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Learners' Language Learning Style Preferences, Class Level, Gender, and Using Mobile Apps for EFL Learning Among Tunisian University Students

Amani Bouzayenne

Higher Institute of Management of Gabes, Tunisia

Author email: bouzayenneamani1@gmail.com

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Abstract

Currently, the utilization of mobile devices and more specifically mobile language applications is a current ongoing tendency. In line with this trend, this study investigated the linkage between language learning style preferences, class level, and gender on the one hand and the use of mobile applications for EFL learning among university students in Tunisia on the other hand. The considered variables were gauged using a Likert-scale response format questionnaire. The subjects were 180 Tunisian university students at the Higher Institute of Management of Gabes aged 19 to 28. Two data analysis procedures were used: namely, the Spearman Rho correlation giving insight into the correlations among the study variables, and the alpha internal consistency coefficient informing about the reliability of its instrument. Based on the study findings, students' language learning style preferences proved to have a direct bearing on the use of mobile applications for EFL learning. Concerning the link between class level and mobile applications for EFL learning use, no meaningful relationships were registered between these two variables. As regards the correlation between gender and the use of mobile applications for EFL learning, no significant difference was detected between male students and their female counterparts. Through the achieved results, it is recommended that the interrelationship between students' differences and the use of mobile applications for EFL learning is a field of research that merits further scientific exploration to shed more light on the existing literature regarding the use of mobile applications for EFL learning.

Keywords: Mobile applications for EFL learning; Language learning style preferences; class level; gender

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Introduction

With the growing use of mobile devices, the mobile market has become one of the biggest industries in the world in just a few years. Utilizing mobile technologies has increased at an impressive pace. The number of people who own mobile devices is increasing rapidly in recent years. Mobile technology has become an integral part of people's modern life facilitating essential functions in most aspects of their daily life from banking to keeping records of simple activities they do. It is thanks to mobile apps (applications) that are operated on mobile devices that our life has been made easier. It is the special features of these apps (i.e., interactivity, ubiquity, and mobility) that help people break time and place restrictions.

Such applications have been exploited not only in our daily lives but also in education. The rising popularity of various mobile devices has revolutionized the way we learn. The new generation likes mobile technologies (e.g., smartphones, PDAs, and game devices). This fact is exploited in EFL (English as a Foreign Language) learning. Mobile devices, in particular apps for EFL learning which are run on them, have turned out to be one of the most crucial means to assist EFL learners. A great variety of mobile apps have been specifically created for EFL learning (Hockly, 2012). EFL informal learning is undergoing a shift from e-learning to m-learning. Mobile learning is admitted being an essential factor in keeping learners interested in learning. EFL learners can have the potential to practice language skills via their mobile devices. Thanks to modern technology, the field of education is evolving exponentially. The process of learning is getting more exciting, more flexible, and more mobile.

Mobile apps for EFL learning are demonstrated to have favorable external circumstances to surpass the constraints exposed to learners in language learning such as time, place, and linguistic input (Chen & Chung, 2008). Mobile technologies promote the ubiquity of language learning by giving learners access to rich resources anytime and anywhere (Zaki & Yunus, 2015). Indeed, these wireless technology EFL apps make it possible for learners to extend EFL learning outdoors (Jin, 2017). For instance, during the COVID-19 pandemic, when schools closed indefinitely, mobile learning was adopted as an alternative to enhance EFL learning. Taking into consideration the countless advantages of mobile EFL apps on learning, many recent studies have shown that their use is increasing and is expected to rise in the future. Thus,

it is necessary to explore Tunisian students' use of mobile EFL apps and examine various factors affecting such use to add to the knowledge of enhancing EFL learning in the outside classroom setting.

While there is a wealth of research investigating the impact of using technology on EFL learning (Passey et al., 2004; Gruba, 2004; Paris, 2004; Clark et al., 2009; Sundqvist, 2013; Ghavifekr and Rosdy, 2015; Sert and Boynuegri, 2017; UNESCO, 2019), the literature dealing with the use of mobile applications for EFL learning is limited. And as far as research on mobile EFL app use is concerned, the previous literature has so far mainly focused on assessing users' perceptions of mobile EFL app use or on the effect of such a usage on EFL learning. Apart from exploring the relationship between gender and mobile EFL app use, there are only a few research studies that looked at the link between other learners' individual differences and mobile EFL app use.

The relationship between gender and mobile EFL app use is a complex issue as findings can vary across different cultures and contexts. Hence, it has extensively been investigated in the literature. Some studies have proved that there were variations in gender concerning mobile EFL app use (Metruk, 2021). Gender-related disparities in technology access, cultural norms, and expectations related to gender roles were among the factors that explain significant gender differences in mobile EFL app use. Nevertheless, other studies demonstrated that gender was not a strong predictor of mobile EFL app usage (Nami, 2020). As technology and society evolve, such a relationship (i.e., between gender and mobile EFL app usage) may change over time. Hence, it is crucial to further investigate such a link.

In the field of mobile EFL app research, Language learning style preferences merit to be investigated. Indeed, it is crucial to understand how learners with various language learning style preferences use mobile EFL apps. Learners differ in the way they process information and engage with learning materials. Hence, their preferred learning styles may influence their mobile EFL app usage, henceforth, their learning achievement (Gürkan, 2018). In other words, for example, visual learners prefer to learn by seeing (i.e., through images, graphs, videos, etc.). So, mobile EFL apps that include such types of materials may appeal to this type of learner. Consequently, by using such mobile EFL apps, their comprehension of language concepts

would be enhanced. Considering and understanding learners' style preferences could gain insights into learners' learning experience with mobile EFL apps and ultimately, EFL learning outcomes.

Also, class level can be another important learner variable that needs to be studied as it can have a significant impact on how learners use mobile apps for EFL learning. Undoubtedly, Different class levels have different needs and goals. More precisely, embarking on their language learning journey with little or no prior knowledge, beginners need to focus on acquiring basic vocabulary, simple sentence structures, and pronunciation. After having developed some foundational language skills, intermediate learners are ready to handle more complex language tasks. At this stage, learners need to focus on vocabulary expansion, grammar advancement, and listening skills. As for advanced learners, having achieved a solid foundation in the language, they need to be provided with more challenging language tasks, such as advanced vocabulary and grammar exercises. As the three-level groups have different needs, mobile EFL app usage may be influenced by the variable of class level.

Seeing the scarcity of research in this area (Metruk, 2021; Chung et al., 2015), more research is required to examine the potential differences in the use of mobile EFL apps regarding learners' individual differences. Such research aims to add to the knowledge about making the pedagogical principles behind the design of mobile EFL apps correspond to the needs of various learner groups. Indeed, by understanding how learners' individual differences, such as learning style preferences, class level, and gender, may be related to mobile EFL apps usage, more effective and inclusive mobile EFL apps could be designed, ultimately, leading to providing a broader range of learners with the opportunity to reach successful language outcomes.

English is the global and ideal language for expression that can be understood all around the world. So, it is admitted that English proficiency is regarded as a necessary skill for graduate students to get a job. In Tunisian universities, English as a foreign language is a compulsory subject. Yet, learning English has been a challenge for most university students in Tunisia. They are having a lot of problems with learning English. In this age of science and technology, most students possess Android sets and mobile phones. With the rapid growth of

mobile apps for promoting EFL learning which can easily run on such devices, students, then, can become willing to learn English and at the same time have fun.

Yet, research is scarce regarding Tunisian university students' use of mobile apps for EFL learning outside the classroom. To the researcher's knowledge, there is no research study carried out on such a research topic. Then, the current study aimed to investigate the relationship between students' individual differences: namely, language learning style preferences, class level, and gender on the one hand and mobile EFL app use among the students at the Higher Institute of Management of Gabes on the other hand. This survey aimed to fill in the gap in the current literature on the use of mobile apps for EFL learning by Tunisian university students to support informal English learning in Tunisia. The study was an attempt to answer the following three questions and to test the hypotheses about each of them.

Question I

In the Tunisian EFL informal learning context, do students' language learning style preferences determine the use of mobile apps for EFL informal learning?

The hypothesis relating to question I

Students' language learning style preferences correlate with the use of mobile apps for EFL learning.

Question II

Does students' class level predict mobile EFL app use?

The hypothesis relating to question II

Students' class level defines mobile app for EFL learning use.

Question III

Does gender correlate with the utilization of mobile apps for EFL learning?

The hypothesis relating to question III

Gender correlates with mobile EFL app use.

Literature Review

Features of MALL

MALL (Mobile Assisted Language Learning) is part of mL (mobile Learning). Mobile Learning focuses on any skills or services that irrespective of place and time provide instructive content and electronic information which helps in the acquiring of knowledge (Lehner & Nosekabel, 2002). MALL is related to language learning using mobile technology. There is a broad range of mobile devices to be used. According to Almasri (2013), these devices are based on wireless technologies which come in the form of iPods, Pads, mobile phones, tablets, GPS tools, laptop computers, MP3or MP4 players, videotapes, and multimedia players.

Most mobile devices seem convenient for learning thanks to their unique features and affordances. The main advantage of mobile devices is ubiquity: learners can learn anywhere and anytime they want. Also, because of their lower prices in comparison with traditional computers, they have outnumbered desktop computers. As it was admitted by Pegrum (2014), mobile devices have established overwhelming superiority over traditional computers. Users prefer smaller and lighter devices with touch screen interfaces and the stylus pen to heavy desktop computers with a large screen, mouse, and keyboard (Karpenko, et al., 2021). Thus, it seems reasonable to argue that mobile devices, namely MALL, occupy a more prominent role in the process of EFL learning at present and it is expected to rise in the years to come.

Mobile technologies are trendy at present. The rising use of mobile devices paved the way for their use in the process of language learning. Such use in learning environments is a crucial feature that has received considerable momentum in recent years. Mobile devices turn into an instructive tool thanks to mobile applications which are run on them. These applications refer to any kind of software that operates on mobile devices.

Use of Mobile Applications for EFL learning

Many research studies have been carried out in the field of mobile app use in EFL learning and almost all of them showed that such use has continued to be beneficial for

improving the different EFL learning skills. Nowadays, using mobile phones to learn language is seen as trendy. Put differently, they are utilized for the language acquisition service (Klimova, 2018).

As far as implementing the Telegram app in the instructive process of English skills is concerned, Naderi and Akrami (2018) confirmed that using the Telegram group in teaching had a potential impact on the learners' reading comprehension abilities. They asserted that it enhanced the learners' ability in reading comprehension. As regards speaking skills, Setiawan and Wahyuni (2017) pointed to the effective role of E-talk Castel's model in improving students' speaking skills in English. Besides, in her review study, Klimova (2018) concluded that mobile language apps helped in developing one's vocabulary. Additionally, the participants in Ekinci and Ekinci's (2017) study who were Turkish university students claimed that the use of mobile EFL apps assists them not only in acquiring vocabulary but also in improving their writing and reading skills. In a different context, Mindog (2016) attempted to explore the use of mobile EFL apps by Japanese university students. The students thought that mobile EFL apps support them in enhancing their EFL skills (listening, reading, writing, and speaking), grammar, lexis, and spelling.

Also, in the past years, numerous studies have investigated the effect of using mobile EFL apps on motivation which was often regarded as one of the most important factors in EFL learning and have demonstrated that app use was proven to be an effective tool for enhancing motivation (Lin et al., 2018; Jong et al., 2018; Hwang and Wang, 2016; Yükseltürk et al., 2018). Ebrahimzadeh & Alavi (2016) found an interrelation between using digital games for acquiring vocabulary and EFL learning. Gamification was demonstrated to create enjoyment and significantly improve learners' motivation to learn EFL. This is consistent with the findings of the qualitative and quantitative study carried out by Cam & Tran (2017) at a university in Vietnam. The researchers examined the use of games for teaching grammar. They concluded that integrating games was a convenient option as the use of such kinds of activities was recorded to develop students' motivation to learn grammar. Such findings were much supported by many other research studies (Alamer, 2016; Jong et al., 2018). Additionally, it is

worth mentioning that Mobile game-based language learning applications bolstered not only learners' motivation but also lifelong learning (Ebrahimzadeh & Alavi, 2016).

Mobile EFL App use and Gender

Gender which has often been regarded as one of the major factors in L2 (Second Language) learning, has also been subject to examination in the mobile EFL app research. Males and females may have different attitudes towards the use of technology, namely the use of mobile EFL apps. On the one hand, the study by Liu and Guo (2017) found that male students demonstrated to be affected by the perceived usefulness of mobile devices, whereas their female counterparts exhibited a stronger preference for social and utilitarian orientations. On the other hand, other studies proved insignificant differences between the two genders in their view of mobile EFL app use. Yaman, Senel, and Yesil (2015) explored the extent to which English language university students in Turkey used their smartphones for the aim of EFL learning. The participants showed insignificant differences regarding their gender. Hence, the results concerning the differences between the two genders about their perceptions of mobile EFL app use seem inconclusive, which means further investigation is required.

Mobile EFL App use and Learning Style Preferences

Language learning style preferences are defined as the general approaches that learners use for learning (Chang, 2005). In the SLA/FLL field, even though they may be using the same learning material, SL/FL learners learn it differently because they have different learning styles. In addition, if this learning material is compatible with the preferred learning style of the learner, the latter will find learning easier and learn more efficiently (Chang, 2005). Since language learning style preferences are considered individual characteristics, they can influence mobile EFL app usage. In the last two decades, among the research publications on mobile EFL apps (Gou, 2023; Klimova, 2021; Bagci & Peksen, 2018), there have been very few investigated the relationship between individual differences: namely, language learning style preferences and mobile EFL app usage. Hence, such a field of research needs more scientific exploration to add to the knowledge about potential patterns in mobile EFL app usage.

Mobile EFL App use and Class Level

In the educational context, class level refers to the academic stage the student has currently attended (such as elementary, middle, high school, and college levels) or the skill-based progress the learner has attained within a specific discipline (such as beginners, intermediate, and advanced). Students are grouped with similar levels of knowledge to provide them with more tailored and effective instruction. Different class levels have distinct needs and objectives. When using mobile EFL apps, class level can be a significant predictor as proved in the literature. More precisely, those that focus on basic vocabulary, pronunciation, and simple sentence structure would appeal to beginners (AlDakhil, & AlFadda, 2022). However, others that include more advanced reading and listening materials could be beneficial to intermediate learners. As far as advanced learners were concerned, mobile EFL apps with authentic learning materials could be helpful for this type of learner (Luo, 2016). Seeing the relation between class level and mobile EFL apps app use, investigating such a link can help in developing more effective mobile EFL apps; henceforth fostering better EFL achievement for learners at all levels.

Method

The present study was quasi-experimental as it used neither a control group nor a treatment or a pre-test (Thomas, 2022). Also, it was described as multivariate as it aimed to scrutinize how some independent variables: namely, language learning style preferences, class level, and gender influence the research dependent variable: namely, the use of mobile apps for EFL learning in the Tunisian informal EFL context (American Psychological Association, 2015).

Sampling

The sample considered in this study was a subset of the large population of Tunisian university students. The research subjects had ages ranging from 19 to 28 and specialized in Management, Informatics, Economics, Finance, and Accounting at the Higher Institute of Management of Gabes. The participants selected for this study were 180 Tunisian students at the Higher Institute of Management of Gabes. The choice of these specialties was because for students specialized in these educational fields, EFL proficiency level is seen as a liberating force enabling them not only to go study abroad (e.g., to participate in the Erasmus program), but

also to be competitive in the job market. Hence, they are proven to keep struggling to improve their English proficiency. Once they know the purpose of carrying out such research study, they will demonstrate a willingness to participate in it and provide confidential answers.

Convenience sampling was adopted in the present study. The sample was composed of subjects who were simply available in a convenient way to the researcher. Such choice of sampling was motivated by the fact that it is practical.

Research Instrument and Procedures

In the current study, a self-report questionnaire, which represents the most ubiquitous data collection procedure in IDR (Individual Difference Research), was designed by the researcher and used to collect data on students' language learning style preferences in addition to their class level, gender, and use or nonuse of mobile apps for EFL learning.

The study instrument was divided into two sections. The first section concerned eliciting students' language learning style preferences. It contained items selected from the most important theories of language learning style preferences. It had 11 components and 23 sub-components. The first component was made up of the various ways of using physical senses (e.i. visual, auditory, and tactile). The second component presented the extrovert vs. the introvert learning styles. The third contrasted the random/intuitive style with the concrete/sequential learning one. The fourth tackled closure-oriented and open learning styles. The fifth dealt with global and learning styles. The sixth contrasted the synthesizing style with the analytic learning one. The seventh consisted of the sharpener and the leveler learning styles. The eighth was about the deductive and the inductive learning styles. The ninth concerned the field-independent and the field-dependent learning styles. The tenth pertained to the impulsive and reflective learning styles. The eleventh presented the metaphoric and the literal learning styles.

The number of items per component in the first section of the questionnaire was decided on concerning a compromise between reliability and validity. This compromise led to the decision to include an average number of two items per sub-component. The first section, then, consisted of 46 statements adapted from Cohen, Oxford, and Chi's (2001) Learning Style Survey.

Likert scaling, which is the most widely used scaling format in questionnaire design, was used to rate the statements of the first section of the questionnaire on a scale ranging from 1 (strongly disagree) to 5 (strongly agree) with a middle value labeled "neutral" or "undecided". The final score for a participant on a given sub-component of the first section of the questionnaire was the sum of her/his ratings for the items that composed it.

It is worth noting that in some sub-components, items that were reversed in meaning from the overall direction of the statement (i.e., negatively worded) had their answer value reversed before the calculation of the total. Therefore, if the respondent was rated 2, it became 4; 3=3; 4=2; and 5=1. That represented a guard against developing a response set, i.e., the tendency of participants to develop a consistent set of answers that do not faithfully reflect their behaviors.

The second section of the questionnaire was composed of three items eliciting information about students' socio-demographic information, namely class level, gender, and use or nonuse of mobile apps for EFL learning.

The reliability of the first section of the questionnaire was established using Internal Consistency Reliability. The reliability coefficient was calculated, and it was found to equal .81 which is highly satisfactory.

After establishing the reliability of the first section of the questionnaire, it was distributed in English hand to hand to the participants, who were asked to agree or disagree with the statements of the first section which were in the form of declarative sentences, and to answer the open-ended questions of the second section which are about class level, gender and use or nonuse of mobile apps for EFL learning. It is worth noting that respondents were guided through a sample question to guarantee their understanding of the procedure adopted for answering the questionnaire.

Data Analysis

This survey was organized around a set of variables: students' language learning style preferences, class level, gender, and use of mobile apps for EFL learning. Mobile app for EFL

learning usage was treated and labeled as a dependent variable. The other variables were treated as independent ones.

To fulfill the aims of the study, the data analysis procedures that have been relied on in the current study were the following: "the Cronbach alpha index of internal consistency" and "the Spearman Rho Correlation". The former was employed in this study to assess the loading of the different items and the components of the first section of the questionnaire. The latter was employed to assess the relationship between the study variables (i.e. to answer the three research questions).

The choice of the Spearman Rho correlation was supported by the following reasons: this kind of correlation has been widely used in IDR to explore the relationship between individual difference variables. In addition, this type of correlation requires ordinal data as was the case in the present study i.e., data on students' language learning style preferences are obtained based on the Likert scaling format as ordinal data.

The obtained data were computer processed using the Statistical Package for Social Sciences. In the process, each item of the first section of the questionnaire was given a code or label; then the total of each group of items making up a single sub-component was computed.

Findings and Discussion

180 subjects participated in the study. 170 subjects were finally retained for the study proper. 10 subjects were eliminated from the study proper because their questionnaires contained missing values i.e., they did not complete all the items.

The findings are presented and discussed according to the three research questions posed in the study.

Students' Language Learning Style Preferences and Mobile EFL App Use

Findings based on the relation between students' language learning style preferences and mobile EFL app use can be seen in Table 1.

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Table 1. The Correlations between Students' Language Learning Style Preference and Mobile EFL App Use

Language Learning Style Preferences	Mobile EFL App Use
Visual	.558**
Auditory	.376**
Tactile	.374**
Extrovert	-.456**
Introvert	1
Random	.164
Sequential	.153
Closure-oriented	.248
Open	.292
Global	.065
Particular	.344**
Synthesizing	.655
Analytic	.339
Sharpener	.276
Leveler	.024
Deductive	.271
Inductive	.260
Field-dependent	.127
Field-independent	.212
Impulsive	.154
Reflective	-.155
Metaphoric	-.586**
Literal	.430**

** Correlation is significant at the .05 level (2-tailed)

The hypothesis about Question I assumed that learners' language learning style preferences significantly correlate with their use of mobile apps for EFL learning. The correlation test (Table 1 above) lent support to this assumption as the three language learning style preferences: namely, the visual, auditory, and tactile were found to correlate with mobile EFL app use significantly and positively. The visual, auditory, and tactile styles correlated with mobile EFL app use respectively at .55, .37, and .37. The visual style was found to have the highest correlation with mobile EFL app use (.55). So, in the Tunisian context, mobile apps for EFL learning were frequently used by learners with the three different sensory preferences (i.e., visual, auditory, and tactile). The introvert style preference represented a potential predictor of mobile EFL app use as a perfect positive correlation was found between mobile EFL app use and this kind of language learning style preference (1). In contrast, a significant but negative correlation was recorded between the extrovert style preference and mobile EFL app use as they correlated at -.45. In other words, in the Tunisian EFL informal learning context, extrovert learners were not proved to use mobile apps for EFL learning, whereas introvert learners were

demonstrated to frequently use such apps. The style preference was also proved to correlate with mobile EFL app use significantly and positively as they correlated at .34. Based on the study findings, it was safe to say that learners exhibited frequent use of mobile EFL apps. Concerning the last language learning style sub-scale, a negative and significant correlation coefficient was detected between the metaphoric style preference and the use of mobile EFL apps (-.36). However, a significant and positive correlation coefficient was registered between the literal style preference and mobile EFL app use (.43). Therefore, while the literal style preference was a good predictor of mobile EFL app use, the metaphoric one represented a hinder to such use. Put differently, in the Tunisian EFL informal learning context, literal learners were proved to frequently use mobile apps for EFL learning, whereas metaphoric learners were those with a low level of mobile EFL app use.

Class Level and Mobile EFL App Use

The second hypothesis relating to Question II suggested a significant correlation between students' class levels (i.e., students' educational grades they are currently attending which were obtained from the students' responses to the second section of the questionnaire) and the use of mobile apps for EFL learning. The findings were not consonant with this hypothesis as the correlation test revealed the absence of a meaningful relationship between the two variables in question (Table 2). Therefore, students' class level had no direct bearing on their use of mobile apps for EFL learning.

Gender and Mobile EFL App Use

The third hypothesis derived from the third question proposed that mobile EFL app use is determined by gender. This hypothesis did not receive any empirical evidence as the correlation test proved to be overall non-significant (Table 2). Thus, students' gender had no direct influence on their mobile EFL app use.

Table 2. Correlations between Mobile EFL App Use, Class Level, and Gender

	Mobile EFL App Use
Class Level	.041
Gender	.039

Language learning style preferences are defined as the preferred or habitual ways of acquiring, processing, and storing new information. These preferred ways reflect the learners' orientations and general attitudes toward the learning behavior (Cesur&Fer, 2009). It is worth mentioning that they can shed light on differences in students' use of mobile apps for EFL learning as was empirically proved in the current study. Hence, they can emerge as one of the many diagnostic variables, which should be considered to enhance and optimize the process of designing mobile EFL apps.

There was ample evidence from the present study findings that showed that students' language learning style preferences and mobile EFL app use were highly correlated. The visual, the auditory, the tactile, the extrovert, the introvert, the particular, the metaphoric, and the literal styles were found to correlate with mobile EFL app use respectively at .55; .37; .37; -.45; 1; .34; -.58 and .43. Thus, the introvert style constituted the most determinant factor of mobile EFL app use, whereas the extrovert and the metaphoric styles represented important obstacles for such use.

Considering the present study findings, mobile apps for EFL learning appeal to different sensory preferences. Such findings can be explained by the fact that mobile EFL apps provide users with rich multimedia support which caters to various learning style preferences. The input is varied: audio and video. Some mobile EFL apps make it possible for users to switch the written form to an audio version with the visualization of the reading passage. Hence, visual learners, who learn best through pictures, tables, and color coding, will appreciate graphics and video lessons provided by such apps. For auditory learners, who prefer learning by listening, listening to audio clips is enjoyed by this group of learners. As far as tactile learners,

who prefer active learning, are concerned, they enjoy learning by touching. Therefore, the convenient functions of the various mobile devices including touching the screen, and clicking or dragging the finger, which are available to users, are admitted by such kind of learners.

Lack of communicative activities in most mobile EFL apps is preferred by introverted learners but not by extrovert ones. Such a claim is supported by the study findings as a perfect positive correlation was recorded between the introvert style preference and mobile EFL app use (1). In contrast, the extrovert style preference was found to be significantly but negatively correlated with mobile EFL app use (-.45). Thus, concerning extraversion, such feature of mobile EFL apps is regarded as a limitation. That can be explained by the fact that learners with the extrovert learning style preference prefer social interactive activities. Such finding is consistent with results from previous research studies (Malerba, 2015; Niño, 2015).

It is due to the instructional design of most mobile EFL apps. Some previous research studies examining mobile EFL apps pointed to the fact that a great number of apps were designed and created based on behaviorist and teacher-centered learning approaches rather than communicative or social-constructive ones. They provide isolated grammar and vocabulary drills through extensive repetitions to support users in eventually attaining them (Burston. 2014b; Guo, 2013; Heil et al, 2016).

Mobile EFL apps, namely mobile vocabulary learning applications, not only do they offer vocabulary words from various topics, but also they provide several samples of the specific situations in which every word is used. Learners with learning style preference enjoy getting the details. Therefore, such features will be praised by learners and encouraged to download the mobile EFL app and even continue using it. Then, the significant and positive correlation between the style preference and mobile EFL app use is clearly understood (.34).

Literal learners learn the material as it is without imposing any additional meanings on it. This can explain the significant and positive correlation found between this type of learning style preference and mobile EFL app use (.43). In fact, users of mobile EFL apps are obliged to follow a sequence of instructions. So, it is due to the way these apps function that metaphoric learning style preference is found to correlate significantly and negatively with mobile EFL app use (-.58). Metaphoric learners tend to cope with data metaphorically; they try to add other

meanings to it. Therefore, by restricting users' educational content, the content of mobile EFL apps does not appeal to this type of learner.

Concerning the relationship between mobile EFL app use and class level in the Tunisian university EFL informal learning setting, based on the study findings, it can be concluded that the variable of class level did not affect mobile EFL app use. The absence of any statistically significant relationships between the two variables in question provides valuable insight into how mobile EFL apps is adopted and utilized across different class levels. In other words, the appeal to mobile EFL app use is consistent across different educational grades in the Tunisian university EFL informal learning context. Learners from various class levels might find the mobile EFL apps equally appealing or unuseful, irrespective of their educational grade. The present study finding can also be explained by the fact that mobile EFL apps are not restricted to a particular academic level. These apps are versatile and cater to the diverse learning needs of different class levels. Added to that, such findings challenge the assumption that technology preference is based on educational grades. Learners across different class levels have the same levels of technology literacy.

Regarding the correlation between gender and mobile EFL app use, the present research failed to find any significant relationships between these two variables. The present study findings are in line with Nami's (2020) survey result but in contrast with Metruk's (2020). Such a finding is an interesting one as it can provide insights into how gender deals with technology adoption and language learning and more specifically with mobile EFL app usage. Based on the study finding, it is safe to say that in the Tunisian university EFL informal learning context, mobile EFL app use is gender neutral. This could imply that both male and female students are equally willing to use mobile EFL apps. The absence of gender-related differences in mobile EFL app use challenges gender stereotypes. Historically speaking, in the context of technology usage, it has been believed that males are more tech-savvy. Hence, the present study findings reflect changing social norms. In the Tunisian university EFL informal learning context, both genders are equally involved in mobile EFL app use. This finding could also suggest that in the Tunisian context, societal factors, such as familial support and cultural attitudes towards

technology might not vary based on gender. It is worth mentioning that due to such inconsistency in results, more research should be carried out to shed more light on the issue.

Conclusions and Implications

Recently, educational apps and more specifically mobile EFL apps have proliferated at an impressive rate achieving popularity among learners all over the world. As it is considered a new phenomenon, it needs further attention and research examination. Then, this study was carried out within the field of psycholinguistics to scrutinize the linkage between language learning style preferences, and mobile EFL app usage in the Tunisian EFL informal setting. Also, it investigated whether there are any class levels or gender-related differences in mobile EFL app usage. Thus, the survey considered the role of cognitive variables: namely, language learning style preferences and learners' demographic backgrounds: namely, class level, and gender, in mobile EFL app usage. The present study advocated that focusing on learners' individual differences deepens our understanding of variations in mobile EFL app usage and ultimately, EFL learning outcomes.

The key findings of the present study are the following: first, clear and ample empirical evidence was proved for the postulation of the relevance of considering cognitive and demographic variables to grasp the full picture of mobile EFL app usage. Second, in the Tunisian EFL informal university context, it was empirically proved that there were certain learning style preferences were more conducive to using mobile EFL apps effectively. More precisely, the introvert style preference was the strongest predictor of mobile EFL app use. Then, came in order the visual, literal, auditory, tactile, and particular style preferences. In contrast, the extrovert and metaphoric style preferences represented inhibiting factors for mobile EFL app usage. Third, class level and gender were proved to have no significant correlation with mobile EFL app usage as the two hypotheses concerning the linkage between class level, gender, and mobile EFL app usage were proved null. Thus, the conclusion that can be drawn from this study is that variation in mobile EFL app usage is accounted for by learners' language learning style preferences.

In light of the study findings, it is recommended that before creating and designing a mobile EFL application, it is highly important to take into consideration users' individual

differences: namely, learners' language learning style preferences. In other words, Educators and mobile EFL app designers should consider the instructional design aspects of the apps to cater to the users' individual language learning style preferences. Put differently, mobile EFL apps should be tailored to the users' different language learning style preferences. In that way, mobile EFL apps will be appropriate, prove effective, reach a larger number of users worldwide, and achieve, then, productive EFL learning outcomes.

This research contributes to providing valuable empirical insights regarding Tunisian university students' use of mobile apps for EFL learning outside the classroom context. The current survey establishes empirical evidence for the direct role played by students' language learning style preferences in determining learners' willingness to use mobile EFL apps. Ultimately, the study contributes to the enhancement of EFL informal learning by directing mobile EFL app designers and educators to develop appropriate methods and approaches in mobile EFL app design to enable a broader range of EFL learners to use such apps, benefit from them, and hence improve their EFL achievement.

The current study was subject to two limitations. The first potential constraint was the rather small sample size: a total of 180 university students filled in the study questionnaire. Such limitation makes the findings difficult to generalize to a larger population. Despite the challenge that it represents, it would be of vital importance that further similar research should be conducted involving a larger sample of Tunisian university students possibly employing participants from other institutions and other departments. Second, although the data gathered from the self-report questionnaire on language learning style preferences are found to be reliable, a fellow up interview is recommended to investigate students' language learning style preferences in greater depth.

Research exploring Tunisian university students' use of mobile apps for EFL learning is scarce. Much remains to be explored and revealed in this area. The current research provides the impetus for further investigation in this field of research. Mobile EFL app use is a new phenomenon that needs more investigation. Researching the influence of users' individual differences on mobile EFL app use could be beneficial and would ultimately generate more knowledge and create a better understanding of the issue in question.

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