Impact of ELSE Game-based English Vocabulary Learning App on Iranian EFL Exceptional Students' Vocabulary Learning: EFL Professionals and Computer Experts' Evaluation in Focus

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Abstract

This research study aimed to develop a mobile app to enhance exceptional students' English vocabulary learning and to evaluate the Exceptional Student Learning English (ESLE) app, mainly from exceptional students' perspectives and different experts' perspectives. The ESLE app, an interactive mobile game, was developed using multiplatform and the digital game-based learning instructional design model. In the first stage of the study, 40 exceptional students with intellectual and physical disabilities were selected and assigned non-randomly to an experimental and a control group (20 in each group); they were all grade 7th to 9th junior high school students. The experimental group received vocabulary instruction through the ELSE app, and the control group was taught conventionally. The groups were compared both before and after the treatment. The app was then analyzed according to the analytical framework of Hubbard (2011). To this end, 12 English teachers and computer experts were selected purposefully. Open-ended questionnaires were sent to 12 participants to collect the experts' feedback

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on the developed app. The study results showed that all exceptional students improved their vocabulary skills after engaging with the game-based app. The experts' feedbacks showed their positive attitudes towards using the ESLE app for exceptional students' English vocabulary learning. Findings have illuminative implications for many EFL teachers in applying an effective method in teaching new words to exceptional EFL learners. The study also offers implications for EFL material developers and application designers.

INTRODUCTION

All students exhibit differences from one another in terms of their physical characteristics and learning abilities. The physical characteristics and attributes and learning abilities of exceptional students differ from the norm to such an extent that they require an individualized particular education program and related services to benefit from education fully. Thus, an exceptional student is an inclusive term that refers to children with learning and behaviour problems, children with physical disabilities or sensory impairments, and children with superior intellectual abilities and unique talents (Cortiella & Horowitz, 2014).

With the development of technology and devices today, there is a change from desktop to android devices for mobility. New tools are capable of running game-based applications that are continuously growing. From the beginning of its existence, computer technology has been used for various instructional purposes, including language teaching (Trostle Brand, Favazza, & Dalton, 2012).

Numerous mobile applications are designed to support different aspects of second/foreign learning. It seems that Mobile apps are the ideal support for vocabulary learning (Walker, 2011). There is a new system related to gaming and learning, which is called game-based mobile learning (Yen, Wang, & Chen, 2011). This mobile game application for learning English vocabulary is a game utilized explicitly for learning, which is played on a multiplatform device. The main aim of this game-based app is to use interactive gameplay to enhance the motivation of exceptional students to improve the learning effectiveness and to gain more knowledge about the English topic (Goodman, Bradley, Paras, Williamson, & Bizzochi, 2006). Exceptional students are expected to learn the English alphabet and a new English vocabulary. The vocabularies are presented both in English and Persian because the target group is exceptional low-level students. The application was utilized by exceptional teachers or parents as a supplement or replacement tool in teaching English, and it is easy to use without environmental limitations.

Vocabulary learning plays an important role in developing future English concepts. However, statistics show that most of the exceptional students have difficulty with Basic English vocabulary skills. While considering students with an English vocabulary learning disability, the level of the problem with English vocabulary is more critical for these students compared to their friends without the disability.

Theory and empirical-based studies indicate that the English vocabulary disability centers on the conceptual understanding of meanings. Nevertheless, many students are not able to figure out the meaning and spelling of words. Research-based learning vocabularies are essential because of the challenges exceptional students have in this area and the importance of vocabulary to academic success. Research about vocabulary learning and students with disabilities is an issue of concern because it is well known that exceptional students have deficits with vocabulary (Accardo, 2015). While technology has well-documented use in general education classrooms, it also presents many advantages for exceptional students. Therefore, in classrooms that consist of exceptional students, a mobile app can maximize educational opportunities and improve outcomes (Jenson, Taylor, & Fisher, 2011).

Based on what was stated above, the following research question was addressed in the present study:

RQ1: *Is there a significant difference in vocabulary achievement between exceptional Iranian EFL students who learn vocabulary through the game-based app and the conventional method?*

RQ2: *What are the strengths and weaknesses in utilizing ESLE game-based app for effective learning of English vocabulary from different experts' perspectives?*

It emerges that mobile-assisted instruction is essential for learners today. Using the technology, exceptional students can interact with learning vocabulary in the online environment (Ghobadi & Taki, 2018). In other words, the integration of mobile-assisted app in learning and teaching vocabulary provide further chances for exceptional students and exceptional teachers in the technology era (Salehi & Salehi, 2012). According to Kajornboon (2013), due to the widespread use of mobile apps, many areas of education, in general, and English vocabulary teaching and learning, in particular, have undergone a significant modification (Kajornboon, 2013).

English vocabulary learning is a vital part of foreign language learning. It is also essential for language teaching and is of paramount importance to language learners. Recent research indicates that teaching English vocabulary may be problematic because many exceptional teachers are not confident about the best practice in teaching English vocabulary (Berne & Blachowicz, 2008). Teaching English vocabulary is an essential part of learning a language as languages are based on vocabulary (Thornbury, 2006).

The spread of mobile app assists language teachers to increase English vocabulary learning beyond the classroom. In this regard, developing an excellent English vocabulary game-based app is very important in ensuring the exceptional student is motivated enough to keep playing the game until the game goal has been achieved (Gee, 2003; Hsu, Lee, & Wu, 2005). By integrating new technologies and English vocabulary learning theories and models, the utilization of mobile apps may assist exceptional students to create a learner-centred learning community (Sekiguchi, 2012). Therefore, the mobile app changes the traditional approach of teaching and learning English vocabulary and requires teachers to be more creative in customizing and adapting the mobile app.

English vocabulary apps are not a substitute for existing English vocabulary learning devices, but they serve as supplementary for learning vocabulary in a new environment (Gay, Stefanone, Grace-Martin, & Hembrooke, 2001). English vocabulary learning with an app is characterized by its potential for personalized, spontaneous, and informal learning. English vocabulary learning with mobile technology is more beneficial for learning English vocabulary outside the classroom (Ghobadi & Taki, 2018). Exceptional students may have the opportunity to learn English vocabulary by using mobile devices when they desire and where they are. Learning English vocabulary is considered an essential factor for success; providing a more helpful environment for exceptional students to learn English vocabulary is one of the strategic educational goals towards enhancing exceptional students' improvement and supporting English vocabulary learning needs (Kukulska-Hulme & Shield, 2008).

The use of the English vocabulary app turns out to be well aligned with educational goals such as promoting learning opportunities, improving student achievement, supporting learning needs and learning styles, and provides authentic materials for the students (Kukulska-Hulme, 2009).

The ESLE application is one of the English vocabulary applications with many activities with new English words, pictures, and sounds. The exceptional students can even learn the lesson without any text and only through images and games; hence games are playing a significant role in learning through ESLE. ESLE has many games to teach English vocabulary, and most of them may improve English vocabulary learning. Learning vocabulary often seems to be of essential importance to the typical language learner (Zimmerman & Schunk, 2001).

METHODS

Design of the study

Because the primary purpose of this study is to determine the effectiveness of the ESLE app with the traditional method of English teaching, and whether the ESLE app is effective to teach English vocabulary to exceptional students having a problem with English vocabulary

learning from experts' perspective, a mixed-methods design was used.

Participants

This study's target group consisted of 40 exceptional students with intellectual and physical disabilities (20 in each group), grade 7th to 9th junior high school, and twelve English, psychology, and computer professors selected from Shahreza and Isfahan universities in summer 2020. The students were male and female, and their first standard language was Persian. The researcher was the instructor of two groups of game-based applications and a control group. To select exceptional students,

Instruments

The research instruments consisted of the ESLE app, and an open-ended questionnaire, and a semi-structured interview.

ESLE Application

To use the app, exceptional students had to download it from the ESLE application website and install it on their smartphone devices. An exceptional student had the opportunity to choose one out of 7 complete courses. After the exceptional students select which course they wish to learn, the app asks them to "select a course" from the list appearing before them. The app then inquires whether exceptional students already know anything about English vocabulary. If so, it provides the student with a

the researcher initially asked the teachers to determine appropriate students for the study.

Since it was impossible to include the whole population of professors, we selected 12 professors randomly from the department of English language, department of Psychology of Children with Special Needs, and department of computer from Shahreza and Isfahan universities. They were selected because they have special knowledge about the app's content, and they can download and install the chosen app. Most importantly, all of them have expressed that exceptional students need this app for improving English vocabulary.

pre-test. If the exceptional student is new to the language, the student must start with the English alphabet. It is safe to say that ESLE is a straightforward and straightforward app to use. Without any more questions or even registration for the course, the exceptional students can go right into their first lesson by tapping *Start*. The activities are of many types, for example, matching activities, pairing activities, listening activities, and spelling activities.

Open-ended Questionnaire

To investigate the research question, we designed one questionnaire administered to 12 experts to collect information about the parent's perspective on the ESLE app. The main endeavour behind this questionnaire is to gather data to answer the research question.

The questionnaire consisted of 15 questions about the target learner, content and focuses of the app, pedagogical features, and methodological approaches based on Hubbard's framework. The Open-ended questionnaire was the primary means of qualitative and quantitative data collection in this study to gain professors' feedback on the experiences of using the ESLE app and their perceptions about the app.

Table 1
Hubbard's Evaluation framework

■ Content/Design Target	■ Procedure & Approach	■ Technological Features
·**Target Learners**	·**Activities**	·**Multimedia**
- age	- Instructional	·**The exploitation of mobile potential**
- interest	- Individual	- Other Functions
- proficiency level	- Facilitative	- Web 2.0 features
·**Content**	·**Focus**	
- topic	- Linguistic focus	
- organization	- Language skill focus	
- content size	- Sociolinguistic focus	
·**Learning styles**	·**Methodological approaches**	
·**Learning strategies**		

Semi-structured interview

With a semi-structured interview, it was possible to ask follow-up questions to get more valuable information. The semi-structured interview used in this study was related to the ESLE app. The research questions were translated from English to Persian, the national language of Iran, and the medium of instruction in all primary schools. For this reason, all participants were interviewed in Persian for better communication between the interviewer and the interviewees.

Data Collection Procedure

Two weeks before the study's commencement, the Key English Test (KET) as a general English proficiency test was administered to examine whether the learners were homogenous in their general English abilities. The criterion for selecting homogeneous students was a proficiency score ±1standard deviation above and below the sample mean.

Then, a vocabulary pre-test was administered to the groups. A vocabulary test from the content of textbooks of 7th to 9th grades was designed to examine the participants' knowledge of vocabulary items. The test included 20 items in multiple-choice format. Considering the validity, the test had been expert-judged by three experts. The panel of experts reported the test as acceptable. The reliability of the test was reported based on the results of Cronbach Alfa. The scores obtained from the vocabulary pre-test showed that the students were homogenized in vocabulary knowledge, and their levels in vocabulary were the same and without significant differences. After the pre-test, students were divided into two groups of game-based application group and the conventional group. Then, the researcher collected consent from families with students in the after-school program.

Subsequently, as for experts' perspectives, the ESLE app was downloaded and installed. They were told to use the apps whenever they want and wherever they are for a week. However, to ensure that the participants could make a good judgment of the app based on sufficient using time, they were suggested to use the app for at least one week.

After one week, participants were asked to complete the questionnaire. In the open-ended questionnaire, participants were asked to write down three advantages and disadvantages of the ESLE app they have been using.

Then 12 professors were interviewed to elicit the needed information for the study. All of the participants were also interviewed via telephone to discuss their perception of using the ESLE English vocabulary learning app as a supplementary tool and the advantages and disadvantages of the app. Their feedback was noted down during the mobile interview and reviewed immediately afterwards. The allotted time for the interview was approximately 15 minutes for every expert. The questions of each interview were formulated based on the main research questions.

Furthermore, after collecting the interview data, they were analyzed manually. The interviewees' answers and suggestions and the pros and cons of the application were translated into English for further analysis. Then, the collected information was reported in the form of extracts. Data were analyzed by coding for themes in line with the research questions.

RESULTS

Using game-based English vocabulary for learning is very popular nowadays because it is portable with high mobility. With growing interest in the game-based app, these programs are now being used for education. To motivate exceptional students to learn English vocabulary and facilitate learning for them even if they are on-the-go or outside the school, ESLE, a game-based mobile English vocabulary learning app was designed and developed in this study. However, with the appropriate design, the game-based app can be parents' and teachers' teaching aids, and exceptional students' English vocabulary

learning can be multiple.

In this study, the designed game-based English vocabulary app aims to make exceptional students be more motivate and active in learning English vocabulary. The teacher controls the exceptional students learning progress and reviews what they have learned, and this corresponds to the benefits of using technology in English language learning. Hence, the study designs the English vocabulary app, which is expected to help exceptional students improve their English learning and enhance their English ability. With this game-based English vocabulary app, exceptional students can choose when and where to learn. The whole process is student-centered learning.

Exceptional students learning English with ESLE app

The first research question was an attempt to investigate any significant difference in vocabulary achievement between exceptional Iranian EFL students who learn vocabulary through the game-based app and exceptional Iranian EFL students who learn vocabulary in the conventional method. To this end, a pretest and a posttest in vocabulary were run to the learners in both groups. Table 2 shows the results of the pretest in the groups under study.

Table 2

Descriptive Statistics of Pretest

Group Statistics					
Groups	N	Mean	Std. Deviation	Std. Error Mean	
Experimental	30	11.1000	5.46683	.99810	
Control	30	10.9333	2.61209	.47690	

Table 11 reveals that the mean score of the exceptional students in the treatment group was 11.1 (SD = 5.4). Besides, the mean of the exceptional students in the control group (SD = 2.6) was 10.9. As it is clear from the above Table, the means of the groups were slightly different. However, the differences among groups needed to be tested statistically, thus, the assumption of parametric test needed to be tested. One of the assumptions is that the data should be normally distributed. Table 3 shows the test of normality of pre-test in vocabulary between the groups.

Table 3

Kolmogorov-Smirov Tests of Normality in Pretest

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pretest Control	.138	30	.200[*]	.939	30	.229
Pretest Experimental	.128	30	.200[*]	.962	30	.475

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

a. Lilliefors Significance Correction

The significance level in the control group (df = 30) is .229, and the significance level for the experimental group (df = 30) is .475. As both of the significance levels are higher than 0.05; thus, the data is normally distributed. Again, the above tables are not enough to ensure the homogeneity of the groups under study before the treatment. So, there is a need for running an independent sample t-test to investigate the difference between the two groups in the pre-test of vocabulary. The result of the t-test of homogeneity at pretest is illustrated in Table 4.

Table 4

Independent Samples Test of Pretest

	Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Equal variances assumed	22.444	.740	.151	58	.881	.16667	1.10618	-2.04760	2.3809
Equal variances not assumed			.151	41.585	.881	.16667	1.10618	-2.06636	2.3996

According to the above table, Levene's test of the equality of variances is F=22.44 with a significant level of .740. As for the equal variances, the results show that the significant level of .740 is higher than 0.05. Since the p values in the vocabulary pretests of both groups are higher than the significance level (.05), it can be concluded that the data is normally distributed. Figure 1 shows the bar graph of exceptional students' pretest in the experimental and control groups.
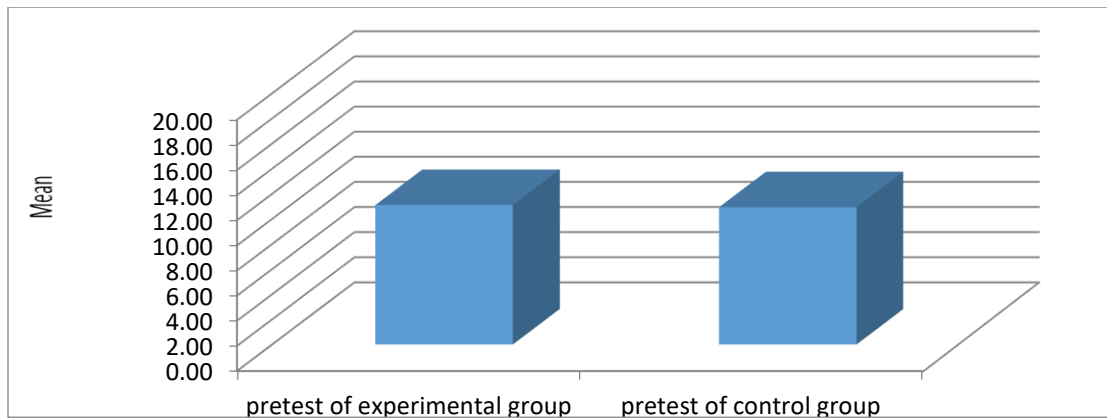
Figure 1. Pretest of Vocabulary

After treatment, a posttest on vocabulary was conducted between the groups under study. Table 5 presents the results of descriptive statistics of the posttest.

Table 5

Descriptive Statistics forPosttest

Group Statistics					
Groups	N	Mean	Std. Deviation	Std. Error Mean	
Experimental group	30	18.8667	1.33218	.24322	
Control group	30	14.7000	1.93248	.35282	

Table 5 reveals that the mean score of the exceptional students in the treatment group or game-based app group was 18.8 (SD = 1.33). Besides, the mean of the control group (SD = 1.93) was 14.7. Similar to the procedure conducted to the pretest, there was a need to run a homogeneity test for the vocabulary posttest. Table 6 shows the test of normality for the vocabulary posttest.

Table 6

Tests of Normality for Posttest

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Posttest Control	.128	30	.200*	.962	30	.575
Posttest Experimental	.128	30	.200*	.962	30	.489

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

a. Lilliefors Significance Correction

The significance level for the control group (df =30) was .575. The significance level for the experimental group (df =30) was .489. The above Tables are not enough to make sure the groups under study were different after the treatment. So, there was is a need for running a t-test. Based on the research question, the null hypothesis claimed that there is no significant difference in vocabulary achievement between exceptional Iranian EFL students who learn vocabulary through the game-based app and exceptional Iranian EFL students who learn vocabulary in the conventional method. As stated before, an independent t-test was run to explore the effectiveness of the game-based app on vocabulary learning of exceptional Iranian EFL students. The result is illustrated in Table 7.

Table 7.

Results of T-Test in Vocabulary Learning

	Levene's Test for Equality of Variances		t-test for Equality of Means							
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	1.405	.003	9.723	58	.000	4.1666	.42853	3.3088	5.0244
Equal variances not assumed			9.723	51.48	.000	4.1666	.42853	3.3065	5.0267

According to the above table, Levene's test of equal variances is F = 1.405 with a significant level of .003. The results also represent the t-test value of 9.72 with a significant level of .000. As for the equal variances, the results show that the significant level of 0.003 is less than 0.05. Therefore, the null hypothesis stating that there is no significant difference in vocabulary achievement between exceptional Iranian EFL students who learn vocabulary through the game-based app and exceptional Iranian EFL students who learn vocabulary in the conventional method is rejected. It can indicate that there is a significant difference between the two groups in vocabulary learning. Hence, it is concluded that the exceptional Iranian EFL students who received game-based app instruction outperformed the group who received traditional vocabulary instruction. Figure 2 visualizes the results.
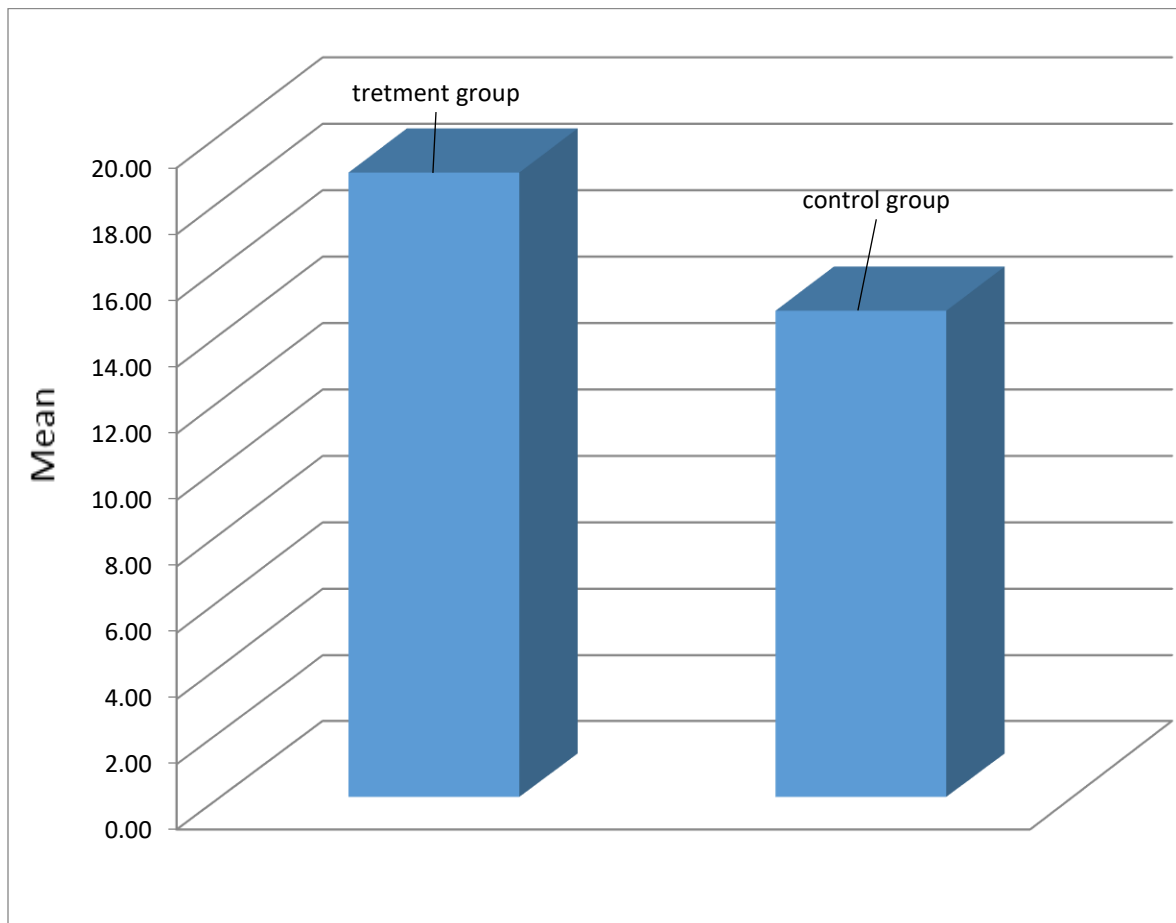
Figure 2. Groups' Performance in Vocabulary

**Features of ESLE app for English vocabulary learning**

The second research question of this study dealt with the evaluation of ESLE game-based app for effective learning of English vocabulary

from different experts' perspectives. Findings to this question are presented below.

Target learners

In the overwhelming majority of the apps for English vocabulary learning the target users are general students and all apps were designed for general learners. There aren't any apps designed for exceptional students. ESLE app is targeted explicitly at exceptional students. Regarding the assumed English proficiency levels of the target users, the ESLE app is designed for exceptional students from low level to beginner.
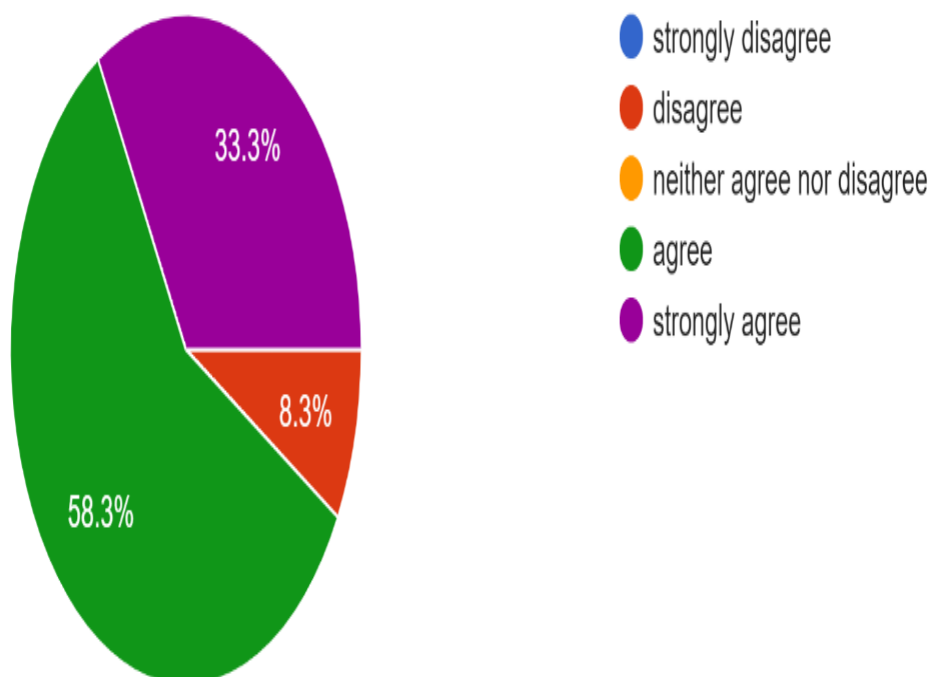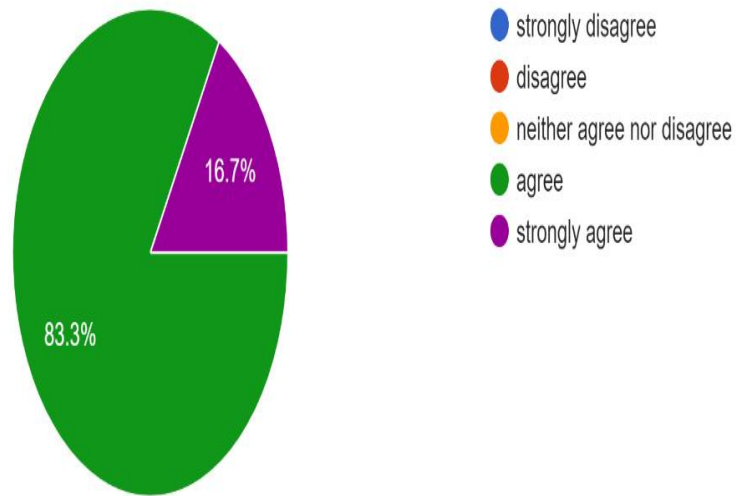

Figure 3. Evaluation of participants about the target group of ESLE app

Content and focus

The organization and study characteristics have distinctive patterns in line with language skills.

Most of the apps need cognitive learning styles like learning styles of recognition, recall, and comprehension, instead of socio-cognitive.
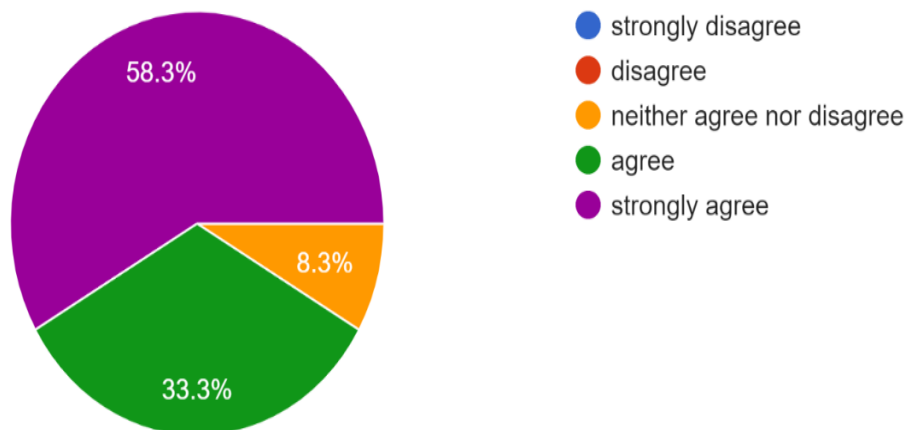
12 responses

Figure 4. Evaluation of ESLE content

The ESLE application provides a list of tests and games for enhancing learner's comprehension and self-checks. The most dominant organization type in the app is the word list with its definition and picture.

Noticeably, the app has topics that probably provides users with more context and motivation.

Figure 5. Participants comment about independent and collaborative learning situation of the ESLE app

The primary focus of the ESLE app is on vocabularies. This application has activities for vocabulary learning. Other linguistic knowledge, such as spelling or pronunciation, is also supported in this app. The majority of vocabulary apps were designed for individual learning, but the ESLE app was made for collaborative learning. This app has excellent facilitating devices, such as pronunciation, poems, graphics for visual aids, and bilingual translation.
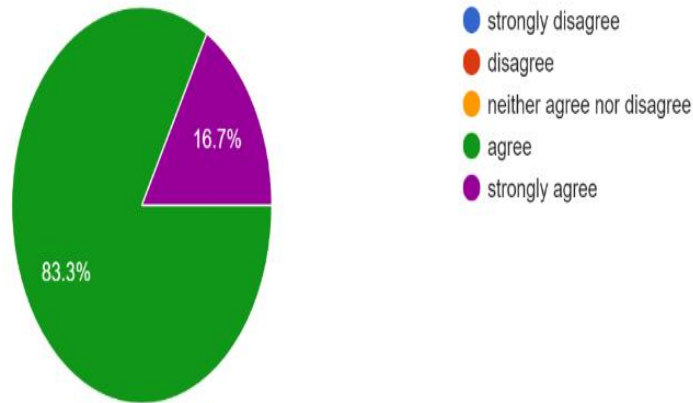

Figure 6. Use of multimedia

Pedagogical features

Instructional activity and individual features of the ESLE app are demonstrated in each lesson.

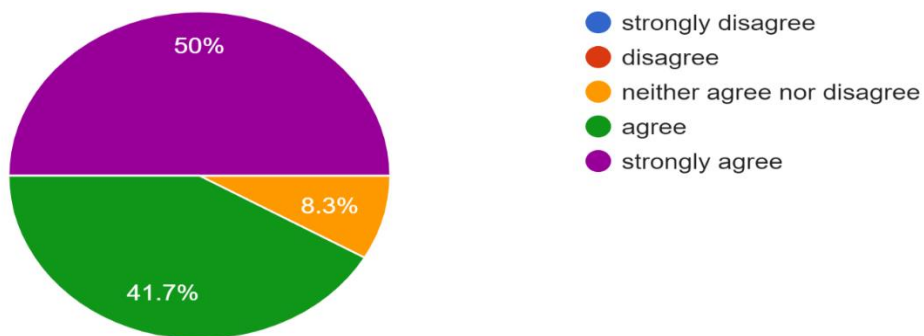The type of instruction and exercises of the ESLE app are mostly drill and practice.

Figure 7. Participants comments about the comprehensive and experiential features of the ESLE app

The ESLE app provides a pretest for exceptional students to examining their English vocabulary outcomes and a post-test to track their progress. ESLE app is in the form of encouraging exceptional students to learn English vocabulary correctly to pass. The activities of the ESLE app are interactive. They seem similar to the concept of mobility of MALL (El-Hussein & Cronje, 2010). Almost half of the activities offer a new game with recognized instruction.

Figure 8. Instruction of each lesson

Most of the activities are learner's recognition of text or voice. There was an attempt to encourage or facilitate collaborative learning. However, many activities are

facilitative for independent language learning by providing scaffolding devices such as words, pictures, spell checkers, and pronunciation. From the main page, learners can either start

learning the list of words or search for specific categories. Each lesson presents each word on one page with a definition, a picture, and an audio file for pronunciation: American English.
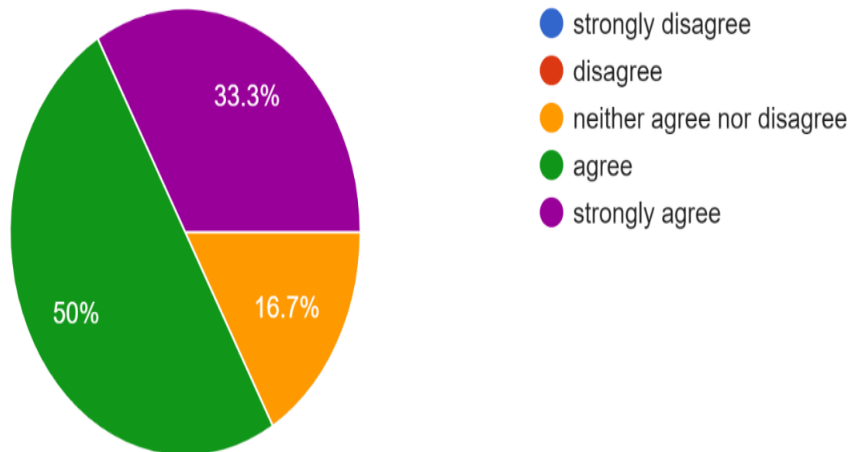

Figure 9. The ESLE app uses different images, sounds that attracts exceptional students

Methodological approaches

This app has a recognizable methodological approach. The most frequently employed

approach is task-based. It was analyzed that the most commonly used multimedia feature was sound, picture, and animation.
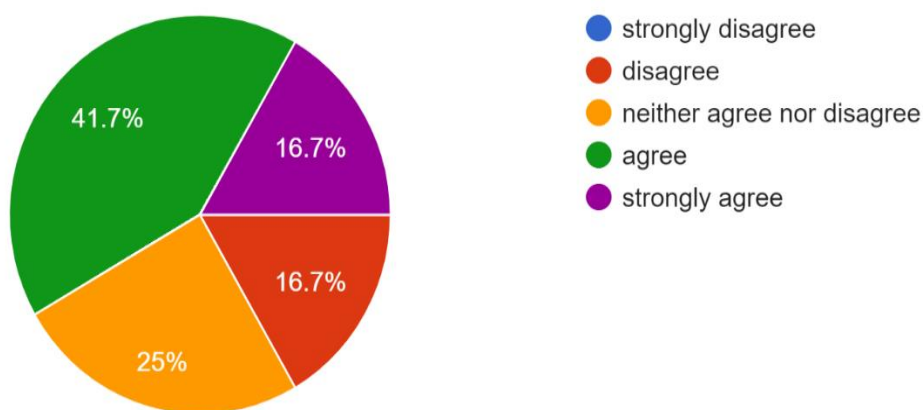

Figure 10. The ESLE app uses a task-based approach

Learning English vocabulary with ESLE game-based app- experts evaluation of the app

Experts evaluation of the app were analyzed in two sections, which are participants' comments on the ESLE app and their perception of vocabulary English learning through the ESLE app.

Experts comments on the ESLE app

After one week, the participants seed to have many comments on the ESLE app as assistance for English vocabulary learning. Nearly all participants believe that using the ESLE app is an innovative approach to vocabulary learning for exceptional students.

Firstly, the participants found it very flexible to use the ESLE app for exceptional students learning English vocabularies; they can easily access the learning materials anytime and anywhere. Exceptional students can either use it as supplementary learning material for improving English vocabulary or as a study reference when they need it.

The participants found it easy to learn vocabulary. In a word, it is flexible and easy to handle. The respondent's reports show that the ESLE app provides exceptional students with ubiquitously accessible and flexible resources and activities.

The participants like using the ESLE app for learning English vocabulary because this app fitted the exceptional students' needs well.

They could choose different lessons, and they can play different games that the app provided.

Participants' comments reflect that the ESLE app can provide opportunities for individualized and personalized learning. Exceptional students themselves can decide what they want to learn. Therefore, it can enhance exceptional student's vocabulary learning motivation and encourage vocabulary practice and skills improvement. The ESLE for learning English vocabulary was considered engaging and playful.

Table eight (8) shows that more than half of experts, about 91.6 %, believe that the lower-level and beginner exceptional students can use the ESLE app for learning English vocabulary. However, 8.3% of responses have disagreed. Additionally, almost all the experts (strongly agree 16.7%, agree 83.3%) approve the idea that the topic of each lesson in the app provides useful vocabularies for exceptional students. Interestingly, all experts strongly agree 50% and agree 41.7, favor the idea that the ESLE app uses comprehensive and experiential English vocabulary learning. As the findings in the table above illustrate, about 58.3% of experts indicate that the ESLE app provides an independent and collaborative vocabulary learning situation; however, the rest experts, 16.7% neither agree nor disagree and 8.3% show their disagreement with the idea.

Additionally, many experts (strongly agree 33.3% and agree 58.3%) believe that the ESLE app activities provide facilitative and instructional vocabulary resources.

Table 8

Experts comments on the ESLE app

| Question	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
1. The lower-level and beginner exceptional students can use the ESLE app		8.3%		58.3%	33.3%
2. The topic of each lesson in the app provides useful vocabularies for exceptional students				83.3%	16.7%
3.ESLE app uses comprehensive and experiential English vocabulary learning			8.3%	41.7%	50%
4. The ESLE app provides independent and collaborative vocabulary learning situation		8.3%	16.7%	16.7%	58.3%
5. The activities in the ESLE app provide facilitative and instructional vocabulary resources			8.3%	58.3%	33.3%
6.The ESLE app encourages vocabulary focus (spelling, pronunciation,)			8.3%	33.3%	58.3%
7.The ESLE app uses the task-based approach		16.7%	25%	41.7%	16.7%
8. The ESLE app uses different images, sounds, that attracts exceptional students			16.7%	50%	33.3%
9.It is easy to download and use the ESLE app.			25%	25%	50%
10.The ESLE app provides fun and a great way to learn English vocabulary.		8.3%	25%	66.7%	
11.Exceptional students have more opportunities to learn English vocabularies by using ESLE app			8.3%	33.3%	58.3%
12.Exceptional students' anxiety is reduced by using the ESLE app as learning supplementary.			8.3%	50%	41.7%
13.The ESLE app for vocabulary learning is engaging and playful.				66.7%	33.3%
14. The design of the ESLE is attractive and fascinating.				50%	50%
15.The ESLE app is very flexible and useful			16.7%	58.3%	25%

Yet, 8.3% of experts indicate his neutral position with this advantage. Moreover, the majority of experts confirm that the ESLE app encourages vocabulary focus (spelling, pronunciation); still, 8.3% of them take a neutral orientation. As depicted in the table, more than half of the experts, 58.4% show that the ESLE app uses the task-based approach. However, 25% of experts took a neutral position and 16.7% disagreed with the idea. As seen in the table, the experts agreed (strongly agree 33.3%, agree 50%) that the ESLE app uses different images and sounds that attract exceptional students. A high percentage of experts, about 75% (strongly agree 50%, agree 25%) who approve that it is easy to download

As it is clear from the above figure, 58.3% of the experts rated the app with a score of 5, and 33.3% rated it to be 4 as the highest score. Moreover, a small number (8.3%) rated it with the lowest score of 3. In general, more than half of the experts believed that the application improved exceptional children's ability I .

and use the ESLE app; however, a low percentage of experts 25% indicate their neutralization. Moreover, the majority of the experts, about 66.7%, believe that the ESLE app provides fun and a great way to learn English vocabulary. It is clear from the table that 91.6 percentage of experts think that exceptional students have more opportunities to learn English vocabularies by using the ESLE app.

On the whole, the participants had a positive attitude towards the ESLE app for learning English vocabulary. They believed that exceptional student vocabularies will improve after using this app. The average rating the participants gave on the chosen app was 4.16.

English learning in general and vocabulary learning in particular and they rated it with high scores of 5 and 4.
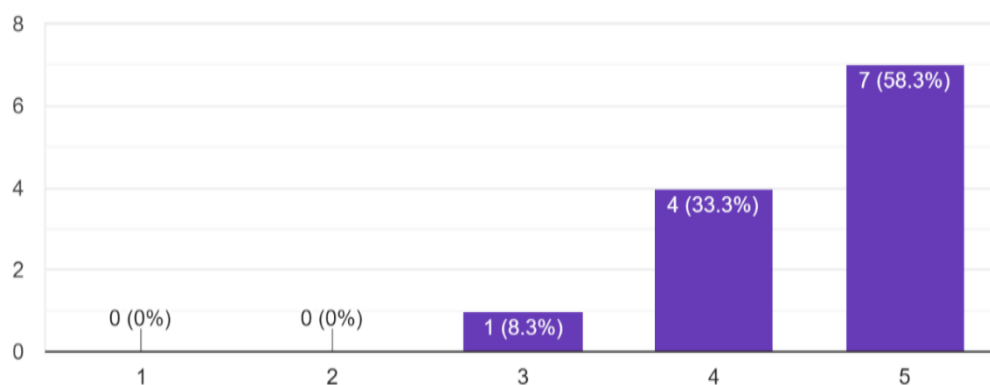
Figure 11. Rating the ESLE app

Advantages and disadvantages of the ESLE app based on expert's opinion

The experts had positive attitudes toward the application as follows:

-This application is better used for educational assistance along with textbooks and direct teaching.

-In general, because students prefer to use a mobile phone to a book, I think this program is more efficient than a book, but the pressure of the teacher to provide exercises and questions is high in using books.

-The program is very interesting.

-Learning was better if it was used to teach words in sentences.

-This program is suitable for basic learning of letters and words.

-If this program continues, it will be very effective in teaching the language of exceptional students.

DISCUSSIONS

The main objective of this study was to explore the role of ESLE, a game-based mobile English vocabulary learning app, on vocabulary performance of exceptional English students, and then this paper investigated the strengths and weaknesses in utilizing ESLE game-based app for effective learning of English vocabulary from different experts' perspectives in Isfahan province. The analysis of the data shows that exceptional students are actively using ESLE app for learning English vocabulary. Similarly, the analysis showed that all the experts who

-The application was complete and comprehensive, in my opinion, such games are interesting and motivating for children.

-This application can increase the motivation of students to learn vocabulary and stabilize the content with more understanding and comprehension, because the issue of scoring, motivates students on its own.

The disadvantage of this application is that the use of some content in English is not at the level of students and parents and this causes discouragement, but compared to other language learning programs, it has a higher quality of learning.

-It is very fun and motivating and students enjoy learning the language.

-It was good and convenient.

-Most students do not have the facilities to install this program or the ability to use this program alone.

-It is suitable for students' initial training.

participated in the study had positive attitudes towards the ESLE app. Also, the results indicate that exceptional students who have participated in this research show positive attitudes towards the adoption of the ESLE app as an innovative app that can actively engage them in enhancing English vocabulary skills. Moreover, all exceptional students use handheld mobile to support and facilitate learning the English vocabulary process. Surprisingly, 58.3% of experts confess that the organization and study characteristics have distinctive patterns in line with language skills. The most dominant organization type in the app is the word list with

its definition and picture. In this respect, it is worth noting that the ESLE application provides a list of tests and games for enhancing learner's comprehension and self-checks, mainly in EFL vocabulary teaching and learning. In terms of determining instructional activity and individual features of the ESLE app, the results indicate that the type of instruction and exercises of the ESLE app are mostly drill and practice, for example, listening, repeating, and comparing. The experts indicate that mobile technologies are significant in making teaching and learning easier, they show a strong willingness to implement them in classroom activities to enhance the vocabulary learning skills of exceptional students. More importantly, the findings also show that both exceptional students and experts demonstrate their eagerness to adopt the ESLE app for English vocabulary learning. The ESLE app gives the English language teacher the opportunity to blend the use of mobile technology with their traditional teaching for their exceptional students. According to Stockwell and Hubbard (2013) "It is crucial, however, for exceptional students, teachers, policymakers, and employers to be keenly aware of the pedagogical, physical, and psycho-social issues involved in the successful implementation of MALL for English vocabulary learning" (p. 11). The results of the current study are in harmony with Gass and Selinker (as cited in Turgut & Irgin, 2009) that maintained the natural repetition in games allows a language learner to be continuously exposed to the target language, creating more

opportunities for acquisition to occur. Furthermore, the results are congruent with DeHaan, Reed, and Kuwada's study (2010) that tried to explore the effects of the music-video game on second language vocabulary recall of Japanese EFL learners. Their justification for the effectiveness of games on language learning was the interactive nature of the games or "the extent to which users can participate in modifying the form and control of a mediated environment in real time" (p. 75). They believed that the games incorporate various pedagogical elements to both entertain and train the player, and when a degree of interactivity between players and these elements takes place, learning happens.

The results of the current study are in line with Donmus's study (2010) who researched to achieve information about using educational games with the support of social networks in foreign language education. The result of his study showed that students who continuously interacted with Facebook benefited from educational games. Besides, the results are congruent with Sudarmilah, et.al. (2020) who tried to make it easier for children to understand and foster vocabulary acquisition as well as to develop children's motivation in the learning process as this learning media is designed with an attractive and interactive interface. Edugame application which emphasized an android-based visual form was established as a support to the development of children's speech and reading skills. The development method used in designing this application is the prototyping model which consists of the needs analysis,

prototype design, prototype evaluation, program writing/coding, program testing, program evaluation, and implementation. Edugame as vocabulary learning media for deaf children promotes an interesting and interactive learning process to improve children's understanding of words in learning vocabulary.

CONCLUSION

This paper proposed the self-developed ESLE game-based app for exceptional students to use as a supplementary tool in the classroom. This combined learning tool and game allows exceptional students to either learn or retain words they choose or words the app decides for them. This fun vocabulary app givesexceptional students definitions and tiles with combinations of several letters on them that you have to arrange into the new words. Based on the results, it was revealed that this app helped the exceptional student learn English words accurately and naturally. This app also assisted the exceptional students to check their learning outcomes and progress using an additional test. This app provided a comprehensive, in-depth word database, multiple words, realistic analysis, and audio pronunciations for unfamiliar words. In fact, games are motivating for EFL learners and as Uberman (1998) pointed out, games are a way to help students not only enjoy and entertain with the language they learn but also to practice it incidentally. Based on the results, it can be concluded that some techniques are effective in comprehension and production and the learners should be aware

of the nature of different instructional strategies to trigger their own learners' interest in language learning and production.

In the light of the findings, it is evident that using games may promote motivation and language acquisition. Then, it can be concluded that different instructional techniques can give different results, for this reason, it is suggested that EFL teachers, as well as EFL learners, should choose the best technique for teaching and learning a second language skill or sub-skill.

Generally speaking, this study proved that the ESLE app, as a venue for learning, could cater to the individual needs of exceptional learners and give them a feeling of security. In the context of Iranian students, the ESLE app as a platform for social media has proved to be favored, and also because of its ubiquity and ease of access learners can enjoy the comfort of using it. In sum, the findings of the present study can have significant implications for many EFL teachers in applying an effective method in teaching new words. They can use the games in their classes as a supplement to their courses. The present research can also offer implications for EFL exceptional students in that, instead of the traditional rote learning of words, they can try a mixture of different strategies like ESLE application in their own learning experiences. Using the ESLE application can help pupils to enjoy learning and the learning experience becomes more pleasant, entertaining, and full of fun. The course designers can also benefit from the findings of this study. They can supplement

their courses for young learners with instructional strategies such as games as entertainments and tasks or they can transfer the gist of what has been taught in a lesson to the students to teach the points, from grammar to vocabulary, with the assistance of meaningful

learning that may happen in dialogue games. The results are applicable for developing teacher education and in-service training, as teacher competencies in game-based learning will be more integral to teachers' professional knowledge and skill repertoires.

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