DIFFERENTIAL EFFECTS OF THE IPAD ON FIRST AND SECOND LANGUAGE ACQUISITION BY SAUDI CHILDREN DURING THE COVID-19 PANDEMIC

Reima Al-Jarf, Ph.D.
King Saud University, Riyadh, Saudi Arabia
reemasado@msn.com

Abstract: *This study investigates the differential effects of the iPad on first and second language learning by Saudi children in the home environment. The subjects consisted of 78 parents and 118 children. The children were grouped into: 1-6 years old (young children in kindergarten and pre-school); 7- 9 years (grades 1-3); and 10-12 years (grades 4-6). Results of the survey-questionnaire showed that the iPad is more effective in helping young children in language learning than older children in grades 1-3, and in grades 4-6 respectively. Older children mainly use the iPad to play games and watch movies. More children under the age of 6 use the iPad to learn English than Arabic; 21.88% use Arabic Alphabet apps to learn; 15.6% use apps to learn the Quran; 12.5% use apps to learn numeracy and arithmetic; and 12.5% use animal apps. The iPad helps kindergarten children to learn the alphabet, numbers, names of animals, colors, fruits, seasons, and continents. They learn from apps, from games, cartoons, movies, nursery rhymes, stories, and flash cards. The iPad helps children focus on and engage in learning because the apps are interactive and use color, animation, audio, and video. Negative effects of the iPad on language learning include learning bad language, bad handwriting and some children no longer read print books. Most parents supervise their young children but not older children while using the iPad. The article reports the results in detail and gives recommendations for better use of the iPad.*

Keywords: *iPad; Mobile Technology; Language Learning; Children; Language Apps; Autonomous Learning.*

I.   INTRODUCTION

Due to the Covid-19 Pandemic, students of all ages in the Kingdom of Saudi Arabia (KSA) have been studying online since March 2020 until now (Spring semester 2021). Since children are studying online, they are using their mobile devices such as iPads, tablets, and smart phones to access the Saudi Ministry of Education's distance learning platform *Madrasati (My School)* for grades 1-12 from home. They use they mobile devices to do homework and take tests online. They are also using their mobile devices for entertainment, communication and learning beyond the school curriculum, as they are having more free time than before. A need to find out how children are utilizing their mobile devices during the Covid-19 Pandemic in formal school education and in autonomous learning at home, especially in the area of first and second language learning, is needed.

A review of the literature has shown a plethora of studies that investigated the effect of mobile devices on children's first (L1) and second language (L2) acquisition at school. For example, [1] reviewed journal articles, conference proceedings, and doctoral dissertations published between 2008-2018 and performed a meta-analysis of 80 experimental and quasi-experimental studies to evaluate the learning outcomes of MALL (Mobile-Assisted Language Learning). Their findings showed that the use of mobile devices for language learning is more effective than conventional teaching methods. In a similar study, [2] reviewed 11 studies published between 2005 and 2016 that examined the use of mobile devices for teaching English to students in grades K-12th in the USA. Results of the review indicated promising effects of mobile devices in teaching English to students in grades K-12. Using mobile devices in instruction led to improved learning, engagement, and -efficacy, and increased students' focus time on academic content. In Spain, [3] collected data from 20 elementary schools and 1,011 students in grades 5 and 6 and found that certain activities with the iPad

influenced students' engagement, promoted their authentic learning, and satisfied their needs. Likewise, [4] explored how elementary educators implement iPad devices as instructional tools to enhance language arts instruction. She concluded that iPads can function as a powerful motivating agent and a compact, easy to implement tool for differentiating language arts instruction in first-grade classrooms.

In addition, some studies investigated one-to-one devices in some elementary schools and their effect on language learning. [5] used ethnographic and quantitative classroom observations to explain variations in immigrant students' academic achievement in English and language development. 80.9% of the students evaluated their experiences using the one-to-one devices in their classrooms as extremely positive, whereas 19.1% did not feel that mobile devices were benficial to their learning. Technology use at home, academic engagement, language use with friends, being overage for their grade, experiencing family poverty, and whether they worked or not seemed to affect students' language development and academic achievement. Similarly, [6] implemented a one-to-one iPad program in a 4th grade mainstream classroom in an international school. The children reported that the iPad was used in ways that contributed to their linguistic and content knowledge development. However, there were concerns about shifting pedagogy and resources required for implementing a one-to-one iPad program.

Furthermore, numerous studies revealed the effects of using mobile devices on the acquisition of certain skills in the native language (L1) by children such as the facilitation and development of literacy skills [7]; [8]; [9]; [10]; [11]; reading skills [12]; [13]; writing skills [14]; phonological awareness [15] and vocabulary enrichment [16]; [17]; [18]. Further studies demonstrated the benefits of using ebook and story books apps on mobile devices by children [19]; [20]; [21]; [22]; [23]; [24].

As in L1 learning, recent research studies have demonstrated that mobile technologies can support L2 learning and acquisition. According to [25] mobile technologies had a positive impact on student motivation and the approach employed in L2 learning tasks. Students and teachers became increasingly independent in the use of the iPad for English language teaching and learning. Utilization of mobile devices in the classroom was beneficial in developing children's second/foreign language skills. The integration of a mobile social networking site into first grade EFL classes in China produced larger gains in students' speaking skills in English and fluency in the experimental group which means that mobile technology enabled learners to speak in low stress classroom situations [26]. In Canada, the use of iPods and tablets promoted the development of oral language and literacy skills in early French immersion classrooms. Young learners in those classrooms became more motivated to use the target language following the use of mobile devices. The iPods/tablets provided a kind of scaffolding to the writing process by connecting oral language with the written form. The use of oral language with the support of mobile technologies promoted new forms of assessment tools for the teachers, self-assessment by the learners, and peer assessment [27].

In Hindi as L2, [28] developed a mobile game that teaches 4th grade children learning Hindi as L2 decoding skills in Hindi, with an emphasis on complex akshara. The researchers found that the game improved students' akshara recognition and their ability to read and spell words that contain complex akshara.

Moreover, [29] indicated that EFL children's learning motivation and quality of narrative writing skills were enhanced by the use of iPads and Penultimate, a digital handwriting app. The culture-based writing topics derived from students' background knowledge mirrored EFL students' multicultural backgrounds and provided EFL teachers with a creative way to incorporate students' prior knowledge into their EFL learning through a culture-based instructional model. Parents also played a significant role in young EFL learners' MALL. In [30] study, the effect of MALL was compared to paper-based instruction in the development of Iranian EFL elementary learners' writing skills. Students in the experimental MALL group significantly outperformed students in the control group who did not use MALL. They made fewer errors on the target grammatical structures. MALL learners felt positive about the integration of mobile technology in writing classes. Writing barriers in [31] study decreased as a result of integrating an iPad recording app, an iPad camera, and the Book Creator App into a twenty-first century writing workshop for second grade students enrolled in a Mandarin Chinese program in a language immersion elementary school.

In vocabulary learning, [32] investigated the differences in vocabulary acquisition by students keeping mobile-based and those keeping paper-based vocabulary notebooks in EFL learning. Mobile-based vocabulary notebooks had positive effects on students' vocabulary acquistion. Likewise, [33] compared the effects of e-flashcards and paper flashcards on Chinese vocabulary learning and learning attitudes among 4th and 5th grade English-speaking students learning Chinese as a foreign language. Students who used e-flashcards statistically outperformed those who used paper flashcards on Chinese word reading and listening. In addition, students who used e-flashcards demonstrated more positive learning attitudes toward Chinese vocabulary learning than those who used paper flashcards. Such findings support the audio application on Chinese word recognition among beginning Chinese language learners as an effective instructional approach.

Although a plethora of studies confirmed the importance of integrating mobile devices in teaching L1 and L2 to children in school, studies that investigated the impact of utilizing mobile devices by children in the home environment, especially during the Covid-19 pandemic, are lacking. In Saudi Arabia, there is a need for exploring how children of all ages take advantage of their free time and having access to mobile devices in the home environment during the Covid-19 pandemic in learning English and Arabic. Therefore, the current study aims to fill this gap by exploring the differential effects of the iPad on L1 (Arabic) and L2 (English) learning in the home environment by Saudi children during the Covid-19 pandemic. It aims to compare 3 groups of children: 1-6 years old (young children in kindergarten and pre-school); 7- 9 years (grades 1-3); and 10-12 years (grades 4-6) as to effect of the iPad on their L1 and L2 acquisition. The study focuses on the informal, out-of-school use of the iPad in learning Arabic (L1) and English (L2) on their own at home. Specifically, the study aims to answer the following questions: (i) Which languages are learnt on the iPad at home? (ii) Which skills are learnt and/or practiced in English and/or Arabic on the iPad at home? (iii) Which apps are children using to learn English and/or Arabic on the iPad at home? (iv) Are there significant differences between the three age groups in using the iPad for learning English and/or Arabic on their own at home? (v) What positive and/or negative effect does the iPad have on learning English and/or Arabic at home? (vi) What is the role of parents in language learning by their children at home? Do parents provide guidance and supervision to their children in language learning on the iPad? (vii) What are the parents and children's views on learning English and Arabic on the iPad at home? (viii) Are there any misconceptions among parents and children about language learning on the iPad?

Findings of the present study will shed some light on what children do with their iPad while at home, whether they use their iPad in developing their listening, speaking, reading, writing and vocabulary skills in Arabic and/or English, and which apps they use to develop those skills. It will also shed some light on the best practices for utilizing the iPad in language learning in the home environment, the shortcomings of language learning apps, and the kind of guidance that children need when they use their iPad in language learning at home. It will raise parents' awareness of the potentials of iPad in children's L1 and L2 acquisition, will give some implications for language learning practice on the iPad and further research in this area.

II.   METHODOLOGY

2.1   Subjects

The subjects consisted of 78 parents and their 118 children. Analysis of the demographic data showed that 7% of the parents in the sample have a Ph.D., 31% have an MA and 62% have a B.A. degree. 77% are working and 23% are not working. Parents in the sample are specialized in English literature, linguistics, translation, education, IT, Islamic studies, social work, biology, law, business, library science, home economics, physical therapy, and pharmacy.

As for the children's sample, 40% were between 1-6 years old (in Kindergarten and preschool), 30% were between 7-9 years old (in grade 1-3), and another 30% between 10-12 years (in grade 4-6). All the children in the sample have their own iPad with internet access or share an iPad with their sibling.

2.2   Data collection and analysis

Parents were surveyed using open-ended questions. They were asked about their children's age, grade level, language of focus at home; examples of English and Arabic language apps used by the children that promote their language acquisition; Arabic and/or English language skills developed (alphabet, pronunciation, speaking, vocabulary, spelling, reading, composition… etc.); the positive and negative effects of the iPad on children's L1 (Arabic) and L2 (English) learning; and whether they help and supervise their children while using the iPad and kind of help they provide and what they think about leaning English and Arabic on the iPad.

The researcher also interviewed 20 children to find out in what ways the iPad affects their Arabic and English language acquisition, which skills they have developed more and which apps they find the most helpful in language learning.

Parents and children's responses were compiled and classified according to the questions asked. Percentages of parents and children giving the same responses were computed. Parents and children's points of view are reported qualitatively as well.

As a reliability check, the author tallied, classified, and quantified parents and children's responses twice with a 2-week interval between them. Variations in analyses were corrected.

III. RESULTS

3.1 The iPad and language learning by Saudi children

Data analysis showed that 75% of the parents believe that the iPad has a positive effect on children's language learning (6% believe the iPad has a positive effect on learning Arabic only; 13% think it has a positive effect on learning English only; 56% reported that it has a positive effect on learning both languages); 2% indicated that the iPad has some effect on their children's language learning; and 23% pointed out that the iPad has no effect on language learning in children at all.

However, parents asserted that the iPad is more effective in helping children under the age of 6 in language learning than older children in grades 1-3 and children in grades 4-6 in that order. The older the children, the less beneficial the iPad is in language learning. The iPad is used more and is more beneficial in learning English than Arabic.

The parents declared that children in grades 4-6 do not use the iPad for language learning purposes at all because they mainly use the iPad to play games, soccer, car-races and watch movies mostly in English. They also feel that educational and language learning apps are boring.

For children in grades 1-3, 37% use the iPad in language learning and 63% use it for games and entertainment (watching movies, and T.V. series, soccer matches, wrestling and others). More children use the iPad in learning English than Arabic because some parents believe that kids do not need to learn Arabic as it is their native language.

Since Arabic is diglossic, i.e., has two forms: a Standard Arabic (SA) form used in education, the media and formal situations, and a colloquial form used in daily conversation, the children benefit from the iPad in pronouncing SA words correctly, learning new Standard vocabulary and expressions, and new slang words from movies, cartoons and games such as: اشعر بالحزن *(I feel sad),* ارجوك *(please), (store),* أحمق *(idiot),* اركض *(run),* غبي *(unintelligent),* سكة *(path, railway),* فديتك *(I adore you),* names of Arabic clans and football players. In addition, they read stories about the Prophets, and some Suras and stories from the Holy Quran. They learn to read, write, and spell by trial and errors in order to communicate with their relatives and friends on WhatsApp.

In English, children in grades 1-3 learn some English words that occur very frequently in games such as *"play, cancel, quit, download, start, end, finish, game."* They learn general English words such as *"delicious, amazing, good job, funny, sad, happy, good morning, good afternoon, good night, impossible".* They also learn English opposites. Some parents said:

Nadia: *My daughter has been using new Arabic words that I never used with her. She learnt the phone number of the fire brigade. She can express herself orally in SA. She has learnt how to correctly pronounce words that she used to mispronounce before, although I never corrected her. She can tell which pronunciation is correct and which one is not. She uses SA words and expressions such as "ladder, fireman, please, you are a short-tempered mother".*

Khaled: *My child learns to spell in order to search for games and songs. He asks me about the meaning of this word and that word and the meaning of some sentences.*

Amirah: *My daughter learnt to read English words that she encounters in games so that she can download apps, read instructions and turn the network on and off.*

Suna: *My children only play games on the iPad, but they have memorized the shapes of some English words which they see very often in English games and they know their meaning even though they do not know how they are pronounced such as: "play, cancel, quit, download, start, end, finish, game."*

Nayef: *my 9-year-old son knows names of wrestlers from wrestling videos by heart, although they are difficult and too many, but they add to his knowledge of English proper names and how they are pronounced.*

As for children under the age of 6, parents reported that they use apps to learn the Arabic alphabet, numbers, names of animals, animal sounds, colors, fruits, vegetable, body parts, shapes, clothes, and seasons. They learn to read and spell Arabic words through watching their favorite TV channels on the iPad such as: افتح يا سمسم *(Open Sesame),* براعم *(Bara'em Kids' T.V. Channel),* طيور الجنة *Tuyoor Al-Jannah (Heaven's Birds T.V. Channel),* برنامج عدنان *(Adnan for learning Arabic and the Quran).* Parent also gave examples of Arabic

language learning apps that their children use such as: النحلة الذكية (the Smart Bee); معلم الحروف (Alphabet الحروف Teacher); معلم الأرقام (Numeracy Teacher); مقاطع يوتيوب لأناشيد تعليم الحروف، (Alphabet songs on YouTube); صوت وكلمة (Sounds & words); حروفي المرحة (My Fun Letters); العربية قصص الأطفال (The Arabic Alphabet); قرآن ربي (God's Quran); صح ام خطأ (True or False); نبي الرحمة (Prophet of Mercy); قصص الحيوان (Children's Stories); (Animals' Stories). In general, it was found that 21.88% of the children under the age of 6 use Arabic Alphabet apps; 15.6% use apps to learn the Quran; 12.5% use apps to learn numeracy and arithmetic; and another 12.5% use animal apps. The rest use miscellaneous apps.

Furthermore, data analysis showed that 46% of the children under the age of 6 use the iPad to learn English more than Arabic because: (i) they go to international kindergartens; (ii) they lived abroad when their parents were studying in an English-speaking country; (iii) their parents are English teachers; and (iv) the parents want their children to know English. Results revealed that 5% of the children do not like the iPad. They like to use their parents' smart phones. The parents indicated that the iPad helps their children learn the English language easily. They learn English from YouTube videos, Barney videos, and Ames movies. They learn nursery rhymes and songs and learn words from flashcards. They learn the English alphabet, names of colors and continents from special apps. Apps help them develop their ability to discriminates sounds and improve their pronunciation. They recognize the shape of words as whole words. They infer meanings of words from pictures associated with them. They listen to and repeat 5 sentences a day. Some learn how to construct sentences. They memorize some sentences and phrases which they later use in certain situations. They practice what they learn and use it in interacting with other speakers. Examples of the English language learning apps which the children use as mentioned by the parents are: *ABC Song, Minecraft, Agnitus, Endless ABC, LETTER School, Fun at The Circus, First Words Sampler, ABC Letter Tracing, Read Me Stories, Animal Sounds Free, Laugh and Learn Animal Sounds, Farm Animals, Toddler Fish, Counting Fun - Hush Baby, If You're happy, Find an Animal, Twinkle Star*. Some parents wrote:

Salwa: *My son is 2 and he has learnt Arabic letters, words, pronunciation, and he recognizes the shapes of whole words for words used in downloading, opening, and closing apps. In English he has learnt simple words like "yes, no, one, two" only, no more.*

Fatima: *I noticed a difference in my 3-and 5-year-old children's Arabic and English languages before and after using the iPad. Their Arabic and English languages have improved a lot.*

Lana: *I have 2 daughters: 2 years and 4 months. In English: She learnt the numbers and color names. She can answer when I quiz her. She knows some English letters. Can connect the phoneme (sound) and grapheme (written form) in English. She knows the shapes (triangle, square, rectangle, circle) and discriminates between them. She knows a variety of words. She sings songs about the family, healthy food, how to brush teeth. In Arabic, she knows the numbers, shapes in Modern Standard Arabic. She sings in Arabic.*

Maha: *My son is 5. He watches animal video clips in English on YouTube. He learnt animal names such as "crocodile, lion, monkey".*

Samia: *My 4-year-old son learnt to speak from the Pappa Pig English Episodes app although it is a pig family. He learnt names of all animals even difficult ones such as (rhino, hippo Peacock).*

3.2   Negative effects of the iPad as perceived by parents and children

The parents reported numerous benefits for using the iPad in language learning. The iPad is easy to use and children can use it with ease, without prior training. It makes language learning fun, smooth and easy. It helps children focus and engage in learning as the apps are interactive and use color, animation, audio, and video. Their children like songs because they can be easily memorized. They can use and re-use the apps any time and as many times as they wish, delete them or change them if they wish. They can connect a concept, word or sentence with the picture and action.

Similarly, older children said that they use the iPad for fun, not for studying and language learning. Some do not like the iPad. 5% prefer to use smart phones and laptops. They think that educational apps are boring, whereas games are exciting and full of action. Others reported that they did not know that there are language learning apps that they can use for language learning. They added that nobody told them about language learning apps that they can use on the iPad. They believe that they do not need Arabic language learning apps because Arabic is their mother tongue, in addition to learning Arabic at school. On the other

hand, younger children indicated that songs are fun. They like them. They are nicer than books. They can sing along and move their heads with the songs.

Furthermore, parents pointed out some negative effects of the iPad on language learning such as bad handwriting compared to writing by hand on paper. They added that using the iPad may lead to reticence and lack of social skills if it is used for a long time. Some apps use different colloquial forms in Arabic, rather than SA which is confusing for the children. Some games contain inappropriate words that the children might pick up and use without knowing their meaning. They would use them when they are angry or offended but this problem can be solved by deleting those games. Some indicated that their children do not read print books anymore. Since the children play games mostly in English, not Arabic, and spend a lot of time using them, this leads to focus on English rather than Arabi and this might lead to losing or weakening their Arabic language. For example, some children know the names of some animals and fruits in English, but they do not know them in Arabic. Some children do not learn much if the apps are not interactive. Moreover, there are more songs and apps in English than Arabic. There are not many Arabic language learning apps to accommodate all ages. English videos are more attractive than Arabic videos, that is why children are more attracted by English than Arabic videos. Some parents responded:

Sara: *My son is 3. The iPad helped him develop oral fluency in English through kids' songs and YouTube. In English he has acquired 150 words.*

Zahra: *My daughter is 3. She has learnt to speak English with an American English accent from watching cartoons and kid's movies on YouTube. She memorizes everything that she hears and talks to herself all the time in English and repeats the exact dialogues that she has watched to herself.*

Aziza: *Unfortunately, the iPad does not develop children's speaking skills in Arabic because that requires mixing with people.*

Ghada: *My daughter used to speak SA then stopped when we lived in UK. She watches cartoons in Italian, Spanish, English on her iPad. She does not like Arabic. She goes to an international school where the medium of instruction is English.*

Samia: *My son is 8. He does not like educational apps. He feels they are boring. He likes games and watches comedies on YouTube. He learnt some English words that recur very often in games and on YouTube such as 'fight, punch, like, dislike, subscribe, win, lose, game is over, start, finish.'*

Nayef: *My 9-year-old son watches wrestling videos. He imitates the screaming and movements of wrestlers more than paying attention to the English language used except for learning the names of wrestlers.*

3.3   Parents' role

Parents' responses showed that they provide more help and guidance to young than older children in grades 4-6 while the children are using the iPad. Some search YouTube for characters or shows that their young children like to watch on T.V. so that they can watch them on the iPad such as the *Crocodile Series,* دحوم *Dahhoum and Barney*. Some search for and start the apps or song videos for their young children. The parents said:

Lana: *I do not interfere while she is watching, I do not tell her what/what not to watch. I do not impose on her which language to use. It is up to her.*

Ahmed: *My son asks me about the meanings of words and sentences.*

Dalal: *I type the name of a video or an app or a search term such as: "alphabet songs, learning the alphabet" in the search box on the iPad. I get many results from which my daughter and I choose some and watch them together.*

Samia: *When my daughter first entered kindergarten, I started to teach her the alphabet, but she would be bored and would not want to sit for a long time. Then I started to play some alphabet songs on the iPad and in a short time, she started to sing a long and now she knows the alphabet by heart. So, whenever I want her to learn something, I play some YouTube videos on the iPad for her.*

Nayef: *My son asks me and his mother to help him enter the password in English and how to enter the English search terms that he needs for locating his favorite apps and videos in the search box. He also asks me about the meaning of the English messages that appear on the screen while playing a game.*

3.4 Misconceptions among parents

Responses to the survey revealed that 10% of the parents have some misconceptions about the iPad and language learning. Some indicated that children do not need to learn Arabic as it is their native language. Few believe that it is better to learn English at a language school or institute, not from the iPad. Some also declared that it is better for children to learn a language directly from people, not from apps. Some parents commented:

Sultana: *Developing children's speaking skills in Arabic cannot be learnt from the iPad because that requires mixing with people.*

Amira: *I object to the idea of language learning and language development through the iPad. Language development in children occurs through direct contact with people.*

Jameela: *it is not a good idea for children to use the iPad to acquire language.*

IV. DISCUSSION

Findings of the present study are partially consistent with findings of prior studies that showed that use of the iPad at school had positive effects on first and second language learning by children of all ages and in all grade levels such as [1]; [2]; [4]; [5]; [6]; [25]; [26]; [27]; [28]; [29]; [30]; [31]; [32]; [33] and many others. In prior studies, mobile devices enhanced children's literacy, reading, phonological awareness, pronunciation and vocabulary skills. In the present study the iPad was most beneficial in language learning at home for children under the age of 6. Children aged 7-9 use the iPad to learn L1 and L2 at home to some degree; and children aged 10-12 use the iPad at home mainly to play games, not to learn languages. Like older children's stereotypes in the present study that the iPad is an entertainment tool, [34] reported that students regularly associate tablets with gaming and social media, making it difficult for them to use the iPad creatively.

Another study that surveyed parents' reading practices at home found that children's attention, physical position to the reader, and discourse increased while reading digitally. None of the children requested to read additional print books whereas 50% of the children who read digitally requested more digital books [35]. This is contrary to the findings of the present study in which parents mentioned that children no longer read print books.

Despite the benefits of the iPad in the language learning process, there are also some negative effects on children's language such as learning bad language, bad handwriting, and reticence. Similar findings were obtained in a study by [36] in which mothers confirmed some negative linguistic effects of the iPad on young children such as lack of communication with parents and other people due to social isolation and children's engagement with the iPad for long hours.

A second limitation mentioned by some parents is lack of good and insufficient number of language learning apps in Arabic compared to the great variety of language learning apps in English. Currently available language learning apps do not cover all Arabic language skills for young children. There are not Arabic language learning apps for children of older ages. The inadequate and insufficient number of language learning apps was revealed by other studies in the literature. [37] examined the effect of "Duolingo"®, a mobile gamification app, on English L1 third and fourth grade students' Spanish language achievement and student academic self-efficacy, and found no significant difference in students' Spanish achievement or in academic self-efficacy between students who used "Duolingo"®, and those who were taught with traditional face-to-face instruction. In another study, [38] analyzed the features of 90 English learning apps and found that most English learning apps are not designed for EFL learners, and do not encourage user interaction around the texts. Similarly, [39] concluded that half of the Mandarin language learning apps lacked key educational features essential for second language learning. The apps scored most highly on the interactivity, cultural awareness, usability, and language and literacy content criteria and scored lowest on the collaboration and provision of learning outcomes criteria.

V. CONCLUSION

Findings of the present study have shown that use of the iPad by children in the home environment may not seem beneficial and attractive to children as adults might think. Even children have misconceptions about iPad uses such as thinking that the iPad is for playing games and entertainment, not language learning and not knowing that the iPad can be used in language learning as nobody told them so. Parents also reported more focus on learning English than Arabic, as they think children do not need to learn Arabic because it is their native language. Some children are so dependent on the iPad that they no longer read print book. There should be a balance between focus on English and Arabic language learning. Parents' guidance at home and teachers' guidance at school are required because technology does not teach by itself. Reading story apps should be integrated in the reading curriculum at school to familiarize the children with them and to train them to read at home. Interactive story apps have been proven to be effective [36]. Parents should be introduced to language learning apps on mobile devices such as the iPad by experts to enable them to guide their children at home. Since there is a lack of Arabic language apps for mobile devices for older children, this paper calls for the development of more Arabic language learning Apps for older children such as apps that teach Arabic grammar, Arabic novels, short stories, and literature, children's encyclopedias, dictionaries, science, geography, history, world cultures and others.

Finally, further research is needed to inform parents and teachers of the best practices in language learning on mobile devices, app design, and to provide guidelines to help them select quality apps to support first and second language learning by their children at home.

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