, and kinesthetic learning styles and strategy use was positive. That is to say, the stronger one possesses a learning style, the better strategy user he would be. Individual learning style, though, remained different as its correlation with strategy use turned to be a negative, which means that the stronger individual learning one would get, the worse strategy user he/she would be. The findings of this part of the study are in line with Borzabadi (2000).

## Conclusion

The present study intended to investigate the possible relation between language learning strategy use and learning style among pre-university students. It was found out that just visual learning style reached the major status and the overall use of other learning styles was minor and also it was shown there was a significant difference between the learning styles' mean scores. The results of the study showed that most of the learners were medium strategy users. In this study all learning styles proved to affect language learning strategy use except group learning style. The correlations between the learning styles and language learning strategy use were positive but weak. In the case of individual learning style the correlation was negative.

The findings of this study revealed the existence of a dominant learning style among pre-university students, the most important implication of this finding can be for teaching. Teachers should feel the necessity of investigating the dominant learning style of a class, a major field of study or other defined groups of students who learn English together and this would be of great help in adopting a suitable teaching style. For example the teachers can use the following techniques in the classroom:

● Use color, layout, and spatial organization in their associations, and use many 'visual words' in their assertions. Examples include see, picture, perspective, visual, and map.

● Use mind maps. Use color and

two variables, a Spearman correlation coefficient was not run.

For investigating the relation between tactile learning style and language learning strategy use the same procedure was followed. A Chi-square test was again conducted. The result showed that there was a significant relationship between tactile learning style and language learning strategy use, p= 0.02. For investigating the correlation between these two variables a Spearman correlation coefficient was run again. The result revealed that there was a positive but weak correlation between the two variables. The correlation coefficient was 0.18.

For investigating the relation between kinesthetic learning style and language learning strategy use the same procedure was done. A Chi-square test was again conducted. The result showed that there was a significant relationship between kinesthetic learning style and language learning strategy use, p= 0.01. For investigating the correlation between these two variables a Spearman correlation coefficient was run again. The result revealed that there was a positive but weak correlation between the two variables. The correlation coefficient was 0.22.

The results showed that visual learning style was the most favored learning style and group learning style was the least though not the negligible one. If they use the visual style, they prefer using images, pictures, colors, and maps to organize information and communicate with others.

They can easily visualize objects, plans and outcomes in their mind's eye. They also have a good spatial sense, which gives them a good sense of direction. The fact that group learning proved to be the least favored though not negligible would mean that although participants do not have difficulty implementing this learning style, this is the last resort to acquire something as they do not find team work a beneficial facet of learning.

Oxford (1990) defined learning strategies as "specific actions taken by learners to make learning easier, faster, more enjoyable, more self directed, more effective, and more transferable to new situations
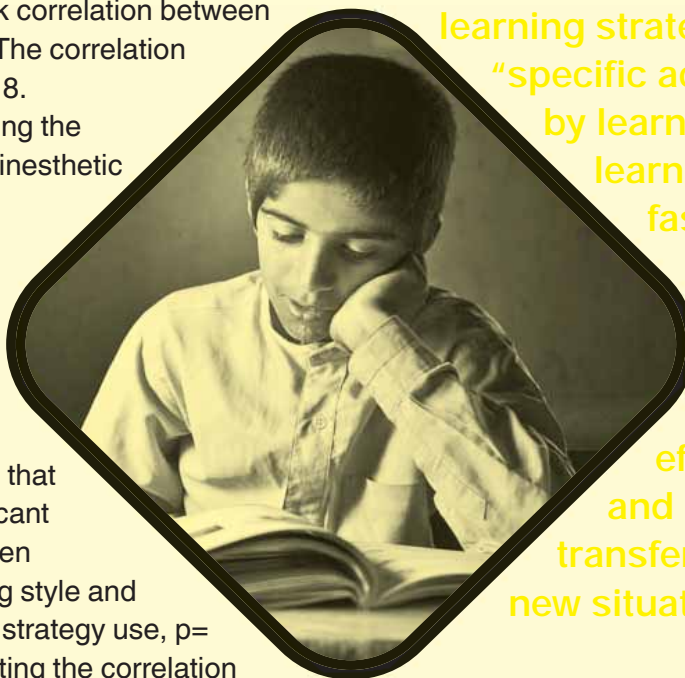
The results revealed that most of the participants were medium strategy users. This result it may demonstrate lack of familiarity with the concept of using appropriate learning strategies, both on the side of students and their instructors as well as lack of specialized strategy use training in their language learning curriculum. It may also be due to their conservativeness in reporting themselves as extremes in the novel field. It means that ticking most of the items as 'sometimes' would most

those who score from 1 to 2.4 as low strategy users, those who score from 2.4 to 3.5 as medium strategy users and high strategy users would be those who score from 3.5 to 5. To find out the magnitude of the participants' strategy use, taking a look at the frequency of people who are low, medium, and high strategy users would be enough. The results are summarized in table 2.

**Table2. Language learning strategy use frequency**

| Language learning strategy use | Frequency | Percent |
|---|---|---|
| Low | 18 | 13.64 |
| Medium | 86 | 65.15 |
| High | 28 | 21.21 |

As can be seen from the table almost two thirds of the students were medium strategy users and the rest were low and high strategy users.

To investigate the third research question, the researchers investigated the relationship of each learning style with overall language learning strategy use.

To investigate the possible relationship between auditory learning and strategy use, a Chi-square test was conducted. The result revealed that there was a significant

relationship between auditory learning style and language learning strategy use, p= 0.01. As the two variables were ordinal ones, a Spearman correlation coefficient was calculated to examine the correlation between the two variables. The result revealed that there was a weak correlation between the two variables in a positive way. The correlation coefficient was 0.23

To investigate the possible relationship between visual learning style and strategy use, a Chi-square test was again conducted. The result showed that there was a significant relationship between visual learning style and language learning strategy use, p= 0.04. For investigating the correlation between these two variables a Spearman correlation coefficient was run again. The result revealed that there was a positive but weak correlation between the two variables. The correlation coefficient was 0.17.

For investigating the relation between individual learning style and language learning strategy use the same procedure was followed. A Chi-square test was again conducted. The result showed that there was a significant relationship between individual learning style and language learning strategy use, p= 0.01. For investigating the correlation between these two variables a Spearman correlation coefficient was run again. The result revealed that there was a weak correlation between the two variables in a negative way. The correlation coefficient was -0.19.

To investigate the possible relationship between group learning and strategy use, a Chi-square test was again conducted. The result showed that there was not a significant relationship between group learning style and language learning strategy use, p= 0.12. Since there was not a significant relation between the
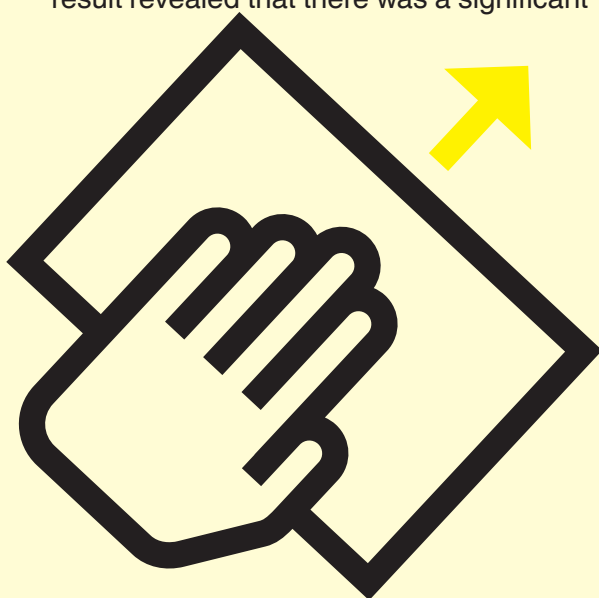
memory strategies, cognitive strategies, compensation strategies, metacognitive strategies, affective strategies, and social strategies. Having six subscales, this inventory evaluates the individual's general strategy use and also each of the strategy categories on a range of scores from 1 to 5. And the bandscale Oxford (1990) provides for the inventory categorizes scores between 3.5 to 5 as high  language learning strategy use, those between 2.4 to 3.5 as medium  language learning strategy use and score ranging from 1 to 2.4 as low  language learning strategy use.

## Procedure

In order to carry out the study, the researchers selected five schools in two cities. The learners were fully briefed as how to answer the questions; they were also given enough time to answer the items of the questionnaire.

To avoid any misinterpretations, the researchers translated the questionnaires into Persian. The Cronbach alpha reliability of the translated version of PLSPQ was 0.76 and the Cronbach alpha reliability of the translated version of SILL was 0.85.

## Data analysis

Data analysis included the computation of measures of descriptive statistics for learning styles. In this study Chi-square test was used to investigate the possible relationship between the variables and the level of significance was set at $p < 0.05$. A Spearman Correlation Coefficient was calculated to check the magnitude of the relationship. For comparing the means One-Way ANOVA was conducted at $p < 0.05$.

## Results and discussion

In this part, the results of the application of statistical procedures to the raw data to investigate each research question are presented.

For investigating the first research question, the researchers implemented the learning style inventory which covers 6 learning styles. Each learner can get a total score of 5-25 on each learning style. The results are presented in table 1.

### Table 1. Learning styles descriptive statist

|  | auditory | visua | indi-vidual | group | tactile | kinesthetic |
|---|---|---|---|---|---|---|
| Mean Std. | 17.23 2.22 | 19.76 2.56 | 17.1 3.01 | 16.11 3.23 | 17.58 2.93 | 18.22 3.02 |

The mean scores obtained for each learning style and the band scale provided by Ried (1984) that defines scores ranging from 5 to 13 as negligible, 13 to 19 as minor and 19 to 25 as major were studied. As can been seen from table 1, just one learning style can be considered as major and it is visual learning style and the overall use of other styles is considered to be minor.

To investigate the mean differences, a One-Way ANOVA was run. With the p-value of 0.02 and F= 21.25, the difference between the learning styles' mean scores was significant.

To address the second research question, SILL was utilized according to which each learner can have a score out of 5 on his/her total strategy use. The band scale provided for the inventory defines
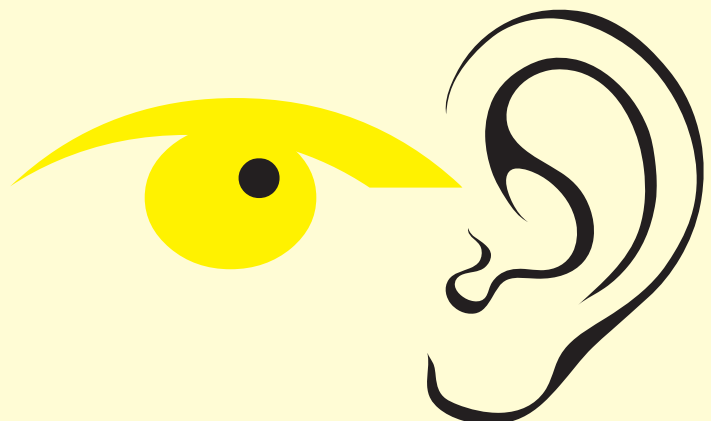
completed two self-reported instruments as part of the quantitative study: the MBTI-G (Myers and McCaulley 1985) for learning styles and the Strategy Inventory for Language Learning (SILL) (Oxford 1990) for preferred language learning strategies. It was revealed that for each contrasting pair of the bipolar MBTI scales, the preferred learning strategy categories were in an approximately matched distribution. For Thinking-Feeling, the complementarity was nearly complete. The research findings indicated that learners' learning styles may significantly influence their choices of language learning strategies. Carson and Longhini (2002) investigated the relationship between language learning styles and strategies of the diarist/ researcher in a naturalistic setting. The study utilized Oxford's SILL and the Style Analysis Survey (SAS) to compare categories that emerge in the diary entries. The analysis indicated that the diarist's learning strategies were often affected by her learning styles. For example, the diarist, with a global learning style, always suspended bits of partly understood language until they formed a large pattern. The diarist was also aware of the difficulty of utilizing strategies not preferred by her styles. For example, the diarist was introverted and often felt uneasy when communicating with people she did not know well.
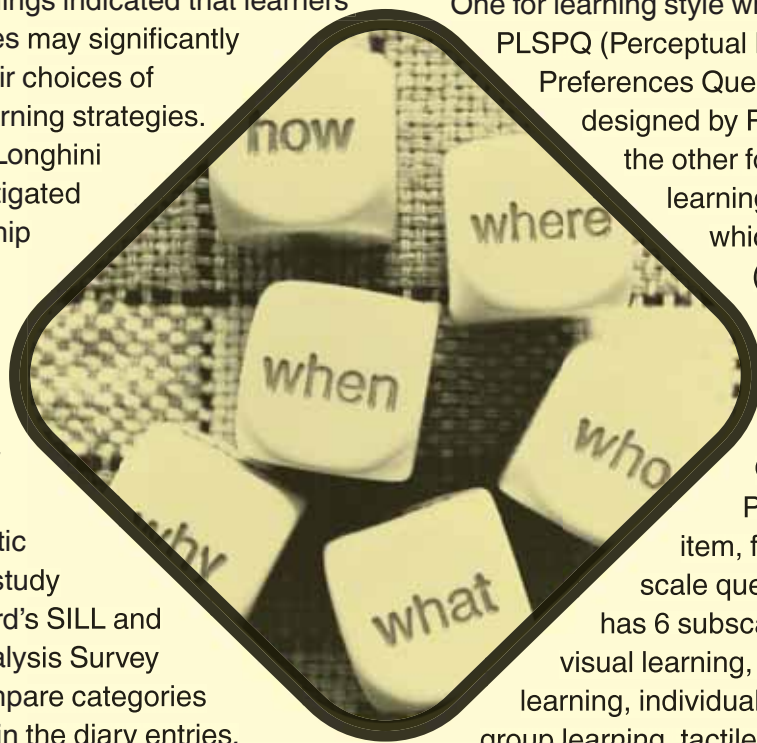
## Method
### Participants

132 pre-university students participated in this study. The number of male and female students was 72 and 60 respectively. The age of the students ranged from 17-19 with an average age of 18.2.

### Instruments

For the purpose of this study two self-report questionnaires were employed. One for learning style which was PLSPQ (Perceptual Learning Style Preferences Questionnaire) designed by Reid (1987) and the other for language learning strategies which was SILL (Strategy Inventory for Language Learning) designed by Oxford (1990). PLSPQ is a 30-item, five-point Likert scale questionnaire. It has 6 subscales as follows: visual learning, auditory learning, individual learning, group learning, tactile learning, and kinesthetic learning. Each style has five items. The total score one may have on a learning style would range from 5 to 25.

SILL is a self-scoring, paper-and-pencil questionnaire which consists of a series of statements to which students are asked to respond on a five-point Likert scale ranging from 1 (never or almost never) to 5 (always or almost always). It consists of fifty items and according to Oxford it is designed to collect data on the six categories of language learning strategies:

main subcategories: metacognitive, cognitive, and socioaffective strategies. Cohen (1998) and Stern (1992) have also classified language leaning strategies the same way as done by the ones mentioned above.

Keefe (1979) define learning styles as "cognitive, affective, and physiological traits that are relatively stable indicators of how learners perceive, interact with, and respond to the learning environment" (p.4). Dun et al. (1989 as cited in Clenton, 2002) assert that learning styles include variables such as "individual responses to sound, light, temperature, design, perception, intake, chronobiological highs and lows, mobility needs, and persistence, …motivation, responsibility (conformity) and need for structure…" (p. 56).

Reid (1995) asserts that learning styles have some fundamental characteristics, on which they are based. These are:

● every person, student and teacher alike, has a learning style and learning strengths and weaknesses;

● learning styles exist on wide continuums; although they are described as opposites;

● learning styles are value-neutral; that is, no one style is better than others;

● students must be encouraged to "stretch" their learning styles so that they will be more empowered in a variety of learning situations;

● often, students' strategies are linked to their learning styles;

● teachers should allow their students to become aware of their learning strengths and weaknesses.

The scope and depth of learning styles vary because it seems impossible to limit a person's learning style only with a certain dimension, that is, it cannot be said that a person is only visual, audio or kinesthetic. Ehrman and Oxford (1995) assert: "Naturally, not everyone fits neatly into one or another of these categories to the exclusion of the other, parallel categories (e.g. visual, auditory, kinesthetic)" (p. 69). This view is also supported by Willing (1988) who asserts that "at any period in the history of methodological fashions, there is usually the covert assumption of one particular learning style as basic. [However], what makes the current interest in learning styles new is that several different ways of learning are now held to be equally valid" (p. 6).

In a qualitative study of 20 Foreign Service Institute (FSI) students, Ehrman and Oxford (1995) explored the relationship between learning styles and learning strategies through semi-structured interviews. Before the qualitative study, the subjects had already



Visual

Auditory

Tactile
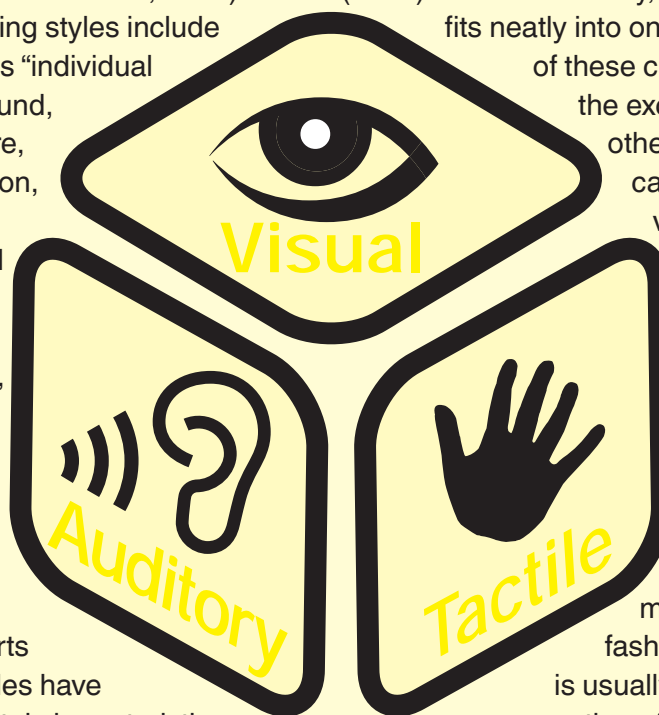
questions:

1. What is the dominant learning style(s) of pre-university students?
2. What kind of language learning strategy users are they?
3. Is there any relationship between learning styles and language learning strategy use among pre-university students?

## Review of literature

Research into language learning strategies began in the 1960s. Particularly, developments in cognitive psychology influenced much of the research done on language learning strategies (Williams and Burden, 1997). In most of the research on language learning strategies, the primary concern has been on "identifying what good language learners report they do to learn a second or foreign language, or, in some cases, are observed doing while learning a second or foreign language"(Rubin and Wenden, 1987, p.19). The behaviors good language learners engaged in (Naiman et al., 1978) became the focus of research in the hope of making some generalizations about how to increase the efficiency of L2 learning and teaching.

The term language learning strategy has been defined by many researchers. Oxford (1990) defined learning strategies as "specific actions taken by learners to make learning easier, faster, more enjoyable, more self directed, more effective, and more transferable to new situations" (p. 8). Cohen's view (1998) is that learning strategies are "either within the focal attention of the learners or within their peripheral attention, in that learners can identify them if asked about what they have just done or thought" (p. 11). Such strategies are usually contrasted with communication strategies, which are, unlike learning strategies, concerned with the production of L2 input, not its acquisition and internalization. Language leaning strategies are also contrasted with learning style due to their problem oriented nature. As mentioned by Brown (1994), strategies are used when a learner is faced with a specific learning difficulty, and his/her strategic approach may change in accordance with the nature of the learning problem faced, styles, on the other hand, are relatively fixed and do not change dramatically from one learning task to the next.

Language Learning Strategies have been classified by many scholars. However, most of these attempts to classify language learning strategies reflect more or less the same categorizations of language learning strategies without any radical changes. Rubin (1987) divide learning strategies into three groups of learning strategies, communication strategies, and social strategies. In another classification, Oxford (1990) makes a distinction between two broad classes of learning strategies: direct and indirect. Direct strategies deal with "language itself in a variety of specific tasks and situations" (p. 14) while indirect strategies are for "general management of learning" (p. 15). Direct learning strategies include memory strategies, cognitive strategies, and compensation strategies. Indirect strategies include metacognitive strategies, affective strategies, and social strategies. O'Malley and Chamot (1990) divide language learning strategies into three

## Introduction

Since the pioneering research studies carried out on language learning strategies in the mid-seventies (for instance Rubin, 1975; Stern, 1975), there has been a growing awareness that language learning strategies have the potential to be a strong learning tool in language learning (O'Malley, et al., 1985). In spite of this awareness and in spite of much useful and interesting work which has been carried out in the intervening years (nearly a quarter of a century), the language learning strategy field continues to be characterized by confusion and no consensus (O'Malley et al., 1985). Ellis (2008) comments that "the study of learning strategies has been motivated by both the wish to contribute to SLA theory by specifying the contribution that learners can make to L2 learning and by the applied purpose of providing a research-informed basis for helping learners to learn more efficiently through identifying strategies that 'work' and training them to make use of these" (p. 703).

Various definitions have been provided for language learning strategies. In general, these definitions refer to language learning strategies as operations, techniques, steps, processes, behaviors, or thoughts used by learners to guide, facilitate, and solve problems in their language learning and language use. However, one controversial issue in defining language learning strategies is the degree of learners' consciousness when using them (Hsiao & Oxford, 2002). The definitions proposed for language learning strategies seem to suggest that they are conscious actions, but their use over time makes them automatic, i.e. unconscious (Oxford, 1990).

The notion of learning style, which encompasses mental, physiological and affective elements, refers to 'an individual's natural, habitual, and preferred way(s) of absorbing, processing, and retaining new information and skills' (Reid, 1995; p.34). Reid (1998) theorized that whereas learning styles are internally based traits which are often not perceived or consciously used by learners, learning strategies are external skills often used consciously by students to facilitate their learning.

Some researches in EFL/ESL contexts have supported the idea that language learning strategies and learning styles are related to each other and the choice of learning strategies depends on the types of learning style which the learners possess and both of them contribute to language learning (Ehrman and Oxford, 1990; Ehrman and Oxford, 1995; Littlemore, 2001; Wen and Johnson, 1997).

In general, these definitions refer to language learning strategies as operations, techniques, steps, processes, behaviors, or thoughts used by learners to guide, facilitate, and solve problems in their language learning and language use

There are some studies on the relationship between language learning strategies and learning style in Iran (Mohammadpour, 2008; Borzabadi, 2000). But to date no studies have investigated this relationship in the pre-university contexts. Considering this fact the current study investigates the following research

# Investigating the Relation between Learning Style and Language Learning Strategy Use among Pre-university Students

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**چکیده**

هدف این تحقیق جست‌وجو کردن رابطه بین سبک یادگیری و استفاده از راهبردهای یادگیری زبان در میان دانش‌آموزان پیش‌دانشگاهی است. به این منظور از ۱۳۲ دانش‌آموز پسر و دختر خواسته شد تا دو پرسش‌نامه را پر کنند؛ یکی برای شناسایی سبک‌های یادگیری و دیگری برای شناسایی استفاده از راهبردهای یادگیری. نتایج نشان داد که سبک یادگیری مشاهده‌ای برای شرکت‌کنندگان سبک مهمی است و از دیگر سبک‌های یادگیری به‌طور جزئی استفاده می‌شود. همچنین اکثر شرکت‌کنندگان به‌طور متوسط از راهبردهای یادگیری استفاده می‌کردند. این مطالعه مشخص کرد که همهٔ سبک‌های یادگیری، به‌جز سبک یادگیری گروهی، بر استفاده از راهبردهای یادگیری تأثیر دارند. بین سبک‌های یادگیری شنوایی، مشاهده‌ای، لامسه‌ای، حرکتی و استفاده از راهبردهای یادگیری همبستگی مثبت اما ضعیفی وجود داشت. علاوه بر این، همبستگی سبک یادگیری فردی و استفاده از راهبردهای یادگیری منفی بود.

**کلیدواژه‌ها:** سبک یادگیری، استراتژی‌های یادگیری زبان‌آموزان زبان پیش‌دانشگاهی

**Abstract**

The aim of this study was to investigate the relation between learning style and language learning strategy use among pre-university students. For this purpose, 132 male and female students were asked to fill out two questionnaires. One questionnaire for identifying perceptual learning style preferences and the other one for identifying language learning strategy use. The results showed that visual learning style was considered as major among participants and the overall use of other learning styles was minor and it was also revealed that most of the participants were medium strategy users. In this study all learning styles except group learning style proved to influence language learning strategy use. There was a positive but weak correlation between auditory, visual, tactile, and kinesthetic learning styles and language learning strategy use, but in the case of individual learning style the correlation was negative. The results of the study and their implications for language learning and teaching are further discussed.

**Key Words:** learning style, language learning strategies, pre-university English course.