Mobile apps for language learning

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Abstract - *In the 21 st century, technology has become an important part of our lives to an extent that our dependency on them has increased drastically. Be it being woken up by our alarms in the morning or setting a reminder for a given task, this new era has changed everything for humans. It has not only increased the pace of our lives but also advanced it to levels that weren't even imagined two decades before. This, thus proves that technology plays a vital role in making our lives easier and better. So nowadays, learning via mobile apps is as common as having a smartphone. Due to globalisation and increased interconnectivity, people have started showing interest in various cultures and languages from different parts of the world. This has led to the introduction of many foreign languages. However, learning can be a tedious task, keeping in mind the schedule and other courses of learners. Therefore, in order to make the learning task easier, mobile apps are being widely used for language learning and have proved to be efficient. This has not only motivated the students to learn something new but has also developed their personality. This paper will review the literature on language learning via mobile apps.*

Key Words: Mobile applications, apps, Language Learning, technology, smartphone, foreign languages, literature review, survey.

1. INTRODUCTION

A mobile application is a software application, which is coded for use on mobile phones and tablets , and designed to make everyday life easier. The technological boom has brought about various innovations in health and education over the last few decades. An upcoming field which is gaining immense popularity amongst young students is Mobile Assisted Language Learning. There is a wide range of mobile applications available on both Android and iOS platforms to suit the varying requirements of different types of users. The general trend is that app developers do not target operating systems such as BlackBerry OS, Bada or Ovi to the same extent which can be a drawback for a certain section of people.

However, using smartphones for pedagogical uses has been criticized by many professors as it can promote distractions in class. Students may misuse their phones , and the learning process can be hindered. Moreover, many believe that there is no replacement for a teacher when it comes to acquiring proficiency in language skills. It is extremely difficult to replace human interaction in the classroom, as teachers can take into account the emotions and psychology of the student in a way that machines cannot. Artificial Intelligence and machine learning can improve the capability of a smartphone to understand the learner's requirements. These apps work on advanced algorithms and user feedback but still lack the ability to adapt to an individual's skill set and needs, and seldom offer any corrective feedback. Thus, the claims of the desirability and effectiveness of mobile applications for language learning need to be supported with valid arguments in order to form an informed opinion about their usage. It cannot be denied that mobile applications make learning much more convenient, as the course material is made accessible from any place with an internet connection, at any time of the day. Interactive and personalised learning augments the pace of the learning process. These applications also provide visual aids and innovative games for strengthening the student's vocabulary. Consequently, this paper will review research from general education and will evidence of interactive and personalised learning through mobile apps increases motivation to learn and consequently increases learning effectiveness.

2. DISCUSSIONS

A "judgemental" analysis was carried out in Seoul, South Korea. for the purpose of this study. Over a hundred applications were downloaded and reviewed, out of which 87 were selected as target materials. These target materials were sorted according to their focus skills, and then reviewed qualitatively and coded quantitatively. Most of these apps require a cognitive learning style, and the target users of these applications were young adults or adults who have a general interest in learning the English language. It was found that only 19% of the language learning apps have been designed for children, which is closely related to the population of smartphone users in that age demographic. (1) The usage and design of mobile apps for language learning is encouraged by the authors, due to its great potential and mobility. Another research conducted through an online survey in an Australian university showed how mobile applications enable students to learn on-the-go and utilize small breaks in their busy schedules to connect with and learn languages. Students were asked to identify the technologies which

they used for language learning. Further, they were asked to rank the top three technologies which proved to be beneficial for their learning. They were also prompted to leave qualitative comments explaining the detailed benefits experienced while using this method for learning. (2) It was found that Mobile apps benefit vocabulary and translation skills the most, providing a large number of online resources such as language dictionaries and verb conjugations.

In Spain, an extensive study was carried out with the aim of gaining knowledge about the features of mobile applications that make them effective for students using Mobile Assisted Language Learning**.** The process concluded with a total of 67 assessed EFL applications. It mainly focused on the instructional goals of such apps, rather than their technological aspects. It was found that app developers do not target operating systems such as BlackBerry OS, Bada or Ovi to the same extent , and very few applications were available exclusively for Android devices. (3) There were a high number of apps that presented technical issues at the time of downloading or initializing them. It was revealed that more than one third of the apps assessed by the evaluators did not work properly or did not even work at all. The results of this study put forward another aspect of using mobile apps for language learning that must be taken into consideration before switching to this method of instruction. To gain insights on the use of mobile apps for vocabulary learning, Malaysian students were asked to use such apps and the variety of features offered to them. It identified students' experience in using these applications. A detailed questionnaire was prepared and circulated amongst students for quantitative research. From the qualitative point of view, phenomenological approach was used because this study involved exploring a phenomenon with a large group of individuals involved. Interviews and surveys were conducted for an in-depth understanding of the subject. It was found that the majority of students have a positive response towards the use of mobile apps in learning vocabulary. Their accessibility is a major driving factor for their popularity and they find the use of such applications easy and convenient. Educational games that integrate learning with recreation were found to be popular among the students. Another favoured feature was the availability of word lists and definitions. (4)

Some studies focused on a single application in particular. An example is the study carried out to find the results of using an application called "Guess it! Language Trainer". This application was developed to facilitate interactive learning between peers using mobile apps, since most applications are restricted to individual learning. Research was carried out on students studying a compulsory German course at a university in Spain. A client-server architecture was used where a server coordinates many smartphones or tablets. This system identifies students' interaction with the app by connecting with the server through the Internet. It was concluded that traditional classroom teaching often fails to help students attain proficiency in a given language but, using this interactive application, students were learning at a much faster pace , resulting in a better learning experience. (5) Mobile applications are simpler and lighter than computer based software, and provide better convenience and accessibility. The prospects of learning a second language using the popular language learning app "Duolingo"application were examined to test its efficiency. The various pedagogical features offered by the application such as translation, matching , pairing, speaking and listening were tested. The study proved Duolingo to be the most popular mobile application in the Education category on the Android store as it is engaging and free-to-use. By including educational games, this app has managed to grab the learner's attention for a longer span of time. It also issues frequent reminders to the user in order to maintain the regularity of the learning process. Despite these advantages, Duolingo lacks human interaction and is not realistic in its portrayal of native speakers. Also, it has restricted options for learners who aren't already English speakers. (6)

Another study was carried out by Education First Labs to analyse the effectiveness of a mobile-based language learning application called Engage which links students with English teachers in real-time through their mobile phones. The application was developed over multiple iterations, with periodic feedback from the students. Students were instructed to try a mock version first, followed by a mobile prototype. Finally, a fully functional application was released on Apple's iOS platform. Post-study surveys were conducted, student usage records were collected and their reviews on the App Store were taken into consideration. This application was found to be very successful in connecting students and teachers in real time on a virtual platform. The offline preparation and online role-play activity provided a rich learning experience and therefore resulted in higher participation in class. (7) The aim of a research based in the United States of America was to examine the efficiency of games and digital technology for educational purposes. The research was focused on the use of mobile games for language learning . Mobile applications were selected on the basis of their popularity amongst language teachers. Then they were evaluated keeping the RETAIN Model as the framework for evaluation, wherein an application is assessed under six fields:

1. **R**elevance
2. **E**mbedding
3. **T**ransfer

4. **A**daptation
5. **I**mmersion
6. **N**aturalization

It was found that although games offer opportunities for immersive and visual learning, many language teachers remain apprehensive about the pedagogical uses of mobile games. (8) However, a mobile game integrated with proper course material along with classroom teaching could be beneficial for effective language learning.

In Germany, a study was carried out to monitor the effectiveness of commercial mobile language learning applications for pedagogical uses. The adaptive technology and explanatory feedback of these applications was evaluated. The fifty most popular language learning apps were selected from the Android and iOS store. They were evaluated on multiple grounds such as number of languages offered, monetization, corrective feedback and areas of instructional assessment. Experienced coders were asked to meet on a weekly basis to discuss issues related to the way these apps have been coded and the features they offer. A survey was conducted for collection of data and the results were examined. It was found that vocabulary instruction was the main focus of these applications, but it was taught in isolated chunks rather than in relevant contexts. Results also showed that these apps lack the ability to adapt to an individual's skill set and needs, and seldom offer any corrective feedback. Through this research, it was highlighted that there is still much scope for improvement in the world of mobile applications for language learning. (9) A research was carried out on a class of 30 beginner-level female students from Saudi Arabia who were studying English as a foreign language. It also explored the students' viewpoint on using mobile games for educational purposes. Earlier, the motivation for studying English was found to be low among students from Saudi Arabia as English was studied as a compulsory subject, only for securing a better job, and not out of personal interest. However, using mobile games helped hasten the learning process as they found the applications engaging, fun and easy to use. Their motivation for learning English saw an increment with the implementation of these applications. (10)

The aim of a research based in the United-Kingdom was to study learner initiated use of mobile applications for learning a new language. The use of digital resources in an informal as well as a formal setting was discussed. Students studying eight different languages at the university level were surveyed over a period of two years. A combined research approach was employed, using both Skype interviews and online questionnaires for data collection. Their usage patterns and learning needs were identified, along with their motivation for using mobile apps. It was found that these learners were able to

compensate for their lack of classroom contact because of their self-motivated learning. They felt more in control of what they were learning and could learn at their own pace, leading to fruitful results. It also led to better utilisation of their screen time. (11)

In an extensive study in a university, students were divided into two groups and a language test was conducted. One of the groups was given a paperback dictionary and the other group was provided with a mobile dictionary. The students were assessed based on the vocabulary used and their performance in the other levels. In all five rounds, it was observed that the latter group performed better in the test, proving that mobile dictionaries are better than printed dictionaries as it is more efficient, portable, enables exchange of information and builds students' interest for learning. Students too preferred printed dictionaries as it saved a lot of their time and energy. (12)

The next study involved analysis of different mobile applications for language learning and study of contrasting features. Firstly, the applications were searched for and selected accordingly. Then applications were sorted by focus skills and analysed according to the rubrics. Later the applications were compared and differences were noted between the functioning and skills of the software. (13) It was observed that mobile apps for language learning are contrasting in various aspects, with various different features especially designed for different kinds of users to meet various other requirements. An observation on the effectiveness of the learning apps in classroom activities was made in a university. In order to do so, a questionnaire was designed asking students about the various apps that are preferred, their usage of mobile apps and how effective they find them in order to know about their views. Then information was gathered through google forms followed by an interview. Finally, step-wise analysis of the data was done by the researchers and the apps were reviewed in detail. Through this study it was found that most students use their gadget while traveling. A common result was mobile apps improve English and enhance grammar and other skills. Duolingo was found to be the most widely used app among the learners. (14) Also, these apps enabled learners to learn on their own pace, depending on their previous knowledge and grasping power. The idea of incorporating apps in classes was preferred by many students.

Another study conducted in a Turkish preschool of mobile learning apps using REVEAC on analysis of matter the mobile apps were analysed in various aspects. Firstly, an appropriate learning app with Turkish content was chosen from the playstore for children under the age of 5. Then for evaluation purpose REVEAC (Rubric for the Evaluation

of Educational Apps for preschool Children) Scale was used. Finally, a detailed study of the app was conducted with the aim of collecting information regarding app usage. It was observed that the learning apps meet the required rubrics. In terms learning, the apps provided good content but difficulty level could've been raised. Designs and functionality on an average did not meet the expectations. From incomprehensible sounds to poor designs, the unappealing features did not captivate the children. But in general, overall functionality of the mobile app was satisfactory. (15)

The aim of a study conducted in China was analysis of English language learning mobile applications targeting foreign learners in order to understand the current scenario of these apps and preferred design criteria for an efficient learning app. The study was divided into two phases, out of which the first one included interviews, surveys and observations. The university students were provided with some English learning apps and the usage of these apps was examined. (16) This phase not only witnessed high participation but also the students found these apps very comfortable and useful. In the second phase, the EAP app was created by the tutor for the students in which class material was uploaded along with other resources assisting the students in reading, writing and listening. Finally, it was concluded that the language learning apps kept the learners engaged and also encouraged them to practice on their gadgets. The use of these apps for English learning not only proved to be useful but enjoyable as well. A survey on WeChat based learning was held in a university in China which focused on the use of WeChat as a language learning app, specifically Chinese. In order to carry out the survey, the university students were required to install WeChat apps on their mobile phones. This app was established at three levels. Apart from course-related conversations, a WeChat public account was created for updating weekly posts. In order to test the progress, formative and summative assessments were held. On the conclusion of the term, informal interviews and questionnaires were conducted in which the students were to analyze their WeChat usage and how it helped them in learning chinese faster and in an easier way based on the experience they gained while using the application. (17) From this survey, the final outcome came to be that WeChat made learning interesting and easy for the students as it not only gave them opportunity to learn while communicating but it also had other linguistic inputs like chinese poetry and literature that helped in better understanding of the language. However, as chatting is informal in WeChat, conversations between people from different parts of the world can gradually turn into english as most of them are familiar with it, preventing the learners from learning chinese effectively.

An exclusive research on the TaleBlazer app was held to analyse the learning experience of the students via gaming app. The preliminary demo session of ImparApp was conducted to provide the makers with inputs for further developments of the game. Information was gathered by interviewing the students before and after play-test session. Seven students of lower intermediate Italian modules participated in this session and their understanding capability of the language was observed. The first part included instructions. Then the students were asked for feedback and suggestions. Upon completion of ImparApp within the Beginners Italian Course at the university, wider engagement with potential users was sought after, enabling researchers to study the outcome of the app on learning and how it assisted the learners. (18) Students found the content engaging and liked the approach of learning Italian this way. By completing daily tasks on the app, the students got to practice speaking, writing and focus on grammar. This helped them incorporate learning experience in their daily life. The students preferred this method of learning as they learnt the language while focussing on earning points and reaching the next level of the game. A study conducted in the university of Cadiz, Spain aimed at analysing a language trainer app called Guess it! and how it has affected the students to learn german. For this, a few Spanish speaking students were selected for the task and were required to enrol in a German language course. The participants were required to assess a few definitions and then were allowed to create their own definitions of terms. Each participant would then rate each definition created by other students that increased interaction and integrity among the participants. The data that had been collected in the programme server was analysed by the reviewers in order to study the students' progress in the language. This research showed that the individuality in the learning process led to community learning as the database connected the users and assisted in faster learning. The students could acquire the language skills at the end of the course as this application motivated students to practice daily. (5). Another research aimed at monitoring the progress in students' performance was conducted in the university in foreign language learning. For this, thirty-one students undertook the English language course, out of which 19 students specifically designed learning tools in their gadgets. The first method included SWOT analysis which was held in the introductory class. Then from the information gathered, a mobile app called Angliˇctina (English) TODAY was developed. The web app enabled teachers to upload course material and the app helped students practice on a daily basis. The teachers could analyse the performance of the students and the learners too could get the feedback of their assessments and daily tasks instantly. As the vocabulary of the students was not strong and learning new words was difficult, this app was

designed in such a way that made learning experience enjoyable and also helped the learners improve their vocabulary. (19) The results showed that the students who used mobile apps for English performed better in all the tests. The students could learn the language anywhere at their own convenience and pace.

A survey aimed at rating busuu learning app. The participants were required to use the app for at least ten minutes a day and had access to premium version. For the research, various data collection tools included feedback forms and user experience questionnaire, interviews and assessments. Busuu was rated on its features, functioning, app design, its role in social networking and effectiveness in language learning. Finally, it was found that the busuu app helped in interactive learning where the learners shared their daily goals and progress as well as encouraged individual participation. However, the users weren't satisfied with the app design due to its disabled friending feature. many users didn't find the app enough for learning. (20) The major question that arises is why mobile assisted language learning (MALL) is becoming so popular and what benefits it offers to the students. It's important to find out how technology proves to be of great use for students by providing them a personalised learning experience. The solutions to certain questions such as how MALL is being used by the students, how and when it can be also implemented in classroom learning to make their learning process simpler and more efficient and what is its importance according to them were required to be found. Along with the rising popularity of Mobile Assisted Language Learning it also became important to focus on some of the pitfalls of Mobile Assisted Language Learning (MALL). (28)

Various different surveys were conducted to find out the solutions for the following questions:
1. The challenges associated with integrating technology with studies in the classroom.
2. The benefits associated with learning through mobile apps.
3. The applications which could be used for learning business English or even general English. (24)

The technology which is being currently used for language learning has used simple grammar and simple vocabulary. The study was that mobile assisted language learning has become very essential for education as well as for learning foreign languages. The various reasons which make m-learning so popular include:
1)Personalised learning experience for students helping them boost their self confidence.
2)Helps students with slow understanding capabilities to achieve their study goals.

3)Provides motivation to the learners to study in both formal and informal environments. (26)

A report on how the mobile devices have become even more powerful and versatile because of which more and more users are likely to make them their primary computing devices, and have also begun to widely use them as sources of language learning for a more effective and personalised learning experience. (29) These language learning mobile apps probe to be very significant to provide an individual with a personalised learning experience. The methodology acquired for the same involves the computing capabilities morphed into mini computers. These mobile learning apps are efficient because of the considerably larger screens, high resolution and clarity, powerful processors. It's the mobility, advanced hardware along with better software which encourages new thinking and rise in the number of mobile learning apps. It's an approach which helps the learners to combine formal and informal thinking. There has been a rising interest in exploring the use of various computing devices along with portable audio video in the field of language learning. These devices act as individualised sources of language learning which the users can use to determine which apps to acquire and how to implement the same to add in their learning. The market has become profitable and competitive. The pace of this innovation is likely to be rapid. (23)

Over the previous decade mobile assisted language learning (also referred to as MALL)
both inside and outside language learning environments. Being a field which is quickly maturing, mobile learning is a growing body of research and has enabled teaching and learning of languages with the help of mobile phones and other devices. However,there are certain key issues associated with mobile assisted language learning which includes:

1. Physical issues
2. Pedagogical issues
3. Psycho social issues (27)

Moreover, there are 10 principles learned from implementation of technology applications. These are meant to be complemented by additional guidelines from the language learning and teaching approaches which are implemented by users. Principles have been proposed which would be useful for those who decide to learn languages from their mobile devices. More importantly it was concluded that these principles for language learning did not represent the entire solution for a complex problem but only referred to the points of consideration for the same. (22) It's the usefulness of these mobile phones for learning which gives rise to this positive

response of the students. Also, some interactive games prove to be good sources of learning vocabulary. The students have also given suggestions on how these apps can be made better by introducing more and more media elements like images and videos. They have also suggested that the difficulty of the vocabulary should be reduced and so should the definitions. It was found that the most essential element which encouraged the students to learn through these apps was the games feature. (21)

Mobile assisted language learning is quickly becoming an important tool making it an interesting option for learners to learn a second language. The result of the research showed how important it is to understand the attitude of users in the process of deliberation of technology. It also concluded that in the discussions conducted for technology acceptance along with the technological developments in education, the opinions of the faculty shouldn't be underestimated. It could also have been concluded that it is becoming extremely important to examine the usefulness (which is generally faculty perceived) for the process of technology adoption. It was also found from the study that the students in general have a very positive view about learning vocabulary through the mobile apps. The reason for the same being ease of access for them. (24)

3. CONCLUSIONS

There has been a rising interest in exploring the use of various computing devices along with portable audio video in the field of language learning. These devices act as individualised sources of language learning which the users can use to determine which apps to acquire and how to implement the same to add in their learning. The market has become profitable and competitive. The pace of this innovation is likely to be rapid. Principles have been proposed which would be useful for those who decide to learn languages from their mobile devices. More importantly it was concluded that these principles for language learning did not represent the entire solution for a complex problem but only refer to the points of consideration for the same. Mobile assisted language learning is quickly becoming an important tool making it an interesting option for learners to learn a second language. The students in general have a very positive view about learning vocabulary through the mobile apps. The reason for the same being ease of access for them. It's the usefulness of these mobile phones for learning which gives rise to this positive response of the students. Also some interactive games prove to be good sources of learning vocabulary. The students have also given suggestions on how these apps can be made better by introducing more and more media elements like images

and videos. They've also suggested that the difficulty of the vocabulary could be reduced and so could the definitions. It was found that the most essential element which encouraged the students to learn through these apps was the games feature. The mobile learning apps can prove to be very beneficial for the students if they want to learn Chinese characters. The most popular app for the same was found out to be Pleco. It was also suggested that learner training is lacking and it required as the learners used only a small portion of its functionality. Mobile assisted language learning has become very essential for education as well as for learning foreign languages. The various reasons which make m-learning so popular include:

1. Personalised learning experience for students helping them boost their self confidence.
2. Helps students with slow understanding capabilities to achieve their study goals.
3. Provides motivation to the learners to study in both formal and informal environments.
4. The result of the entire study was found by analysing the data. This involved mainly three data sets which were being analysed namely:
   a. Sensory affordances
   b. Cognitive affordances
   c. User satisfaction

The research showed how important it was to understand the attitude of users in the process of deliberation of technology. It also concludes that in the discussions conducted for technology acceptance along with the technological developments in education, the opinions of the faculty shouldn't be underestimated. It could be concluded that it is important to examine the usefulness (which is faculty perceived) for the process of technology adoption. The benefits associated with the mobile assisted language learning (MALL) include:

1. Vocabulary
2. Oral and written comprehension
3. Pronunciation

Various other advantages of MALL were discovered by these students. Learning through mobile apps has made it possible for students to be able to study anywhere and everywhere. By providing the students with devices which are accessible everywhere, helps encourage self-study in the busy schedule they have. It proves to provide more freedom to the students and also guarantees their success in future

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