Teachers' perceptions of the effectiveness of using Arabic language teaching software in Omani basic education

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ABSTRACT

This paper is part of a strategic research project that aimed to assess the effectiveness of the design and use of new software for Arabic language learning (ALL). However, the focus of this paper is to understand Arabic teachers' perceptions of the effectiveness of the software that was designed purposely by the project's team to facilitate ALL at Omani Basic Education schools. More specifically, by using two methods, a focus group interview and semi-structured interviews, this qualitative study attempted to reflect on the ways in which using software technology is changing the profession of Arabic language teaching and learning (ALTL). The sample of the focus group interview consisted of 12 Arabic female teachers from Muscat Basic Education schools. Nine of them participated in semi-structured interviews. These interviews investigated the perceived degree of the effectiveness and obstacles of using the Arabic language (AL) software in teaching the Arabic language (TAL) along with the teachers' perceptions for increasing its effectiveness. Overall, findings indicate that teachers perceived the designed software as an effective tool to promote students' learning and to deal with their learning difficulties. However, some factors that seemed to influence the implementation of this software, and some improvement elements were suggested by these teachers to increase the level of the effectiveness of this software.

Keywords: Software use, Arabic teaching, Language learning, Teachers' perceptions, Basic education, Oman

INTRODUCTION

A large volume of research studies has reported the advantages of using computer-assisted language learning (CALL) in childhood education. For example,(Al-Khatib, 2011, Almekhlafi & Almeqdadi, 2010; Kessler & Bikowski, 2010; Raby, 2007; Stockwell, 2007; Barr & Gillespie, 2003; Ayres, 2002) indicated that this type of learning creates, an enjoyable, flexible, low-anxiety, interactive language learning environment for children's language learning. Additionally, it increases students' participation in the learning process and boosts their motivation (Raby, 2007). Using computer assisted learning (CAL) can be a valuable medium for improving the quality of language learning and teaching. Therefore, language teachers need to look at technology as a tool that can improve language learning and teaching and should provide different opportunities for their students to benefit from the available technological resources. Teachers' perceptions towards the use of software technology in language teaching have been investigated by many researchers (Choy and Ling Ng, 2015; Thompson, 2015; Mollaei, & Riasati, 2013; Almekhlafi & Almeqdadi, 2010; Ismail, Almekhlafi, Al-Mekhlafy, 2010).

However, the effectiveness of using specific software in the actual teaching-learning process, such as in Omani basic education, and to learn a specific language, such as Arabic, has yet to be explored. Indeed, very few studies have focused on Arabic teachers' perceptions of integrating software in the Omani Arabic teaching context. The literature review indicates that the majority of the research in CALL has been conducted in different contexts and under different learning conditions. Therefore, it is crucial to point out how Arabic teacher (AT) in Oman perceive the

effectiveness of this particular software that was designed to deal with specific students' difficulties in reading and writing in learning Arabic language in Omani schools. The use of learning software is deeply influenced by the context of the learning position, including the classroom culture and philosophy of education (Stockwell, 2007; Barr & Gillespie, 2003). As a result; AT in Oman may display some different views about technology implementation from those who have been reported in the contemporary literature.

This can be more logical if we consider that the characteristics of the Arabic language might require a specific technological tool that can deal with its specific features in language learning. The Arabic language is generally characterized by the phenomenon of diglossia. In Oman, and in other Arab countries, children need to learn two forms of Arabic: Modern Standard Arabic (MSA) and Non-standard Arabic (NSA) Arabic. There are significant differences at all linguistic levels in the structure and vocabulary between MSA and NSA Arabic. Thus, this situation causes some specific learning difficulties when children enter the school and start to learn reading and writing skills. For example, Maamouri (1998) stated, "Young Arab users do not feel that they are free to use and innovate in [MSA]. Pupils entering school have to "unlearn" or even suppress most of their linguistic habits while they try to acquire a new set of "rigid rules" (p. 41). This is because, "[MSA] is nobody's mother tongue and is rarely or almost never used at home in the Arab world" (Maamouri, 1998, p. 33). Thus, the required procedures for educational software that could facilitate ALL are significant.

However, despite the advantages of software integration in language learning, the lack of software design and application to facilitate ALL is reported in the literature (e.g. Choy and Ling Ng, 2015; Thompson, 2015; Aldalalah, Soon, & Ababneh, 2010; Almekhlafi, & Almeqdadi, 2010; Al Musawi, 2000; Ismail, Almekhlafi, & Al-Mekhlafy, 2010). It seems also that the majority of studies conducted, especially in the Arabic language field, used quantitative methods, specifically surveys. Thus, using qualitative methods might be more appropriate for gaining a deeper understanding of complex social phenomena such as technology implementation. In this regard, Almekhlafi & Almeqdadi (2010:176) called for adopting more qualitative methods in understanding teachers' use of technology. They stated that in surveys "participants may fill in questionnaires without giving enough thought to content. Hence, study results are affected and do not reflect reality".

In response to the lack of ALL software design and application and to the call of some researchers in the field (Al Musawi, 2000; 2007), a team were formed in 2012 and worked on a 3-year strategic research project funded by His Majesty the Sultan of Oman's Grant for Strategic Research at Sultan Qaboos University (SQU). They designed software for improving students' level of learning in MSA in Omani Basic Education schools (Al Musawi, Al Hashmi, Kazem, Al Busaidi, & Al Khaifi, 2014). MSA is the language of instruction in Omani schools; thus, the software was meant to help in improving: listening, vocabulary learning, reading and writing skills.

The software design went through a series of steps followed by piloting the first prototype in March 2014. Arabic teachers who used this prototype were selected to take part in this study to share their perceptions of its effectiveness and ways of improvement. The main project aimed to measure the effectiveness of using the new software in ALTL and evaluated its implementation and, thus, it is essential to understand teachers' perspectives concerning the advantages of using this software and the factors affecting its use. Taking into consideration that the researchers have conducted a previous experimental study (Al Musawi, Al Hashmi, Kazem, & Al Busaidi, 2015), there was a need to understand the effectiveness of the use of the newly designed software for ALL .Therefore, this study employs a qualitative methodology to give in-depth supportive evidence of Arabic teachers' perceptions about this topic. This should also respond to the need for adopting more qualitative methods (Almekhlafi & Almeqdadi, 2010:176).

LITERATURE REVIEW

The effectiveness of technology in language learning

Many previous studies indicated that technology has a positive influence in language learning (Afrin 2014; Al Musawi, Al Hashmi, Kazem, Al Busaidi, and Al Khaifi, 2014; Hani, 2014; Al-Khatib, 2011; Ismail , Almekhlafi, Al-Mekhlafy ,2010; Almekhlafi & Almeqdadi, 2010; Raby, 2007 ;Stockwell, 2007; Barr & Gillespie, 2003; Ayres, 2002). For example, Afrin (2014) suggests that technology use can help students take ownership of their learning, make them autonomous and confident in their learning and enable introverted students to interact more freely. Additionally, Al-Khatib (2011) found that the use of technology has led to higher performance in final examination results and has increased students' abilities in the following areas: comprehension, analysis, dialogue and initiative, along with its social, cultural and academic benefits. Hani (2014) also indicates some advantages of using technology in Teaching English as a Foreign Language (TEFL). They are: increasing students motivation, providing students with immediate feedback, providing more fun, requiring less time and effort in the classroom, developing language skills, fostering individualization, providing more opportunities to learn outside the classroom. He also illustrated that the implementation of technology leads to the integration of the four linguistic skills (listening, speaking, reading and writing).

Specialists have also found that using technology has improved language learning in both productive and receptive skills. (Ismail, Almekhlafi, Al-Mekhlafy, 2010; Al Abdel Halim, 2009; Lin, Winaitham, & Saitakham, 2008). Also, Al Abdel Halim (2009) shows in his study of computer-assisted reading instruction major improvement in students' reading speed and comprehension.

The findings of Neri, Mich, Gerosa and Giuliani (2008) also indicated that computer software for pronunciation learning helped Italian children improve their pronunciation skills in learning the English language. Lin, Winaitham, & Saitakham (2008) also reported this finding. They found that the use of technology increased students' level of achievement in pronunciation, speaking, reading and vocabulary in English as Foreign Language (EFL) education. Other researchers (Cunningham and Redmond, 2008; Blake, 1998; Beauvois, 1997) have also reported the effectiveness of employing technologies in developing overall language skills.

Similar findings were also reported in the AL context. Mohri (2010), for example, examined the perceptions of teachers towards teaching materials, which were designed using a combination of story and technology in ALT in Thailand. The results showed that AL teachers mentioned that these technological learning tools were effective for the ALT.

A study conducted by Sahrir and Alias (2011) to understand the perceptions of AL learners in the Malaysian Islamic International University also shows that learners had a positive trend towards learning the AL using web games as well as some regular video games. Aldalalah et al. (2010) have also investigated the impact of educational software on first grade elementary students towards ALL. The findings indicated that students who studied using sounds with pictures performed much better than those who used text with pictures. The study concluded that the use of sounds with pictures was an important catalyst for ALL.

Studying teachers' perceptions of technology use

The improvement and the dissemination of software technology have changed the traditional class environment (Tondeur, van Braak, & Valcke, 2008). Compared to traditional classrooms, it helps to create learner-centered classrooms. However, such an assumption could not be achieved unless teachers have positive beliefs and perceptions towards the use of technology. Indeed, technology does not have the advantages in itself; the advantages will be achieved only

when teachers implement it in the learning and teaching process. According to Kim (2002), teachers' perceptions toward technology are considered an important factor that can positively influence students' learning and give them more confidence in technology implementation. Gilakjani and Leong (2012) also show that understanding teacher' attitudes about teaching, learning, and using computers, can aid in the design and implementation of EFL instruction.

Ismail et al (2010) also found that integrating technology in the language classroom depends on teachers' approach and on their attitudes of their own roles. This is in line with the argument put forward by Mollaei and Riasati (2013). They point out that teachers' perceptions have an important impact on the use of computer software in language learning. Afrin (2014) also highlighted that teachers' perceptions of using technology for language teaching have an effect on teachers' technology use.

In language teaching contexts, teachers who have a positive perception of technology, use different affective ways to improve students' linguistic skills and create meaningful communication opportunities for their students to practice the language (Gilakjani and Leong, 2012; Khamkhien, 2012). Jeong (2006), for example, confirmed that the role of teachers in language learning settings is more important than ever before since teachers are able to inspire and encourage students to use language technology for meaningful and affective language learning. Bancheri (2006) also asserts that the language teachers' role in the new world of technology is not only to provide knowledge, but to help students acquire knowledge and recognize the value of using the software technology for independent language learning. This ensures the significance of investigating teachers' perceptions of using learning technologies in ALL, which this study has attempted to do.

Factors Influencing Implementation of computer technology resources

Literature on teachers' perceptions of the use of computer technology resources in language teaching shows that providing computer technology resources for language teachers does not always ensure teachers' use of these in practice. Many studies (e.g., Afrin, 2014; Hani, 2014; Gilakjani and Leong, 2012; Al-Khatib, 2011) have indicated that there are some factors that manipulate the beneficial use of technology and that may lead to failure in technology use. These factors could be grouped into financially-related factors, teacher-related factors such as affective or other personal attitudes and beliefs and financial problems that are more linked to the lack of technical support and the lack of materials at schools. Hani (2014), for instance, found that teachers in the Arab World, and in Jordan in particular, had difficulties in using learning technology. These difficulties were related to an insufficient number of computers, technical problems, the need for more teacher training, and the high cost. Ismail et al (2010) also found that teachers of both Arabic and English reported similar difficulties that obstruct their integration of technology in teaching. They are lack of technology resources at schools, lack of time needed for preparation and implementation of technology, shortage of technology maintenance and insufficient lab-equipment. Al-Ruz and Khasawneh (2011) also reported that factors of insufficient time for course planning, not being able to access computers and software and insufficient technical and administrative support also affect the use of the technology.

Other factors such are teachers' beliefs and attitudes, and confidence in computer use are also commonly cited in the literature which affects the implementation of the technology (Ismail et al 2010; Lin, Wang & Lin 2012).

PURPOSE OF THE STUDY

The purpose of this study was to investigate the effectiveness of using special software designed to improve the quality of ALTL in the Sultanate of Oman as voiced by the teachers who used the software in the piloting stage. Specifically, this study attempted to study teachers' perceptions about the software, factors that affected its implementation, and their ideas to improve it.

RESEARCH QUESTIONS

1. How effective is the use of AL software in ALTL from Arabic teachers' perceptions?
2. What are the factors and the obstacles affecting Arabic teachers' successful use of the designed software?
3. What are teachers' perceptions for increasing the effectiveness of the designed software in ALTL?

THE SIGNIFICANCE OF THE STUDY

The findings of this study will support both theoretical and empirical studies about using software technology in the ALT context, which needs to be acknowledged, since most research in this field has been focused on the English language teaching (ELT) context.

In addition, the findings of this study will provide significant feedback to the research team to know its advantages, how it can be developed according to the teachers' perspectives and cite the barriers obstructing its implementation. This helps formulate plans for reformation, innovation and improvement of the current software and the development of further software that can cover different needs in ALTL. Therefore, the findings of this study hope to provide important insights to improve the quality of the software and therefore, contribute to the advancement of Arabic teaching and learning.

Previous researchers (Almekhlafi & Almeqdadi, 2010; Ismail, Almekhlafi, Al-Mekhlafy, 2010) often descriptively surveyed teachers' perceptions about the use of educational software and the variables associated with its implementation. This study, however, by using qualitative research methods, provides information that would help to give more insight about what makes the use of this software effective for teachers in Arabic classrooms. Understanding how AL software enhances language learning and how it is linked to learning outcomes might help teachers to design and use effective software and integrate it in the curriculum for Omani students.

The present study is also expected to create a basis for further studies in this area. However, the findings are limited to an Omani context and to ATLT.

METHOD

Participants

The participants were 12 (Grades 1-4) teachers who teach Arabic in the Ministry of Education in Muscat basic education cycle's schools in 2014-2015. All participants were females as there are no male teachers in the Sultanate of Oman for these grades. The 12 teachers who participated in the study have between 7 and 15 years of teaching experience. Additionally, all of them had used the designed software for the improvement of the Arabic language improvement, as it is mandated for this research project. As the first language of these teachers is Arabic, the focus

group interview and semi-structured interviews were conducted in Arabic and were translated by the researchers into English.

Data collection methods and research tools

The data of this study was collected through using two qualitative methods, focus group interview and semi-structured interview. Twelve teachers were asked to attend a focus group interview and then nine of them were selected for face-to-face follow-up semi-structured individual interviews.

The purpose of starting with focus groups and then moving on to semi-structured interviews, was to get more depth and details about the participants' perceptions and gain further explanation on how Arabic teachers perceived the effectiveness of using the designed software in facilitating students learning in Arabic. Denzin and Lincoln (2005) argue that the social realities of the phenomenon being studied can be understood in different manners. Thus, understanding the Arabic teachers' perceptions, in this study, required looking at the data from different angles. The use of two qualitative tools enhanced data richness and enabled the researchers to validate the study results, and consequently increased the reliability of the findings.

Twelve teachers attended the focus group interview to determine their perceptions of the important elements regarding the effectiveness of the designed software. The questions for the focus groups had been carefully predetermined and sequenced from general to specific. For example, the first question requested participants to express how this software helped their students improve their language proficiency. Among the questions, teachers were asked whether this software had made a difference in their teaching of Arabic or challenged them to think in new ways of teaching the Arabic language by using different software technologies. They were also asked whether they faced any difficulties or challenges in using the designed software. Follow-up questions included whether they had any specific suggestions of improvement for increasing the effectiveness of the designed software. The focus group interview lasted approximately one hour and was moderated by one of the project members.

After the focus group interview, the nine teachers, who agreed to provide more information to advance the understanding of the effectiveness of this software, took part in the follow-up interviews. Each teacher was interviewed for approximately 20– 40 minutes. S/he was asked to reflect on his/her perceptions about: using the designed software in ALL and ALT, the advantages of using this software technology for Arabic, the factors and obstacles affecting Arabic teachers' successful use of the designed software; and finally teachers' perceptions of increasing the effectiveness of the designed software in Arabic language teaching. Each interview was recorded, transcribed, and then analyzed qualitatively.

Data analysis

Data gathered from the focus group interview and semi-structured interview were both coded and analyzed using the coding procedures suggested by Miles & Huberman (1994), which group the data generated according to similarities and differences to produce themes. Initially, the data generated from the focus group interview and semi-structured interview were examined and compared. All words and sentences related to the teachers' perceptions were coded and categorized. Then the categories that had similar properties were combined together. For more accurate data analysis, another colleague who acted as an independent coder checked a sample of the data.

RESULTS

The Effectiveness of the Software

The central focus of this study was to assess the teachers' perceptions of the effectiveness of using designed software in ALTL. To answer question 1: How effective is the use of AL software in ALTL from Arabic teacher's perceptions? Four sub-themes emerged regarding the effectiveness of using the software: "Improving the quality of Arabic teaching", "making Arabic language learning more enjoyable", "improving overall language skills"; and "dealing with reading difficulties". The following section discusses the effectiveness of using the designed software from teachers' perspectives, and they are summarized in Figure 1.

Figure 1. *The effectiveness of the software*

Improving the Quality of Arabic Teaching

All of the Arabic teachers reported that the use of this software had improved the quality of ALT. They believed that compared to the traditional methods they used in ALT, this software changed the meaning of language teaching from teacher-centered to student-centered. Thus, teachers who used this software viewed themselves as learning facilitators, not information providers. According to them, learners became more independent in building their linguistic skills. Therefore, this has contributed to the development of students' language skills as well as general learning skills. For example, one of them said in the focus groups interview, *"It has changed the role of Arabic teachers; such software has shifted from teaching Arabic to learning Arabic independently"* (Teacher E).

Three of them mentioned that the advantage of such software is that it makes teaching and learning happen everywhere, not only in the classroom. For example, one of them reported, *"Providing this software to our students will allow them to access the lessons whenever they want"* (Teacher A).

Another teacher reported the advantages of giving immediate feedback and said, *"It is very difficult for me as a teacher to deal with each student individually and give them the needed feedback, thus, this software is effective for Arabic teaching as it provides the learners with immediate feedback"* (Teacher F).

One important issue also mentioned by some of them regarding the effectiveness of this software in improving the quality of Arabic teaching is that it has the feature of considering learner

differences because it gives the learners the opportunity to control their own learning. One of them said, *"It allows the students to learn at their own speed, they can evaluate their progress and monitor their activities, but in my traditional teaching it is very difficult to do so" (Teacher B).*

Making Arabic Language Learning More Enjoyable

Eleven of the teachers indicated that this software was effective in making ALL more flexible and enjoyable. Therefore, this, according to them, positively contributed to the level of students' achievement and motivation to learn Arabic. One teacher explained this by saying, *"I have noticed how these students were waiting for Arabic classes and keep asking when they can go to the Learning Resources Room to use the software" (Teacher M).*

According to them, this enthusiasm seemed to be associated with the quality of this software. One of them said, *"The direct presentation of the sound and the pictures as well as the linguistic games via the software has made the presentation of Arabic lessons to be more comprehensive and enjoyable" (Teacher L).* Another teacher said*, "It it involves quizzes, word matching, sentence completions, and fun games; all these make students enthusiastic for Arabic classes" (Teacher D).*

Improving Overall Language Skills

All teachers participating in this study indicated that they found this software to be helpful for improving overall AL skills. They reported that the presentation of sound and the pictures via the reading material had made the language presented for these students appear more comprehensible and more effective in developing language skills. For example, one of them explained this by saying, *"By using numerous series of activities such as pronunciation-through-word recognition word and games, I consider this software exceptionally effective in developing language skills such as reading, vocabulary, listening, and pronunciation" (Teacher A).*

Another teacher also said, "*The software was very effective in building listening and reading skills. Students can listen to different listening topics as well as reading different resources, and deal with numerous language activities that improved their overall language skills" (Teacher C).* Another teacher confirmed this and said, *"Students have more opportunities to listening to some lesson presented by lovely characters that they interact with in the software and this was really helpful in making these students listen and interact, read and involve in some writing activities" (Teacher G).*

In addition, the participants believed that one of the advantages of this software was that it helped to increase students' vocabulary learning. For example, one teacher explained this by saying, *"Present new words frequently and repeatedly in input this help the learners to get more familiar with the vocabulary and they are more likely to remember what they have learnt as they are conveyed in a comprehensible manner" (Teacher K).*

Dealing with Reading Difficulties

Ten of these participants believed that one of the advantages of this software was that it helped in detailing reading difficulties. For example, one of them believed this by saying:

"The most biggest advantage of this software is that it encourages those students with difficulties in reading to be able to read aloud, by listening to someone reading for them, watching video clips and pictures"… "all these audio-visual features which appeal to young students were there to facilitate their reading and this is what we need to deal with these kinds of reading difficulties" (Teacher G).

One other teacher also confirmed how this software helped in dealing with reading difficulties and reported significant increases in students' reading speed, comprehension and pronunciation. She said, *"With its special technology that provides an audio pronunciation feature and systematic repetition of words, students with reading difficulties have improved. Their reading speed has improved, their comprehension level has increased also they pronounce the words much better"* (Teacher F).

Factors Affecting Arabic Teachers' Successful Use of the Designed Software

To answer question 2: What are the factors and the obstacles affecting Arabic teachers' successful use of the designed software? Four sub-categories emerged from the main theme of the factors. This clearly indicated their influences in successful use of the designed software in teaching AL. Overall, the teachers indicated that factors of insufficient computer facilities in school, lack of time in teaching plan, negative beliefs and no lasting effectiveness with high achieving students are affecting the successful use of the software. They are presented in the following section and summarized in Figure 2.
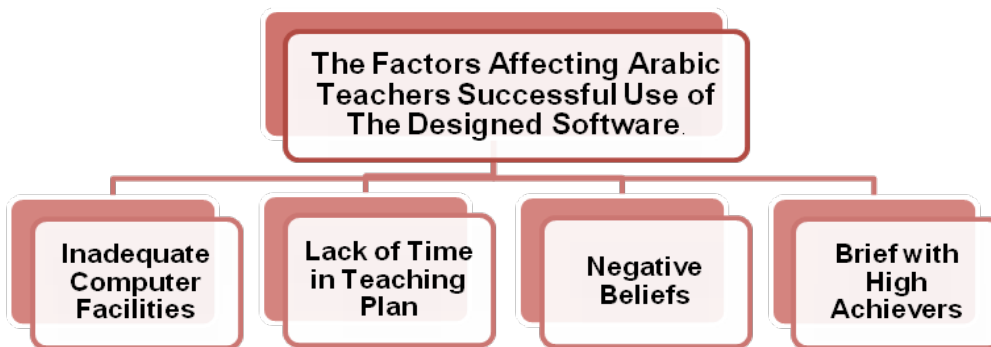

Figure 2. The factors affecting Arabic teachers' successful use of the designed software.

Inadequate Computer Facilities in School

All the teachers who have used the designed software complained of not having a special computer room for Arabic language teaching. They reported that the computer facilities are only placed in the Learning Resources Room, *For example, one of them said, "To be able to get access to the computers we have only the Learning Resources Room. This is for us a problematic issue because there is no special language computer room or a language lab for teaching the Arabic language and even so the size of this room is not big enough"* (Teacher L).

Some of them also referred to the limited computers in some schools, which are, not cover all the students. One of them explained, *"The number of the computers is not enough for all students, some time sometimes I have to use my laptop and borrow computers from my colleagues"* (Teacher G).

Even if some schools have enough computers, it appeared that the neglect of regular maintenance of computer facilities at schools led to this factor; for example, one of them said, for

example one of them said, *"We have enough computers but some of them are slow and others do not even work properly" (Teacher B).*

Three of them pointed out that those factors led some students to be bored and, thus, this affected their interaction with the software especially when the computer stopped working suddenly. One of them said, *"One of my students felt very bad when he was totally involved with the software and his computer was suddenly blocked" (Teacher E).*

The Lack of Time in Teaching Plan

Of the twelve teachers who used this software, six of them were concerned about time. They mentioned lack of time in the AL plan as a major factor influencing the successful implementation of this software. It appeared that this perception resulted from the pressure exerted on these teachers when using this software simultaneously with an AL textbook during the academic year. For example, one of them said, *"I know there are great advantages of using this software; however, it is very difficult to use it in conjunction with the school textbook" (Teacher H).*

Another confirmed this by saying: *"We have to use the Arabic language curriculum and you wanted us to use this software, there is no time in curriculum plan for all of this."* She also said, *"Because I have to go through the formal syllabus with my students I feel more comfortable with using textbooks as it is what I have to teach" (Teacher D).*

Negative Beliefs

Two of these teachers brought up a different perception regarding the application of this software, which reflected their personal beliefs. Consciously, this seemed to reduce their enthusiasm towards using such software. For example, one of them believed that she could not give more of her time to such software because the students at this stage needed more interaction with their teachers to develop language proficiency. She said, *"If learners do not have enough opportunities to develop language proficiency in a dynamic environment and enough interaction with their teacher such software will not be beneficial for language learners" (Teacher H).*

She further confirmed this in her interview and said, "*I think they can learn easily by face-to-face communication with their teachers and by interacting with other students… computers cannot replace this kind of interaction, computers also do not cover affective parts of human feelings as teachers do" (Teacher H).*

Another teacher seemed to be concerned about students losing literacy skills and said, *"I am just concerned if the use of such software will negatively affect young learner's literacy skills as these kinds of skills can be obtained by using books and pen and paper" (Teacher F).*

Brief with High Achievers

In spite of the variety of positive aspects of using this software mentioned by these teachers, it emerged from the data that teachers noticed that the high achievers' motivation and interests towards using the software did not last as long as it lasted with the other students. They pointed out,*"At the beginning stage, sounds and colorful screens and so on attract students' attention and increase their motivation, but this doesn't last long with high achievers" (Teacher E).*

"I found that high achievers are attracted to this software only at the beginning but after that they would get bored because they finished most of the activities at the beginning stage" (Teacher D).

Teacher's Perceptions for Increasing Software Effectiveness

To answer question 3: What are teachers' perceptions for increasing the effectiveness of the designed software in ALTL? Three main categories emerged from these themes, which reflect these teachers' perceptions about the ways in which the effectiveness of the designed software could be increased. Their suggestions were grouped into the following categories:
pedagogical improvements, technical improvements and environmental factor improvements. They are presented in the following section and summarized in Figure 3.
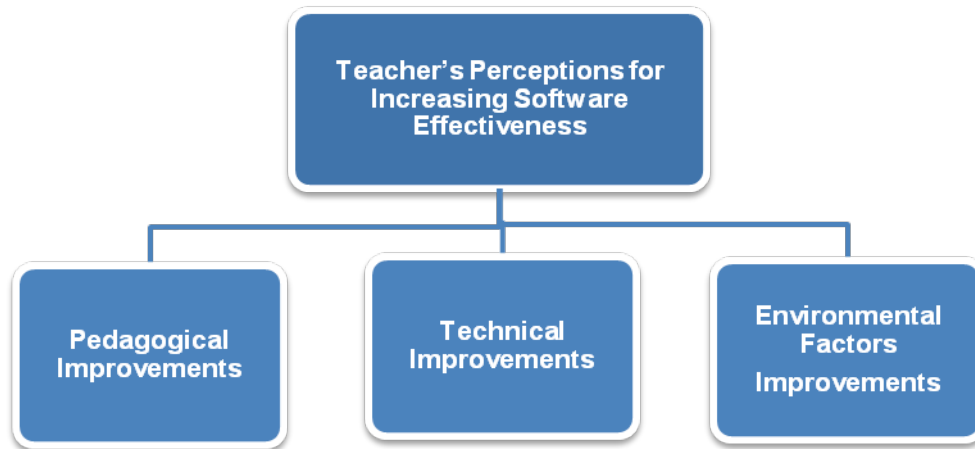

Figure 3. Teacher's perceptions for increasing software effectiveness

Pedagogical Improvements

Some of these teachers gave more emphasis to pedagogical improvements to increase the effectiveness of the software. According to them, giving more opportunity to these students to speak and read aloud is important. For example, one of them describes this by saying, *"The software is extremely effective in improving comprehensive reading skills and building vocabularies but it does not give enough opportunities for students to speak and read aloud and get immediate feedback for their reading mistakes" (Teacher D).* Another participant confirmed this by saying: *"If these students can have rich conversations with these characters it would be very helpful in increasing their communicative skills" (Teacher B).*

Technical Improvements

It has emerged from the data that some of these teachers suggested that adding more 3D simulation lessons instead of using 2D simulation would be a good move. One of them said, *"More 3D simulation that simulates real environments to promote speaking skills needs to be considered and more 3D videogame elements" (Teacher A).*

Another teacher also, made the suggestion to add other tools to this software and said, *"Complemented with other resources and tools, for example, audio chats, video and websites would definitely increase its effectiveness" (Teacher D).*

Administrative and Environmental Factors Improvement

To increase the effectiveness of this software these teachers brought up the importance of providing a language lab for ALT in each school. For example, this teacher said, *"To get the best use of this software we need to have well-equipped language classrooms or language labs. In this case the use of this software would be very effective" (Teacher J).*

They also indicated that, for successful implementation of technology, sufficient computer and multimedia facilities should be available at schools for both teachers and students. For instance, one teacher said, *"Arabic language teachers need their own special language labs which are equipped with computers, multimedia facilities, a projection TV and a big screen. Also, school administrators should keep all computer facilities up-graded and maintained" (Teacher F).*

DISCUSSION

The Effectiveness of the Software

The findings indicated that these teachers confirmed the positive effectiveness of the designed software in facilitating ALL and ALT. They are in line with some previous studies (Afrin 2014; Al Musawi et al, 2014; Al-Khatib, 2011; Almekhlafi & Almeqdadi, 2010; Ayres, 2002; Barr & Gillespie, 2003; Hani, 2014; Ismail et al, 2010; Kim, 2008; Park & Son, 2009; Raby, 2007; Stockwell, 2007; Tezci, 2010) which also confirmed the advantages of using technology in language learning. According to the findings of this study, the effectiveness appeared in: "improving the quality of Arabic teaching", "making Arabic language learning more enjoyable", "improving overall language skills" and "dealing with reading difficulties".

All of these participants have pointed out the effectiveness of "improving the quality of Arabic teaching". The study endorses the findings of the previous studies that showed that software technology can change the quality of teaching and move it from teacher-centered to learner-centered, which increases participation and motivation among learners (Al Musawi, 2000; Al-Khatib, 2011; Ismail et al, 2010; Raby, 2007).

In addition, the majority of the teachers frequently reported the effectiveness of this software in "making Arabic language learning more enjoyable''. This mainly resulted from the quality of this software that provided different activities as well as linguistic games which made the software enjoyable. In addition, this software was based on pedagogical standards that considered learning in an entertaining environment as an important element in developing language learning technology. This finding is in line with some previous studies (Al Abdel Halim, 2009; Al-Khatib, 2011; Hani, 2014).As suggested by Hani (2014), such successful and enjoyable interaction through technology applications helps build student motivation and eventually leads to improvements in ability and confidence.

It has also been found that this software is effective for "improving overall language skills" and "dealing with reading difficulties". Almost all areas of language skills especially reading, vocabulary, listening, and pronunciation were reported to be improved. This is consistent with previous studies which showed the effectiveness of the technology program in increasing language learning skills and dealing with linguistic difficulties (Al Abdel Halim, 2009; Aldalalah et al, 2010; Almekhlafi, & Almeqdadi, 2010; Golonka, Bowles, Frank, Richardson, Freynik, 2014; Ismail et al, 2010; Tanner & Landon, 2009).

Factors Affecting Arabic Teachers' Successful Use of the Designed Software

Even though the Arabic teachers held positive perceptions of using this software, they reported some factors that affected their successful use of the designed software. These factors are related to "inadequate computer facilities in school", "the lack of time in teaching plan", "negative beliefs" and "brief with high achievers".

In general, 85% of them perceived the current facilities at schools as not supportive to effectively applying the software in Arabic teaching. This finding is similar to Hani (2014) and Lin, Huang, & Chen (2014) as they found similar issues in their studies. The teachers in this study seemed also to be concerned about "the lack of time in the teaching plan". This could be mainly related to the challenge teachers face in dealing with the national curriculum and the software program at the same time. This shows the importance of coordination between academic software designers and the Ministry of Education in Oman to integrate such software officially into national AL curriculum.

This would facilitate, according to them, its application, which will naturally lead to effective treatment of this situation. The timing problem in the previous research seemed to be different from this study, as they were mostly related to the situation where the teachers had to design the technology themselves and therefore the complaint was mostly that they did not have much time to prepare and implement the technology. (Almekhlafi & Almeqdadi, 2010; Earle, 2002; Flores, 2002; Hani, 2014; Lin et al, 2014).

Few of them also seemed to hold negative beliefs regarding the application of the software. This is in line with Akbaba & Kurubacak (1999), Chen (2008), and Lin et al's (2014) studies which showed that some teachers have negative beliefs toward the effectiveness of educational technology despite it being often viewed as an useful instructional strategy. Negative beliefs against using the software technology could affect its applications (Al-Ruz & Khasawneh 2011; Lin et al, 2012). This suggests that Arabic teachers might need some training to broaden their understanding of the effectiveness of software applications in improving the quality of ALT. Previous researchers (e,g Akbaba & Kurubacak 1999; Al-Ruz & Khasawneh 2011; Chen, 2008; Lin et al, 2012) have emphasized the importance of changing teacher believe regarding technology use in teaching and learning. This perhaps would help Arabic teachers to be more open in implementing the software technology, and thus, providing their students with the opportunities to discover the expansive benefits of using technology to boost language acquisition.

The factor of "briefness with high achieving students" is another aspect that affected the usefulness of this software. Eight of these participants seemed to be aware of the importance of taking into account the most advanced level of students. Although this software was developed to suit different student levels, the activities and linguistic games seemed to concentrate more on improving the overall language skills and dealing with linguistic difficulties. This suggests the need to consider the most advanced students by adding some more activities that challenge their level of learning.

Teachers' Perceptions for Increasing Software Effectiveness

From the findings of the study a number of issues that would improve the effectiveness of the software according of these teachers' perceptions. In terms of pedagogical improvements, these teachers suggested that this software would be more effective if it had a feature that allowed learners to speak and interact with the characters in the software and get immediate feedback on their pronunciation. These perceptions mainly resulted from the difficulties that faced the project team in finding a suitable Arabic software system that could provide this feature. In fact, speech technology automated systems that have the potential for providing interactive activities with

learners and immediate feedback by means of verbal and written communication are almost non-existent in ALT software. This is because the systems that are available for the designers in AL are ones related to the English.

Indeed, the dominance of English in the sphere of ICT is well known, however, non-specialized computers will not be able to operate and develop the communicative skills of AL. While it is possible to do so with some parts of languages skills such as vocabulary building and reading comprehension, this is not always a perfect process for communication purposes. For example, messages sent from the learners to the computer in Arabic do not always appear in the correct form and that makes giving immediate or correct feedback very difficult. This situation can be understood if we consider the characteristics of AL. Also, The complex morphological structure of AL and the fact that written illustration does not have many of the vowels that exist in the spoken form, makes it hard to utilize and decode within the computer software.

Even with other languages such as English, the system was designed to function with speakers independently and to be used for reading aloud and for dialogue is found to be the most challenging and expensive form of system to develop, and it is not perfect. Hopefully, this situation will be changed in the future, but in the meantime, the awareness of this should be considered.

The second recommendation to improve the effectiveness of this program was related to technical improvements. Teachers suggested that adding more 3D simulation lessons for listening and reading activities instead of using 2D simulation was important. This is again more related to the quality of the software device available to AL designers. As has been mentioned earlier, it was difficult for the designers of the software to find a way to use 3D simulation and at the same time provide Arabic reading text. This suggests the necessity of well-equipped programs created purposely for AL programming that could address such technical issues.

In terms of the improvement of environmental factors, these teachers' responses reflected the importance of ensuring the arrangement of the school environment before applying the software program in ALT.For example, the significance of providing a language lab for ALT in each school and provide providing both teachers and students with sufficient computer and multimedia facilities were also highly suggested. This finding is similar to Aldalalah et al (2010), Almekhlafi, & Almeqdadi (2010), and Ismail et al's (2010) findings that show the importance of these facilities in the learning environment.

In addition, they have reported that the improvement of the effectiveness of this program requires administrative cooperation between the research project team and the Minister of Education in order to integrate the software into the formal curriculum so these teachers can implement it formally. Indeed, such a suggestion is significant, as this will secure its implementation in a formal way.

CONCLUSION

As this study was based on the principle that teachers'perceptions can provide important suggestions for the improvement of this designed software, their perceptions should be acknowledged and implemented with a view to improving the current software and future software designing in ALL. The findings of the study will act as a database for AL software designers and authorities in Oman based on these teachers' perceptions and recommendations for improvement in ALT technology.

Although this study mainly aimed to investigate the perceptions of Arabic teachers regarding specific software that was purposely designed for ALT in Omani Basic Education, it has provided a general understanding of the usefulness of using learning technology in AL and the factors that might affect useful application of such technology. However, studies that are more specific are needed to investigate Arabic teachers' perceptions about the uses of other types of technology in ALT in Oman.

In general, the finding of this study demonstrates that the AL teachers who participated in this research have supportive perceptions toward the effectiveness of the designed software in improving ALL and ALT in Omani Basic Education. Thus, the study has supported the previous research on the advantages of using technology in improving Arabic language teaching and learning.

However, the results also illustrate some factors that affect the implementation of this software which needs to be acknowledged and addressed. This suggests, in order to have a major effectiveness of using such software, the collaboration between educational authorities and software developers are needed to continue and extend the use of this software. In this case, an official integration of such pedagogical software types in AL education is highly recommended. This would help in eliminating the factors affecting its implementation and would motivate and encourage Arabic teachers to make use of such software. This would also ensure the existence and continued use of such software beyond the research project processes. As the findings suggested the need for greater access into AL computer facilities, Arabic teachers should be provided adequate and sufficient computer facilities if they are supposed to increase the level of ALL and ALT.

The findings also demonstrate some suggestions in terms of pedagogical improvement and the improvement of environmental factors. Most of these recommendations should be put into practice by educational authorities in order to include the software technology in formal AL curriculum. Although a number of initiatives are taking place to facilitate the use of software technology in AL, they have not yet obtained a clear critical mass in order to construct a special technical design system that suits the characteristics of AL. Therefore, further development of language technology that can deal with this matter is necessary in order to improve the efficiency and effectiveness of software technology in AL.

The development of AL technology is an essential step in dealing with the weakness in the Arabic language that mainly results from the phenomenon of diglossia in the Arabic language. Consequently, we believe that policy makers should start the development of AL technologies within targeted programs serving ALT and educational development in the Sultanate of Oman in order to bridge the technology divide.

More strategic research and insights into types of computer software that may be developed to deal with AL communication skills are required. It is equally important to include students' interaction in software technology to improve Arabic learners' communicative skills. Alternatively, software programs that are specifically designed to allow learners of Arabic to speak and interact are needed.

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