



EFL LEARNERS' PERCEPTIONS TOWARDS THE ACTIVE READING SOFTWARE AS A LEARNING TOOL TO ENHANCE READING COMPREHENSION

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Abstract:

The present study endeavored to explore EFL students' perceptions regarding the acceptance and intervention of ARS in enhancing reading comprehension ability at Majmaah University, Saudi Arabia. The study engaged 30 male undergraduates of English major B.A program. For data collection, the study utilized a qualitative technique using semi-structured interviews and the interview questions were constructed based on the principles of Technology Acceptance Model (TAM) by Davis (1989). Active Reading Software (ARS) was employed as a technological tool for teaching reading comprehension. The treatment group received intervention from ARS for the duration of four weeks in the computer lab. Qualitative data obtained from the students' interviews were evaluated by means of thematic analysis using Braun and Clarke's (2006) framework. The results of the thematic analysis pointed out five major themes considered to be the factors that influenced participants' perceptions towards ARS as a learning tool for improving reading comprehension at the tertiary level. Findings of the present study offer essential implications for language instructors and educational institutions providing technology-integrated courses. Understanding the factors influencing the learners' perceptions towards the adoption of technological tools in learning is significant for its success.

Keywords: ARS, computer software, perceptions, TAM, technology-enhanced learning

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1. Introduction

1.1 Background

Reading comprehension is one of the fundamental language skills for building up students' English language capability. Improved language capability is a key to scholastic achievement both in EFL and ESL settings (Horiba & Fukaya, 2015). Reading ability is essential for learners on account of constructing meaning from the verbal or written texts for better understanding. The main objective of reading instruction is to build up the reading comprehension skills of the learners for achieving high academic goals (Denton et al., 2015). Reading is significant because of its role in formal education where learners study various academic subjects for career success. Therefore, for achieving desired learning goals and language proficiency, EFL students are required to understand and interpret the underlying concepts of texts whenever they get exposed to reading texts; printed or computerized formats (Uccelli, Galloway, Barr, Meneses, & Dobbs, 2015). Reading is a source of communication, language acquisition and exchange of ideas and knowledge among the people. However, the reading process is complex and dynamic that involves learners cognitively with the text for the construction of meaning on the basis of their prior knowledge (Woolley, 2011). Reading process allows a reader to interact with the content for construction of meaning which includes information in the text, learners' background knowledge and previous experience. Moreover, learners' inability to use comprehension skills during reading may negatively affect their learning outcomes and social achievement (Dodick et al., 2017). The purpose of reading, therefore, is not to understand the meanings of the individual words but rather to comprehend the text as a whole in terms of ideas, concepts and author' purpose (Kuhail, 2017). Moreover, university students need to master various comprehension skills for enhancing their knowledge for academic performance.

Reading is a multi-sensory process involving learners cognitively, perceptually, physically psychologically with whatever they read (Mangen, 2008). Reading process consists of both sensory as well as conceptual aspects, therefore, it is a challengeable task for instructors teaching reading comprehension to EFL or ESL learners. Particularly, in the Saudi EFL contextual setting, the teaching of reading is a highly challenging task. Most learners even at post-secondary or tertiary stage perform reading tasks devoid of real comprehension of the key thematic contents as well as the author's intention after the texts. Khan (2011) pointed out a number of factors that are liable to EFL students' bad performance and poor results in reading comprehension. First, the base of reading comprehension is enriched vocabulary knowledge; Saudi EFL learners seem to have a poor level of vocabulary proficiency. Second, reading comprehension requires mastery of comprehension skills and application of reading strategies. However, Saudi learners are not proficient in utilizing certain reading skills or strategies that are considered to be prerequisite for evaluating reading text conceptually. Third, learning without motivation is essentially a challenging undertaking in language pedagogy. The inability of Saudi learners to overcome their language barriers is based on their motivational level. Fourth,

the induction of inappropriate reading materials in EFL reading instruction may result in poor performance and unsatisfactory outcomes in reading. Finally, language teaching is not scaffolded by technological aids and teacher-centred practices to enhance the language proficiency of the students. Additionally, there are some other factors that influence reading comprehension ability Saudi learners. Saudi learners merely concentrate on passing the reading course; memorizing meanings of limited words and practising certain tasks related to comprehension questions (Nezami, 2012). Moreover, Saudi learners lack reading habit to engage in reading for pleasure. Nezami also added that exposing learners to authentic and motivating reading materials could develop the reading habit of the learners to read for academic as well as for pleasure. Many studies in the past emphasized the role of reading strategies and relevant schemata in reading comprehension. More recently, the integration of technological aids in the teaching of reading has revealed significant outcomes. However, the prevalent condition of reading practices in Saudi EFL context can also be improved by focusing on the root cause of the problems.

The efficacy of using technology in language pedagogy is proven by ample empirical evidence in the field of CALL. It is a commonly accepted notion that the viable utilization of technology in language instruction may facilitate learners in enhancing their language capability and it can also positively impact learners' perceptions towards learning (Edmunds, Thorpe, & Conole, 2012). Moreover, with the effective use of technological tools in reading classes, learners' prior which is core to reading comprehension, can be activated. In addition, technology-integrated instruction can increase learners' level of engagement, motivation and provide learners with an opportunity to practice their language skills in a learning environment which is devoid of stress and anxiety (Lai, Yeung, & Hu, 2016). According to Krashen, (2011) web pages, for instance, can possibly expand the volume of comprehensible input because learners show their motivation in spending more time reading online materials instead of reading offline reading materials. Krashen also added that the possible reason behind learners' motivation towards digital text is that they consider web text comparatively more interesting, lively, and stimulating. In the new era of digital globalization, a shift to read from printed pages to read from digital screens has occurred (Putro & Lee, 2017). In many countries, educational technologies are extensively used in promoting quality education based on students' individualized learning experiences. On the other hand, the use of technologies, in Saudi EFL teaching context, is limited and the teaching practices are merely based on text-book approach (Alkhalaf, Drew, AlGhamdi, & Alfarraj, 2012). However, the incorporation of new technology in the educational context is reliant on learners' positive attitudes, motivation, and perceptions towards its use.

Perception is a social psychology phenomenon in which people tend to interpret or produce a certain idea or concept meaningfully when they are exposed to a situation or external stimuli (Posner, 1977). However, a meaningful interpretation is usually done on the basis of prior experiences. Acceptance and awareness of external stimuli by the learners is fundamental to the process of perception. Individuals accept stimuli that

correspond to the satisfaction of their immediate needs and ignore stimuli that probably cause psychological stress or anxiety (Pickens, 2005). In a foreign language context, learners' attitudes and perceptions play an indispensable role in the process of planning or evaluating a learning program (Struyven, Dochy, & Janssens, 2005). Understanding the factors that could probably affect learners' perceptions of the adoption of new technology in education is crucial (Tabak & Nguyen, 2013). Similarly, the effectiveness of technological tools in achieving the desired goal in a target language is reliant on learners' positive attitudes and perceptions (Eom & Ashill, 2016). The academic success or failure to a greater extent depends on learners' attitude and perceptions (Donaldson, McKinney, Lee, & Pino, 2016). There is a strong correlation between learners' positive perceptions towards technology use in the learning process and learning outcomes of the learners (Chang et al., 2015). In technology-based learning, Zhao (2015) outlines some of the factors that can have significant effects on learners' perceptions. These factors include input materials, mode of delivery, prior experience with technology, gender, age, feedback, evaluation, learning environment, teachers, and peers. Moreover, the factors affecting learners' perceptions or attitudes with respect to technology acceptance model are summarized as; perceived ease of use, perceived usefulness, perceived availability and practicality (Peek et al., 2014). Thus, the current study attempts to unfold the underlying factors affecting learners' perceptions towards the application of Active Reading Software in improving reading comprehension ability of Saudi EFL learners in Majmaah University.

2. Research Questions

- What are the factors affecting Majmaah EFL learners' perceptions towards the acceptance of ARS as a learning tool for improving reading comprehension skills?

3. Literature Review

3.1 Reading and Technology

The continuous advancements of technologies in our day-to-day life has motivated the researchers focusing on the incorporation of technological tools in education for enhancing the process of language practices across the globe (Alemi, 2016). Similarly, the ever-increasing effects of technological tools in language teaching have changed the learning styles and experiences of the learners to a great extent (Thao, Tham, & Ngan, 2019). In language pedagogy, technology has been used as a supporting tool for decades by language instructors to enhance teaching methods and language proficiency of the learners (Blake, 2016). Teaching reading skill in a foreign language setting is a challenging task for language teachers as it involves learners in a multimodal process of comprehension that requires a range of comprehension strategies (Dündar & Akçayır, 2017). In order to interpret reading texts effectively, learners need to be proficient in using certain comprehension skills without which comprehension would not take place.

Therefore, language instructors utilize certain technological tools in the reading classes to facilitate learners to acquire reading skills; predicting, decoding, inferencing, visualizing, activating prior knowledge, identifying main ideas, and summarizing, which are essentials for understanding reading texts or topics successfully (Gilakjani & Sabouri, 2016). Learning reading via technology intervention enhances the motivational level of the learners to read more independently both in formal and informal settings. According to Song, Kalet, and Plass (2016), the great advantage of technology-integrated reading instruction is a successful activation of learners' prior knowledge with the help of the multimedia tools. The efficacy of technology in enhancing reading proficiency of the learners is advocated by several studies carried out both in EFL and ESL contexts (Ansarin, Farrokhi, & Mahboudi, 2017; McDermott & Gormley, 2016; O'Brien, Salinas, Reinhart, & Paratore, 2018; Piper, Zuilkowski, Kwayumba, & Strigel, 2016). Therefore, in view of filling the existing gap in CALL research, the present study attempts to assess the factors influencing Majmaah University students' perceptions towards using Active Reading Software used as a supplemental learning tool in improving reading performance.

3.2 Literature Review

The present study has critically reviewed the literature of the relevant studies carried out in the domain of CALL to determine the factors affecting learners' perceptions towards the utilization of technological tools in EFL and ESL settings.

Wiyaka, Mujiyanto, and Rukmini (2018) explored learners' perceptions of the usefulness of CALL software called DEC in Indonesia. This software was utilized by the first semester students as a supportive software in Integrated Course offered by the university. This study was based on Davis (1989) Technology Acceptance Model (TAM). A total of 236 students took part in the study and the data were collected on the perceived acceptability of the program using a survey questionnaire. Data on four external variables; perceived ease of use, perceived usefulness, perceived attitude towards usage, and perceived intention to use the program were tabulated descriptively. The findings of this study are consistent with the research by Ratna and Mehra (2015) who claimed that users readily accept the technology that is easy to use and useful to improve their language proficiency.

Gilbert (2017) investigated learners' perceptions towards web-based reading comprehension in ESL context in the USA. The study used a huge sample of 375 participants aged 18 to 59 years. The participants were culturally, linguistically, and ethnically diverse. In a two-month experiment, participants' perception of online reading and reading from the printed text was investigated. The study used only qualitative data collection procedures; that is students' interviews, observation and student journal entries. According to the result, the overall perception of the participants was positive towards online reading in terms of perceived ease of use, perceived effectiveness, and sense of freedom. The participants reported that while engaged with online reading they felt at ease to locate information because it was easy to read and navigate via web-based

text. However, some participants preferred text-based reading over hypertext for lengthier and extensive reading. Findings of the study indicated that participants considered online reading as interesting and motivating as compared to face-to-face reading from the printed text. In addition, the finding supported the results of previous studies (Chipangura & Aldridge, 2017; Shah & Attiq, 2016) which indicated a positive impact of using technology on learners' perception towards technology-integrated learning.

Milonm and Hasanand Ipban (2017) explored learners' perceptions towards technology-based learning of language skills. In a random selection, 120 ESL students were engaged in the study. The study employed a self-structured questionnaire in a 5-point Likert. Participants were asked about their experiences with CALL applications in learning language skills. Findings revealed that the majority (93 %) of the participants had positive perceptions towards CALL-based learning of language skills. Perceived ease of use and perceived usefulness were the two variables which received the highest mean score in the analysis. According to Abdullah, Ward, and Ahmed (2016) perceived ease of use and perceived usefulness are the two significant factors that impact positively learners' perception towards the adoption and integration of technological tools in the learning process. Moreover, the majority of the participants preferred technology-based learning over traditional-based learning on account of providing learners the opportunity to practice language skills at their own pace using a variety of authentic learning materials.

Huang (2016) examined learners' perceptions towards blended learning in comparison to face-to-face learning in EFL context in southern China. The study engaged 296 participants from different majors in the experiment that lasted for one academic year. The participants attended the blended English course at the same university. Data collection procedure included two questionnaires containing 18 items on participants' perceptions regarding the effectiveness of blended mode learning. Findings revealed that 59 % preferred blended mode of learning, 33 % favoured face-to-face mode of learning and 8 % showed mixed feelings about both modes of learning. In the data, 93.2% of participants stated that online learning facilitated them to improve their listening and reading skills. They claimed that online learning gave them more freedom to choose the learning material of their choice. This finding is supported by previous studies (Condrat, 2014; Liu, Liu, & Tu, 2020) that technology-based learning gives autonomy and confidence to learners.

Ratna and Mehra (2015) investigated university students' perceptions towards the acceptance of e-learning for improving language skills using Davis (1989) TAM model. The study was based on three variables of the TAM model – perceived usefulness, their ease of use, their attitude towards the usage of the technological tool. This exploratory study utilized a structured and self-reported questionnaire for data collection. The participants were studying e-learning course as a part of their graduate program. Findings revealed that the external variable perceived usefulness received the highest mean score ($M=3.89$, $SD=.764$). The findings suggested that perceived ease of use,

perceived usefulness, and attitude towards e-learning are three significant factors that could positively affect learners' perception towards the acceptance of e-learning.

3.3 Theoretical Model

Technology Acceptance Model (TAM) by Davis (1989) is widely applied in empirical research studies that attempt to investigate and explore the factors affecting learners' perceptions towards the acceptance and adoption of technological tool in the learning process (Ratna & Mehra, 2015). TAM is essentially focusing on the factors that urge individuals to adopt and use a particular technology to support the learning tasks. This model suggests that the acceptance and rejection of any new technology is determined by certain factors that affect users' behaviour. The most significant factors that affect users' perceptions and behaviour to accept particular technological tools are perceived ease of use and perceived usefulness. Perceived ease of use refers to the degree to which an individual perceives the use of the system as effortless. Perceived usefulness (PU) refers to the general perceptions of the individuals to accept that using the technology will enhance his or her work performance. In much empirical research, a modified form of TAM is applied to various generic kinds of software to determine the factors that impact individuals' perceptions towards the acceptance and actual use of it (Vogelsang, Steinhüser, & Hoppe, 2013). The present study adopted the TAM model to explore the factors that affect learners' perceptions towards the use of Active reading Software (ARS) in learning reading comprehension.

4. Methodology

4.1 Study Design

The current study utilized exploratory design using qualitative analysis to determine the factors that influence participants' perceptions to accept and use ARS as a learning tool for enhancing reading comprehension. Qualitative approaches are more effective to analyze respondents' perception because they inherent higher potential to meet the objectives of the study (Gilbert, 2017). Moreover, the present study is based on various influence factors of the TAM and employed students' interview as a main research qualitative tool for data collection. Therefore, a semi-structured interview was conducted to understand participants' perceptions, cognitions, and experiences of using ARS in EFL reading classes in the Saudi context. A panel of experts at Majmaah University validated the content of the interview and the modified version, after incorporating the recommendations made by the experts, was utilized. The interview protocol included eight questions that were arranged according to the four basic constructs of TAM; perceived usefulness, perceived ease of use, perceived effectiveness and perceived behavioural intention.

4.2 Population and Sampling

The current study engaged 30 Saudi EFL male undergraduates. All the participants were first-year B.A students enrolled in B.A English program at Majmaah University, Saudi Arabia. The participants in the study aged between 17 to 19 and they shared the same culture and religious background. Moreover, their participation in the experiment was a voluntary as they were provided a consent form to take part in the study. Students with an English major at Majmaah University are distributed into respective sections or groups on account of their college placement test scores. In addition, all the participants took an English proficiency test prior to the experiment to confirm their homogeneity level. According to the result, all the subjects were of the same English proficiency level.

4.3 Instructional Procedure

The instructional procedure included Active Reading Software (ARS) as an independent variable and instrument of the study. The experiment engaged 30 participants and the selection procedure followed a randomized sampling technique. During the intervention, the participants used ARS as a complementary tool for four weeks in their reading classes. Two reading sections of upper-intermediate and pre-advanced levels were studied by the participants. Every reading level contains ten reading topics followed by a variety of reading tasks and activities. Each intervention session lasted for 90 minutes twice a week. The instructional procedure adopted differentiated teaching technique that included four basic steps: introduction of the content, modeling, guided practice and independent practice. In this mode of instruction, students were allowed to complete several reading tasks and exercises in a particular time assigned for each task in the reading section. At the end of the experiment, a semi-structured interview was carried out to understand the overall perceptions of the respondents towards the acceptance of ARS as a learning tool for improving reading comprehension.

4.4 Data Collection

The current study adopted a qualitative approach using students interview as a main research data collection tool. Semi-structured interviews were conducted to explore the factors affecting participants' perceptions of ARS. Interview questions were constructed and categorized following TAM constructs for assessing user acceptance of the technology. Prior to conducting the actual interview, a copy of the Arabic translated version of the interview questions was provided to the interviewees for better comprehension of the interviews. Students opted to give interviews in Arabic. Face to face interviews were conducted and the data were recorded and analyzed qualitatively using Braun and Clarke's (2006) six steps framework.

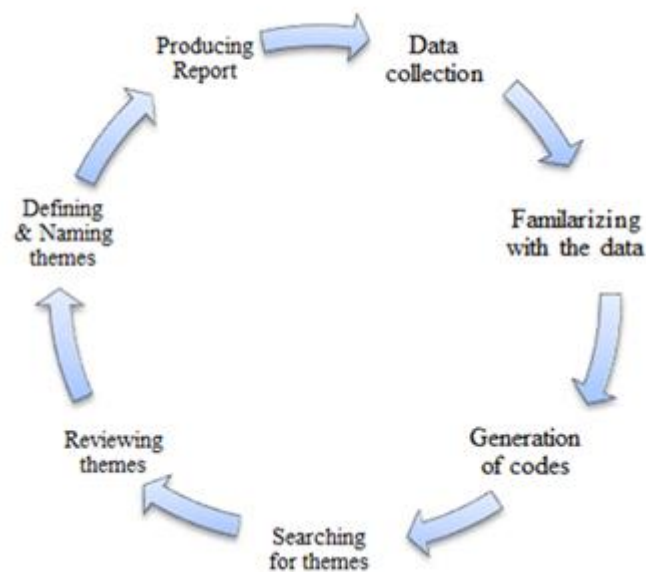


Figure 1: Braun and Clarke's (2006) six-step model for qualitative data analysis

5. Results and Analysis

The qualitative data obtained from the interviews were analyzed through thematic analysis procedure to seek answers to the specific research questions of the study. The collected interview data were transcribed, listed and translated into English from Arabic. The present study, for data analysis, utilized Braun and Clarke's (2006) six-step model to obtain themes and sub-themes of the interviews as follow:

5.1 Data Familiarization

The data acquired from the responses of the interviewees were transcribed. The transcribed data were read several times by the researcher to identify the keywords, and compare the transcribed script with their field notes.

5.2 Coding

In this analytic process, the relevant features of the data were labelled in a systematic way. During this process, the data contents were fragmented into smaller units and named these units and codes based on the shared ideas and concepts. A total of 35 initial codes were generated from the data. Finally, the generated codes were compared and combined to identify their relationship.

5.3 Themes Identification

The collated codes were scrutinized and categorized to determine potential themes and sub-themes. The emerged themes were based on participants' perceptions of using ARS for learning reading comprehension.

5.3.1 Reviewing Themes

In this step of data analysis, all the relevant themes and sub-themes were reviewed and merged to avoid redundancy and repetition of information. Finally, the collated themes were arranged and categorized.

5.3.2 Defining Themes

During this step, the themes were defined using specific terms and phrases and informative names were allocated to these themes based the research question.

5.3.3 Writing up

In this last step of thematic analysis, the researcher linked all the data coherently and produced a scholarly report on the analysis. Table 1 illustrates the major themes and sub-themes generated from the analysis.

Table 1: Major Themes and Sub-themes of the study

Themes	Sub-themes
1 Perceived Ease of Use	a. It is easy to work b. Clear language and instruction c. Relaxed and flexible to use
2 User Interface Efficacy	a. Fascinating interface b. Reliable all over c. Continuous feedback
3 Perceived Usefulness	a. Stress-free learning b. Understand learning c. Enhance learning outcome
4 Interactive Learning Activities	a. Problem solving b. Learner-focused c. Close reading
5 Effective tool for developing Reading skills	a. Effective learning b. Increase Vocabulary c. Encouragement and motivation

Theme 1: Perceived Ease of Use

The first major them generated from the qualitative data was perceived ease of use. Respondents were asked about their experiences with the ARS, the majority responded that they felt at ease to use ARS for learning reading skill. They also added that the language used in the instruction is clear and understandable.

Excerpt: *"I think the most important thing about ARS is that it is easy to operate. I can use it without any problem. Also, the language used in instruction is clear and easy to understand."*

Theme 2: User Interface Efficacy

The second most important theme that emerged from the data was user interface efficacy. Designing a good user interface is an essential factor affecting individuals' perception to accept a new technological tool. In the interviews, the students reported that they liked ARS due to its attractive and interesting interface design. When asked what specific feature of interface design inspired them, majority of them expressed that ARS interface was comfortable and fascinating:

Excerpt: *"It is very attractive and I like the colorful display, the pictures and sounds. It guides me on how to use the system..."*

Excerpt: *"Actually, it is wonderful because font size is adjustable... can be easily navigable. All the functions are understandable and comfortable."*

Theme 3: Perceived Usefulness

The third major theme that emerged from the qualitative analysis was perceived usefulness. Data analysis revealed that a great number of respondents expressed their satisfaction over the use of ARS in learning language skills, especially reading skill. They also acknowledged that ARS helped them increase their language productivity in a stress-free learning environment:

Excerpt: *"I like ARS because it is a useful learning tool.. which I can use to learn English easily. I learnt many new words with ARS."*

Excerpt: *"Of course, ARS is more effective for learning language skills. I think what is more important about it is that I can practice reading in a stress-free learning environment."*

Theme 4: Interactive Learning Activities

The fourth significant theme as identified in the study was interactive learning activities. A large number of respondents in the interviews stated that they enjoyed learning with ARS because it gave them the opportunity to practice interactive learning activities in the class. Moreover, they also added that the learning activities focused on learners' interest:

Excerpt: *"I like ARS learning exercises because they are more student-focused. You need to solve the problem yourself like puzzle exercises."*

Excerpt: *"Well, I think students should use ARS because the learning tasks and activities are helpfully related to students. And ...You can use it alone"*

Theme 5: An Effective tool for Developing Reading Comprehension Skills

The last important theme extracted from the qualitative data analysis was ARS as an effective learning tool for improving reading comprehensions skills such as identifying main ideas, recognizing stated and unstated details, building vocabulary, understanding author' or text purpose. In the interviews, the students expressed that after using ARS they were capable of identifying main ideas, topic sentences of the reading texts, and producing new ideas. They also concluded that the overall benefits of using ARS was the enhancement of their reading comprehension performance:

Excerpt: *"I prefer to us ARS in future because it is helpful in learning reading skills... I learnt many new words from it and I think if I use it my reading skills will improve."*

Excerpt: *" Well reading was hard for me ..but after I practiced ARS , I think I can understand reading... main idea, topic sentence etc...."*

6. Discussion

The present study attempted to uncover the factors that could positively affect Saudi EFL learners' perceptions towards the acceptance and integration of ARS as a technological tool in the learning of reading comprehension at the tertiary level. In order to understand learners' perceptions in relation to the acceptance and integration of ARS in learning reading comprehension, the current study utilized the principles of TAM. However, TAM is most commonly used in the quantitative studies to examine individuals' perceptions and attitudes towards technology acceptance in learning. Literature shows limited application of TAM in qualitative research (Vogelsang et al., 2013). It examined the effects of perceived ease of use, perceived usefulness, the behavioural intention on learners' perceptions to use and accept ARS as a technological learning tool. The findings of the present study indicated five major factors as discussed in the previous section that could have a significant impact on Majmaah EFL learners' perceptions towards the acceptance of ARS as a supportive learning tool to enhance their reading comprehension ability. Among the major themes, perceived ease of use has been reported as a dominant factor that has influenced participants' perceptions about ARS as a learning tool for reading. Moreover, the findings support the previous studies (Abdullah & Ward, 2016; Dizon, 2016; Salloum, Alhamad, Al-Emran, Monem, & Shaalan, 2019) that examined the factors such as perceived ease of use, perceived usefulness and perceived behavioural intention on learners' perceptions to accept and use new technology. Based on the results of the study, it is concluded that ARS is a very effective learning tool for improving learners' reading comprehension skills and their perceptions towards technology-integrated learning.

7. Conclusion

The recent advancement of innovative technology has enhanced the effectiveness of learning pedagogical practices in many parts of the world (McKnight et al., 2016). The incorporation of technological tools in education has assisted language instructors to facilitate their teaching, involve learners actively in the learning process, expose them to target language culture and provide access to online authentic learning materials. Moreover, the ability of the learners to attain learning autonomy for individualized or self-paced learning depends on the effective use of technology in the learning process. Findings of the previous studies indicate that learners' perceptions and attitudes play a significant role to determine and measure the effectiveness of technology in both EFL and ESL contexts. Therefore, the present study attempted to explore the factors that could affect learners' perceptions of technology acceptance and integration in learning a target language. Several studies in the past adopted TAM constructs to examine the factors affecting individuals' perceptions to accept and use technology as a tool in learning. The evaluation of technology to accept or rejects essentially depends on four basic principles of TAM; perceived ease of use, perceived usefulness, availability of hardware, provision of technical support and perception towards technology (Marangunić & Granić, 2015). The findings of the present study revealed that learners readily accept the technology if they feel at ease to use it. Similarly, learners accept technology as useful when they perceive that it can enhance their learning ability. Additionally, the finding of the present study also revealed that ARS helped learners to improve their reading comprehension skills learners. Moreover, they admired ARS as a learning tool in terms of learners' perceived ease of use, perceived usefulness, and perceived behavioural intention. Based on the findings, therefore, the present study suggests that ARS, as a supportive learning tool, should be used by the language instructors to support their teachings and develop learners' language skills in general and reading skill in particular.

Conflict of Interest Statement

The authors declare that do not have any conflict of interest. We also declare that this research work is not sponsored by any institution or company. The topic of research has been selected to enrich the academic research in the domain of technology-integrated learning. The data collected in this study are original and have been analyzed and interpreted only for the sake of research and it will not be utilized for any other purpose.

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References

- Abdullah, F., & Ward, R. (2016). Developing a General Extended Technology Acceptance Model for E-Learning (GETAMEL) by analysing commonly used external factors. *Computers in human behavior*, 56, 238-256.
- Abdullah, F., Ward, R., & Ahmed, E. (2016). Investigating the influence of the most commonly used external variables of TAM on students' Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) of e-portfolios. *Computers in human behavior*, 63, 75-90.
- Alemi, M. (2016). General impacts of integrating advanced and modern technologies on teaching English as a foreign language. *International Journal on Integrating Technology in Education*, 5(1), 13-25.
- Alkhalaf, S., Drew, S., AlGhamdi, R., & Alfarraj, O. (2012). E-learning system on higher education institutions in KSA: Attitudes and perceptions of faculty members. *Procedia-Social and Behavioral Sciences*, 47, 1199-1205.
- Ansarin, A. A., Farrokhi, F., & Mahboudi, H. R. (2017). Incorporating computers into classroom: Effects on learners' reading comprehension in EFL context. *International Journal of Applied Linguistics and English Literature*, 6(7), 143-160.
- Blake, R. (2016). Technology and the four skills. *Language Learning & Technology*, 20(2), 129-142.
- Chang, H.-Y., Wang, C.-Y., Lee, M.-H., Wu, H.-K., Liang, J.-C., Lee, S. W.-Y., . . . Hsu, C.-Y. (2015). A review of features of technology-supported learning environments based on participants' perceptions. *Computers in human behavior*, 53, 223-237.
- Chipangura, A., & Aldridge, J. (2017). Impact of multimedia on students' perceptions of the learning environment in mathematics classrooms. *Learning Environments Research*, 20(1), 121-138.
- Condrat, V. (2014). The use of technology to promote learner autonomy. *Creativitatea lingvuala: de la semn la text*, Iași, Editura PIM.
- Denton, C. A., Wolters, C. A., York, M. J., Swanson, E., Kulesz, P. A., & Francis, D. J. (2015). Adolescents' use of reading comprehension strategies: Differences related

- to reading proficiency, grade level, and gender. *Learning and Individual Differences*, 37, 81-95.
- Dizon, G. (2016). Measuring Japanese EFL Student Perceptions of Internet-Based Tests with the Technology Acceptance Model. *TESL-EJ*, 20(2), n2.
- Dodick, D., Starling, A. J., Wethe, J., Pang, Y., Messner, L. V., Smith, C., . . . Bogle, J. M. (2017). The effect of in-school saccadic training on reading fluency and comprehension in first and second grade students: a randomized controlled trial. *Journal of child neurology*, 32(1), 104-111.
- Donaldson, P., McKinney, L., Lee, M., & Pino, D. (2016). First-year community college students' perceptions of and attitudes toward intrusive academic advising. *NACADA Journal*, 36(1), 30-42.
- Dündar, H., & Akçayır, M. (2017). Tablet vs. paper: The effect on learners' reading performance. *International Electronic Journal of Elementary Education*, 4(3), 441-450.
- Edmunds, R., Thorpe, M., & Conole, G. (2012). Student attitudes towards and use of ICT in course study, work and social activity: A technology acceptance model approach. *British Journal of Educational Technology*, 43(1), 71-84.
- Eom, S. B., & Ashill, N. (2016). The determinants of students' perceived learning outcomes and satisfaction in university online education: An update. *Decision Sciences Journal of Innovative Education*, 14(2), 185-215.
- Ghavifekr, S., & Rosdy, W. A. W. (2015). Teaching and learning with technology: Effectiveness of ICT integration in schools. *International Journal of Research in Education and Science*, 1(2), 175-191.
- Gilakjani, A. P., & Sabouri, N. B. (2016). A study of factors affecting EFL learners' reading comprehension skill and the strategies for improvement. *International Journal of English Linguistics*, 6(5), 180-187.
- Gilbert, J. (2017). A study of ESL students' perceptions of their digital reading. *The reading matrix: an international online journal*, 17(2), 179-195.
- Horiba, Y., & Fukaya, K. (2015). Reading and Learning from L2 Text: Effects of Reading Goal, Topic Familiarity, and Language Proficiency. *Reading in a Foreign Language*, 27(1), 22-46.
- Huang, Q. (2016). Learners' Perceptions of Blended Learning and the Roles and Interaction of f2f and Online Learning. *ORTESOL Journal*, 33, 14-33.
- Joo, Y. J., Park, S., & Lim, E. (2018). Factors influencing preservice teachers' intention to use technology: TPACK, teacher self-efficacy, and technology acceptance model. *Journal of Educational Technology & Society*, 21(3), 48-59.
- Kuhail, A. A. (2017). The Effectiveness of Using Interactive Digital Videos on Developing Sixth Graders' English Reading Skills and Vocabulary learning and Retention. *The Effectiveness of Using Interactive Digital Videos on Developing Sixth Graders' English Reading Skills and Vocabulary learning and Retention*.
- Lai, C., Yeung, Y., & Hu, J. (2016). University student and teacher perceptions of teacher roles in promoting autonomous language learning with technology outside the classroom. *Computer Assisted Language Learning*, 29(4), 703-723.

- Liu, X., Liu, Y., & Tu, J.-F. (2020). Multimedia Technology and Learner Autonomy: An Experimental Study for Asymmetric Effects. *Symmetry*, 12(3), 462.
- Mangen, A. (2008). Hypertext fiction reading: haptics and immersion. *Journal of research in reading*, 31(4), 404-419.
- Marangunić, N., & Granić, A. (2015). Technology acceptance model: a literature review from 1986 to 2013. *Universal Access in the Information Society*, 14(1), 81-95.
- McDermott, P., & Gormley, K. A. (2016). Teachers' use of technology in elementary reading lessons. *Reading Psychology*, 37(1), 121-146.
- McKnight, K., O'Malley, K., Ruzic, R., Horsley, M. K., Franey, J. J., & Bassett, K. (2016). Teaching in a digital age: How educators use technology to improve student learning. *Journal of research on technology in education*, 48(3), 194-211.
- Milonm, S. R., & Hasanand Ipban, H. (2017). Students' perception towards technology in learning English as a foreign language: A case study of higher secondary students of Pabna, Bangladesh. *IOSR Journal of Humanities and Social Science*, 22(6), 47-53.
- MısıR, H., Koban Koç, D., & Engin Koç, S. (2018). An analysis of learner autonomy and autonomous learning practices in massive open online language courses. *Arab World English Journal (AWEJ) Special Issue on CALL*(4).
- Nezami, S. R. A. (2012). A Critical Study of Comprehension Strategies and General Problems in Reading Skill Faced by Arab EFL Learners with Special Reference to Najran University in Saudi Arabia. *International Journal of Social Sciences & Education*, 2(3).
- O'Brien, L. M., Salinas, A., Reinhart, K. C., & Paratore, J. R. (2018). Pre-service Teachers' Use of Multimodal Text Sets and Technology in Teaching Reading: Lessons Learned from a Design-Based Study *Best Practices in Teaching Digital Literacies* (pp. 123-136): Emerald Publishing Limited.
- Peek, S. T., Wouters, E. J., Van Hoof, J., Luijkx, K. G., Boeije, H. R., & Vrijhoef, H. J. (2014). Factors influencing acceptance of technology for aging in place: a systematic review. *International journal of medical informatics*, 83(4), 235-248.
- Pickens, J. (2005). Attitudes and perceptions. *Organizational behavior in health care*, 43-76.
- Piper, B., Zuilkowski, S. S., Kwayumba, D., & Strigel, C. (2016). Does technology improve reading outcomes? Comparing the effectiveness and cost-effectiveness of ICT interventions for early grade reading in Kenya. *International Journal of Educational Development*, 49, 204-214.
- Posner, M. (1977). Preview of Lindsay & Norman, 1977. *Contemporary Psychology*, 22, 726.
- Putro, N. H. P. S., & Lee, J. (2017). Reading interest in a digital age. *Reading Psychology*, 38(8), 778-807.
- Ratna, P., & Mehra, S. (2015). Exploring the acceptance for e-learning using technology acceptance model among university students in India. *International Journal of Process Management and Benchmarking*, 5(2), 194-210.
- Salloum, S. A., Alhamad, A. Q. M., Al-Emran, M., Monem, A. A., & Shaalan, K. (2019). Exploring Students' Acceptance of E-Learning Through the Development of a Comprehensive Technology Acceptance Model. *IEEE Access*, 7, 128445-128462.

- Shah, H. J., & Attiq, S. (2016). Impact of technology quality, perceived ease of use and perceived usefulness in the formation of consumer's satisfaction in the context of e-learning. *Abasyn J. Soc. Sci*, 9(1), 124-140.
- Song, H. S., Kalet, A. L., & Plass, J. L. (2016). Interplay of prior knowledge, self-regulation and motivation in complex multimedia learning environments. *Journal of Computer Assisted Learning*, 32(1), 31-50.
- Struyven, K., Dochy, F., & Janssens, S. (2005). Students' perceptions about evaluation and assessment in higher education: A review. *Assessment & Evaluation in Higher Education*, 30(4), 325-341.
- Tabak, F., & Nguyen, N. T. (2013). Technology acceptance and performance in online learning environments: Impact of self-regulation. *Technology*, 9(1), 116-130.
- Thao, T. Q., Tham, D. M., & Ngan, H. T. T. (2019). Attitudes toward the use of TELL tools in English language learning among Vietnamese Tertiary English majors. *VNU Journal of Social Sciences and Humanities*, 5(5), 581-596.
- Uccelli, P., Galloway, E. P., Barr, C. D., Meneses, A., & Dobbs, C. L. (2015). Beyond vocabulary: Exploring cross-disciplinary academic-language proficiency and its association with reading comprehension. *Reading Research Quarterly*, 50(3), 337-356.
- Vogelsang, K., Steinhüser, M., & Hoppe, U. (2013). A qualitative approach to examine technology acceptance.
- Wiyaka, W., Mujiyanto, J., & Rukmini, D. (2018). Students perception on the usefulness of ICT-based language program. *English Language Teaching*, 11(2), 53-60.
- Woolley, G. (2011). Reading comprehension *Reading Comprehension* (pp. 15-34): Springer.
- Zhao, L. (2015). The Influence of Learners' Motivation and Attitudes on Second Language Teaching. *Theory and Practice in Language Studies*, 5(11), 2333-2339.

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