On the relationship between Iranian EFL learners’ reading fluency, their personality types and learning styles

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Abstract: The purpose of the present study was to investigate the relationship between EFL personality types, their learning style, and their reading fluency. To this end, 130 male and female intermediate EFL learners were selected from three institutes. They were asked to fill in two questionnaires including a Holland’s questionnaire of personality types and Reid’s Perceptual Learning Style Preference (PLSP) Survey. Moreover, they were asked to read a reading section of Active Skills for Reading to measure their reading fluency. Pearson coefficient of correlation was employed to answer the first and second research questions and a multiple regression analysis was run after checking the preliminary assumptions. The results of the study indicated that there is a significant relationship between learners’ personality types and reading fluency. The findings revealed that both personality types and learning style could predict learners’ reading fluency.

1. Introduction

For scholars in the field of linguistics and language teaching, reading has always been a source of interest and Mikulecky (2008) claimed that “effective reading is essential for success in acquiring a second language” and it is vital that students develop the ability to read fluently to allow further
comprehension. Moreover, it is also stated that reading fluency reveals individuals' overall reading competence. It is also noteworthy to maintain that one of the crucial necessities of successful reading comprehension is the ability to read the connected text fluently (Fuchs et al., 2001). Accordingly, individuals' reading fluency, that is, their ability to read with speed, accuracy, and prosody, acts as an essential skill to be developed. In fact, according to Rasinski (2006), fluent readers focus on the content rather than on the process of decoding every individual word. Over the past few decades, the concept of language learning and teaching has changed significantly based on the various studies accomplished on learning theories, second or foreign language learning and acquisition research, language teaching methodologies, and individual learning differences. These differences are rooted in the multifaceted nature of human behaviors, which according to O’ Donnell, Reeve, and Smith (2012) make up a myriad of internal factors, each of which constitutes a specific feature, such as learning styles, personality, preferences, etc.

The unique way each learner uses for his/her own learning, known as learning style, now, is attended and focused in studies as it is believed to play a crucial role and interact with other influential variables, in the success of any attempt to learn (Fewell, 2010; Too, 2009). Thus, according to Saleh (1997), the full understanding of learning styles is a major tool for teachers to help them improve their learners and to build their teaching and instructional practices to develop the learning experiences of their students at schools. As Lightbown and Spada (1999, p.58) stated, “learners have clear preferences for how they go about learning new material”. In addition, they asserted that being aware of individual characteristics creates more learning settings in the classroom and nearly all learners can be successful in the process of language learning. Experts can classify their preferred learning styles by observing and performing different learning strategies (Reid, 1995). However, as Mulalic, Shah, and Ahmad (2009) point out, as educational practices are, now, often considered from the ideal perspective of pedagogy, students' styles have been ignored by teachers and lecturers as they are considered as an insignificant component of learning. The teaching classes in Iranian contexts are examples of this unfortunate situation where students with variety of cultural backgrounds and different ages, levels, and styles sit in classes where the materials used are the ones developed to fulfill the general pedagogical needs with little reference to these individual differences and styles (Heidari Soureshjani & Naseri, 2012).

Moreover, among different constructs of individual differences in the field of language learning, learner personality type has received a great attention from specialists to study its effect on learners' success in second language learning and has also become of great interest for students themselves (Fazeli, 2011). To be successful in language learning, numerous factors are responsible such as motivation, attitude, intelligence level (etc.), and it seems that among the most important factors for success in language learning, it can be pointed out to the type of personality that individuals possess. The initial introduction of the term personality domain was done by Carl Jung in 1933. Two models for measuring personality have been since proposed: Five-Factor Model (FFM) based on the works of Allport and Odbert (1936) and Cattell (1946) as well as RIASEC-profile by Holland and Gottfredson (1976). FFM contains five traits, namely, being agreeable, conscientiousness, extroversion, neuroticism, openness, as factors of determining individual differences while Holland’s profile does not see individual differences only as traits but also as a reflection of a person's interests and preferences (De Fryt & Mervielde, 1997). This is why this study used Holland's profile to capture more in-depth measure of the participants' individual differences. The profile intends to measure six features of personality, namely Realistic, Intellectual, Social, Conventional, Enterprising, and Artistic features.

Nevertheless, the work on personality has, since, been extensive to the point that it has gained a huge attention in L2 researches (Dörnyei, 2009). By putting emphasis on learners and their personality traits in foreign language acquisition, it is confirmed that many studies have discovered a relationship between personality traits and foreign language proficiency. For instance, there is an important relationship between personality traits and language proficiency along with achievement scores (Fazeli, 2011; Zahibi, 2011). Also, the relationships between personality and different
Aspects of second language learning have been studied in the literature (Fazeli, 2012; Robinson, Gabriel, Katchan, & Katchen, 1994; Zafar & Meenakshi, 2012). Also, today, being aware of the students’ learning styles and increasing teachers’ awareness of personal variation in language classrooms is one of the main objectives in the field of foreign language learning and teaching. According to Sulaiman and Sulaiman (2010), all learners are individuals with single shapes of powers and weaknesses. Their cognitive abilities are greatly different. Some learners can learn complicated classroom materials quickly and easily, while others attempt to master basic concepts and skills. Learners are varied and they learn in a range of ways. A review of the research regarding the effects of personality on learners’ achievement reveals that most of the studies (e.g. Garner-O’Neale & Harrison, 2013; Opstad & Fallon, 2002; Sefcik, Prerost, & Arbet, 2009) have investigated the correlation between personality types and academic achievement of students from a variety of majors.

While the importance of the individual differences is acknowledged, according to Dunn and Griggs (1988, as cited in Kara, 2009) some learning styles do not have any impact on a student’s learning, while others do. Therefore, identifying the influential styles seems necessary if maximizing the success in learning is the goal. Moreover, while the use big five model (i.e., FFM) is dominant in psychological studies (Asmali, 2014), the use of Holland’s model in this study enables the researcher to capture the interest and preferences of the participants in a person-environment match—the assumption that people seek and select environments in which they can express their interests—which is the core to Holland’s theory (De Fruyt & Mervielde, 1997). This way, the Iranian context of learning, which has its own unique features, can also be taken into consideration. Given the importance of reading fluency in learning a foreign language and the significant role of individual differences, as detailed above, the present study used its selective design to investigate the possible relationship between these variables among Iranian EFL learners.

2. Literature review

For scholars in the fields of linguistics and second language teaching, reading comprehension has recently become an interesting issue. As stated by Carrel and Grabe (2002), “Reading, as is true of all aspects of language knowledge and use, is complex and the development of fluent reading abilities by L2 students is a challenging undertaking” (p. 233). For language learners, reading is considered as a stimulating task which encourages learners to be engaged in comprehending the objectives of given texts adequately, and also to be engaged in processing the texts at the phonological, morphological, syntactic, semantic, and discourse levels. Based on some research studies such as (Mokhtari & Thompson, 2006; Snow, Burns, & Griffin, 1998), reading fluently and comprehensively depends on some amount of the readers’ knowledge of language structure.

In addition, the role of language learners’ lexical knowledge has been assessed as an essential element in the process of reading comprehension (Laufner, 1997; Nation, 2001; Schmitt, 2000). In the past decades, the significance of second language learners’ syntactic and lexical knowledge has been well reported in experimental studies. Reading is considered as an important skill that helps people learn through human’s knowledge and experience and it is the fastest and easiest way to increase people’s educational level and it also encourages the progress of learning, emphasizes language skills, improves structural capacities, develops one’s personality and dignity, and provides strength to endure frustration. Briefly, reading is the best and only way of allowing humans to absorb the new experiences and substitute old ones (Hung & Tzeng, 2000, as cited in Pranata & Junining, 2015). Since 1974 reading fluency has been at the center of various studies and they have continuously indicated that fluent reading plays an important role in a successful reading comprehension (Rasinski, 2004; Samuels, 1979, 2006). According to the Collins Cobuild English Language Dictionary (1987), fluency is an individual’s ability to speak, write, and read a language accurately with no hesitation. In addition, among the main characteristics of a fluent reader is that he reads smoothly and rarely stops at unknown words. Similar to the Collins Dictionary definition, in the Concise Oxford English Dictionary (2001) defines fluency as smoothness, easiness, and accuracy in speaking, reading, and writing. However, fluency refers to the...
ability to speak a language easily, well, and quickly. Often, reading fluency is treated as synonomous to reading speed; however, most literacy specialists give it a more expansive definition. According to Crawley (2012), fluency was briefly defined as the “ability to decode words automatically, group them meaningfully, and read with expression” (p. 112). Another definition of reading fluency refers to the accurate and precise recognition of words with a proper speed during the reading tasks. According to Shanahan (2006), reading fluency is defined as “the ability to read texts aloud with sufficient speed and accuracy” (p. 30). Samuels (2006) stated that reading fluency is the ability to simultaneously decode and comprehend the written text. Moreover, Pikulski (2006) also adjusted his previous definition of reading fluency and stated that reading fluency is a developing process and an effective decoding skill that enables a reader to understand a text. There is a reciprocal relationship between interpretation and comprehension. Fluency is displayed in precise, rapid, and expressive oral reading, which makes silent reading comprehension possible.

On the other hand, a main apprehension among the scholars is the definition of learning styles. Kirby (as cited in Swanson, 1995) asserted that the term learning styles came into use when scholars started finding ways to integrate both course presentation and materials in order to be in line with learners’ needs. According to Joy and Kolb (2009), the notion of learning styles refers to the individual differences and preferences or usual patterns of mental functioning and dealing with new information. Furthermore, learning styles are considered as an individual’s cognitive, affective, and physiological behavior that is a stable indicator of how he observes, interacts, and reacts in the learning environment (Keefe, 1979). By way of explanation, they refer to the typical powers and preferences in the ways that learners get and process information (Felder, 1996). Lately, Oxford (2005) claimed that learning styles and strategies are the main issues to be considered for determining how language learners learn a second or foreign language. Furthermore, learning styles are considered as internally based characteristics, often not observed or used intentionally. They are the basis for the intake and comprehension of new information.

The most commonly used scale for determining the learning style is the one proposed by Reid (1995). Three major categories, namely cognitive learning styles, sensory learning styles, and personality learning styles build up the classification proposed by him. He further assigns three sub-categories to sensory learning styles, namely environmental, perceptual, and personality learning styles. The focus of this study is on perceptual styles which include visual, auditory, kinesthetic, tactile, individual and group learning. The four first one of these styles are considered as basic perceptual modalities while the last two ones are the two social interaction factors.

Furthermore, it is presumed that different categories are common outcomes of growth in a particular culture which is called personality type such as realistic type. In fact, some particular heritage of a sensible person leads to the preference of such activities in which the results are to face clearly with objects, devices, and living things and to prevent training activities. These tendencies in behavior result in possession of agricultural, practical, and technical or electrical competencies besides a shortage of educative and social competencies (Holland, 1996). Realistic conflict theory, which is also known as a realistic group, is a reasonable group, judging in a practical way. Characteristics of a realistic person consist of the following terms: social, materialistic, self-centered, outspoken, non-intuitive, original, strong, and practical.

Another personality type is investigative type as Holland (1996) stated, particular heritage and experiences of a curious person (i.e., investigative type) lead to the activities that result in the creation of ingenious, observational, and biological or cultural circumstances to recognize these phenomena and manage it through motivational and inflexible activities. Such people are considered to be helpful, and solicitous and enjoy mathematical science. They have the tendency to consider their problems and to take issues with social and political aims. Among the characteristics of investigative people being analyst, alert, critical, independent, introspective, reasonable, and complex are noteworthy. The other one is Artistic type as Holland (1996) stated, particular heritage
and experiences of an artistic person lead to the preference of behaviors which result in free and problematic activities that deal with verbal or physical matters to invent products which are artistic. The acquisition of art, music, and drama stems from these behaviors. Their characteristics include being vague, intuitive, chaotic, emotional, sensitive, inventive, spontaneous and introspective. The Social type, as believed by Holland (1996) refers to the particular heritage and experiences of a social person which leads to the preference of behaviors and results in guiding people and avoiding precise and managed activities related to machines. Acquisition of communication and language of individual competencies or lack of technical competencies are caused by these behaviors. This group of people tends to solve problems and they are aware of their social responsibilities. They have tendencies of being part of social works. They seem to be energetic, good-tempered, sociable, talkative, and sociable. The other one is Contractual type as Holland (1996) believed that inheritance and experiences of a contractual person result in activities such as normal dealing with data or archiving contents, and setting numerical data in an organized schedule. Acquisitions of official and commercial competencies as well as shortage of artistic competencies can be the result of these behaviors. In addition, people of this category are practical, reasonable, devoted, dutiful, and respectful. Holland’s theory rendered itself to a questionnaire known as RIASEC. This questionnaire measures six types of Realistic, Intellectual, Social, Conventional, Enterprising, and Artistic features. According to Holland’s scoring system for the SDS, the participant’s highest score represents his dominant personality type (Holland, 1996).

The study’s three variables, whose theory was presented above, are not new concepts to be explored in the field of education. However, the special bond they may make to each other to facilitate the learning is worth further investigation. In what follows some selective empirical studies and their results are reported to demonstrate the possible bond.

Asadipiran (2016) explored the common learning styles among Iranian high school EFL learners. Her results showed that the three most common styles were visual, tactile, and auditory styles while group learning was the last preferred style. A study conducted by Heidari Soroushjoni and Naseri (2012) showed that sensory styles are the most preferred learning styles for beginning learners, personality styles for intermediate learners, and finally, degree-related styles for advanced-level learners. Derakhshan and Shakki (2018) explored the relationship between high and low level of proficiency among Iranian EFL learners and their learning styles. Their results showed learners with high levels of proficiency favored Kinesthetic and Tactile learning styles more than other preferences. Simpson and Yunfel (2004) investigated the relationship between students’ learning styles, class membership, and enjoyment levels. Their findings indicated that learning styles had a significant effect on students’ enjoyment levels in the class. Moreover, Naserieh (2009) conducted a study on the relationship between perceptual learning style preferences and skill-based learning strategies. Based on his results, kinesthetic modality was found to be significantly associated with all strategy categories, while group learning was related to social strategies. Khademi, Motallebzadeh, and Ashraf (2013) conducted a study on the relationship between Iranian EFL teachers’ understanding of learning styles and their students’ success in reading comprehension tests. The results of their study indicated that there was a significant relationship between the Iranian EFL teachers’ recognition of learning styles and their students’ success in reading comprehension test. Last, but not the least, Chavosh and Davoudi (2016) investigated the relationship between perceptual learning styles and L2 reading comprehension and how well each perceptual learning style contributes to L2 reading comprehension. Based on the results of data analyses, only tactile and kinesthetic learning styles had a significant relationship with L2 reading comprehension performance. Furthermore, the findings of the study proved that the tactile learning style was the best predictor of L2 reading comprehension performance.

With regard to personality types, Ali and Bano (2012) investigated the relationship between Reading skills and Big-Five factors of personality (that is, Extraversion, Agreeableness, Conscientiousness, Neuroticism and Openness). The results of their study indicated that there is a minor significant relationship between extraversion and reading skills, a minor correlation between agreeableness,
reading skills, conscientiousness and reading skills. While this study confirmed the relationship between reading skills and personality types, it proposed the need for more research of a similar nature to receive significant results thereafter. In addition, it was found that reading skills are entirely connected to personality types. Moreover, Bagheri and Faghih (2012) examined the relationship between self-esteem, personality type and reading comprehension of Iranian EFL students. Results of their study proved that there is a positive relationship between overall self-esteem and reading comprehension, as well as overall self-esteem and personality type. Esfandiar and Radfar (2017) used Myers-Briggs Type Indicator (MBTI) to investigate the relationship between Iranian EFL learners’ personality and their performances in C-Test. The results showed that Introversion and Thinking were positively correlated with performance on C-test while the strongest personality for predicting C-Test performance was extroversion. Finally, Ibrahimoglu, Unaldi, Samancioglu, and Baglibel (2013) examined the relationship between personality types of college students and their learning styles. The findings of the study indicated a meaningful relationship between learning styles and personality types.

The review of the literature showed that, although some works have been done considering the variables in relation to learning in general and reading comprehension in specific, no attempt has been done to entail the fluency of reading into consideration of these investigations. Moreover, there was almost a dearth of study which used Holland’s profile to capture the environment-match personality features. Inspired by these gaps in the literature and the contextual and pedagogical importance of the variables mentioned in the introduction section, the following research questions were formulated in the current study.

Q1. Is there any significant relationship between Iranian EFL learners’ personality types and their reading fluency?

Q2. Is there any significant relationship between Iranian EFL learners’ learning styles and their reading fluency?

Q3. Do Iranian EFL learners’ personality types significantly predict their reading fluency?

Q4. Do Iranian EFL learners’ learning styles significantly predict their reading fluency?

3. Method

3.1. Participants

The initial participants of the study were 185 male and female Iranian students at the intermediate level with an age range of 20 to 38 (M_age = 29). These students were studying general English at three language institutes in Karaj, Iran and they were selected based on a convenient sampling procedure. Out of the 185 participants, 130 whose scores fell between one standard deviation above and below the mean in Nelson proficiency test were identified as homogenous and took part in the main study.

3.2. Materials and instruments

3.2.1. Nelson test

In order to be assured of the homogeneity of the participants in terms of English language proficiency, and to ensure that they were all at an intermediate level, a test of Nelson, series 200A, was administered. It consisted of 50 multiple-choice items testing both individuals’ grammatical control and their communicative competence. The time allotted for the test was 50 min.

3.2.2. Reading test

The researcher used a reading section of Active Skills for Reading by Neil J Asadipiran (2016) in order to measure reading fluency. For measuring reading fluency, CBM (Curriculum-Based Measurement) oral reading fluency probes were used as a monitoring tool that gave the researcher the students’ total words read and total miscues.
Personality questionnaire. The personality type questionnaire by Holland (1997) was used in this study. This questionnaire consists of scales measuring the six types of Realistic, Intellectual, Social, Conventional, Enterprising, and Artistic features. When combined together for easy identification, the six types form the acronym RIASEC. The participants’ scores on the six scales were scored and profiled. The higher a participant’s score on a scale, the more he resembled the type which that scale represents. According to Holland’s scoring system for the SDS, the participant’s highest score represents his dominant personality type (Holland, 1996). The pattern of the participant’s personality is determined by his profile of scores. This could be obtained by ranking the scale scores from the highest to the lowest.

3.2.3. Learning style questionnaire
In order to identify the participants’ learning style preferences, the Perceptual Learning Style Preference (PLSP) Survey was administered to the participants. This questionnaire was developed by Joy Reid in 1984. As Reid (1984) asserts, people learn in different ways. For example, some people learn primarily with their eyes (i.e., visual learners) or with their ears (i.e., auditory learners); some people prefer to learn by experience and/or by “hands-on” tasks (i.e., kinesthetic or tactile learners); some people learn better when they work alone, while others prefer to learn in groups. This questionnaire is designed to help the learners identify the way(s) they learn best -the way(s) they prefer to learn. This instrument consists of 30 randomly ordered statements. The participants responded based on a five-point Likert-scale, ranging from “strongly agree” (1 point), “agree” (2 points), “undecided” (3 points), “disagree” (4 points) to “strongly disagree” (5 points).

3.3. Data collection procedures
In order to homogenize the participants in terms of their language proficiency, a Nelson test was given to the initial participants of this study who were 185 male and female intermediate EFL learners studying English at three language institutes in Karaj. Based on the results of the test, the researcher chose 130 participants whose scores lay between one standard deviation above and below the mean. This process was done to select only homogenous intermediate EFL learners as it was expected from advanced learners who have already developed high reading fluency and fail to show the variances needed for finding the correlation between reading fluency and individual differences. The elementary students were also excluded as they were not expected to be able to do reading comprehension, let alone reading fluently. After homogenizing the participants regarding their level of proficiency, first, a briefing session was arranged in Farsi with students studying at three language institutes in Karaj. It should be also noted that the researcher was present while the participants were responding to the questions to provide further explanations if required.

The reading text was selected based on their level of proficiency, and in order to assess the participants’ level of fluency, the researcher found a passage of approximately 250 words written at the student’s grade placement and she submitted the passage to a text readability formula to estimate its grade appropriateness. The researcher held the reading text in another session and she pointed out that the text should be read aloud in a normal way, and not faster than normal. Then, the participants were asked to read the text when they felt ready and the researcher tape-recorded the process subsequently. Although each student’s reading was marked after 60 s in order to measure its fluency, each student read the entire text without being stopped. After that, she marked the point in the text the student had come to after 1 min of reading. Then, the researcher used the copy of the text in order to assess the reading fluency of the learners and gave it to her colleagues as well so that they could do the same. Finally, the scores that participants obtained on the fluency scale by the researcher and her colleagues along with the scores of both questionnaires were used to investigate the research questions.

3.4. Data analysis
In order to examine the possible relationship between EFL learners’ Personality types, learning styles and reading fluency, the researcher used the Pearson product moment correlation coefficient. Furthermore, the third and fourth research questions were answered through running a multiple regression.
4. Results

Initially, based on the descriptive statistics of the subjects’ test scores, 130 subjects out of 185 whose scores fell within the range of one standard deviation above and below the mean were selected. This was done to assure the homogeneity of the participants in terms of their overall language proficiency.

Based on the results obtained from Nelson test (M = 26.5, SD = 5), those whose scores fell within the range of 21.5 and 31.5 were asked to answer the two questionnaires of personality and learning styles. Before initiating the statistical analysis, it was necessary to choose between parametric or non-parametric statistics. Since the data were of interval type then it was needed to check if the data related to the variables in question were normally distributed or not. To this end, Kolmogorov Smirnov test of normality was drawn on. Table 1 displays the descriptive statistics and the statistics related to Kolmogorov Smirnov test of normality run on the data related to six types of personality, six types of learning styles and reading fluency scores.

As seen in Table 2 all the levels of significant related to statistics of Kolmogorov Smirnov are greater than the confidence interval of 0.05 indicating the normality of all data sets. Accordingly, parametric statistics is appropriate for the analyses of data.

The results obtained from Table 2 show all distribution of the scores were normal, legitimizing running parametric correlation tests. The first research question of the study sought to investigate any significant relationship between Iranian EFL learners’ personality types and their reading fluency. In order to estimate the relationship between each personality type and reading fluency, learners’ respective scores were correlated using Pearson correlation coefficient (Table 3).

Based on the results of correlation analysis, it was found that only intellectual personality type had a negative significant relationship with reading fluency (\( \rho = -0.26, P \leq 0.05 \)). None of the other personality types is significantly related to reading fluency.

The second research question of the study aimed to examine the possible relationship between Iranian EFL learners’ learning styles and their reading fluency. In order to estimate the relationship

| Table 1. Descriptive statistics of the Nelson test administration |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Statistic       | Mean            | Std. Error      | Std. Deviation  | Minimum         | Maximum         | Skewness        | Kurtosis        | Std. Error      |
| Nelson Homogenize | 26.5            | 4.976           | 17.00           | 35.00           | -227            | -725            | 0.212           |

| Table 2. Kolmogorov Smirnov test of normality, mean score and standard deviation |
|---------------------------------|-----------------|-----------------|-----------------|
| Statistic                        | Kolmogorov-Smirnov\(^a\) |
| Reading fluency rater 1a         | \(.052\)         | 130             | \(.200^*\)      |
| Reading fluency rater 1b         | \(.063\)         | 130             | \(.200^*\)      |
| Reading fluency rater 2          | \(.058\)         | 130             | \(.200^*\)      |
| Personality type                 | \(.054\)         | 130             | \(.200^*\)      |
| Learning style                   | \(.046\)         | 130             | \(.200^*\)      |

\(^{a}\) Lilliefors Significance Correction

\(^{*}\) This is a lower bound of the true significance.
Results of Pearson correlation coefficient suggested that only visual, auditory, and kinesthetic learning styles are significantly related to reading fluency. While visual and kinesthetic learning styles are positively correlated with reading fluency, there is a negative correlation between EFL learners’ auditory style and their reading fluency. The third research question aimed to examine whether personality types lend themselves as a good predictor of EFL learners’ reading fluency. In order to answer this research question, multiple regression was run on personality types as the predictors and reading fluency as the dependent variable. Initially, some assumptions of multiple regressions needed to be examined before moving on with the actual regression analysis. According to Pallant (2010), multi-collinearity, normality, outliers, linearity, homoscedasticity, and independence of residuals are pre-requisite assumptions for carrying out regression analysis.

VIF index was consulted to check the multicollinearity assumption. According to the multicollinearity assumption, there should not be a strong relationship between the independent variables (Pallant, 2010). As Table 5 shows the VIF values for realistic, intellectual, social, conventional, enterprising, and artistic personality types are 1.20, 1.17, 1.09, 1.46, 1.19, and 1.03, respectively, which are less than 10. This means that multicollinearity assumption has been met (Pallant, 2010).

Having established the assumptions of multiple regression, the actual analysis was performed and regression outputs (Table 6) were consulted.

The fourth research question aimed to probe how well learning styles predict reading fluency. As it was stated in the data analysis section in chapter three, multiple regression analysis was employed to find how learning styles predict reading fluency. It was also mentioned earlier that
some assumptions, namely, multicollinearity, normality, outliers, linearity, homoscedasticity, and independence of residuals (Pallant, 2010) are the prerequisite assumptions of multiple regression and they all need to be checked before starting the main regression analysis. As Table 7 shows the VIF values for visual, auditory, kinesthetic, tactile, and individual styles are 4.59, 7.21, 2.30, 1.36, and 1.51, respectively, which are less than 10. This means that multicollinearity assumption has been met (Pallant, 2010).

Having established the assumptions of multiple regressions, the actual analysis was performed and regression outputs were consulted.

As Table 8 shows, learning styles as a whole explained about 15% of the variance in dependent variable (reading fluency). In other words, learning styles made a 15% contribution to explain the variance in reading fluency. This amount of contribution was found significant as the F value was 4.44 with a significant value of 0.00 which was less than the confidence interval of 0.05.

5. Discussion
Based on the results of the correlation coefficient, it was found that only the intellectual personality type had a significant relationship with reading fluency ($p = -0.26, P \leq 0.05$). Other personality types had a significant relationship to reading fluency. Therefore, the null hypothesis I in this study which stated that “there is not any significant relationship between Iranian EFL learners’ personality types and their reading fluency” was safely rejected.

Results of Pearson correlation coefficient suggested that only visual, auditory, and kinesthetic learning styles had a significant relationship with reading fluency as 0.23, 0.23, −0.35, at $P \leq 0.05$, respectively. Therefore, the null hypothesis II which stated that “there is no significant relationship between Iranian EFL learners’ learning styles and their reading fluency” was rejected, too. Based on the results of regression analysis, the personality types as a whole explained about 12% of the

### Table 4. Results of Pearson correlation coefficient on learning styles and reading fluency

|         | Reading Correlation | Sig. (2-tailed) | N  |
|---------|---------------------|-----------------|----|
| Visual  | Pearson Correlation | .239**          |    |
|         | Sig. (2-tailed)     | .006            |    |
|         | N                   | 130             |    |
| Auditory| Pearson Correlation | −.357**         |    |
|         | Sig. (2-tailed)     | .000            |    |
|         | N                   | 130             |    |
| Kinesthetic| Pearson Correlation | .319**         |    |
|         | Sig. (2-tailed)     | .000            |    |
|         | N                   | 130             |    |
| Tactile | Pearson Correlation | −.059           |    |
|         | Sig. (2-tailed)     | .504            |    |
|         | N                   | 130             |    |
| Group   | Pearson Correlation | −.123           |    |
|         | Sig. (2-tailed)     | .165            |    |
|         | N                   | 130             |    |
| Individual| Pearson Correlation | .123            |    |
|         | Sig. (2-tailed)     | .165            |    |
|         | N                   | 130             |    |

**. Correlation is significant at the 0.01 level (2-tailed).
| Model | Unstandardized Coefficients | Standardized Coefficients | T | Sig. | Collinearity Statistics |
|-------|-----------------------------|---------------------------|---|------|-------------------------|
|       | B | Std. Error | Beta |    | Tolerance | VIF |
| 1     | (Constant) | 88.705 | 2.973 | 29.838 | .000 | |
|       | Realistic | .090 | .130 | .064 | .692 | .490 | 827 | 1.209 |
|       | Intellectual | -.399 | .124 | -.294 | -3.208 | .002 | 848 | 1.179 |
|       | Social | .209 | .110 | .168 | 1.904 | .059 | .917 | 1.091 |
|       | Conventional | -.141 | .142 | -.102 | -0.994 | .322 | .681 | 1.468 |
|       | Enterprising | .091 | .123 | .068 | .739 | .461 | .837 | 1.194 |
|       | Artistic | .209 | .155 | .116 | 1.350 | .179 | .966 | 1.035 |

a. Dependent Variable: Reading
| Model | R    | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics |
|-------|------|----------|-------------------|-----------------------------|-------------------|
|       |      |          |                   |                             | R Square Change  |
|       |      |          |                   |                             | F Change          |
|       |      |          |                   |                             | df1              |
|       |      |          |                   |                             | df2              |
|       |      |          |                   |                             | Sig. F Change     |
| 1     | .353 | .124     | .082              | 5.4042                      | .124             |
|       |      |          |                   |                             | 2.912            |
|       |      |          |                   |                             | 6                |
|       |      |          |                   |                             | 123              |
|       |      |          |                   |                             | .011             |

a. Predictors: (Constant), Artistic, Realistic, Enterprising, Intellectual, Social, Conventional
b. Dependent Variable: Reading
| Model | Unstandardized Coefficients | Standardized Coefficients | T   | Sig. | Collinearity Statistics |
|-------|-----------------------------|---------------------------|-----|------|-------------------------|
|       | B                      | Std. Error | Beta | 14.196 | .000 | Tolerance | VIF |
| 1     | (Constant)              | 97.602  | 6.875 | 14.196 | .000 | 1        | 1   |
|       | Visual                  | -.274   | .185  | -.262  | -1.479 | .142 | .218 | 4.591 |
|       | Auditory                | -.590   | .248  | -.527  | -2.374 | .019 | .139 | 7.211 |
|       | Kinesthetic             | .079    | .119  | .083   | .661   | .510 | .433 | 2.308 |
|       | Tactile                 | .026    | .118  | .021   | .218   | .828 | .732 | 1.366 |
|       | Individual              | .012    | .127  | .009   | .091   | .928 | .660 | 1.514 |

a. Dependent Variable: Reading
Table 8. Model summary of regression analysis

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | F Change | df1 | df2 | Sig. F Change |
|-------|---|----------|------------------|---------------------------|-------------------|----------|-----|-----|---------------|
|       | .390 | .152 | .118 | 5.30308 | .152 | 4.444 | 5 | 124 | 0.001 |

a. Predictors: (Constant), individual, kinesthetic, tactile, visual, auditory
b. Dependent Variable: Reading
variance in dependent variable (reading fluency). In other words, the personality types made a 12% contribution to explain the improvement in English reading fluency. This amount of contribution was in terms of $F = 2.19$ significant at 0.01 or 0.05. Therefore, the null hypothesis III which stated that “Iranian EFL learners’ personality types do not predict their reading fluency” was safely rejected.

Finally, based on the results of regression analysis, learning styles as a whole explained about 15% of the variance in dependent variable (reading fluency). In other words, learning styles made a 15% contribution to explain the improvement in reading fluency. This amount of contribution was $F = 4.44$ significant at 0.05. Therefore, the null hypothesis IV which stated that “Iranian EFL learners’ learning styles do not predict their reading fluency” was rejected.

Although both correlational regression analyses showed minor significant relationships with small (near to medium) effect sizes, the results cannot simply considered meaningless. The low effect size sometimes happens because of the small and convenient sample sizes or due to what Arnold and Feldman (1981) call social desirability response bias, i.e., “the desire individuals have to present themselves in a favorable manner when responding to specific questions or statements” (p. 379). Accordingly, the self-reported data obtained in this study may fail to accurately present the de facto levels of personality types or learning styles. Comparing the results to previous studies would give a better understanding of the meaningfulness of these results.

Considering the first predicting variable, i.e., personality, as mentioned in the literature, there is almost a dearth of study using Holland’s profile in measuring EFL learners’ preferences and their proficiencies. This profile takes into account the interests of the participants and is environment-match. However, as the study conducted by De Fruyt and Mervielde (1997) proved, the correspondence of the FFM is significant at least to one or more RIASEC types. They also showed that the reverse correspondence is not the case as not all RIASEC scales are correlated with the Big Five, especially the Realistic scale and to a lesser extent the Investigative scale. Having that in mind, the results of the study are compared to other studies that mainly used the Big Five for their measurements.

First, the results are in line with Ali and Bano (2012) findings which showed a significant relationship between reading comprehension and personality type. Using the Big Five model, they found minor relations between extraversion, agreeableness, and consciousness on one hand reading comprehension on the other hand. Defruyt and Mervielde’s results show that these three factors are strong predictors of enterprising type in Holland’s profile, which also showed minor insignificant correlation with reading fluency. Moreover, their findings showed an overall significant relationship between reading skills and Big-Five factors of personality and called for further investigation in this regard. Moreover, the results were congruent with the outcome of Esfandiari and Radfar (2017) investigation, which showed a significant correlation between personality types and EFL learners’ performances in C-Test. As a crucial part of a C-Test, two reading sections were involved in their test, indirectly proposing the correlation between reading proficiency and personality styles.

Furthermore, the results are also in line with the findings of Bagheri and Faghih (2012) indicating there is a positive relationship between overall self-esteem and reading comprehension, as well as overall self-esteem and personality type, which implicitly assign self-esteem as a third variable correlating reading comprehension and personality types. Considering the results of this study which showed Intellectual (or Investigative) personality type having significant correlation with reading fluency, and also by considering the results of De Fruyt and Mervielde (1997) which showed investigative type is not associated with any of the Big Five constructs, this personality type might also be related to the third variable correlating reading fluency and personality type. Of course, this needs further investigation.

With regard to the learning styles, the findings in the present study are aligned with the results of the studies which showed the significant relationship between the styles in factors affecting success in learning classes. Studies like Simpson and Yunfel (2004), which showed their role in class membership
and enjoyment, or Naserieh (2009), which showed styles’ roles (Kinesthetic style being one of the most influential ones) in the successful use of learning strategies, are among these studies. Furthermore, the results acknowledge the relationship between learning styles and language learning in general, reported by previous studies. Derakhshan and Shakki (2018), for instance, reported EFL learners with high levels of proficiency favored Kinesthetic and Tactile learning styles more than other preferences. The result of the current study also showed a significant correlation between Kinesthetic style and reading fluency. However, the lack of a significant correlation between Tactile style and reading fluency may be attributed to the language proficiency of the learners. Moreover, comparing the results of the study with that of Asadipiran (2016), the researcher noticed that two (auditory and visual) of the three learning styles that had a significant correlation with reading fluency were the ones Asadipiran identified as the most common learning styles among Iranian high school students. This may be due to the reason that the commonality of styles among learners makes them benefit more from classroom instructions, which is mostly compatible to auditory and visual preferences. The reading classes in Iran are usually instructed by reading the texts and discussing it, which requires looking into the texts (visual requirement) and listening to explanations (audial requirement). The students with these common styles, which are the majority of classes, show learning feedbacks to the teacher, making him/her sure that the lesson is well learnt, even though the learners’ other learning styles may not benefit from the classes as much as these two do.

Considering the direct relationship between learning styles and reading comprehension, the previous studies were also supportive. Chavosh and Davoudi (2016), for example, pointed out that Kinesthetic and Tactile learning styles are the two styles having the highest association with reading comprehension performances of the students. While the result of the present study was congruent in the case of Kinesthetic style, it failed to show a significant correlation between reading fluency and Tactile. Tactile was the third most common learning style in Asadipiran’s (2016) work and most favored styles of highly proficient learners in Derakhshan and Shakki (2018) study as well. This may make one wonder about the failure of this study in recognizing it as one of the influential factors. The reason might root in the fact that reading comprehension as a whole, in Iranian classroom contexts, is usually measured by means of paper tests, where the optimal goal is to evaluate how much the comprehension of the text is achieved. Tactile learners, known for their hands-on preferences, see the reading tasks as a puzzle of words which need to be solved by comprehension. However, when the fluency of reading is the goal, where the accurate quick reading and understanding is aimed, they lose the time factor to do their experiments.

6. Conclusion
With the shift of the focus from teaching to learning in the field of ELT, learners’ characteristics gained a lot of attention and an EFL teacher knows that the ways in which students learn are greatly different. Individual students have particular strengths and weaknesses which can be built upon and enhanced through effective instruction and teachers need to take into account their students’ different personality types and learning styles. These individual variables could be summarized as gender, age, learning styles, motivation and personality type. The possible reason why personality type and learning style are more worth paying attention to is that they can be the predictors of the important issues such as reading fluency which itself can guarantee the language learners’ academic success. Moreover, any investigation into these variables needs to constantly take into account the possibility of other unmeasured factors at play. In this study, Holland’s profile was used to take into account the environment-match personality types as well to further dig into the relationship of the variables in the Iranian context. Furthermore, as each skill and component of the learning need to be carefully planned to reach the upmost successful results, investigating different aspects of a skill, like fluency, as well as the influential factor, like personal differences are necessary. The results of this study proved that addressing the language learners’ personality type and their preferred learning style has a meaningful link to their reading fluency rate. This relation implies that it is one of the teacher’s duty to become aware of their students’ dominant personality type and learning style in the classroom.
As shown by the previous researches (e.g., Khademi et al., 2013), there is a significant relationship between the Iranian EFL teachers’ recognition of learning styles and their students’ success. This consideration should happen in all stages of teaching language skills or contents, of lesson planning to a homework assignment, of warm-up to lesson review and others. If students become aware of what type of learners they are, they can have a clearer picture of the learning process, and more awareness of learning. With more awareness of learning style, they may comprehend why they feel comfortable in learning one thing while uncomfortable in learning another. Although taking into account individual differences into any classroom instruction seems very challenging tasks, knowing these differences would help teachers to run classes to better endings. Moreover, having major learning styles does not imply a lack of other styles. Teachers just need to do some adjustments when dealing with different tasks. Moreover, material developers might find it useful to design their materials in a way that can cater to all types of learners. Material developers can provide different activities in their course books matched with different personality types with the aim to increase learners’ reading fluency.

This study was done to shed more light on the importance of individual difference and preference in language learning. The use of Holland’s profile was helpful to give a new perspective on the features that need more investigation to fully understand the role of personality in learning. Conducting a research in an EFL context with its specific background and learning culture (e.g., Jahanbakhsh & Ajideh, 2018), the study tried to add to the existing knowledge where, as meta-analysis studies reported on the demographic features (e.g., Norris & Ortega, 2000) indicated, that majority of the participants in L2 research are students who live in the USA, west Europe, or east Asia whose first or second language is English. The study used convenience sampling and the participants were all adults. The small effects of the correlations may be due to this limitation of the study. More regional and broader investigations are still needed to give a fully comprehensive and conclusive result on the matter.

Funding
The authors received no direct funding for this research.

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Citation information
Cite this article as: On the relationship between Iranian EFL learners’ reading fluency, their personality types and learning styles, Lida Foroozandehfar & Gholamhassan Famil Khalili, Cogent Arts & Humanities (2019), 6: 1681347.

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