

Enhancing 21st Century Students' Listening Skills via Augmented Reality and Mobile Applications

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Students in the 21st century want to be taught lessons that are closely related to current real-life situations (Manuel et al., 2018) and have technology integrated as a learning tool (Prensky, 2001). Unfortunately, most of the present listening lessons do not cater to the needs of 21st century learners and are considered traditional as the lessons utilise less updated technology and audio only methods in teaching listening skills. In today's world, where students' lives and the internet cannot be separated, listening lessons using the students' mobile phones as well as audio and moving visual images (video media) is made possible. When using mobile phones and video media approaches, students not only have unlimited access to authentic videos online, but also have the freedom and flexibility to pause, stop or replay the video according to their needs. Therefore, through the incorporation of Augmented Reality (AR) and mobile applications, a model of listening practices namely MyEVO is developed. This innovation is aimed to modernise the existing traditional method in the teaching and learning of listening skills into an on-the-go practice.

Key words: *augmented reality (AR), listening practices, mobile applications, self-directed module, video media.*

Introduction

Twenty-first century education is very much impacted by the emergence of a wide variety of advanced technologies and this has created a positive digital classroom atmosphere. In the Malaysian context, students are no longer depending only on formal education to acquire new language, but they have now started acquiring language informally where the material or the

source of the language comes from digital platforms that are readily available online. Various unlimited selections of reading materials, audios, videos, notes and practices can now be easily accessed and has helped learners be independent in their learning. According to the Malaysian Educational Blueprint for Higher Education (2015 – 2025), the current education system should actively pursue technologies and innovations that are relevant for the students' needs and enable greater personalisation of the learning experiences. Besides being proficient in Bahasa Melayu, students are also expected to be proficient in English language. Therefore, to achieve this high aspiration, English language classroom activities that integrate the use of technology should be seriously planned and implemented.

In the past, the teaching of listening skills in the English language classroom was very challenging as teachers had to bring their own devices such as radio, laptop and speakers into the classroom. Using these devices, teachers played audio cassettes or CDs so that students could listen to the English language audios and answer sets of listening questions. The problems and challenges arose when some students complained about not being able to listen to the audio properly and some students needed the teacher to pause, replay or stop the audio according to their needs. This occurs as different students have different English language proficiency levels and some students are visual learners; they needed to see the images of the audios to aid understanding. However, due to the rapid development of technology, students these days are readily equipped with smartphones and internet connection, and therefore, the application of advanced and sophisticated technology or learning tools in the teaching of listening skills is undeniably possible. The students can now independently get access to the videos used in class using their own devices, and have the freedom to individually pause, stop or replay the videos according to their needs. Thus, with the current change in the education system, a model of listening practices namely MyEvo that allows students to individually access the listening texts and be an independent learner is developed. MyEVO also adopted the video media approach proposed by Gruba (1997) as a foundation of its development which allows the students to listen and at the same time watch the movements and facial expressions of the characters in the audio. By integrating the use of Augmented Reality (AR) technology and mobile applications, it gives an interactive experience of a real-world environment to the learners in practising their listening skills and the fundamental materials included are authentic and based on meaningful, real life situations.

In this paper, we analysed students' view of using MyEVO as a self-directed module in learning listening skills in an English Language classroom and also their views on the integration of Augmented Reality and mobile applications in enhancing their listening skills.

Methodology

Samples

There were 177 undergraduate students from two institutions who participated in a survey distributed via Google survey link and their feedback on the experience of using MyEVO was collected. Before filling in the questionnaires, students have been taught how to use the MyEvo module and they have also answered sets of listening practices in the module.

Design & Development

The main aim of MyEVO is to help students comprehend and acquire language (specifically through listening skills) via the application of current and up-to-date technology: the Augmented Reality (AR) and mobile applications. MyEVO consists of 15 sets of practices covering a variety of topics that are relevant to the students' interests. Each set of practices is accompanied by one 'Augmented Reality (AR) trigger image' that links the students to the video in 'MyEvo aura' page (the students has to download the HP Reveal application before they can get access to and follow 'MyEVO aura' page), five listening comprehension questions, two HOTS questions and one QR code that links the students to 'MyEVO community' page. All the videos used in MyEVO were carefully selected and downloaded from YouTube. The videos covered a variety of current, authentic and relatable, everyday-life, issues. For listening comprehension questions, students can circle the correct answers on the module itself. While for the HOTS questions, students are required to submit their answers on 'MyEVO community' page where all responses submitted by all MyEVO users can be found on this interactive page. The 'MyEVO community' page can be accessed by scanning on the QR code attached together with each of the practices. The objective of using this strategy in submitting students' responses is to encourage the learners to be active in their learning and to encourage the learners to also aware of other people's views and opinions about the issue being discussed in the practices. As a self-directed learning module, MyEvo allows students to no longer depend on teachers to play the listening audio in class through the use of old-fashioned and traditional computers or CDs. By using their own smartphones, earphones and internet mobile data/institutions' wireless, students can easily scan the image in each listening practice in the module that trigger the AR technology. The image will then trigger the video related to each listening set to pop-out and finally allow the students to watch the video through their own mobile phone and complete the listening practices at their own pace.

Implementation

A total of 506 students from various faculties in both institutions have attempted listening practices in MyEVO module during their English language lessons. Firstly, the students scanned the AR trigger image on each practice and they then watched and listened to the video that popped out. All five listening comprehension questions in the module were then

answered by the students. The students also attempted two HOTS questions and submitted their responses on the 'MyEVO community' page. However, out of 505 students who have experience using this module, only 177 students answered the questionnaire distributed through the Google survey.

Instruments

As for data collection, this study employed quantitative methods with the use of an online questionnaire. The questionnaire consists of four (4) parts:

- 1) Students' view on the content of the listening practices in MyEVO.
- 2) Students' view on the use of MyEVO as a self-directed module in learning listening skill.
- 3) Students' preference on the use of video media for future listening practices and the reasons affecting their preference.
- 4) Students' preference on the implementation of listening practices using Augmented Reality (AR) and mobile applications and the reasons affecting their preference.

Data Collection Procedure

Data collection procedures were successfully completed in a one semester timeframe. The students attempted sets of listening practices in the module and by using questionnaires, their experiences and feedback of using the module were captured at the end of the semester. The listening lessons and e-activities in MyEVO module were implemented as an alternative to replace the traditional way of using CDs, laptops, speakers and projectors during listening lessons conducted by language teachers in an English language classroom.

Results and Discussion

Figure 1. Students' View on the Content of the Listening Practices in MyEVO

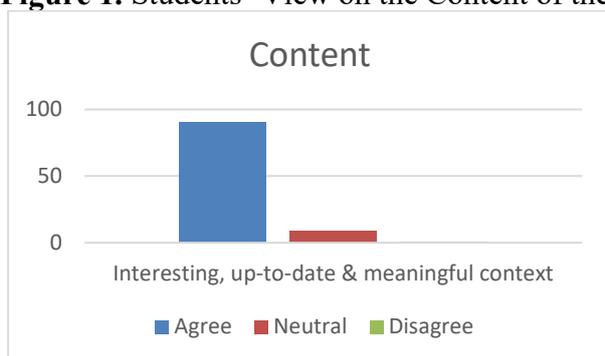


Figure 1 shows students' view on the content of the listening practices in MyEVO. The results show that the majority (89.3%) of the students agreed that the content of MyEVO module is up-to-date, interesting and meaningful. It can be concluded that the topics covered and the videos used are able to attract students' interest and participation in the listening

activities. In line with the advancement of modern and sophisticated technology and Internet, a wide range of interesting video media that are readily available online can be downloaded and used for the purpose of teaching and learning and thus made it possible to be integrated in the 21st century English language classroom, specifically for the listening lesson. Past studies also revealed that students would like to be assigned with activities that involve technologies and those activities should be relevant to their lives (Essary, 2014)

Figure 2. Students' Views on Using MyEVO as a Self-Directed Module in Learning Listening Skills

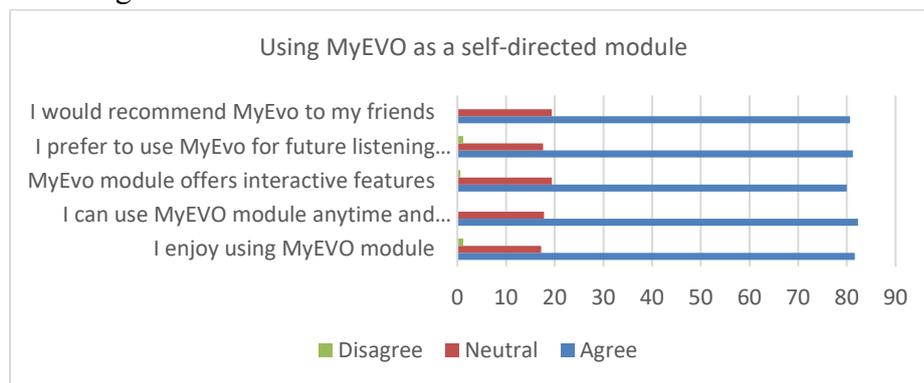


Figure 2 shows students' views on using MyEVO as a self-directed module in learning listening skills. The results demonstrated that a high number of the participants agreed that they enjoy using the MyEVO module (81.9%) and they can use it anywhere and anytime (80.8%). The majority of the students (80.2%) also agreed that MyEVO offers interactive features which allows them to watch the video and submit their HOTS questions responses in just a few clicks. It was also found that the majority of the students prefer to use MyEVO for future listening practices (80.2%) and would recommend it to their friends (80.2%). These findings concluded that the majority of the students have positive views and attitudes towards the presence of visual technology and, the integration of Augmented Reality and mobile application in listening lessons. These practices make the lessons more interesting, interactive, and convenient. The findings of this study supports the findings of Rahimi and Soleymani (2015) and Read and Kukulska-Hulme (2015) where it was proven that mobile applications can reduce students' anxiety and sustain students' motivation.

Figure 3. Students’ preferences on the use of video media for future listening practices and the reasons affecting their choice

| Criteria | Yes (96.6%) | No (3.4%) |
|---|--|---|
| In the future, do you think your listening practices should integrate both audio and video? (video media) | <ul style="list-style-type: none"> • Easy to understand the content (n=61) • More interesting (n=26) • More focus (n=15) • Cater the needs of visual learners (n=4) • Suits the current development of technology (n=4) • Improve pronunciation skills (n=3) • Learn new vocabulary (n=3) • Help to identify who is speaking (n=1) | <ul style="list-style-type: none"> • I am not multitasking (n=1) • Listening practices don’t need videos (n=1) • Difficult to focus as the students had to watch the video while listening (n=2) |

Figure 3 shows students’ preferences on the use of video media for future listening practices and the reasons affecting their preference. A very high percentage of the students (96.5%) agreed that the future of listening practices should integrate both audio and video where they have the chance not only to listen to the audio, but also be aware and alert of what is happening in the setting of the video media. When they were asked on the reasons that affected their preference, students agreed that it is easy to understand the content of the listening video as the main reason (n=61) why the future listening practices should integrate both audio and video (video media method). This was followed by the opinion that using video media is more interesting (n=26), and students feel more focused on the listening audio when the video is also attached with the listening practices (n=15).

Figure 4. Students’ Preference on the Implementation of Listening Practices using Augmented Reality (AR) and Mobile Applications and the Reasons Affecting their Preference

| Criteria | Yes (95.5%) | No (4.5%) |
|--|--|---|
| In the future, do you think your listening practices should integrate the use of technology (Augmented Reality) and mobile applications? | <ul style="list-style-type: none"> • Easy to use (n=115) • Modern method (n=74) • Interactive (n=61) • We can control the video (pause, stop, replay) (n=99) | <ul style="list-style-type: none"> • Weak Internet connection (n=43) • Small-sized screen/ visual (n=17) • Device problem (battery, unresponsive apps, etc) (n=28) |

Figure 4 shows students’ preference on the implementation of listening practices using Augmented Reality (AR) and mobile applications and the reasons affecting their preference. A very high percentage of the students (95.5%) agreed that the future of listening practices should integrate the use of Augmented Reality and mobile applications. This illustrates that in

the English language classroom, students show positive views and attitude on the application of Augmented Reality (AR) and mobile applications in the efforts to enhance their listening skills. Mobile learning makes learning more enjoyable, flexible and interactive as students are not rendered immobile by the restrictions of the traditional classroom settings or the old-fashioned desktop computer technology (Kukulska-Hulme & Traxler, 2007). This study also found the main reasons that cause students to prefer the integration of AR and mobile applications in enhancing their listening skills are because it is easy to use (n=115), it allows them to individually control the video (pause, stop and replay) (n=99), it is a modern and up-to-date approach (n=74), and because it is interactive (n=61). Thus, in general, it can be concluded that AR and mobile applications do play a positive role in increasing students' motivation in the listening classroom. However, findings of this study also tell us that the students also view the integration of technology in the listening classroom as possessing certain challenges and obstacles. A number of students mentioned that the use of AR technology and mobile applications should not be integrated in the listening practices due to the possibility of weak internet connection (n=43), device problems (battery, unresponsive apps, etc) (n=28), and small-sized screens/visuals (n=17).

Conclusion

This study presents findings on the second language learners' views of using MyEVO module which integrates the use of Augmented Reality and mobile applications to enhance their listening skills in the 21st century classroom. The main aim of this module is to replace the traditional audio only method conducted in English listening lessons. It is also specifically designed with the objective to replace the previous method of using radio, laptop and speakers in the English language classroom. To find out the students' experience using video media approaches and the use of Augmented Reality and mobile applications through MyEVO, their feedback was gathered and an analysis was conducted. The results show that students have positive views and attitudes on the application of these technologies to assist their understanding of a listening lesson. In addition, they also have a positive view that listening practices should be conducted using video media approaches that integrate the use of both audio and video. This is because video media approaches aid in the understanding of the listening audio, as it captures learners' interests and the students can focus more on a listening task when it is attached with a video. Through the incorporation of audio and moving visual images (video media) in completing the practices, the module is seen as relevant to the current digital natives as all the videos are authentic, related to everyday life issues, not scripted and can be easily accessed. The students do not solely listen to the language audio provided, but also watch the attached videos in order to gain better understanding of the topic learnt. Other than that, students are also in the view that listening practices should integrate the use of augmented reality mobile applications for a more enjoyable and meaningful experience. This is because it is easy to use, allows them to control



the video themselves, it is modern and up-to-date and interactive. The use of Augmented Reality is seen as relevant for the 21st century listening lessons as it helps students to get access to the videos online without having to wait for the teachers to play the audio or video in class. In 21st century education, teaching and learning in the Malaysian classroom is perceived as being ready to move into the wireless era as many areas especially in universities, have been equipped with wi-fi services (Nik Mastura Nik Mohammad, Mohd Nor Mamat & Posiah Mohd Isa, 2011). However, it is important to note that students are also of the views that there are a few challenges when technology is integrated in the English language classroom such as weak internet connection, device problems and small-sized screens/visuals. For future research, we will further analyse the effectiveness of using Augmented Reality and mobile applications on students' performance.

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