

Electronic dictionaries as language learning tools for Iranian junior high school students

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Abstract

The use of electronic dictionaries for learning English vocabulary items has attracted tremendous attention recently (Dashtestani, 2013). While the majority of research studies have focused on adult learners at universities, this study compared English as a foreign language (EFL) teachers' and students' perspectives on students' use of electronic dictionaries at a junior high school level. Participants who took part in the questionnaire study were 211 junior high school students and 20 junior high school teachers. A total of 60 junior high school students and 4 junior high school teachers took part in the interviews as well. In general, the teachers and students had positive views about the use of electronic dictionaries for learning EFL vocabulary items, and there were both differences and similarities between the teachers' and students' attitudes. Regarding reasons for which EFL students made use of electronic dictionaries, the teachers and students perceived that the EFL teacher plays the most important role in comparison to other factors/individuals such as the family, the Internet, and students themselves. Findings also indicated that the students did not know different types of electronic dictionaries and did not make use of them frequently. Some perceived challenges, including the restrictive regulations of schools and the lack of access to the Internet and digital facilities, were identified and discussed. The findings can have implications for renewing vocabulary learning techniques and tools used by EFL teachers and students, and thus, pave the way for normalizing the use of electronic dictionaries and the implementation of computer-assisted language learning (CALL) in EFL courses for junior high school students.

Keywords: Electronic dictionaries, junior high school, CALL, facilities, EFL teachers, technology

Introduction

Despite educational and institutional challenges and limitations, technology has integrated itself into teaching and learning milieus (Groff & Mouza, 2008; Peluchette & Rust, 2005; Rickman & Grudzinski, 2000; Schmid, 2014). In language learning settings, the use of technology and incorporation of computer-assisted language learning (CALL) is booming, and this is evident in a large amount of research carried out in this field (Abraham, 2008; Garrett, 2009; Levy & Stockwell, 2007; Nakata, 2011). CALL has supported learners in terms of motivating them to learn foreign languages, having access to language input, learning in more interactive environments, and providing quality feedback. As for English as a foreign language (EFL) teachers, CALL has paved the way for a more effective course organization and interaction with many learners (Golonka, Bowles, Frank, Richardson, & Freynik, 2014). Moreover, the suitability of various learning technologies for language learning has been

examined in recent years (Ariew & Ercetin, 2004; Chiu, Liou, & Yeh, 2007; Dashtestani, 2016; Lenders, 2008).

One important field of CALL is a vocabulary learning through the use of technology and software tools. This is obvious since a large body of research has been conducted in relation to vocabulary learning and technology use (Al-Jarf, 2007; Lin, 2010; Lin, Chan, & Hsiao, 2011; Lin, Hsiao, Tseng, & Chan, 2014; Rusanganwa, 2015). While a wide spectrum of software tools and computer applications have been designed and used for English vocabulary learning (e.g., Müller, Son, Nozawa, & Dashtestani, 2018), investigating the use of electronic dictionaries for learning EFL is a significant research line in the literature of CALL (Golonka et al., 2014). Several studies have been undertaken in relation to the use of electronic dictionaries and improving reading comprehension, comparison of electronic dictionaries and paper dictionaries, the rate of word retention, and the use of electronic dictionaries (Golonka et al., 2014).

The topic of students' and teachers' attitudes towards electronic dictionaries as learning tools has become an important research line recently (Dashtestani, 2013). The majority of studies on attitudes towards electronic dictionaries have focused on university students and teachers, while the use of electronic dictionaries at the school level is lacking. Therefore, the purpose of this study is to delve into the attitudes of Iranian junior high school students and teachers towards the use of electronic dictionaries for learning EFL.

Literature review

Previous research has indicated that electronic dictionaries play an important role in EFL vocabulary learning. For example, in a review of the effect of electronic dictionaries on vocabulary learning, Töpel (2014) reported that the findings of research studies on the use of electronic dictionaries show that looking up different kinds of information in electronic dictionaries enhances the retention of vocabulary items. Mohamad, Rashid, and Mohamad (2017) emphasized the importance of the use of electronic dictionaries for vocabulary learning due to their ubiquitous access and application. Fageeh (2014) discussed that the use of electronic dictionaries was beneficial and contributed to students' vocabulary learning. With regard to short-term and long-term vocabulary learning, Rezaei and Davoudi (2016) concluded that the use of electronic dictionaries can have a significant effect on EFL students' vocabulary learning. Likewise, having used an experimental study, Amirian and Heshmatifar (2013) suggested that electronic dictionaries can enhance EFL students' vocabulary learning and retention.

Concerning EFL students' use of electronic dictionaries and their application in the classroom, several studies have been conducted in the context of EFL learning. For instance, Weschler and Pitts (2000) conducted a study on EFL students' use of electronic dictionaries. They suggested that the Japanese EFL students used their electronic dictionaries in the same way they utilized their print dictionaries. The study also showed that electronic dictionaries were useful for more autonomous students and those who needed to receive more input. Koyama (2015) undertook a research study on the effect of strategy training on EFL students' use of electronic dictionaries. It was demonstrated that the attitudes of the learners were fostered after receiving strategy training on the use of electronic dictionaries. In addition, the use of strategy training improved students' reading comprehension ability. Koyama and Takeuchi (2003) analyzed Japanese students' use of electronic and paper dictionaries for EFL learning. The majority of students had positive attitudes towards the use of electronic dictionaries but perceived that paper dictionaries provided more information for them. Chen (2010) carried out a study on the use of electronic dictionaries and EFL learning. It was reported

that the use of paper dictionaries and electronic dictionaries can have different benefits and drawbacks. Furthermore, it was claimed that regarding comprehension, production, and retention of vocabulary, there was no significant difference between the use of paper dictionaries and electronic dictionaries, while the speed of electronic dictionaries was reported to be higher.

Dashtestani (2013) analyzed EFL teachers' and students' attitudes towards using electronic dictionaries for learning EFL. A mixed-methods design using both questionnaires and interviews was used in the study. The results indicated that both EFL teachers and students had positive attitudes towards the use of electronic dictionaries for learning EFL. The students preferred electronic dictionaries over paper versions of dictionaries. In a similar study, Alhaisoni (2016) assessed teachers' and students' attitudes towards the use of electronic dictionaries. He reported that Saudi students of EFL preferred bilingual dictionaries over monolingual ones. The students used online dictionaries and Google Translate quite frequently. Frequent training provided by teachers for students appeared to be an important measure towards normalizing the use of electronic dictionaries in EFL courses. It was also revealed that the majority of students checked the definitions and spellings of words and paid little attention to some other properties such as phonetics and parts of speech. The teachers also held positive attitudes towards the role of using electronic dictionaries in improving learning and teaching English. Boonmoh (2010) analyzed teachers' attitudes towards the use of electronic dictionaries in Thailand. The findings suggested that the teachers did not make use of electronic dictionaries and were not familiar with their use for and effect on language learning. Midlane (2005) assessed EFL teachers' attitudes towards students' use of electronic dictionaries. The teachers perceived that some students used electronic dictionaries more frequently than the other ones. The perception of inadequate and ineffective definitions of electronic dictionaries was a drawback reported by the participants of the study.

Concerning the limitations of using electronic dictionaries, Dashtestani (2013) reported that Iranian students and teachers perceived obstacles to the proper use of electronic dictionaries, including the absence of training for the effective use of electronic dictionaries, distraction, the use of inappropriate electronic dictionaries, and the lack of classroom-based facilities to use electronic dictionaries in the EFL class. Mohamad, Rashid, and Mohamad (2017) pointed out that electronic dictionaries have some limitations such as the limited Internet accessibility in order to use electronic dictionaries, the lack of credibility of some electronic dictionaries, and the incomplete definitions and examples provided by electronic dictionaries. Jin and Deifell (2013) also discussed that students believe that electronic dictionaries lack reliability and that the quality of electronic dictionaries is not the same across different languages. Stirling (2003) suggested that the use of electronic dictionaries for EFL learning might have some shortcomings. These shortcomings include the distractive nature of electronic dictionaries for classroom use, incredible and incomplete definitions and explanations of vocabulary items, poor access to suitable electronic dictionaries, and the lack of providing examples for vocabulary items. Chen (2006) examined the use of hand-held electronic dictionaries by Chinese EFL learners. The findings suggested that electronic dictionaries were perceived to have inadequate information and were not updated enough.

With regard to the measures and strategies to facilitate the use of electronic dictionaries in EFL contexts, it appears that training students and teachers for the proper use of electronic dictionaries and awareness-raising measures and activities were significant factors and strategies which were reported by previous research. For example, Chen (2006) suggested that explicit training on choosing and using electronic dictionaries is required on a regular basis. The students seemed to need knowledge on how to distinguish an effective dictionary from an ineffective one. In the same vein, Dashtestani (2013) concluded that training is required in order to motivate students to use electronic dictionaries properly. He also suggested that

teachers should include the use of electronic dictionaries in their vocabulary teaching activities and teaching techniques. Stirling (2003) pointed out that EFL students should become more familiar with the different functions and services of electronic dictionaries. Koyama (2015) proposed that strategy training on the use of electronic dictionaries can foster students' attitudes and improve their performance and learning. Mohamad, Rashid, and Mohamad (2017) stressed that EFL teachers should become aware of the use of electronic dictionaries in EFL contexts and receive the required instruction for the proper inclusion of electronic dictionaries in their teaching practices and lesson plans.

Considering the important role of dictionaries in learning vocabulary items, this study investigates Iranian junior high school students' and teachers' attitudes of the benefits and challenges of the use of electronic dictionaries for EFL students. The study compares the attitudes of teachers and students towards electronic dictionaries and can pave the way for more effective and proper use of electronic dictionaries in the Iranian EFL context. Furthermore, the focus of previous research was commonly on university and adult learners while adolescents of junior high school are the participants of this study. These adolescents are more engaged with technology use and their perceptions and views can have several implications for renewing and reforming the school EFL curriculum of Iran and other similar contexts.

Research questions

- 1) What are Iranian junior high school teachers' and students' attitudes towards using electronic dictionaries for learning EFL? Is there a significant difference between their attitudes?
- 2) What are Iranian junior high school teachers' and students' attitudes towards factors that encourage the students to use electronic dictionaries? Is there a significant difference between their attitudes?
- 3) What are Iranian junior high school teachers' and students' attitudes towards electronic dictionaries commonly used by students? Is there a significant difference between their attitudes?
- 4) What are Iranian junior high school teachers' and students' attitudes towards the limitations of using electronic dictionaries? Is there a significant difference between their attitudes?

Method

Participants

A total of 20 Iranian EFL teachers who taught EFL at a junior high school level participated in the current study. All of them were female. The average age of the participants was 31. With regard to their teaching background, they had 6.5 years of EFL teaching experience at the junior high school. Four of these EFL teachers also participated in the interview phase of this study (Table 1).

Moreover, a total of 211 female junior high school students, attending 7 separate classes of a public school in Tehran, participated in the present study. Their ages ranged from 12 to 15. Most of them had 2 years of EFL learning experience and they had started learning English in their seventh grade. We invited the questionnaire participants to participate in the interviews

in the form of focus groups. A total of 60 students in seven focus groups accepted our invitation to take part in the interviews. The first focus group included 8 students, the second focus group included 11 students, the third focus group included 9 students, the fourth focus group included 6 students, the fifth focus group included 11 students, the sixth focus group included 7 students, and the last focus group included 8 students (Table 2).

Table 1
Profile of EFL teachers participating in the study

Gender	Female	20(100%)
Average age	31 years old	
Average years of teaching experience	6.5 years	
Questionnaire participants	20 EFL teachers	
Interview participants	4 EFL teachers	

Table 2
Profile of EFL students participating in the study

Gender	Female 211(100%)	
Average age	13.5 years old	
Province	Tehran	
Grade	Junior high school	
Average years of experience of learning EFL at school	2 years	
Questionnaire participants	211 students	
Interview participants	Focus Group 1=8 students	Focus Group 5=11 students
	Focus Group 2=11 students	Focus Group 6= 7 students
	Focus Group 3=9 students	Focus Group 7= 8 students
	Focus Group 4=6 students	Total=60 students

Data collection and analysis

The theoretical framework of the study was mainly based on Dashtestani (2013) who investigated teachers' and students' attitudes, the limitations of electronic dictionaries, and the strategies which can facilitate the use of electronic dictionaries in EFL courses. Therefore, in Dashtestani (2013) attitudes were defined in terms of perceived limitations, views about benefits and potentials, strategies and measures, and the current use of electronic dictionaries. First, each participant of both groups was asked to fill in a questionnaire designed based on the previous research studies and theoretical frameworks on perspectives on electronic dictionaries (Alhaisoni, 2016; Chen, 2010; Dashtestani, 2013; Koyama & Takeuchi, 2003; Midlane, 2005; Weschler & Pitts, 2000). The questionnaires were divided into five separate parts: (1) background information of the participants (students and teachers); (2) students' and teachers' attitudes towards electronic dictionaries; (3) factors which may motivate EFL students to use electronic dictionaries; (4) students' and teachers' perspectives on dictionaries commonly used

by students; and (5) students' and teachers' perceptions of limitations of using electronic dictionaries. To validate the construct of the questionnaire, exploratory factor analysis was run. The questionnaire revealed a suitable factor structure and acceptable factor loadings (loading higher than 0.3 were regarded as acceptable). The KMO level for each section of the questionnaire was also estimated (Section 1= 0.86; Section 2=0.69; Section 3= 0.59; Section 4=0.87). Five-point Likert items were considered for each part of the questionnaires. The Cronbach's Alpha estimates for different sections indicated an acceptable level of reliability (0.89, 0.87, and 0.70 respectively). Before implementing the study, the items of the questionnaires were submitted to a group of experts who were university professors and their comments were applied to the items of the questionnaires.

The questionnaire phase of this study was followed by a semi-structured interview for the EFL teachers and focus group interviews for the students. One important aim of conducting interviews was to provide triangulated qualitative data in order to complement the quantitative data of the questionnaires. Therefore, the participants were asked to answer the interview questions which were founded on the purposes of the questionnaires. In order to increase the content validity and suitability of the questions of the interviews, the questions were piloted with similar groups of teachers and students to identify the strengths and weaknesses of the questions. The questions were submitted to a group of experts who were university professors and their comments were applied to the interview questions. The interview questions included these main subjects: the effect of using electronic dictionaries on students' learning, individuals/factors makes students familiar with electronic dictionaries, different kinds of electronic dictionaries used by students, obstacles of using electronic dictionaries, training measures required for the students, and the current use of electronic dictionaries in EFL classes.

Each interview session lasted 20–30 minutes for each group of the students and 15 to 35 minutes for each EFL teacher. The participants' responses were recorded in the form of written notes. Content analysis and categorization were used to analyze the data collected. In order to analyze the data Statistical Package for the Social Sciences (SPSS) version 16 was utilized. The results of the questionnaires were reported in the form of the mean and standard deviation for each item. The differences among the perspectives of teachers and students were estimated using the non-parametric Mann–Whitney U test. To increase the accuracy of the values of the Mann–Whitney U test, the effect size and confidence intervals for each item were also estimated and reported.

The effect size was used in order to compare two means and shows the difference in the two groups' means divided by the average of their standard deviations. This means that if we see a d of 1, we know that the two groups' means differ by one standard deviation. A d of 0.5 shows that the two groups' means differ by half a standard deviation, etc. Generally, $d=0.2$ could be considered as a 'small' effect size, 0.5 represents a 'medium' effect size and 0.8 a 'large' effect size. This means that if two groups' means do not differ in terms of 0.2 standard deviations or more, the difference is trivial even if it is statistically significant.

Results

Teachers' and students' attitudes towards electronic dictionaries

As Table 3 shows, both students and their teachers agreed that electronic dictionaries had benefits for the students. The students mentioned that facilitation of finding the meaning of new words ($M=4.32$, $SD=0.89$), finding the meanings of the words in less time ($M=4.42$, $SD=0.88$), diversity in kind ($M=4.11$, $SD=0.92$), ease of use ($M=4.36$, $SD=0.86$), availability

($M=4.17$, $SD=1.01$), affordability ($M=4.09$, $SD=1.10$), interesting learning ($M=4.00$, $SD=0.98$), and motivating learners ($M=4.10$, $SD=0.89$) as the most beneficial features of using electronic dictionaries. The teachers agreed with all of these benefits of using electronic dictionaries.

Table 3

Questionnaire results on students' and teachers' attitudes towards electronic dictionaries

Items	Participants	M	SD
Using electronic dictionaries is interesting	Students	4.05	0.94
	Teachers	4.30	0.80
Using electronic dictionaries makes learning more attractive	Students	3.94	0.96
	Teachers	4.00	0.79
Using electronic dictionaries facilitates finding the meaning of new words	Students	4.32	0.89
	Teachers	4.75	0.44
Using electronic dictionaries expedite finding the meaning of new words	Students	4.42	0.88
	Teachers	4.70	0.47
Electronic dictionaries have diverse kinds	Students	4.11	0.92
	Teachers	4.85	0.36
Using electronic dictionaries for finding the meaning of new words is easy	Students	4.36	0.86
	Teachers	4.75	0.44
Electronic dictionaries are easily available	Students	4.17	1.01
	Teachers	4.90	0.30
Electronic dictionaries are very affordable	Students	4.09	1.10
	Teachers	5.00	0.00
Electronic dictionaries makes learners interested in learning	Students	4.00	0.98
	Teachers	4.10	0.78
Electronic dictionaries motivates learners for learning new words	Students	4.10	0.89
	Teachers	4.10	0.78

Note: Likert scales: 1. strongly disagree; 2. disagree; 3. undecided; 4. agree; 5. strongly agree

As Table 4 demonstrates, apart from attractiveness (Mann-Whitney $U=1818$, $p=0.3$), facilitation of finding the meaning of new words (Mann-Whitney $U=2109$, $p=0.1$), finding the meanings of the words in less time (Mann-Whitney $U=1854$, $p=0.3$), interesting learning (Mann-Whitney $U=1854$, $p=0.3$), and motivating learners (Mann-Whitney $U=1854$, $p=0.3$), there were no significant differences between the perspectives of teachers and students regarding the benefits of using electronic dictionaries. Regarding the effect size, moderate to high effect size levels were identified; however, attractiveness, interesting learning, and motivating learners did not show a high level of effect size.

Table 4

Differences between students' and teachers' attitudes towards electronic dictionaries

Items	Mann-Whitney U	P	Effect size	Confidence interval
Using electronic dictionaries is interesting	1818	0.277452	0.286431	0.25 ± 0.359
Using electronic dictionaries makes learning more attractive	2109	0.997051	0.06825	0.06 ± 0.3659

Using electronic dictionaries facilitates finding the meaning of new words	1587.5	0.040589	0.612507	0.43 ± 0.3329
Using electronic dictionaries expedite finding the meaning of new words	1854	0.295827	0.396914	0.28 ± 0.3298
Electronic dictionaries have diverse kinds	1125.5	0.000215	1.059307	0.34 ± 0.3428
Using electronic dictionaries for finding the meaning of new words is easy	1627.5	0.056527	0.570942	0.39 ± 0.322
Electronic dictionaries are easily available	1219	0.000606	0.979844	0.73 ± 0.3752
Electronic dictionaries are affordable	1070	0.000059	1.165136	0.91 ± 0.407
Electronic dictionaries make learners interested in learning	2074.5	0.895487	0.11291	0.1 ± 0.373
Electronic dictionaries motivate learners for learning new words	2055	0.837648	0.	0 ± 0.341

Note: confidence level: 90%, $p \leq 0.05$

In order to cross-check the attitudes of EFL students and their teachers toward the use of electronic dictionaries, semi-structured interviews were also conducted. Generally, the results of the interviews confirmed the results of the questionnaires. Most of the EFL teachers asserted that using electronic dictionaries has a significant positive effect on EFL students' learning. The majority of EFL students also reported that they were satisfied with the use of electronic dictionaries. Both EFL teachers and students stated that electronic dictionaries are very useful and facilitate the process of finding the meaning of new words for students. The EFL teachers also stated that using electronic dictionaries motivates learners because they save students' time and energy. The possibility of using electronic dictionaries anytime and anywhere and ease of use were mentioned as the main features of electronic dictionaries. The majority of the students and EFL teachers mentioned the positive effect on EFL students' learning, facilitation of finding the meaning of new words, increase in learners' motivation, and availability of electronic dictionaries as the important benefits of the use of electronic dictionaries.

Using electronic dictionaries is enjoyable for the students. The students learn much better when they learn in their favorite way. (Teacher 3)

Before using electronic dictionaries, I checked the meanings of the new words in paper dictionaries. I can try different applications on my smart phone and choose the best one. All of them are very easy to use compared to paper dictionaries in my view. (Focus Group 5, Student 9)

Usually, students like to work with digital devices, using electronic dictionaries motivates learners and they can use their digital devices for learning purposes. (Teacher 2)

Paper dictionaries are very heavy and searching the words in these dictionaries is really boring, but electronic dictionaries, especially, mobile applications, are available and we can download and use them easily. (Focus Group 2, Student 2)

By just typing a word in an electronic dictionary, I can find the meaning and the pronunciation of the new words. (Focus Group 6, Student 4)

Working with electronic dictionaries is not difficult. There is no need for any instruction before using them. All of my friends are able to work with electronic dictionaries. (Focus Group 1, Student 2)

Students' and teachers' views of factors which encourage EFL students to make use of electronic dictionaries for learning EFL

Table 5 indicates that the EFL students chose the EFL teacher as the key factor of encouraging them to use electronic dictionaries (M=4.81, SD=0.40). The other factors such as family, friends, the school, and students had no significant effect on students' encouragement for using electronic dictionaries. The EFL teachers in both questionnaires and interviews reported EFL teachers (M=4.85, SD=0.36) and the Internet (M=4.85, SD=0.36) as the main factors which may encourage EFL students to make use of electronic dictionaries for learning EFL

Table 5

Questionnaire results of students' and teachers' attitudes of factors which encourage EFL students to make use of electronic dictionaries for learning EFL

Items	Participants	M	SD
EFL teacher	Students	4.81	0.40
	Teachers	4.85	0.36
Family	Students	2.40	1.20
	Teachers	2.55	1.09
Friends	Students	2.86	1.19
	Teachers	2.70	1.03
Internet	Students	3.45	1.38
	Teachers	4.15	0.67
Students	Students	3.07	1.23
	Teachers	3.85	0.74

Note: Likert scales: 1. strongly disagree; 2. disagree; 3. undecided; 4. agree; 5. strongly agree

As it is obvious in Table 6, there were no significant differences between the perspectives of EFL teachers and students regarding the role of friends (Mann-Whitney U=1924.5, p=0.00) and students (Mann-Whitney U=1365, p=0.00) in students' ability to use electronic dictionaries and the effect of the Internet (Mann-Whitney U=1563.5, p=0.04). Also, moderate to high levels of the effect size were identified.

Table 6
Difference between students' and teachers' attitudes towards factors which encourage students to use electronic dictionaries

Items	Mann-Whitney U	p	Effect size	Confidence interval
EFL teacher	2035	0.694422	0.205118	0.04 ± 0.1533
Family	1954	0.570125	0.330853	0.15 ± 0.4603
Friends	1924.5	0.003676	0.343771	0.16 ± 0.455
Internet	1563.5	0.048820	0.645319	0.7 ± 0.516
Students	1365	0.006854	0.768464	0.78 ± 0.4625

Note: confidence level: 90%, $p \leq 0.05$

In the interviews, the results of the questionnaire were supported. The majority of students mentioned that their EFL teacher played an important role in their use of electronic dictionaries for EFL learning purposes. Furthermore, some students claimed that they have learned to use electronic dictionaries by trial and error.

Our English teacher makes us familiar with different kinds of electronic dictionaries. (Focus Group 7, Student 5)

Every session we have to check the meaning of the new words and the pronunciation of them. Our teacher helps us to use electronic dictionaries properly for this purpose. (Focus Group 1, Student 3)

I use an application on my mobile phone. I found this app on Google play store by myself. (Focus Group 4, Student 1)

I think working with electronic dictionaries is easy, but our English teacher tried to teach us how to use electronic dictionaries to get the best result and facilitate this process. (Focus Group 7, Student 3)

Electronic dictionaries are easily available on our smartphones. Anyone who tried to check the meaning or pronunciation of a word will be able to work with these applications. (Focus Group 1, Student 1)

Students' and teachers' attitudes on dictionaries commonly used by students

As the questionnaire results depict, the majority of students and EFL teachers mentioned that the students frequently used online dictionaries ($M=3.55$, $SD=1.32$), ($M=4.55$, $SD=0.51$) (Table 7).

Table 7
Students' and teachers' perspectives on dictionaries commonly used by students

Items	Participants	M	SD
Online dictionaries	Students	3.55	1.32
	Teachers	4.55	0.51
Dictionary software	Students	1.52	0.87
	Teachers	1.80	0.70
Dictionaries on mobile devices	Students	2.11	1.32
	Teachers	3.30	1.38
Longman dictionary	Students	2.44	1.48
	Teachers	4.50	0.60
Oxford dictionary	Students	1.84	1.10
	Teachers	3.75	1.33
Merriam-Webster	Students	2.22	1.39
	Teachers	4.30	0.92

Note: Likert scales: 1. Not using at all; 2. Rarely using; 3. Sometimes using; 4. Using; 5. Frequently using

In the interviews, the teachers stated that the students used their mobile devices for checking the meaning of the new words. Also, they believed that the students were familiar with the Longman and Merriam-Webster dictionaries. On the other hand, in both phases of the study, the EFL students stated that they were not familiar with different kinds of electronic dictionaries

I don't know the name of the dictionary I currently use. It's an application on my smart phone. (Focus Group 2, Student 9)

I usually use online dictionaries, but I'm not familiar with different kinds of electronic dictionaries. (Focus Group 5, Student 11)

I installed a dictionary application based on the rating of it in the Google Play store and the comments I read about it, but I'm not familiar with different kinds of electronic dictionaries. (Focus Group 4, Student 1)

Our teacher asked us to install an application on our mobile devices. I'm not familiar with other kinds of electronic dictionaries. (Focus Group 6, Student 2)

I think most of the students use their mobile phones to check the meaning of the words. (Teacher 2)

My students are familiar with Oxford and Longman dictionaries. (Teacher 3)

I think online dictionaries are much better than the offline versions of them. In these kinds of dictionaries users are usually able to check the pronunciation of new words, but many of my students prefer offline applications on their smart phones. (Teacher 1)

Most of my students are not familiar with different types of electronic dictionaries. They just use the application that meets their needs. (Teacher 4)

Based on the values in Table 8, there were significant differences between the attitudes of the teachers and students about EFL students' use of PC-based dictionary software (Mann-Whitney $U=2073$, $p=0.9$), dictionaries on mobile devices (Mann-Whitney $U=1898$, $p=0.4$), Longman dictionary (Mann-Whitney $U=1895$, $p=0.3$), Oxford dictionary (Mann-Whitney $U=1957$, $p=0.5$), and Merriam-Webster (Mann-Whitney $U=2100.5$, $p=0.1$). The participants of both groups had a consensus about students' use of online dictionaries. Regarding the effect size, moderate to high effect size levels were identified for all items.

Table 8

Difference between teachers' and students' perspectives on dictionaries commonly used by students

Items	Mann-Whitney U	p	Effect size	Confidence interval
Online dictionaries	944	0.000025	0.999376	1 ± 0.4917
Dictionary software	2073	0.870688	0.354615	0.28 ± 0.3312
Dictionaries on mobile devices	1898	0.382919	0.881264	1.19 ± 0.512
Longman dictionary	1895	0.299389	1.824224	2.06 ± 0.5517
Oxford dictionary	1957	0.523622	1.565022	1.91 ± 0.4331
Dictionary by Merriam- Webster	2100	0.960274	1.764709	2.08 ± 0.5244

Note: confidence level: 90%, $p \leq 0.05$

Students' and teachers' attitudes of limitations of using electronic dictionaries

Table 9 illustrates that the students and EFL teachers affirmed the obstacles of using electronic dictionaries. The questionnaire data demonstrated that the most important challenges to students' use of electronic dictionaries included in accessibility of electronic dictionaries at school ($M=4.80$, $SD=0.60$) ($M=5.00$, $SD=0.00$) and prohibition of using electronic dictionaries in EFL classes ($M=4.78$, $SD=0.71$) ($M=5.00$, $SD=0.00$). The EFL teachers also reported students' lack of interest ($M=4.05$, $SD=0.68$) and students' lack of awareness about electronic dictionaries ($M=4.45$, $SD=0.51$) as the perceived obstacles. On the other hand, the lack of access to dictionaries at home, the lack of competence to use electronic dictionaries, the lack of interest in using electronic dictionaries, and students' distraction caused by using electronic dictionaries were reported as the least important challenges which means that in these areas students had overcome potential difficulties in using technology.

Table 9 also demonstrates that there were no significant differences between the perspectives of teachers and students about students' lack of interest in using electronic dictionaries (Mann-Whitney $U=507.5$, $p=0.00$) and students' lack of awareness about electronic dictionaries (Mann-Whitney $U=212$, $p=0.00$). As it is shown in the table, apart from students' lack of competence to use electronic dictionaries, the lack of access to appropriate

electronic dictionaries, distraction caused by using electronic dictionaries, not having suitable electronic dictionaries, moderate to high levels of the effect size were identified for the other elements.

Table 9

Questionnaire results on students' and teachers' attitudes of the limitations of using electronic dictionaries and the difference between attitudes

Items	Partici pants	M	SD	Mann- Whitney U	p	Effect size	Confidence interval
There is no access to electronic dictionaries at school	Students	4.80	0.60	1830	0.08	0.471	0.2 ± 0.222
	Teachers	5.00	0.00				
There is no access to electronic dictionaries at home	Students	1.79	1.14	1782.5	0.18	0.486	0.44 ± 0.4271
	Teachers	1.35	0.58				
Teachers do not allow students to use electronic dictionaries in EFL classes	Students	4.78	0.71	1840	0.08	0.438	0.22 ± 0.2627
	Teachers	5.00	0.00				
Students' lack of competence to use electronic dictionaries	Students	1.89	1.11	2034	0.77	0.009	0.01 ± 0.4261
	Teachers	1.90	1.02				
The lack of training for using electronic dictionaries properly	Students	2.18	1.17	1767.5	0.20	0.374	0.38 ± 0.4427
	Teachers	1.80	0.83				
Suitable electronic dictionaries are too expensive to be purchased	Students	2.09	1.18	1927.5	0.50	0.225	0.24 ± 0.4487
	Teachers	1.85	0.93				
Students' lack of interest for using electronic dictionaries	Students	1.97	1.32	507.5	0.00	1.981	2.08 ± 0.4943
	Teachers	4.05	0.68				
Parents do not allow students to use electronic dictionaries	Students	1.66	1.12	1971	0.55	0.280	0.26 ± 0.4213
	Teachers	1.40	0.68				
The lack of access to appropriate electronic dictionaries	Students	2.17	1.29	2090	0.97	0.022	0.03 ± 0.5008
	Teachers	2.20	1.36				

Using electronic dictionaries may cause distraction	Students	1.88	1.18	2001.5	0.674883	0.066095	0.08 ± 0.4579
	Teachers	1.80	1.24				
The lack of awareness about electronic dictionaries	Students	2.19	1.16	212	0.000000	2.522268	2.26 ± 0.433
	Teachers	4.45	0.51				
Students cannot find suitable electronic dictionaries	Students	2.34	1.09	2090	0.942095	0.008336	0.01 ± 0.4285
	Teachers	2.35	1.30				

Note: Likert scales: 1. strongly disagree; 2. disagree; 3. undecided; 4. agree; 5. strongly agree
 Note: confidence level: 90%, $p \leq 0.05$

In order to cross-check the EFL teachers' and students' attitudes of the limitations of using electronic dictionaries, semi-structured interviews were also conducted. The EFL teachers stated that the main problem they faced for using electronic dictionaries is school rules and regulations in Iran. The students were not allowed to have any digital devices in EFL classes and there was no accessibility to digital devices at school. The majority of schools in Iran are not well-equipped and in such a situation teachers are not able to train students for using electronic dictionaries properly and make them familiar with different kinds of electronic dictionaries. They offered to have some online courses or workshops for students in order to make them familiar with different kinds of electronic dictionaries and how to use them. The students also believed that the lack of access to electronic dictionaries at school is the main challenge. Some of the students mentioned that the challenge is that they were not able to find examples for words in electronic dictionaries. Thus, they were not able to learn the meaning of words and the proper use of them.

Students are not allowed to have any digital device in EFL classes. So we are not able to train them how to use electronic dictionaries properly. (Teacher 1)

We are not allowed to have our mobile phones with us even in English classes. (Focus Group 4, student 5)

School regulations limit students in terms of using digital devices at school and there are no laptops or personal computers for students in our classes. (Teacher 3)

Teachers are not able to train students without any digital devices in EFL classes. (Teacher 4)

Our school is not well-equipped and it is not possible to use electronic dictionaries in our classes. (Focus Group 1, Student 7)

I can't find an electronic dictionary which contains examples for new words. I think if I learn new words with the examples, I can use the words properly. So I prefer to check the examples in the paper dictionaries. (Focus Group 7, Student 6)

Discussion and conclusion

Our research results highlight the fact that students and teachers have accepted electronic dictionary technology and believed that this technology can offer merits for language teaching and learning. This research study supports the findings of previous research (Dashtestani, 2013; Koyama & Takeuchi, 2003; Metruk; 2017) emphasizing the positive responses of EFL students towards using electronic dictionaries. The findings of this study depicted some perceived benefits of electronic dictionaries for EFL learning, including attractiveness, the facilitative role in finding the meaning of new words, time efficiency in finding the meanings of words in less time, diversity in kind, ease of use, availability, affordability, interesting learning, and increase in learner motivation. The findings suggest that both teachers and students have accepted electronic dictionaries as useful tools for learning EFL and new vocabulary items. There were no significant differences between the perceptions of the teachers and students in the questionnaires. The interview results also confirm the results of the questionnaires in general. It should be noted that perceptions might differ from what happens in the reality of teaching and learning practice, but they can provide course designers and educational directors with valuable information based on which parts of future educational measures and decisions can be made. In the same way, teachers can foster students' positive attitudes towards electronic dictionaries by motivating EFL students to use electronic dictionaries in the classroom.

One finding which was exclusive to this study was about perceived factors that may motivate EFL students to make use of/learn to use electronic dictionaries for learning English vocabulary items. The findings illustrated both teachers and students perceived that EFL teachers play the most important role in motivating EFL students to make use of/learn to use electronic dictionaries for learning English vocabulary items. Teachers play pivotal roles in normalizing the use of different technologies for students. Dashtestani (2013) also found that teachers were important educational stakeholders who could help students use electronic dictionaries more effectively and purposefully. EFL teachers can include the use of electronic dictionaries in their lesson plans and train students on how to use electronic dictionaries for the purposes of language learning. This finding is consistent with previous research highlighting the significant role of training provided by teachers for EFL students in order to use electronic dictionaries efficiently (Chen, 2006; Dashtestani, 2013; Koyama, 2015). More importantly, EFL teachers' knowledge of how to make proper use of electronic dictionaries is a pre-requisite of training students. If teachers do not know how to select the most effective electronic dictionary and make use of all potential properties of electronic dictionaries, they will not be able to train their students for the required skills and strategies relevant to the use of electronic dictionaries.

Concerning junior high school students' use of electronic dictionaries, the results showed a significant difference between teachers' and students' perspectives. The findings suggest that the students do not commonly make use of electronic dictionaries, and as the teachers mentioned in the interviews, the students do not know different kinds of electronic dictionaries and their relevant services and properties. The teachers also believed students used electronic dictionaries installed on their mobile phones for learning EFL. In general, the results demonstrate the limited use of electronic dictionaries by EFL students. This perceived lack of electronic dictionary use may be linked to students' low confidence or ability to use electronic dictionaries effectively for EFL learning purposes. Curricular restrictions and school regulations are other factors that can discourage students from using electronic dictionaries at schools. Since the perspectives of teachers and students are positive on the use of electronic dictionaries, it is paramount to identify the discrepancy between these positive attitudes and

perceived lack of use. Future research can examine the impeding factors which can discourage students and teachers from using electronic dictionaries at school.

The results also indicated some perceived barriers to the use of electronic dictionaries in EFL contexts. The lack of access to electronic dictionaries at schools and EFL classes was an important perceived obstacle reported by both the teachers and students. Nowadays, access to electronic dictionaries is very convenient using mobile devices. One problem might be the Internet access which is not provided at all Iranian schools. Restrictive regulations of school was a perceived limitation mentioned by the EFL teachers in the interviews. These restrictive rules were linked to preventing students from using mobile phones and other digital devices in the classroom since they believe that technology is a potential source of distraction for young learners. One measure in order to normalize the use of technology in any EFL course or curriculum is the supporting and motivating atmosphere developed by educational supervisors. It is recommended that in addition to providing access to technologies and developing infrastructures required for the use of electronic dictionaries, the teachers and school authorities pave the way for students' use of electronic dictionaries. Further research is required to unravel other restrictive factors in relation to electronic dictionary use in other EFL contexts.

Limitations of the study

Similar to any other study, the researchers encountered some limitations while conducting this study. One limitation was that the word "motivation" was used in its general meaning which denotes encouragement or help. Given the fact that there are a couple of theoretical frameworks for the concept of motivation in second language acquisition literature, the study could have focused on more scientific and operationalized definitions of motivation.

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