

THE ARMAKR APPLICATION FOR SECONDARY SCHOOL STUDENTS' PHONETICS AND DIGITAL LITERACY IMPROVEMENT

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ABSTRACT

Recent technologies provide new opportunities for students to acquire language and literacy skills. As we move into the 21st century, students learn how to become good speakers and writers of digital texts. Phonetics skill is important to be trained in English as a Foreign Language (EFL) classroom. Learning phonetics helps recognize familiar and unfamiliar sounds, improves pronunciation skills, and develops words and sound recognition. By focusing on Pronunciation and phonetic accuracy, learners can improve their listening skills and become better at recognizing and decoding English sounds. This, in turn, improves their understanding of spoken English and contributes to raising their overall language proficiency. In this rapid development of digital technology, teachers should be creative to provide impactful and meaningful learning. Al-Azhar Cairo Bandung Islamic Secondary School is a private school in Bandung that elaborates the learning and teaching process through iPad classes. The goal of this paper is to verify student satisfaction based on the improvement of

student's phonetics skills and digital literacy through the use of the Ar Makr application. It is an iPad application that shows Augmented Reality (AR) that allows users to create virtual objects using their own sketches and photos, directly placing them in the environment, and enhances the creativity of visualization animation to motivate digital literacy. The qualitative method is used in this research. To accomplish this research goal, observation, questionnaires, and interview session was conducted with the students in Al-Azhar Cairo Bandung Islamic Secondary School. The result shows that using the Ar Makr application is improving learning phonetics and building motivation in digital literacy through providing attractive and effective learning and enhancing entertainment. These apps are also helping to promote more active learning in the EFL classroom.

Keywords: Ar Makr; digital literacy; EFL; phonetics.

Introduction

Language has a significant role in nearly every aspect of human life to complete its daily activities. Recent technologies provide new opportunities to acquire language and literacy skills for students. As stated by Chaer (1995:14), language refers to the characteristics that constitute the essence of language as a symbol of the sound system; being arbitrary, productive, dynamic, diverse, and humanistic. So, language becomes the main focus of this research to see how the characteristics of the English language can be determined as the foundation for learning a new language for secondary students.

English is an international language that is very necessary for students to learn in their daily lives because we know that in the field of education today, English is a very important language to master. English is literate and used as a second language through physical and digital media

platforms. English is very important because it is one of the necessary conditions to improve professional work in the future for students. English is a foreign language that students need to learn. However, Indonesian students have a huge challenge studying English because of the pronunciation in English, which is different from Indonesian. As (Khansir & Tajeri, 2015) mentioned, many words are pronounced differently from the spelling in English language. EFL learners will learn in their native language context and infrequently utilize the target language in social situations. They tend to be out of focus in the learning process because they lack motivation and the ability to pronounce English words because they are afraid of mispronouncing them.

One skill that student should be concerned about in learning a new language is phonetics. Phonetics skill is important to be trained in English as a Foreign Language (EFL) classroom. Learning phonetics helps recognize familiar and unfamiliar sounds, improves pronunciation skills, and develops words and sound recognition. By focusing on pronunciation and phonetic accuracy, learners can improve their listening skills and become better at recognizing and decoding English sounds. This, in turn, improves their understanding of spoken English and contributes to raising their overall language proficiency. Phonetics is the study of speech sounds. This skill is important for understanding how to correctly pronounce several words in other languages. If we are able to imitate words in another language correctly, it should produce the correct pronunciation. Pronunciation can be described as the production and perception of sounds that have meaning and impact on the listener. It is concluded that pronunciation is how language is spoken to achieve meaning in the context of use (Burns & Claire, 2003). Without practice, students will not be able to pronounce specific words appropriately. They usually find a problem with how to imitate the sound of several alphabets in the English language because there are several parts in producing the English language that should be focused on, for example, the use of consonants and vowels. In addition, pronunciation includes features at the segmental level, including consonants and vowels, and at the suprasegmental level, including word stress, sentence stress, intonation, and many others, as stated by Burns and Claire (2003). The importance of pronunciation in teaching English, emphasizing that even in speakers of other languages, poorly spoken words can significantly impair comprehension. Factors such as motivation, exposure to the target language, attitude, and teaching strategies affect pronunciation development. According to Gilakjani (2011), pronunciation training can enhance a communicative practice using technology.

Nowadays, English has become such an exciting yet challenging subject to be learned by secondary students with no background in learning English in the previous level of study or primary school; because of that, several students found problems with several words with a difficult way to pronounce them. According to Elliot (1995), pronunciation is one of the most important features of someone's speech, but many teachers do not teach it explicitly. Teachers of foreign language classes rarely teach it. Furthermore, English is one of the most challenging subjects that language teachers and learners face. If teachers understand the characteristics of students' pronunciation, they can effectively improve their teaching to increase the accuracy of the students' pronunciation. Fraser (2000) argues that EFL teachers must provide themselves with lessons and materials to enrich their pronunciation teaching. As stated by Alakrash and Rozak (2021), digital technology usage is widely practiced by language learners and instructors. This digital usage is suggesting a positive attitude towards these tools.

Digital tools have been found to have a favorable effect on students' vocabulary, speaking, writing, listening, and reading abilities. Boredom is frequently the result of traditional language learning techniques like textbooks and lecturers, which frequently fail to engage pupils and lack practical application. As stated by Azimova and Solidjonov (2023), AR can help language learners with these issues by offering a dynamic learning environment. English is vital for both professional and personal development since it is a universal language of business and communication. For non-native speakers, learning English can be difficult nonetheless. By providing immersive experiences, contextual learning, and instant feedback, AR technology has the potential to improve traditional English language training by making the learning process more engaging and useful. According to Qiu et al. (2021), AR facilitates group learning by enabling in-person, real-time communication between students. It offers the perfect setting for role-

playing, storytelling, and experiential learning. The usefulness of AR technology in language instruction has been established. Nevertheless, there are obstacles, such as the requirement for uniform industry standards, and the high expense of having an iPad to support the language learning process.

Reading is another skill that can be defined as an important skill supporting the ability to pronounce. In addition, reading can make students practice their pronunciation at the same time. However, in reality, students' motivation to read is also facing a tremendous challenge..

As we move into the 21st century, students learn how to become good speakers and writers of digital texts. The improvement of technology in education gave a new way to study, and right now it is one of the most important fields because the rapid development of technology presents a new way to learn something new. Digital literacy is an individual's ability to determine, assess, and communicate information using typographic platforms or digital media. Many media can be used to promote literacy in digital. In this rapid development of digital technology, teachers should be creative to provide impactful and meaningful learning. According to Shadiev and Yang (2020), the majority of research found that using technology helps language learners to improve their language studies. The language that is most frequently targeted is English.

This research will attempt to answer the following questions: how does Augmented Reality (AR), especially using the Ar Makr application, help the students to learn phonetics, and how does digital literacy improve in secondary school?

Literature Review

Several previous studies performed research using Augmented Reality (AR) in education and applied several applications related to AR in the learning process, including "Augmented reality in learning phonetics" (Nugraha et al, 2019); "Interactive English phonics learning for kindergarten using Augmented reality (AR)" (Sidi, Yee, Chai, 2017); and " The impact of augmented reality on EFL learners' reading comprehension" (Ebadi & Ashrafabadi, 2022).

First, Nugraha et al. (2019) discussed that EFL learners neglected the importance of understanding English phonetics despite its importance in the language acquisition process. The inability to use and understand English phonetics leads to problems with mispronunciation, which in turn hinders oral and written communication. Concerned about this problem, research has developed the use of augmented reality (AR) technology to facilitate learning English phonetics. This technology combines virtual objects and video clips into a more engaging and interactive learning environment. This study described the steps and process of developing augmented reality as a medium for learning English pronunciation and revealed how students used it in their learning process. From the research results, some conclusions are drawn that learning media using augmented reality technology can be used as an alternative medium to support learning English vocabulary and learning methods. Learning facilities using augmented reality technology have the potential to bring more understanding and attention to children's English pronunciation.

Sidi, Yee, and Chai (2017) examined the interactive learning of English phonics in kindergarten consonant-vowel-consonant (CVC) words using augmented reality (AR) technology to make phonics learning easy and more interesting, interactive, and effective. Augmented reality's visual marker-based technique allows children to interact with virtual phonics content through physical manipulation. With this guide, children are enabled to learn Sound Pronunciation and Match CVC words through phonetic tag matching. The sound card is the visual marker here. This interactive method gives a better learning proficiency.. The prototype was developed based on the interactive pronunciation course software design framework AR. The framework was created based on the evaluation results. The AR technology allows you to interact with the card pronunciation cards, and the physics question cards serve as a visual marker. The Vuforia software development kit was chosen because it supports tracking image markers. Children can learn phonics sounds with a 3D letter presented through interaction with a single phonics card. They can read CVC words audibly with an associated animated 3D model presented through interaction

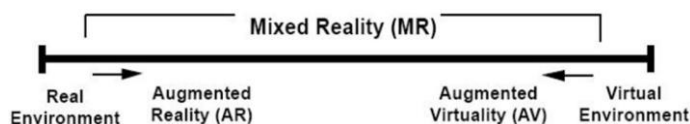
with phonics cards. The collision method and script were used to determine which sound cards collided.

Additionally, children were able to answer questions through the 3D model presented to them through assessment. Virtual buttons and scripts are used to determine which button has been selected. The guide is quite effective, accurate, and efficient based on testing and reviews. The children paid attention during the pronunciation lesson through the instructions provided. Performance assessment results also showed that children improved their reading ability after hours of using this instruction. It is considered an accessible curriculum through teacher-administered SUS assessments.

In addition, Ebadi & Ashrafabadi (2022) investigated how augmented reality had impacted EFL learners' reading comprehension and attitudes toward using AR. A mixed methods approach was used with a sample of 64 intermediate-level EFL learners at a public university in Iran. Independent and paired sample t-tests were used to investigate the reading comprehension ability of the experimental group and possible differences between groups in reading comprehension after using AR. Quantitative results indicated that the experimental group showed significantly higher reading comprehension levels than the control group. The thematic analysis of semi-structured interviews showed that students appreciated using augmented reality and preferred it to traditional reading comprehension methods. Furthermore, AR increased students' interest in reading comprehension tasks and enhanced their willingness to use AR-based approaches in EFL classes.

Augmented reality (AR) is an environment powered by natural and virtual objects in real-time representation. Azuma (1997) defines AR as an environment including virtual reality and real-world elements. For example, an AR user can wear unique glasses. By using these unique glasses, users can see the real world and the computer-generated images projected onto that world. An AR system aims to add information and improve the user's perspective on the natural environment. This AR system definition is not limited to display technologies but can be applied to common visual senses, including hearing, smelling, and touching. Nowadays, AR technology has developed in terms of its kind and types for using the AR in daily life.

Figure 1. Virtuality Continuum



Source: Azuma et al. (2001)

AR is equipped with several characteristics, collaborates with the real and virtual environments to become mixed reality, as shown in the picture above. Unlike virtual reality, which creates a completely artificial environment, augmented reality uses the existing environment and imposes new information on it.

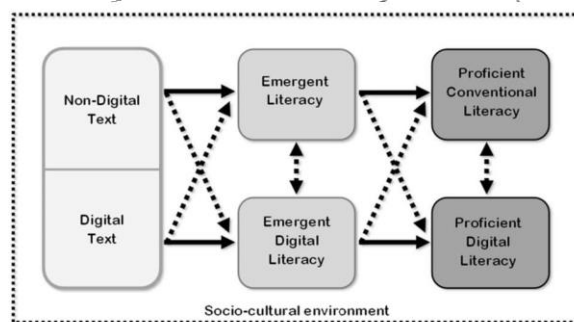
Ar Makr is an application on iPad only that shows Augmented Reality (AR) that allows the user to create virtual objects using their sketches and photos, directly place them in the environment, and enhance the creativity of visualization animation to motivate the digital literacy as stated by Paolis et al. (2016). It generates virtual objects using your sketches and photos and places them in your environment. Ar Makr offers a variety of creative tools and templates to create original 2D and 3D objects, engaging students through physical movement and exploration. This application creates a virtual storybook. Design initial objects using photos and sketches and place them in a linear order to create a step-by-step narrative experience. In learning languages, students must be able to collaborate with technology because of the development of the era that requires children to actively participate in recognizing, creating, and developing their ability to learn languages by using technological devices that make it easier for them to understand the material or learning topics that they want to know and understand. The potential and challenges

of using collaborative AR in the context of immersive virtual learning environments become vital for recommending AR in learning language. Roussos et al. (1999) assert that the most important goal of educational environments is to encourage social interaction between users in the environment. In collaborative AR, multiple users can share the same physical space and communicate for educational purposes. They implement natural means of communication and successfully combine them with immersive virtual reality or remote collaboration. The technologies used should always depend on the educational goals, the needs of the educational application, and the target audience.

Appropriate and correct speech allows the listener to understand what is being said. On the contrary, inappropriate statements will cause the listener to misunderstand or cannot differentiate due to the meaning. Phonetics is a study of speech sounds. It is a branch of linguistic study that focuses on how speech sounds are produced by human speech organs. As stated by Fromkin et al. (2014), phonetics is the sound of language to describe speech sound. In addition, Dawson et al. (2016) note that phonetics is the study of the minimal units that construct a language. For spoken language, there are the sounds of speech, such as consonants, vowels, melody, and rhythm. Although spoken phonemes do not have meaning, they serve as meaning distinguishers. The main goal of teaching phonetics at school is the development of auditory and rhythmic pronunciation abilities. According to Umirzakovich & Islomovna (2020), phonetic skills are speech pronunciation skills that are understood as the ability to correctly pronounce the phonemes of all sounds studied in the speech stream, understanding this sound in another person's performance; rhythmic and tonal skills refer to the skills of designing performances with correct timbre and rhythm and, accordingly, presenting the performances of others.

Digital literacy is emerging nowadays because of the development of technology in every sector, including media for pedagogical purposes. Before digital text came as the brand-new literacy aspect, teachers always focused on non-digital text such as printed paper, books, etc. Moreover, digital text may be presented in digital forms, such as iPad, mobile phones, and laptop. However, there are also important differences between digital and non-digital texts. Digital texts can potentially engage more senses than non-digital texts because their multimodal characteristics can stimulate the visual, auditory, kinaesthetic, and tactile senses. For example, multimodal digital texts, e-books, Internet advertisements, websites, and digital games can simultaneously integrate words, sounds, and images to evoke many different senses in constructing meaning, as stated by Neumann et al. (2016).

Figure 2. A Conceptual Framework in Digital Literacy Development



Source: Neumann et al. (2016)

The solid arrows represent direct development pathways in the non-digital and digital sectors, and the dotted arrows represent the overlap and transfer of skills between non-digital elements and digital. The dotted lines surrounding the model represent that this interaction occurs in a sociocultural environment. Digital literacy means you have the necessary skills to live, learn, and work in a society where communication and access to information increasingly occur through digital technologies such as digital platforms, internet platforms, social media, and mobile devices. Digital literacy is really important these days for students. This will also be important when the

students enter the professional world. Students will interact with people in digital environments, use information appropriately, and collaborate on new ideas and products. Above all, it is really important to be taught in school to increase students' motivation to learn a new language in this rapid technological development. According to Tyner (2008), digital literacy tools and multimedia texts are increasingly popular outside the classroom. Seamlessly integrated into the environment, contemporary students consider these resources an ordinary part of the landscape. Dramatic changes in the use of digital tools in society are forcing schools to rethink and reorganize the systematic design of learning spaces with new literacy tools as a central concept. These changes are in nature, requiring different environments for conceptualizing physical and virtual spaces.

Methods

This research uses a qualitative method. Qualitative research is used to explore first-hand perceptions of the topics covered. According to Creswell (2018), qualitative methods rely on textual and visual data, involve unique data analysis steps, and rely on diverse designs. Therefore, qualitative research methods allow the researchers to have a deeper investigation by interviewing participants in depth. Qualitative data collection methods focus more on information, emphasizing understanding and insight into the reasons related to participants' responses. The most commonly used techniques for collecting data are personal interviews, qualitative surveys such as paper surveys, online surveys, group discussions, and observations. In this research, data collection was conducted using qualitative survey techniques through questionnaires, observation, and interview by asking more open-ended questions to collect textual data so that participants could answer the questions based on their personal experiences and views on the topics of learning English. As stated by Creswell (2018), qualitative observation occurs when a researcher takes field notes about the behavior and activities of individuals at the research site. In these field notes, the researcher records, in an unstructured or semi-structured way, certain preliminary questions the researcher focuses on. Typically, these observations were open-ended in that the researchers asked the participants general questions, allowing them to express their opinions freely. Also, the researchers asked the students to make their own Ar Makr animation in the form of comics 3D and present it in the classroom, the researchers focused on respondents' pronunciation to analyse any errors in pronunciation of phonemes. In this research, the data were described resulting from questionnaires and observation secondary students in Al-Azhar Cairo Islamic Secondary School in Bandung, who conducted iPad education in the curriculum program. Meanwhile, the researchers also conducted the interview by raising several questions directly in detail related to the learning process using Ar Makr. According to Creswell (2018), in qualitative interviews, the researcher conducts face-to-face interviews with participants, telephone interviews, or participates in group interviews with six to eight interviewees in each group. These interviews consist of unstructured and open-ended questions intended to elicit participants' views and opinions.

The researchers used data source from participants who studied English at Al-Azhar Cairo Islamic Secondary School in Bandung. The characteristics of the data source are the students who learn English and have difficulty pronouncing English words because of their phonetics skill. The total number of participants was 20 students from the classes of 2023. The questionnaire was distributed using Google Forms, including 10 questions in English to find out the obstacles that participants encountered while learning English and how satisfied they were when studying English phonetics and improving digital literacy using Ar Makr. These are the following list of questions:

1. Have you learned English in primary school?
2. What kind of English alphabet do you find difficult to pronounce correctly?
3. What is the advantage of learning English using Ar Makr?
4. In your opinion, is the Ar Makr video helpful in improving pronunciation skills? State your reason if your answer is yes or no.
5. What motivates you in terms of literacy?

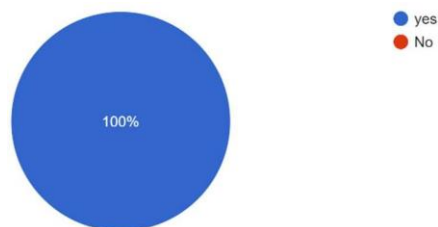
6. What are the obstacles you face to learning English through digital literacy?
7. In your opinion, does Ar Makr improve your digital literacy?
8. Do you think technology improves your skill in learning language in the digital era?
9. Why is Ar Makr considered as a special application for digital literacy?
10. What is the most important thing when learning phonetics and improving literacy with digital devices?

These questions are instructed to be filled out in the Google form that the researchers have already prepared. The students fill out the Google form using their iPads after learning English using Ar Makr.

Result

The result of this research found out the point of the research question. The data are collected and analyzed by the researchers. The first question is “Have you learned English in primary school?”. The result is described in the following figure.

Figure 3. Result of the first question

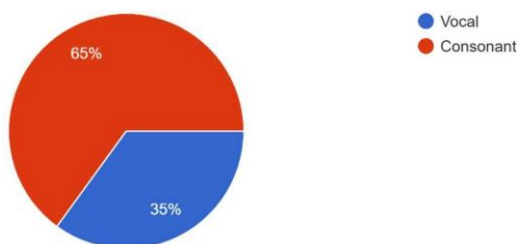


Source: Ar Makr google form questionnaire

All the students already learned English in primary school, as stated in Figure 3. Out of twenty students, all of them chose “yes” as the result 100% in the option section. It is shown that the students have basic English because they have already learned several basic lessons in the primary level, especially, learning alphabet, vocabulary, and Pronunciation.

The second question is “What kind of English alphabet do you find difficult to pronounce? The result is as follows.

Figure 4. Result of the second question



Source: Ar Makr google form questionnaire

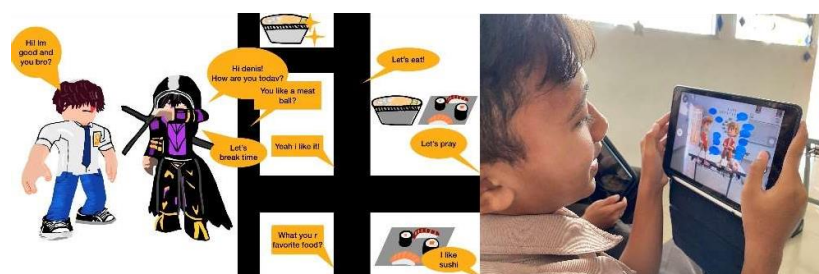
Figure 4 shows that the students who find difficulty in pronouncing vocal are seven out of twenty (35%) and the students who find difficulty in pronouncing consonant alphabet are thirteen out of twenty (65%). The result concluded that consonant English is more difficult to pronounce

than vocal or vowel English. The findings are correlated with the observation result that, in several consonant English, students tend to make an error pronunciation because there are several differences in both English and Indonesian consonants. Due to these differences, there are gaps or absences of some English consonants, for example, the sounds /θ/ and /ð/ in Indonesian. This gap can become a barrier for EFL learners in Indonesia, especially native Indonesians. Moeliono and Dardjowidjojo (2003) assert that English sounds such as /ð/, /θ/, /ʃ/, /tʃ/, /dʒ/, and /ʒ/ are not found in Indonesian. The sounds mentioned above include sounds that are unfamiliar to Indonesian learners. Learners may have difficulty pronouncing them correctly, and that is because of their lack phonetics skill. The value of phonetics in English Proficiency in pronunciation is essential to use language effectively. According to Shamin et al. (2024), learning English phonetically is essential, especially if it is a second or foreign language. It has both suprasegmental (rhythm and intonation) and segmental (individual sounds) elements. Many students have difficulty in pronouncing English because they have difficulty reading and imitating the pronunciation of each phoneme in English. As stated by Macaruso and Rodman (2011), EFL (English Foreign Language) students who struggle learning English mainly have difficulties in phonological processing such as phonological awareness, rapid naming, and verbal working memory.

The advantages for students when they are learning English using Ar Makr, especially in pronunciation and literacy improvement, are easier to understand the material because they can use real pictures, which makes them practice in pronouncing the words with the correct phonemes. It can make their imagination become real through the application, they will be able to imagine and make things like 3D comics according to their wishes, they can create their own creations; and it will help them increase their self-confidence in pronouncing words correctly. Nine students also mentioned that by creating their own imagination, it helped them enhance their creativity. When AR components, such as animations or videos related to specific words, were incorporated into language learning experiences, students' motivation increased. This, in turn, positively impacted the pronunciation of word. According to Booton et al. (2021), integrating AR into language learning materials can enhance motivation and contribute to better vocabulary acquisition and pronunciation.

The importance of evidence-based technological tools can aid students' learning results and provide individualized instruction and practice. As stated by Kyle et al. (2013) in the UK, the government mandates synthetic phonics for teaching by using technology – based, which involves students learning to read words by saying each letter sound distinctly from left to right and joining them together smoothly without pausing between each sound with the help of technology. The effectiveness of technology in the learning process has to be improved, and the development of efficient and automatic phonics skills is crucial for early pronouncing development and long-term reading development. It is a great way to learn about English word. By learning every phoneme of a foreign language and how to pronounce it correctly, it is hoped that the students in Indonesia can pronounce English words correctly and can communicate using English properly. Through the Ar Makr application installed on the iPad, students can take advantage of technology to help their English learning process.

Figure 5. Visualize students' creation using Ar Makr



Source: Classroom observation

All participants agreed that the Ar Makr video is helpful for pronunciation skills. As it is stated in the Google Form questionnaires, the students can explore AR independently by discovering words and phonetic sounds using an animation projected by the Ar Makr application. Another reason is that the student can see the virtual appearance, and the Ar Makr will lead the students to read words by giving pronunciations examples. This lead helped students visualize how to pronounce several phonemes correctly by looking at the animations. When using Ar Makr, the students were asked to perform several dialogues and practice pronunciation skills indirectly. Ar Makr makes students interestingly present their work to increase their level of English sound pronunciation. The students said that making video animations using Ar Makr made them feel more confident in speaking, and they could adapt the tone of speaking in video by practicing the pronunciation. AR technology offers immersive experiences, contextual learning, and instant feedback, which can improve traditional English language training by making the learning process more engaging and useful. AR applications connect language learning to real-world settings or objects.

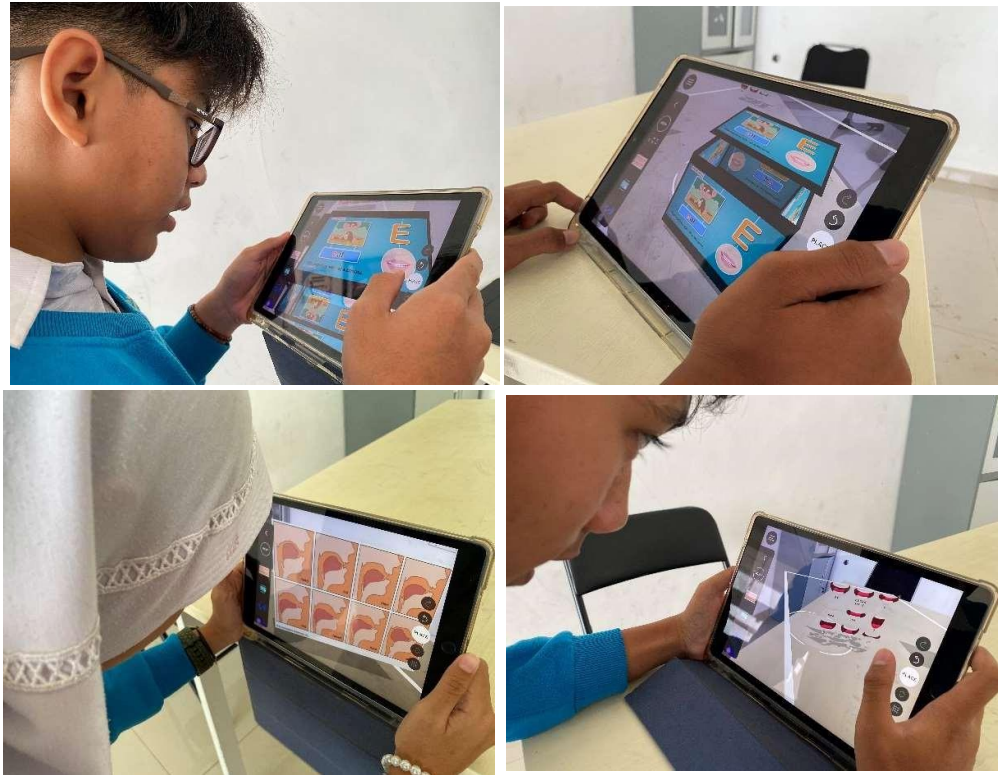
The Ar Makr application motivates the students to understand the story's character literacy, the content of the story, and the image of the story. This application raised curiosity because the animation projected with great 3D visualization, made them enthusiastic to study and understand the story.

However, there were some obstacles they found in learning English through digital literacy. Sometimes they felt dizzy because they had to spend a lot of time watching the screen on their iPads. They should organize screen time to decrease the effect of watching the screen too much. When they read a story, they did not understand the meaning because they lacked vocabulary. On the other hand, nineteen students answered "yes" in terms of Ar Makr improving their digital literacy. The reason that the application makes learning easier, exciting in reading because of the visualization of pictures.

The findings show that the technology has improved the students skills in learning language in this digital era. One of the students commented that technology allows them to access the internet easily, on several platforms, and connect with the world. They can enhance our abilities through it. The technology provides many learning sites and the applications help them understand English better. Technology makes learning faster in a more fun way and makes things easier, especially in practicing pronunciation and reading skills. Technology can provide the information that we want, so we can find inspiring things and share them using the stories that students can make using Ar Makr.

Teachers can suggest designing and Ar makr application that use technology in in learning. It is for designing and applying AR technology to support EFL learners from any schools in English learning. Teachers can understand how interactive technology, particularly the Ar Makr application, could support English language learning. According to Fan and Antle (2020), understanding usability challenges, motivation, learning behaviors, and rural context may guide future AR learning application. Teachers have to consider the process of acquiring a new language.

Figure 6. Learning and practicing Phonetics using Ar Makr



Source: Classroom observation

The Ar Makr becomes a special application for digital literacy because it shows an attractive appearance with lots of objects and presents it actively and creatively. Also, this application displays the virtual image as close as the real one picture. By showing the real pictures, students improved their learning process and increased their interest in English digital literacy. As stated by Kaynar et al. (2020), the teachers' educational approach, both in terms of resources and technology-assisted instruction delivery, has been altered by the advancements of digital technology. Several important things to improve learning phonetics and digital literacy are paying attention to the example of the phonemes or sounds being produced through audio, practicing the words in pronunciation exercises, and keeping the excitement and enjoyment in reading to improve literacy. By reading more, we can gain several new words in English. In the digital era, information is available in large quantities and quickly. Digital literacy enables teachers and students to access, evaluate, and utilize information wisely. Both adults and children can benefit from new technologies by having more opportunities to acquire language and literacy skills. By offering captivating, interactive experiences, AR shows potential in language learning. It may improve children's motivation and capacity to pick up new vocabulary, particularly when learning a second language. As mentioned by Shopie et al. (2021), the marginally better pronunciation in the AR group indicates that this technology may prove to be a useful aid in teaching languages. Technological advancements in the past few decades have changed people's lives at an incredible rate and revolutionized teaching and learning practices and conceptions in ways that were never before. According to Lee (2020), possible draws attention to the necessity for empirical research to evaluate the educational benefits and difficulties of augmented reality applications, especially for supporting in fields outside of the science field, such as foreign language instruction. The Ar Makr application in education explored how AR can revolutionize learning environments by fusing virtual items with the real world. It can be used by educators to improve interactive word walls, navigational vocabulary, and interactive notes, among other classroom tools. Application of Ar Makr in practice for English language learning, which supports the learning process and makes

vocabulary acquisition easier, teachers can strategically put AR card throughout the school. As stated by Carreon et al. (2019) posters, AR card and interactive word walls improve vocabulary acquisition, and interactive notes offer fun learning methods.

Conclusion

Regarding the research questions about verifying student's satisfaction and discussing how Augmented Reality (AR), especially the use of the Ar Makr application for learning phonetics and improving digital literacy in secondary school, the findings showed that students' satisfaction at a high level increases because the AR can improve their ability in learning English phonetics. From the observation and interview results, they claimed that learning English phonetics using Ar Makr is more joyful and exciting through great visualization and auditory experience. As English Foreign Language (EFL) learners in Al-Azhar Cairo Islamic Secondary School, they tend to keep improving their ability and enhancing their digital literacy skills creatively in learning English. The AR technology made the learning process more meaningful and impactful by offering a new language learning experience. Students' motivation in reading is increasing because they read a collaborative text in 3D or 2D comics, which is visualized in Ar Makr as the virtual environment through the real environment and brings new experience in applying digital literacy skills.

The researchers hoped that English teachers might use Augmented reality (AR) in their classroom to level up students' excitement in learning English and also focus on decreasing students' pronunciation problems. Therefore, they can develop their pronunciation with practice and by exercising excitedly and having fun using AR, moreover, by doing this research. The researchers raise suggestions for the next researchers to find other solutions to improve students' pronunciation, phonetic, and digital literacy skills, as well as other applications suitable for any devices.

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