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# The Relationship Between Iranian EFL Learners' Personality Traits and Their Mobile Assisted Vocabulary Learning

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**Abstract**
The growing inclusion of technological devices in language learning calls for exploring their efficacy and determining to what extent learners' characteristics mediate their effectiveness. In light of these concerns, the current study has sought to examine the relationship between learning English vocabulary via mobile phone and the learners' personality traits. The participants of the study were 100 intermediate English as foreign language (EFL) learners studying English at the University of Zanjan, Zanjan, Iran. Sixty American English idioms were chosen and made available in a Telegram channel, during a six-week period of treatment to provide the participants with Mobile-Assisted Language Learning (MALL). A researcher-designed achievement test was administered to assess the learners' vocabulary learning via mobile phone. Big Five Inventory (BFI)" (John et al. 2008) was used to estimate the learners' personality traits. The data analyses showed no significant correlation between the variables; however, simultaneous multiple regression offered extraversion as the unique significant predictor. The results revealed MALL not only frees the learners from the restrictions of time and place, but also minimizes the possible intervention of learners' characteristics in the process of language learning. The fruitfulness of MALL in leaving behind students' characteristics has important implications for both educators and practitioners.

**Keywords:** Big Five Inventory, EFL learners, learning vocabulary, mobile-assisted language learning, personality traits

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## Introduction

The advancement of new technologies has led to significant changes in language learning process. The prevalence of technological devices has encouraged educational stakeholders to promote their application in learning activities. Among these, mobile phones have the potential to increase the success rate of learners by providing a platform for getting access to various sources, such as e-books, visual/audio programs and software. The main feature of a smartphone is its capacity for use at any time and in any place. This liberating characteristic grants learners flexibility on their daily schedule. Regardless of the purpose in learning a new language, studying two major realms is necessary: grammar and lexis. Lack of adequate vocabulary knowledge results in communication breakdown. According to Schmitt (2000, p. 5), "lexical knowledge is central to communicative competence and to the acquisition of a second language." Given the importance of this knowledge, the Lexis Approach in second/foreign language learning/teaching is developed based on the assumption that the building block of language learning is lexis (Richards & Rodgers, 2001).

On the other hand, due to the growing popularity of learner-centered approach in language teaching domain, exploring the impact of learners' characteristics has received a great deal of attention among researchers and teachers. Individual differences have been emphasized as effective factors in the process of learning, and especially language learning (e.g. Miri & Shamsaddini, 2014; Saranraj & Meenakshi, 2016; Yaghoobinejad & Ahour, 2019). Individual differences include the social class; cultural, political, and economic background; personality types; psychological and emotional status of learners, and so on.

Owing to the fact that Mobile-Assisted Language Learning is a personized process, it seems crucial to investigate the learner-related variables like personality traits within a MALL framework. In conventional classrooms, teachers are usually skilled at responding to students' various psychological and social characteristics whereas in MALL these features are not readily discernible by the instructor. In case there is a relationship between learner-related factors and achievement through MALL, more emphasis should be placed on the key role of learners' traits and emotional status and it also has the implication for mobile software developers to take care of these variables while designing their products.

The rapid pace of technology and its growing inclusion in education necessitates exploring these influential factors in the process of MALL. Numerous educational undertakings, especially during the pandemic, touch upon the effectiveness of mobile programs as a viable means for language learning and specifically learning vocabulary. Several studies confirmed the efficacy of these applications (Al Saidi & Al Shezawi, 2020; Bensalem, 2018; Gürlüyer, 2019; Kacetl & Klímová, 2019; Korlu & Mede, 2018; Li & Cummins, 2019); nevertheless, it should be noted that the user of such mobile programs is a human being, who is a complicated, multidimensional, and dynamic creature. Learner's personality traits in addition to his/her physical status may play an important role in the process of language learning.

A number of studies such as Bayram et al. (2008), Cocoradă et al.

(2018), Dewan and Ho (2013), Hassanzadeh et al. (2012), Hsiao (2017), Kamal and Radhakrishnan (2019), Lane and Manner (2011) examined the personality traits in relation to the use of technological devices. However, the available literature stops short of exploring the mediating effect of individual characteristics on learning language skills via mobile phones. Observing this gap in literature, we will try to shed some light on the relationship between personality characteristics and learning achievement through using a mobile application. Furthermore, in spite of the fact that the usefulness of technology cannot be denied, it is worthy to examine if learners with diverse attributes respond to MALL differently.

## Review of the Literature

Originally, in the works of Piaget (1970) and Vygotsky (1978), personal characteristics were regarded as the source of variation in learning. This led to the advent of constructivism and consequently the popularity of learner-centered approaches. Placing emphasis on social interactions in language learning activities solidified the importance of learners' social and psychological characteristics throughout the processes of learning a foreign language. In the following lines, we will review the related literature on vocabulary learning, personality traits and MALL which are the major themes of the study.

### *Learning Vocabulary*

Vocabulary is viewed as a major component for learning a foreign language (Ali et al., 2011; Constantinescu, 2007; La Spisa, 2015). Lexical problems often impede communication, and communication breaks down when people are unable to use the right words (Komachali, 2012). Drawing on the significance of vocabulary, the Lexical Approach to second language teaching was developed as a substitute for grammar-based approaches. Its main focus is on enhancing learners' proficiency with words and word combinations (Amiryousefi & Dastjerdi, 2010; Lewis, 1993). Michael Lewis, who coined the term *lexical approach,* argues that lexis is the foundation of language, and one of the central governing principles of any meaning-based syllabus should be lexis.

In light of technological advancements, teaching vocabulary through mobile phones has received a refreshed interest and a number of recent researches have touched upon examining the efficacy of this device in vocabulary learning. Studies have reported the moderating effects of "*research settings*", "*treatment durations*", and "*task-afforded autonomy*" on L2 word retention (Lin & Lin, 2019), and its medium effect on vocabulary learning (Mahdi, 2018).

The application of the short message service (SMS) to vocabulary learning in Lu's study (2008) revealed that learners who were exposed to reading the regular and brief SMS lessons performed better on the post-test than those who read the relatively more elaborate print material. In a similar study, Li et al. (2010) employed an adaptive learning system and sent the contents to the learners by adjusting to their interests and learning styles; the outcome demonstrated the efficacy of the medium of email on mobile

devices in enhancing the vocabulary knowledge.

Vasbieva et al. (2016) examined the impact of the blended learning approach on teaching English vocabulary. The results showed the blended group's superiority and satisfaction over the face-to-face group. There are also several studies such as Chen (2014), Fageeh (2013), Saran et al. (2012), Shahbaz and Khan (2017), Wang and Shih (2015), Zhang et al. (2011) reporting favorable results for the use of mobile devices in vocabulary learning. Other studies (e.g. Hu, 2013; Lu, 2008; Wang & Shih, 2015) examining the learners' perceptions and attitudes, indicated the positive disposition of learners towards the use of these devices.

In this study, vocabulary is operationally defined as idioms that are widely used in American English. By idioms, we mean expressions that have a meaning that is not obvious from the individual words (McCarthy & O'Dell, 2004). They can take different grammatical functions such as verb, noun, adjective, etc.

***MALL***

The advent of audiolingual theory in 1950s and behavioristic psychology triggered the use of language laboratory in education and subsequently drill-based computer-assisted instruction during the 1960s (Salaberry, 2001, as cited in Chinnery, 2006). This was also decades later eclipsed by computer-assisted language learning and led to the emergence of mobile learning, or m-learning, as a blooming branch of the e-learning movement (Chinnery, 2006).

According to Kukulska-Hulme (2020), MALL is the use of smartphones and other mobile technologies in language learning, with instant access to information, social networking sites, and context-specific assistance; freedom to choose time and place of learning; maintaining learning across different settings; catering for personal needs and preferences; and a suitable space for continuous acquisition of language while doing daily tasks.

Several researchers have attempted to read through and figure out any common thread between studies carried out on MALL. Among them, Afzali et al. (2017) reported that the most frequently-applied service has been SMS. In a more recent effort at reviewing MALL-related research, Kacetl and Klímová (2019) referred to boosting students' autonomy, confidence, motivation and cognitive capacity as the advantages of mobile learning.

There are also other researches whose aims have been to probe the efficiency of MALL in other aspects of language learning, for instance grammatical accuracy (Baleghizadeh & Oladrostam, 2010), contextual learning and interaction (Sole et al., 2010), writing skills (Al-Hamad et al., 2019), speaking anxiety (Han & Keskin, 2016), and confidence in listening and speaking (MALL Research Project Report, 2009).

The usage of social media, installed on mobile phone, for vocabulary learning is the target of the present study. The popularity of social media among people and specially college students, besides the availability and affordability of mobile phones and the Internet connections, were the main reasons for doing the research in this context.

### *Personality Trait*

American Psychological Association (2020), in its website, defines *personality* as "individual differences in characteristic patterns of thinking, feeling, and behaving." Cherry (2020) introduced major theories of personality: (1) biological theories, which suggest that genetics shapes personality; (2) behavioral theories, which emphasize the role of environment and nurture on personality; (3) psychodynamic theories, which regard the unconscious mind and childhood experiences as the most influential factors on personality; (4) humanist theories, which stress the role of free will and self-actualization and innate factors in shaping personality; (5) Trait Theories, which present that personality is composed of some broad traits. Two models of trait theories are well-known: Eysenck's three-dimension theory offering extraversion, neuroticism, and psychoticism as three major dimensions of personality; and the five factor theory (Big Five theory) offering openness, conscientiousness, extraversion, agreeableness, and neuroticism as major dimensions of personality.

Crozier (1997) acknowledged the role of learners' personality traits in language learning and the importance of teachers' awareness of such information. He stated that educational experts need to be cognizant of research on personality since one of the major goals of education is students' personal and social development.

There are studies in literature that examine the correlation of personality types with academic achievement (Carrell et al., 1996), learning styles (Marcela, 2015), and motivation (Komarraju et al., 2009). Miri and Shamsaddini (2014) researched the impact of different personality traits upon sixty Iranian EFL learners' vocabulary learning. By grouping the participants into four traits: assertiveness, aggressiveness, submissiveness and passiveness they found that assertive learners outperformed aggressive, submissive and passive participants.

Scheid (2015) studied the effect of cultural and personal factors on MALL and found significant correlations between personality traits and the way participants utilized The WordDive Mobile Application in terms of exercise duration, amount of exercise tries, speed of progress, exercise mode, amount of exercises performed per day and per week.

Regarding the various forms of e-learning, a number of studies have investigated the mediating effect of personality traits on learners' performance. Bayram et al. (2008) reported that around half of the variance in learners' attitude towards web-based education is accounted by personality characteristics. Kamal and Radhakrishnan (2019) observed the significant impact of personality traits in an e-learning scenario on the individual preference of learning.

In a broader domain, Lane and Manner (2011) sought to determine which personality traits go with smartphone ownership and use. Extraverts were found to be more likely to own a smartphone and reported to place a higher emphasis on the texting function, whereas more agreeable individuals prefer calling to texting in smartphones. On the whole, the analysis depicted personality as a weak predictor of mobile ownership/use except extraversion which was a rather reliable predictor. Dewan and Ho (2013)

scrutinized the way learners with different personalities respond to m-learning messages and report that Sensing, Thinking and Judging types had more favorable attitudes toward using m-learning than Intuitive, Feeling and Perceiving types respectively.

In the present research, the five personality trait dimensions including Neuroticism, Extraversion, Agreeableness, Conscientiousness and Openness-to-experience is chosen that is measured by a 5-likert scale questionnaire. Its external validity and predictive utility were examined through a large study and reported by John and Srivastava (1999):

The Big Five can contribute to the understanding of socially and developmentally significant life circumstances. For instance, juvenile delinquency is highly likely in people with low Agreeableness and Conscientiousness. In psychopathology, internalizing disorders are predictable on the basis of Neuroticism and low Conscientiousness. School performance is also predictable from Conscientiousness and Openness. Given these observations, the Big Five dimensions can justifiably function as indicators of risk for future maladjustments.

Reviewing the literature of studying vocabulary through MALL and the role of learners' personality trait in the processes of language learning reveals that scant heed has been paid to such factors in this domain; therefore this study attempts to explore the relationship between learning vocabulary via mobile and Iranian EFL learners' personality trait including neuroticism, extraversion, agreeableness, conscientiousness and openness-to-experience. To this aim, the following research question was posed:

RQ: What is the relationship between learning vocabulary in MALL and EFL learners' personality trait?

Or to put it differently:

Which variable best predicts the performance of EFL learners in MALL: neuroticism, extraversion, agreeableness, conscientiousness or openness-to-experience?

## Method

### *The Design of the Study*

This research is an applied, quantitative, confirmatory study aimed at finding the answer of the question: what simple relationships exist between variables? Regarding the sampling paradigm, this study was quasi-experimental since convenience sampling was employed, and the sample has not been randomly selected.

### *Participants*

The participants of this study were one hundred adult intermediate EFL learners, including 63 females and 37 males, who studied English at the University of Zanjan, Iran. They were recruited through convenience sampling. However, it is believed that the participants were adequately representative of the target population for two reasons: First, the range of the participants' proficiency level which was intermediate could be regarded as the average level of the target population. Second, the noticeably wide range of total scores in the questionnaire and also the vocabulary test could

manifest the heterogeneity of the participants with respect to different psychological characteristics. Therefore, it is believed that the sample was representative enough to make cautious generalizations. Their homogeneity in terms of English knowledge was ensured by Oxford Placement Test. They took part in this test prior to the study; in order to avoid any kind of bias, specially the bias of history which means the familiarity of participants with standard proficiency test, and improving internal validity of the study, it was decided to rely on the previous results (Esmaeili, 2018). Furthermore, all of the participants were sophomores studying the same major (English Translation) in the same classroom who had passed the same examinations throughout their studies.

### *Materials*

The materials used in the present study were sixty idioms from the two volumes of the book *Basic Idioms in American English (1981)*, compiled by Hubert H. Setzler, through a mobile program (Telegram) aiming at learning English vocabulary. The rationale behind choosing the source of material was the participants' current study at the time. The participants were taking a course on "The Use of English Idioms and Expressions in Translation". The textbook of the course was "*English Idioms in Use*" by McCarthy and O'Dell (2004). Since the participants were provided with British English idioms at the same time of being the subjects of this study, and in order to avoid any kind of bias, it was decided to utilize American English Idioms suitable for intermediate English learners. The selected idioms are among the most commonly used expressions essential for natural, everyday communication of EFL students. A list containing all the idioms covered in the treatment sessions is provided in Appendix A. In addition to the suitability of idioms in terms of their level of proficiency, their novelty, attractiveness, and applicability in the participants' culture were taken into account. It is worth mentioning that in some cases Longman Dictionary was used to provide the participants with more examples.

### *Instruments*

The closed-ended questionnaire in the current study was administered to find possible correlations between variables in short term.

**Big Five Inventory (BFI) (John et al., 2008)**. As Srivastava (2017) in his website has mentioned, BFI is a self-report scale with 44 items developed to assess the BF dimensions. Short sentences with rather easy-to-understand vocabulary are used.

Soto and John (2009, p. 85) reported alpha reliabilities changing from .81 to .88. In another study, Lee et al. (2013, p. 9) maintain that internal consistency of all five dimensions of this scale is highly acceptable with Cronbach's Alphas ranging from 0.79 to 0.87 and NEO-FFI ranges from 0.72 to 0.81, which represent satisfactory validity.

Respondents were asked to answer to questions on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). Neuroticism includes 8 items: 4, 9, 14, 19, 24, 29, 34, and 39; among them, items 9, 24, and 34 need to be reversed. Extraversion includes 8 items: 1, 6 11, 16, 21, 26, 31, and 36;

among them, items 6, 21, and 31 need to be reversed. Agreeableness includes 9 items: 2, 7, 12, 17, 22, 27, 32, 37, and 42; among them, items 2, 12, 27, and 37 are in need of being reversed. Conscientiousness includes 9 items: 3, 8, 13, 18, 23, 28, 33, 38, and 43; among them, items 8, 18, 23, and 43 need to be reversed. Openness includes 10 items: 5, 10, 15, 20, 25, 30, 35R, 40, 41R, and 44; among them, items 35 and 41 need to be reversed. Higher scores will present more dominant personality traits.

**The Achievement Test (AT).** A researcher-designed achievement test administered in order to examine the participants' performance on English vocabulary. The test format was chosen as multiple choice questions restricted to 20 items that should be answered in 10 minutes. The scores would range between 0 and 20. All these choices were made to avoid bringing about threatening, exhausting, or boring experience besides being objective in terms of both devising the items and scoring them. Attempts were made to ensure the validation of the test by: (1) improving the design and appearance of the test, as well as avoiding any kinds of pattern in selection of options and answers; (2) covering the whole content, and avoiding idioms not found in material; (3) choosing multiple-choice form in order to be objective in testing, scoring, and interpreting results; (4) trying to avoid biases which may lead to interference in the purpose of measuring the participants' idiom knowledge; (5) trying to avoid signaling any kinds of clue for choosing the correct option, for instance based on the grammatical knowledge, or by contrast, any kinds of clue which may distract the examinees' attention from finding the correct answer. Besides, the test was proofread by two professors of English Language Department at the University of Zanjan.

The reliability of the AT was scrutinized by pilot testing. The examinees of the pilot testing were 30 Iranian EFL sophomores at the University of Zanjan who studied English Literature as their major. The Cronbach's alpha coefficient as the indicator of the test reliability offered a satisfactory level of internal reliability ($\alpha = .711$, $p < .001$).

Experts' judgment was sought to estimate the validity of the test. Two professors with related major were asked to judge the validity of the researcher-designed test through answering a 5-point Likert scale questionnaire (1 = strongly disagree, 5 = strongly agree) including four types of test validity (face, content, criterion-related, and construct validity).

The means of the obtained scores from two raters were 4.00 and 4.25 from 5, which were above the average and manifested reasonable degree of validity in terms of face, content, criterion-related, and construct validity. To measure the inter-rater reliability of the two expert judgments, Cohen's kappa ($\kappa$) was run. This measure revealed the significantly acceptable degree of inter-rater agreement between the two raters of the test validity: $\kappa = .636$, $p < .05$.

### *Procedure*

At the first session of meeting the participants, they were provided with adequate information about the topic, purpose, implications, benefits, and procedures of the study, and also about the ethical matters, including the

confidentiality of their identity and other obtained data from the questionnaires and achievement test. Then, they were asked to fill out the questionnaire carefully and completely. Besides, the counterparts of the challenging expressions were introduced in the participants' mother tongue in order to ease and ensure the accuracy of the answers.

After ensuring that all of the participants have easy and unlimited access to the Internet and Telegram software via their mobile phones, a Telegram channel was created and all the participants joined, enabling them to study the materials via their mobile phones at anytime and anywhere.

Per week ten idioms were put in the channel, including their meaning and sufficient sample sentences. The participants were provided with sixty American idioms in total. The treatment was conducted over a semester-long (6 weeks) course, and the test was taken 10 minutes prior to the participants' final examination. To investigate the correlation between the learners' performance on the vocabulary test and their personality trait, multiple regression was employed. All the obtained data were analyzed using the latest version of Statistical Package for Social Sciences (SPSS).

## Results

Descriptive and inferential statistics were used to analyze the obtained data from the psychological questionnaire and the researcher-designed achievement test.

### *Descriptive Statistics*

The following table demonstrates the descriptive analysis of the participants' answers to BFI, its subscales and the Vocabulary test.

**Table 1**

*Mean and Standard Deviation (SD) of BFI, its Subscales and VT Scores*

| | | | | Skewness | | Kurtosis | |
|---|---|---|---|---|---|---|---|
| | N | Mean | Std. Deviation | Statistic | Std. Error | Statistic | Std. Error |
| Big Five Inventory | 100 | 3.392 | .27980 | -.845 | .414 | .006 | .809 |
| Extraversion | 100 | 3.441 | .70495 | -.710 | .414 | .629 | .809 |
| Agreeableness | 100 | 3.503 | .62916 | -.247 | .414 | .577 | .809 |
| Conscientiousness | 100 | 3.378 | .58988 | -.309 | .414 | -.535 | .809 |
| Neuroticism | 100 | 2.878 | .88302 | -.167 | .414 | -.244 | .809 |
| Openness | 100 | 3.678 | .47704 | .244 | .414 | -.111 | .809 |
| The scores of VT | 100 | 16.81 | 2.65716 | -.918 | .414 | -.013 | .809 |

As mentioned before, the BFI has 5 subscales, namely, Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness-to-experience. Table 1 provides descriptive statistics of BFI and its subcategories. The mean for BFI was found 3.39 out of 5, and the means of

BFI's subscales were found 3.44 for Extraversion, 3.50 for Agreeableness, 3.37 for Conscientiousness, 2.87 for Neuroticism, and 3.67 for Openness-to-experience (All the means are out of 5, and so above the average). In some subcategories, such as Neuroticism, the relatively high SD suggested diversity in the participants' personality traits, which could be regarded as the good representativeness of the sample containing wide range of personality traits as it is seen in the whole society. The sum of BFI scores ranged from120 to 166. The amounts of skewness and kurtosis suggest approximately normal distribution (|S| and |K| > 1.96), and meet, therefore, the basic assumption of Regression analysis.

With regard to the participants' scores of the vocabulary test, the mean score of the VT was found 16.81, which was largely above the average and signified the efficacy of the treatment. The standard deviation was found 2.65 suggesting wide range of test scores between 10 and 20. Since the distribution of the scores was negatively skewed, one outlier was detected and removed from the data, which resulted in the approximate normality and decrease of the sample's population to 99. The omission of the outlier promoted the normality of the data distributions of all other variables, and consequently raised the level of accuracy in calculating correlation coefficients. The normality of the scores' distribution after removing the outlier is shown in the Table 2.

**Table 2**

*The Normality of the Distribution of BFI, its Subscales and VT Scores*

| | Kolmogorov-Smirnov[a] | | | Shapiro-Wilk | | |
|---|---|---|---|---|---|---|
| Big Five Inventory | Statistic | Df | Sig. | Statistic | df | Sig. |
| | .136 | 99 | .154 | .927 | 99 | .037 |
| Extraversion | .144 | 99 | .100 | .927 | 99 | .037 |
| Agreeableness | .135 | 99 | .156 | .977 | 99 | .717 |
| Conscientiousness | .093 | 99 | .200* | .957 | 99 | .248 |
| Neuroticism | .099 | 99 | .200* | .960 | 99 | .291 |
| Openness | .082 | 99 | .200* | .973 | 99 | .592 |
| The scores of VT | .204 | 99 | .002 | .887 | 99 | .003 |

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

The accuracy of the input data has been examined several times, and in some cases, some participants were asked to fill out the questionnaires again. All the processes of gathering data were carefully supervised and the vitality of gaining accurate information was clarified to all of the participants.

### *Inferential Statistics*

In order to examine the relationship between each independent variable, i.e. personality trait (five subscales) and the dependent variable, which is vocabulary learning, standard multiple regression analysis was applied. To assure the appropriateness of using this scale, the six required assumptions were investigated, including (1) continuousness of data; (2) linear relationship between the two variables; (3) no significant outliers; (4) independence of observations; (5) homoscedasticity; and (6) normal

distribution of errors/residuals. In terms of the first assumption, the nature of scores related to each variable, as described in the Instrument section, is continuous. The results of descriptive analyses for all variables of this study, presented in tables above, suggest the normal distribution of data, which meets the sixth assumption.

Multiple regression analysis shows how well a set of subscales on BFI is able to predict the performance of language learners on the vocabulary test. This analysis provides us with both models related to each individual subscale and all of them as a whole.

The results of multiple regression analysis between subscales of personality trait as independent variables and vocabulary learning as a dependent one are presented in Tables 3, 4, and 5.

**Table 3**
*Model Summary*[b]

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .293[a] | .085 | .060 | 2.37488 |

a. Predictors: (Constant), Openness, Agreeableness, Extraversion, Neuroticism, Conscientiousness

b. Dependent Variable: Vocabulary Test Score

The R value in Table 3 represents the simple correlation as .293, which indicates a low degree of correlation, and the $R^2$ value indicates that only 8.5% of the total variation in the dependent variable can be explained by the independent variables which are: openness, agreeableness, extraversion, neuroticism, conscientiousness. This proportion is too small and suggests no significant correlation between the independent variables and the dependent variable.

**Table 4**
*ANOVA*[a]

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 9.966 | 3 | 3.322 | 1.063 | .004[a] |
| | Residual | 351.168 | 96 | 3.658 | | |
| | Total | 361.134 | 99 | | | |

a. Dependent Variable: Vocabulary Test Score

b. Predictors: (Constant), Openness, Agreeableness, Extraversion, Neuroticism, Conscientiousness

Table 4, ANOVA, shows that this regression model predicts the dependent variable significantly well ($p < .005$).

**Table 5**
*Coefficients*[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 14.633 | 6.437 | | 1.652 | .000 |
| | Extraversion | -.837 | .743 | -.250 | -1.127 | .004 |
| | Agreeableness | -1.080 | .862 | -.289 | -1.253 | .222 |
| | Conscientiousness | 2.281 | 1.230 | .553 | 1.854 | .176 |
| | Neuroticism | .479 | .708 | .177 | .676 | .505 |
| | Openness | 1.092 | .980 | .222 | 1.115 | .276 |

a. Dependent Variable: Vocabulary Test Score

The analysis revealed Extraversion (the subscale of Big Five personality trait) as the best unique predictor of Learning Vocabulary in MALL ($\beta$ = -.250, $p < .005$). The above table provides this formula for predicting the dependent variable:

Vocabulary Test Score = 14.633- (.837* Extraversion)

However, this formula only counts for 8.5% of variation in the dependent variable.

The results of the regression analysis, represented in the tables above, revealed no relationship between learning vocabulary in MALL and the learners' personality traits as the proportion of prediction was too small, and consequently does not differ from zero. In other words, there is no significant relationship between learning vocabulary in MALL and the learners' personality traits.

## Discussion

The invention of new technologies such as computers and smart phones has enormous impact on people's lives per se; now the use of these devices presents considerable vicissitude in the process of language learning, and the properties of creating a secure and peaceful context for learners with a wide range of personal, psychological and social characteristics which are available anytime and anywhere has turned computer-assisted and mobile-assisted language learning to perfect facilitators in learning English. Nowadays there are many apps which offer even online private and native tutors, such as WhatsApp applications, Telegram applications, Facebook, and researcher-made softwares as well as social network applications, including HelloTalk, Live Mocha, Bussuu, and My Happy Planet. The current study was an attempt to find out if learners' individual traits mediate the effectiveness of MALL. The findings, however, suggested no significant correlation between the five factors of personality traits and learning vocabulary in MALL which means that learners with different personality traits can equally benefit from studying vocabulary through MALL. This is in contrast with the results of Bayram et al. (2008), Kamal and Radhakrishnan (2019), and Scheid (2015) who reported strong correlations between these traits and learners' academic achievement in an e-learning environment. In the traditional

context of a classroom, there are also several studies (e.g. Komarraju et al., 2009; Miri & Shamsaddini, 2014; Payne et al., 2007) that introduce personality traits as strong predictor of foreign language learning, the very finding which is against our observation here.

The lack of relationship between personality-related factors and mobile-assisted vocabulary learning is nevertheless compatible with the outcome of some researches such as Biedroń (2011) and Carrell et al. (1996). In the former, a similarly weak relationship between personality traits and foreign language aptitude was found, while in the latter some correlations were observed between extraversion/introversion and vocabulary test. It is also partially in line with Kaufmann's (2016) belief who is a co-founder of web and mobile language learning platform www.LingQ.com; he reckons that introverts and extraverts may employ different strategies or environment to study, but there is no evidence that shows introverts are inferior to extraverts in learning and using their own mother tongue, which can be equally extended to second or foreign language. He went on to argue that "language learning isn't about your personality type."

With regard to the main objective of the study, the analysis of simultaneous multiple regression offers extraversion as the unique significant predictor with negative relationship, which means that learners with higher levels of extraversion benefit less from the program. In a similar vein, Lane and Manner (2011), in their investigation into the relationship between personality traits and smartphone ownership reported personality as a weak predictor of mobile ownership/use except extraversion which was a rather reliable predictor. Although Hassanzadeh et al. (2012) focused on teachers' traits, their findings were also in keeping with ours which showed only extroverts had a slightly moderate and positive correlation with ICT usage.

However, this contradicts the findings of a similar study, conducted by Kao and Craigie (2014). They explored the effects of English usage on Facebook and personality traits on the achievement of EFL learners, and suggested extraversion as a powerful predictor of EFL learners' achievement with positive correlation. The contradiction between the results of this study and Kao and Craigie's (2014) may reflect the different properties related to Facebook and Telegram channel as the latter lacks direct and synchronous interaction among members, including learners and teacher(s). Therefore, extravert learners may find Telegram channel less inviting than Facebook and spend less time to review the materials in comparison to introvert learners.

Channels in social media miss interpersonal learning activities and synchronous interactions. They merely provide a space through which learning materials are imparted to the members. Normally, ambiguousness is avoided in designing learning materials; hence, language learning through the channels of social media restricts biased interpretations made by learners. The findings of the present study corroborate such claim. Social media can be justly regarded as a socially liberating environment for learning a foreign language since they are capable of reducing the possible effect of some socially and emotionally affective variables, including

personality, in language learning.

## Conclusion

Owing to the fact that there was a wide range of scores related to the personal/emotional status, and also due to wide-ranging scores related to the learners' performance on the vocabulary test, the sample is representative of the target population. Besides, some cautions have been exercised to avoid any biases, from the choice of materials and instruments to the processes of gathering and analyzing data. Thus, the results which indicated the absence of correlation between the learners' performance on the vocabulary test and their personality traits are hopefully generalizable to the target population, Iranian EFL learners. Furthermore, the multiple regression analysis offered Extraversion as the unique, negative, and statistically significant predictor of vocabulary learning via Telegram channel. It seems reasonable that applications such as Telegram channels, which do not cater interaction among their members, receive less attention from extravert learners, who enjoy and are energized through interaction with other learners and teacher(s). On the other hand, it would be a fantastic advantage for such instruments to provide introvert learners, who benefit less from the interactive context of language learning especially in traditional classrooms, with less threatening and more promising environment.

This would be a noticeable advantage for MALL to leave behind the learners' psychological characteristics in the process of language learning. Individual differences, defined as affective variables, have been the focus of numerous studies exploring their impacts upon the efficacy of learning English as a foreign language especially in traditional classrooms. Krashen's affective filter hypothesis relates successful language acquisition to the learners' feelings, and blames the negative feelings as serious obstacles to make the most of "input" (cited in Richards & Schmidt, 2010). Accordingly, utilizing MALL, and particularly Telegram channel, can help pass the hindrances caused by negative feelings and also suits learners with different personality traits.

Regarding the widespread use of mobile phones as inexpensive tools among youth, it is highly recommended to benefit from various applications and programs designed for such devices as well as social media for the purpose of learning EFL as complementary appliances in traditional contexts, or even as independent facilities which boost learners' autonomy. Nowadays, there are many free social media's channels working under experts' supervision that impart language knowledge through aural and audio-visual materials. Since such facilities have attracted the attention of many language learners, proving their efficacy would be a revolutionary breakthrough in the domain of language teaching and learning. The present study has been conducted to take a step, even if a small one, to find more about the properties of MALL, and its potentials for different EFL learners.

The pedagogical implications of MALL are already well-established; nonetheless, the findings of the present study, suggesting the benefits of using MALL for learners with different personality traits, emphasize the fruitfulness of vocabulary learning through Telegram channel, and

recommend it as a complementary tool, especially during the pandemic with more emphasis on specific skills, such as reading, speaking, and writing, which inevitably need vast knowledge of vocabulary.

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