

A Study on Mobile Applications in Education

Ravi Sunitha[#], Singh Elina^{*}

[#]Associate Professor, Department of Management Studies, Institute of Information Technology & Management, New Delhi, India,

^{*}Student, Bachelor of Business Administration, Department of Management Studies, Institute of Information Technology & Management, New Delhi, India

¹drsunitharavi@iitmipu.ac.in, ²elina.singh13@gmail.com

Abstract-Mobile applications are the gateway to transfer human knowledge. Learning is a continuous process and the focus has now completely shifted to eLearning. Due to the mobile phones and the various feature-oriented applications, students can learn at their pace and take their time at understanding things, as everything is just a click away. Integration of Mobile in teaching learning process have generated a new era in education. It makes teaching learning process more interactive and effective. It can help to bring quality education to everyone from everywhere. The implementation of mobile Apps and technologies as a whole, can offer many benefits to the university learning environment. This paper discusses the use of mobile applications in higher education sector and the subject specific mobile applications.

Key words: M-Learning, Mobile Technology, Mobile Learning Apps, Higher Education, ICT

1. INTRODUCTION

The world is dynamically changing and upgrading in all the existing fields. Be it culture, society, modernity, sports and the categories won't really come to any end. And one of these super spontaneously growing fields is the technology which is upgrading at an astonishing pace. These days, there have been several changes introduced in the ways we come across technology advancement. There have been numerous of features introduced which not only assist in several day to day activities but also have improvised our standards of living in many ways. This shows how advancement in technology is bringing fruitful results and is also contributing in the overall development in several economic as well as noneconomic spheres we are familiar to.

Mobile learning has become an important factor in higher education. Mobile devices such as net books, tablets or smart phones have become ubiquitous in the institutions of higher education. Majority of the students nowadays own mobile devices and about half of them own more than one.

In addition, because these devices are highly personalized and collaborative communication tools, they provide the institutions of tertiary education with flexible tools for complementing the existing technologies and extending the learning beyond the classrooms and homes from remote places like train or bus stations where students do not have any access to computers.

One of these advancements is the Mobile Applications. As we shuffle back to its history, we would come across the fact the first ever smart phone invented was the one launched by IBM in the year 1993 with those basic everyday features like calculator, clock, contact book and calendar. Since then, there have been several advancements seen in the up gradation of mobile phones and the features they come with. With the flow of time, several organisations across the world came with new inventions and discoveries which led us savour all what we are served with today, i.e., impeccably designed applications of almost all kinds of services and facilities one may look for. This has been one of the most highly astonishing evolutions our world may have had till date and certainly, its quiet evident to believe that this may grow even more efficiently in the coming future.

Of course, a mobile phone consists of just one evident feature which is solely responsible for its existence and that is the feature of applications. Every new technology today is supported or prompted through some or the other application. Also, almost all the services we use today and the facilities we aim to avail are available to us at just one tap of different applications on our mobiles which makes it

possible to access anything and everything simply just through our mobiles. This enables our generation to simplify numerous of day to day activities. This has eventually led to a faster paced life. Thus, mobile applications have uplifted the standards of living by bringing in several changes which are not only beneficial but are also highly efficient.

Mobile(M) learning is the ability to provide educational contents and resources on personal pocket devices such as smart phones, tablets, PDAs, i-pads, mobile phones etc., Educational content refers to digital learning resources which includes any form of content available on a personal device. M-learning is defined as learning multiple contexts, through social and content resources, using personal electronic devices.

II. LITERATURE REVIEW

Karabatzaki et. al; (2018) Technology can possibly improve numerous aspects of our day to day lives, including learning. It has been demonstrated to build students' engagement and learning results. With latest advancements in the abilities of smart phones and their increasing adaption rate among the students, it is conceivable to exploit these devices through designing proper activities and exercises that encourage student's knowledge and learning. In this paper we present few of the most notable mobile methodologies that are used for students so as to advance their learning and their abilities. Moreover, its job in those students who face learning and related challenges is explored. Finally, the outcomes of a research that inspected whether there is a connection between the presentation of students in the language lecture, in mathematics lecture and index of intelligence practice, index of verbal intelligence and general index of intelligence are indicated completely. Hans & Harsha (2018) examined the Mobile Learning Application and its usage among Academic Staff and Students in education. The main purpose of this study is to establish ERP software to identify whether it enhance or upgrade the level and support learning in the institute among the college student. Luna-Nevarez Cuauhtemoc and McGovern Enda

(2018) ,As the implementation of technology blends with education, a broad range of new smart gadgets and tech-driven applications is being available to education. Trending examples for such technology are digital magazines, which can assist teachers with improving the learning experience of their students beyond just classroom teaching. This article examines the effect of customised digital magazines, made and distributed among people through a mobile application like Flipboard, in uplifting students' interest, understanding, and learning of academics-related content. And hence, students responded well to the acceptance of this new tech-driven ideology. Students using mobile applications and reading digital magazines showed more engagement in academics and performed even better in an assessment, as compared to the students in a control environment. Drigas and Angelidakis (2017) Mobile learning has the potential to push the boundaries of education beyond just classroom walls. In light of the device used, any learner can get an access to a wide range of content. Ranging from podcasts to digital videos, attend a virtual lecture or simply refer to a mentor over the net directly for answers to his questions. These new innovative ways give rise to an interest for reconsidering instructional method and the system of education. Therefore, our examples of mobile applications inside formal or informal education system been made in relation with innovation. Ansari & Tripathi (2017) examined the effectiveness of mobile learning apps in the higher education in India. The study discusses the use of mobile applications in student's life. The results show that in the higher education environment, the mobile learning apps play a vital role. Also the results indicated that students had adequate knowledge and awareness regarding the use of mobile applications. According to the research of Ekaterina Pechenkina (2017), Mobile applications are a great part of higher education in several numbers of ways, including as organizers for study, for marketing, as learning instruments, and enrollment of new students. Designed with a purpose of simplifying the blending of students' life with universities', organiser applications have an ability to help students with

different phases of college experience, saving time and vitality for study, while applications utilized as learning instruments can assist students with understanding and comprehending what's taught in lectures, self assess their insights into the subject, and work together with peers. Regardless of the expansion of higher education applications, there is still no methodical comprehension of this field, with various significant questions staying unanswered, for example, what kinds of applications are most ordinarily found in higher education, what their intricate uses are, and how their functionalities and affordances are adapted by universities and its students. This research tends to bridge this gap. In the wake of dissecting 177 applications partnered with Australian universities, a typology of higher education applications is proposed. Navigation and study management applications rise as the most well-known applications offered to the students in universities, with virtual reality or augmented applications emerging as another key classification. New bits of knowledge are offered relating to the complex terrain of higher education mobile applications, and tricky zones emerging from this analysis, for example, student support, equity, safety and privacy, are talked about. Yeap, Ramayah, and Soto-Acosta (2016) examined college students so as to analyse and comprehend the elements that encourage adoption. Two crucial factors were revealed are subjective norms and perceived behavioural control. Along with, the authors discovered that the impact of friends and companions adapting the utilization of m-learning and the integration of instances of m-learning into the coursework uplifts students' confidence and potential. Richardson and Lenarcic (2008) analyzed the significance of mobile technology to upgrade students' potential to acquire basic university knowledge and class content. With respect to their outcomes, mobile technology improvised students' understanding by uplifting the adequacy of staff to student, student to staff, student to student, and college to student interaction. Ji-Hye Bae, Sung-Ki Kim (2014), examined the educational results on the use of applied app on mobile by

students. The study attempted to measure the results of students while using mobile apps and instructional strategies in actual education fields. It also focus on the educational effects obtained for the usefulness learning activities.

III. RESEARCH GAP

Since years and years turning history, there have been numerous of researches and studies conducted over mobile applications. And thus, we may have come across several comprehensions and interpretations on the same. But, it's quite evident that we have been missing an in-depth analysis of the implementation of mobile applications specifically in the field of education. There have been a few studies conducted. Though, their sole agenda was not necessarily found to be focused over the field of education or, didn't represent the core areas which were somewhere missed out.

Therefore, this research is conducted with an agenda to elaborate the influence of mobile applications specifically with respect to the field of education, throwing light over all of its affects, influences and significances it has over education. Through this study, we may take a step to bridge the gap between the previous studies and the present studies by bringing out an in-depth analysis of this particular subject but in terms of growing technology and modern education system.

This will also assist us in interpreting the significant outcomes that are likely to be expected through this extensive research along with highlighting the crucial aspects for the modern day education system which may push it to higher growth.

IV. RESEARCH METHODOLOGY & OBJECTIVES OF THE STUDY

The study is descriptive in nature. Source of Data collection is secondary data collected from internet and other published sources. The type of research which will be utilized in this study is majorly qualitative research along

with some quantitative research. Qualitative research aims to collect a detailed understanding of human behaviour and therefore the reasons that lead to such behaviour. The discipline studies and analysis the “why” and “how” of the decision making process. Besides this, the research will also examine the phenomenon through some quantitative observations (wherever required) so as to precisely elaborate the study. Additionally, the secondary data is used in this study so as to analyse and examine the overall factors related to the subject of this observation. The study focuses on the following objectives

- To study the Advantages of Mobile applications in Learning Process
- To study the subject specific mobile applications in education.

V. TYPES OF MOBILE APPS

- There are three types of mobile apps.
- Native apps: These are the apps which are installed through Google Play or apples app store. It has all the features like accelerometer, the GPS, the compass, camera etc. These apps can use the device’s notification system and can work offline.
- Hybrid apps: These apps also depend on HTML. These apps are a part of both native and web apps
- Mobile web Apps: These are the apps which run by a browser and it is written in HTML 5.

VII. ADVANTAGES OF USING MOBILES APPS IN LEARNING

- Learning Methods: The introduction of applications in the education sector has led to the introduction of new learning methods. There are fun games available on mobile applications that indulge the students into a healthy thought process and help them understand things from a different perspective.

- Flexibility of using Mobile apps: Mobile apps have become part and parcel of people’s lives because of the flexibility and ease of looking up information that they offer. The power of mobile apps can be leveraged to offer training to learners even when they are not connected to internet.
- eBooks And Online Study: These days, students are generally very fond of online studying. This is where library apps and book search apps come into the picture. These applications make it easy for the students to search the appropriate study material in the mobile application. It keeps them closer to the study material and helps them in segregating their studying materials over the web.
- Easy Accessibility: The mobile learning technology and mobile apps help learners to use them at any time at their convenience.
- Utilization of Free Time: College students always have a lot of free time, which get wasted in useless activities. With the help of e-Learning mobile apps learners can use their free hours to learn something productive.
- Enjoyable and Informal Learning: Students are fed up of boring homework routines. The classroom lectures are quite monotonous. The entertaining graphics and attractive illustrations are way better than regular study patterns. The informal feel of learning apps helps learners towards enhanced learning outcomes.
- Changing Educational Standards: The future of education belongs to technology. The content not only is predominant, but they also need to suit the learner. Table I, Table II and Table II explains the various android apps used by students, various mobile apps used in education and subject specific mobile applications in Education.

Table I**Different Android Apps used by students**

Android Presentation Apps	Google Slides Power Point Prezi Viewer
Android Mind Mapping Apps	Mindomo Mindmeister SimpleMind
Android Note Taking Apps	One note Google Keep Evenote
Android Video Apps	Animoto video maker Magisto Video Editor & Maker Video Editor
Android Portfolio Apps	Three Ring Weebly Seesaw
Android Reference Apps	Cite this for me EasyBib Mendeley
Personality Development Apps	Remente Personality Development App Think up Elevate Lumocity BestifyMe Learn Public Speaking

Table II**Various Mobile Apps used in Education**

Mobile Apps for Enhance Teachers Professional Growth	Udemy Mole App Lynda Mobile App TED Mobile App Edx Mobile App Treehouse mobile App LinkedIn App Course Era Mobile App Udacity Mobile App
Mobile Apps for formative Assessment	Kahoot Verso Socrative teacher Plickers Zoho forms Nearpod I Click Reef Recap Poll Everywhere Classflow Classclick Formative
Mobile Apps for creativity	Mindmeister Evernote
Mobile App for Classroom Management	Edmodo Google Classroom Classdojo
Mobile App for Communication	Whatsapp Viber Telegram Remind
Digital Survey Tools	Googleform Typeform Survey monkey

Table III
Subject Specific Mobile Applications

Mathematics	Socratic Geogebra MyScript Calculator Desmos Maths Mobile App for Teaching and Learning Maths Math Tricks Maths Formula Free Grapher Geometry Pad Pocket Mathematics All Math Formula etc.
English	Duolingo FluentU Memrise Culips Study Flash Talk Talk English etc.
Social Science	Today in History SSC Social Science Indian History in English etc.
Physical Education	PE games PET Sports app Edu Sports Yoga Daily Fitness Yoga for weight loss etc.
Science	Cell world MEL Chemistry NASA Math and Science Tutor 3D brain Science Bank Anatomy 4D Science Experiments VIDEOS

	Books of Science Brain POP etc.
Computer Science	Learn Computer Course Computer Science Dictionary Computer Science MCQs Programming Hub: Learn to code Computer science Quiz etc.
Economics	Economics made easy Basic Economics Macro Economics etc.
Management	Principles of Management Sales Management Wrike-Project management etc.

VII. FUTURE SCOPE

Through this extensive research and analyses, this study can be comprehended with a conclusion that mobile applications have a tremendous impact over the lives of people. Considering almost every way of life, mobile applications play a significant role and hence, turn out to be a part of day to day activities.

Certainly, it can easily be understood that students tend to explore several kinds of applications serving different needs in day to day life. Thus, it reflects how they're influenced by the dynamically growing technology and hence, proving out to be the strongest area to trigger the development factor in them. It is quiet convenient for us to determine the significance of mobile applications. But what's important is that how we manage to blend this technology with education which would ultimately raise the bars of growth and success. The future depends on how we treat our present. Whatever we do today may reflect where we stand in our future. The youth is the key to the progress of the world. Considering the significance of education, the ultimate strategy to enforce the strength in the structure of learning could be blending it up with the rising technology. When we would push the boundaries of education beyond the

classroom walls, new ideas and aspirations will start to emerge which may take the future of the world even higher. It would facilitate students with their desired zone of learning which would eventually prosper their growth and development. Certainly, this would also lead to a kick start to an innovative way of learning which would gather a huge adoption by students across the world and would lead to an increase in the spread of convenient education. Mobile applications wouldn't only serve the purpose of convenient and a smart means of education but would also result in easy accessibility of the academic content anytime, anywhere, without carrying the heavy loads of books.

Also, educating students about the same could lead to an add-on to the agenda of empowering education. The awareness of today's youth can lead to marvellous progress of the tomorrow's world. Students must be educated of crucial subjects like technology specifically in terms of education, where mobile applications are the best suited means to impart knowledge in the most conveniently accessible ways. This would not just expand their knowledge, but also sow the seeds for an extremely successful future in terms of technological as well as educational growth and advancements.

VIII. CONCLUSION

Mobile apps help to develop Critical and thinking skills of Learners. Formative assessment tools are convenient, easily accessible, and inexpensive and it also supports the learning environment. Use of Information and Communication Technology (ICT) in education is one of the most important changes in the Teaching learning. Now a days due to the advancement in technology and mobile phones with feature oriented features, students can learn at their convenience just a click away. Mobile applications play a major role in the Teaching Learning Process. The use of Mobile Applications in Education can offer various benefits to the learning environment. Mobile phone enables teachers and students to share their knowledge and experience at any time anywhere. Implementation of Mobile applications in education plays

a significant role in changing the traditional teaching learning process. Mobile learning has gained importance in higher education sector because most of the students own their own mobiles. Now a day's students need digitized materials and also they want soft copy of notes and power point presentations. Students depend more on internet, e books and mobiles for clarifying their doubts. So Mobile Apps play a significant role in the teaching learning evaluation process.

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