

# A Study of Mobile Learning Method in Higher Education

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**Abstract – It didn't take long for the WhatsApp instant messenger to become widely used among college and university students. WhatsApp is an instant messaging app for smartphones that is available all over the world. When using WhatsApp, you can send and receive multimedia files. WhatsApp makes it simple to share media with friends and family for free, including photos, audio, and video. That so many high school pupils are using WhatsApp suggests that social media technology is changing. Almost no college student does not have access to an instant messaging program like WhatsApp on their mobile device or computer. Schools and institutions have looked into how WhatsApp can help students establish a strong social media presence. Students think of WhatsApp as a tool for transferring resources, improving work habits, and promoting vital context-free education. Most of them have access to the Internet, so they can use WhatsApp to establish a useful learning platform for themselves. Almost everyone has a cell phone with them at all times. The WhatsApp group provides a new route to higher education to fulfill the needs of today's college students. Students were said to be more engaged in their own learning process when using WhatsApp, which could lead to higher long-term retention. Teachers have the option of working with students who have any combination of the four abilities. Different assignments and activities must be designed to address different study styles. One of the most useful features of WhatsApp is its ability to create a private group of students who may communicate with one other as well as their teacher and the rest of the community.**

**Key Words – Mobile Learning, Higher Education, WhatsApp Messenger, Smartphones**

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## INTRODUCTION

Today, education is no longer restricted to the classroom. You can now do it in waiting rooms, at bus stops, on trains, during field trips, at museums, and in markets outside of the classroom. In other words, learning can take place "anytime" and "anywhere," as long as it is intentional. Smart phones, tablets, iPods, e-book readers, and portable notebooks have all made this "anytime" and "anywhere" learning paradigm possible. Portable devices with enhanced computational capabilities can now be carried around in a pocket or handbag. As a result, information and communication are now available to everyone. The devices' technological capabilities have sparked a lot of interest in finding ways to put them to good use in the classroom. The use of mobile technologies in educational activities has progressed from being confined to pilot studies to being put into practice on a larger scale by educational institutions. As a result of mobile technology's ability to connect people seamlessly, meaningful interaction and knowledge sharing with the outside world are made possible. The availability of endless educational resources is made possible

by constant internet connectivity. Cell phones, tablets, and other mobile devices have made it possible for people to learn on the go. Learning on the go allows for a more individualized, collaborative, and adaptable experience. It's not bound by space or time. The educational transactions between students and teachers have been profoundly influenced by technological possibilities. Education made possible by mobile technologies has many advantages over traditional classroom settings. Higher education institutions are primarily concerned with making effective use of technology in the classroom. As a result, some universities and colleges around the world have already implemented mobile learning, and others plan to do so in the future. The adoption of mobile learning in higher education by faculty and students is critical to its success. As a result, it's important to figure out what factors influence the acceptance of mobile learning among higher education teachers and students. These variables will be investigated using a mixed-methods approach in this study. As a result of mobile technology already being used by teachers and students especially at universities, researchers were motivated to conduct this study.

Despite their widespread educational use, mobile technologies are not yet an integral part of the formal education system, according to the educational community. India has one of the highest mobile penetration rates of any country in the world. Around 240 million of the world's 1 billion mobile phone subscribers use smartphones, and that number is expected to reach 520 million by 2020, according to Gartner Smartphones account for over 79 percent of all web traffic, and that share is growing at a compound annual rate of 1 percent. Especially in India, where mobile phones are even more common than laptops and desktops, this proves that mobile phones will remain a preferred digital tool for the foreseeable future. As a result, now is a good time to make use of these devices in the classroom. Students and teachers can use technology that they already own to further their educational goals by using the "BYOD" ("Bring Your Own Device") concept. The widespread possession of devices will help optimize IT infrastructure costs, and the same can be used to provide training and support for the implementation of mobile learning.

## MOBILE LEARNING IN HIGHER EDUCATION

There are many ways mobile learning can benefit education, but because it is so prevalent on college campuses, it can be especially effective in higher education. In particular in higher education, mobile device pedagogical affordances have changed the way students learn. The students in a traditional classroom sit and listen to the lecturers, but technology now gives them the option of recording the lecture or downloading it as a podcast to watch at their own convenience and time. When students use an LMS ("Learning Management System") like "Blackboard," "Moodle," "E-class" or Sakai, or another LMS provided by their colleges, they can download printed materials and other learning resources from the LMSs. As e-learning, flipped classrooms, innovation-upgraded learning, and mobile learning have all gained popularity in the last decade. Due to the widespread use of mobile devices in various social strata, mobile learning is becoming increasingly popular and is being developed for educational purposes. Mobile learning, according to Jill Attewell, gets to places where other methods of education fail. Empowering people to learn continues long after the 'gadget honeymoon' has ended. As a result, mobile learning is not just about the appeal of its technical features, but also about the pedagogical usefulness of mobile learning in engaging and motivating students.

### Development of Mobile Learning

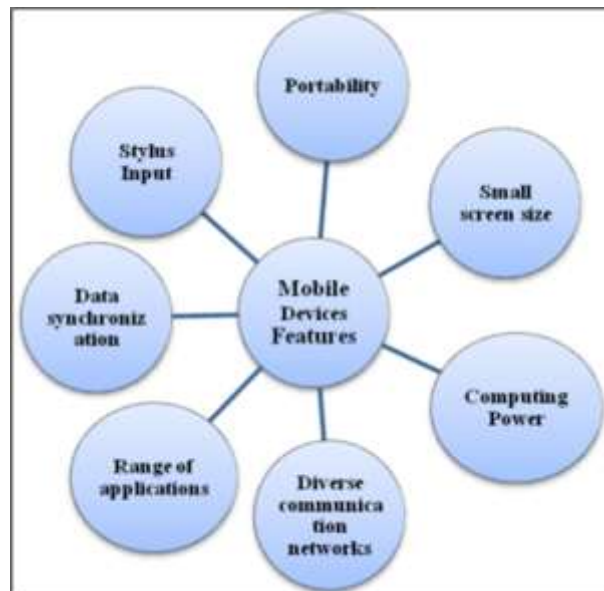
Mobile learning development took place in three phases as described by Pachler and his Colleagues say that between the mid-1990s and early 2000s, educational emphasis shifted from the classroom to learning environments outside of it, and from there to the learner's mobility in the late 2000s. Mobile

learning was first introduced in rich European countries and then expanded to developing countries in the middle of the year 2000 in order to reach a wider audience. PDAs (Personal Digital Assistants) were initially used for educational purposes. Students' field trip data was brought back to the classroom for analysis and discussion during the early phases of the year 2000 as interest shifted toward mobile learning experiences outside the classroom. For instance, the 'MOB-learn' Project (2002-2006) explored context-sensitive problem solving, informal learning, and workplace learning using mobile technologies in collaboration with 24 countries. Experiments on the impact of SMS as a content delivery mechanism and an ongoing point of interaction between teachers and students were being conducted at the same time. Using mobile devices to learn Italian was studied by Levy & Kennedy and literature was studied by Hoppe. As a result of these studies, SMS was found to be a viable medium for sending and receiving guidance in the form of bite-sized information. Smartphones are expected to outsell PCs in the United States by the end of 2005, and most companies have already begun to move away from wired devices in favor of mobile ones. Globally, more than two thirds of the people use smartphones, according to a report published by Digital in India 2018 on this topic. Intriguingly, smartphones are the most frequently chosen means of connecting to the internet all over the world. They drive more traffic to the internet than all other devices put together. There were 47.14 percent of internet access devices in use in January 2018, while there were 52 percent of internet access devices in use on smartphones alone. "7 times more usage of mobile apps than mobile web browsers," according to App Annie, a global provider of app market data. According to the data presented above, mobile internet access may be more common than previously thought. Compared to mobile devices, which account for 79 percent of web traffic in India, desktop and laptops account for only 20 percent of web traffic, with year-over-year growth of -2 percent. In India, the trend is even more in favor of mobile devices. Especially in India, where mobile phones are even more common than laptops and desktops, this proves that mobile phones will remain a preferred digital tool for the foreseeable future. Smartphone users consume an average of almost 3GB of data per month, thanks to the internet's lightning-fast download speeds (broadband accounts for about 60% of all connections). Mobile devices' widespread use has prompted academics all over the world to look into the potential educational benefits of using them. E-learning has included mobile learning in the past, which has been studied by academics. According to computer-based education expert Clark Quinn, this is a convergence of mobile computing and e-learning. However, other researchers have referred to it as e-learning based on mobile technology or simply as the beginning stages of e-learning and distance

learning (d-learning). Mobile learning is included in both distance learning and electronic learning, according to this group's reasoning. Both e- and d-learning have features that set them apart from mobile learning, but mobility (learning across contexts) and learning with mobile technologies set mobile learning apart even further. Even when the learner is on the go, they can benefit from "anytime" learning because it isn't restricted by time or place. e-learning is multi-media-rich, hyperlinked and provides a media-rich environment while mobile learning is spontaneous and intimate and provides a media-rich environment, synchronous and networked, life-long learning and connected.

### **TECHNOLOGICAL ATTRIBUTES AND PEDAGOGICAL AFFORDANCES OF MOBILE DEVICES**

The Ecological Approach to Visual Perception, published in 1977, is the first book to use the term 'affordances'. It's all of the "action a possibility [the environment] presents." In his book "The Psychology of Everyday Things," Donald Norman coined the term "Human Computer Interaction." Allowance can be defined as the "quality of an object" or "the environment that permits the individual to carry out specific actions". Discovering those possibilities that could lead to action is what HCI is all about. As an illustration, a button on a television panel is easily accessible and initiates the user's action of turning the television on or off. It is important to identify the underlying hardware or software capabilities of mobile devices in order to understand the affordances they offer for educational and learning purposes. There are numerous technical features on mobile devices that can be beneficial in a classroom setting. These new technical capabilities are made possible by mobile devices. Because of these mobile device functionalities, their use in the educational sector is foreseen. For Pea and Maldonado, "portability, small screen size, computing power (immediate starting-up), diverse communication networks, a wide range of applications, data synchronization across computers, and stylus input device" were the most important aspects of the handheld device (Figure 1). They help with administration, organization of teaching, and also serve as a learning aid for students using mobile devices. Students will benefit from it as well because it is a great teaching tool. Due to the fact that mobile devices make learning easier for students and free up teachers' time, their use in the classroom has a positive impact on student achievement.



**Figure 1: Pedagogical Affordances of Mobile Devices**

Even though all of the other characteristics of mobile devices are distinctive, e-predecessor, learning's 'portability,' stands apart from the rest because it is the most unique mobile device capability. Those handheld devices that fit in a woman's handbag are referred to as "portable." 'Mobility,' another distinguishing feature of mobile devices, is preceded by 'portability.' When people can work and study from anywhere, it transforms the way we live, learn, and work. This is because mobility reduces the need for fixed locations for work and study. In many cases, the terms mobile learning and ubiquitous learning (or u-learning) are used interchangeably. The concept of ubiquitous learning was first proposed by Weiser (1991). (Park, 2011). To use the word ubiquitous is to say that it can be found in any place. "Something that is so ubiquitous that no one will notice their presence," according to Weiser's original definition of the term. He goes on to say that "the most profound technologies are those that vanish." They become so ingrained in daily life that it's difficult to tell them apart. It's possible to envision a classroom where the teacher stays focused on his or her area of expertise (e.g. math or social studies) while using technology to improve student learning thanks to "ubiquitous computing" in education.

### **MOBILE LEARNING INITIATIVES AT HIGHER EDUCATION INSTITUTES (HEI)**

However, because mobile devices are so widely available in universities and colleges, mobile learning has the potential to support education at all levels and can be particularly useful in higher education. College students are almost always equipped with highly personalized mobile devices like smartphones and tablets that serve as excellent communication and collaboration tools.

Thus, they're a great complement to existing technologies and a way to help students learn outside the classroom. Mobile devices are making flexible learning more popular, and this trend is slowly making its way into higher education institutions. However, after developing their own mobile applications for managing and organizing their study programs through "campus apps," universities began offering their courses via e-learning or online platforms. With the help of Apple's iTunes U, mobile learning content has been made available in universities. Thousands of courses are available in lecture podcasts, e-books, videos, and portable document format through iTunes U. These can be accessed and downloaded by students for future use. More and more tertiary-level seminars, conferences, and workshops are being held on mobile learning. This shows how important it is. For example, in 2002, the first mobile learning conference, called "m-Learn," was held. It's a well-known fact that this is one of the best conferences on mobile learning in the world. Education apps, as well as other mobile learning solutions and products, are finding increasing attention in a growing number of journals devoted to the topic. Universities will eventually have to adopt innovative methods of delivering education if they want to remain competitive in the face of growing global competition and stay on top of new research developments. In this regard, mobile learning may prove to be an effective solution. Mobile learning is already being used by universities like Stanford, Abilene Christian, and Athabasca, as well as London's Open University and Washington University to teach students. It's difficult to implement mobile learning globally in higher education institutions due to social, cultural, and organizational factors. As a result, understanding student attitudes toward mobile learning is essential before it can be implemented in academic institutions. Only after teachers, students, and the university administration have fully embraced these new educational methods can their full potential be realized. According to some, mobile technology should be used to deliver education in the 21st century in order to meet learners' needs.

### 1. Mastering 21st century skills

Because today's youth are so used to the internet and mobile technologies, the idea of a world without the internet is unfathomable to them. With mobile devices becoming so common in their lives, internet access and web 2.0 tools are also becoming more commonplace in their lives. They've grown up with these devices, playing and learning on them, so they're well-versed in using them and leveraging these technologies in their daily lives. In his book, Prensky correctly refers to these individuals as "digital natives." Having grown up in the age of information explosion, students (or learners) now have a greater need than ever for a steady supply of knowledge, which is being provided by current mobile technologies. It's safe to say that the skills

expected of students all over the world have shifted dramatically. Students, according to Brooks-Young, must have both content knowledge and application skills in order to be successful in the 21st century. She also talked about the skills that today's students need to master in order to succeed in a society and workplace that is constantly changing. They include: "digital age literacy, inventive thinking and effective communication"; high productivity; research and information fluency; critical thinking; problem-solving; and decision-making; digital citizenship; knowledge of technology operations and concepts; knowledge of core subjects and 21st century themes; as well as knowledge of life and career skills. From the aforementioned list of skills, it's clear that students need to be proficient in communication, collaboration, and technological skills. You can learn these skills by utilizing mobile learning. Mobile technologies provide a wide range of affordances and opportunities for learning application skills, making mobile learning an obvious choice. Mobile devices' ability to enable contextual, situated, and on-the-go learning favors their use in formal educational contexts as a teaching method as well as a supporting tool. Finally, mobile learning is the superhighway for all connected learners to reach their educational objectives, no matter what their educational background is like.

### 2. Pervasiveness of Mobile Devices

Smartphone adoption is expected to reach 95% by the year 2020, according to Gartner. Smartphone ownership is on the rise, changing how people interact, communicate, and work. Even infants as young as a year old are seen fiddling with and playing with mobile devices, thanks to this shift. Small children are frequently seen using mobile devices to play games or learn alphabets and rhymes, thanks to the proliferation of kid-friendly mobile applications. As a result, mobile learning isn't just for the young; it has the potential to benefit people of all ages. What's to stop growing children from using mobile devices for learning if mobile devices are introduced to them early? As obvious as the availability of electricity is, mobile learning will be a common occurrence for them. As a result of implementing mobile learning, EFA will be achieved in terms of equal access to educational opportunities and equal learning opportunities for all (Education for All). It is possible to use a mobile device as a learning tool, a performance support tool, and a tool for lifelong learning.

Researchers, educators, and academic institutions are all investigating how mobile technologies can be used in the formal education system because of the numerous possibilities they provide. However, there is a word of caution: relying too heavily on mobile device capabilities will defeat the purpose of mobile learning altogether. When device-centricity meets student-centricity, mobile learning occurs.

This occurs when sound pedagogy principles are present. There are other factors at play in regards to mobile learning besides the use of mobile devices. To put it another way, mobile devices can be thought of as a medium, tool, or facilitator for various types of learning situations such as social contexts or authentic contexts. The device's capabilities make it a valuable tool for achieving a wide range of educational goals. The fact that mobile learning can enhance traditional learning and support innovative teaching practices while also being student-centric is well-noted by Sharples. In order for students to fully benefit from mobile technologies, they can connect their handheld mobile devices, such as palmtops, to the campus internet servers. Teachers and students who are pressed for time will appreciate mobile learning architecture, which allows them to access course curriculum information on the go. Data transmission will be greatly facilitated in the future by wireless access. As well as real-time information about their class curriculum, school events, after-school sports and even test scores. Students can access this information. Students can benefit from mobile handheld computing's freedom and productivity by using devices such as Palm handheld computers connected to campus web servers."

## CONCLUSION

It's clear that using WhatsApp for education doesn't just make for better instruction; it also raises student teachers' achievement levels in theory learning and enhances their interest in it. Studies claiming that WhatsApp teaching has a good impact on academic attainment are supported by the findings of this study. Students' academic performance is significantly impacted by it. In contrast to blended mode activities, studying through WhatsApp is more engaging and instructional as well as advantageous to both students and instructors. Those in WhatsApp groups designated as academic beneficiaries must be able to access learning materials, have access to teachers, and be able to continue learning outside of the classroom. Students' learning philosophies and involvement in the classroom were both improved as a result of the WhatsApp teaching technique, as evidenced by the findings. All students in the classroom can participate in active learning using WhatsApp teaching, which helps them design their own learning opportunities. When WhatsApp teaching is done correctly, it will be even more effective and encourage active learning through sound pedagogical concepts.

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