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Research Paper

Integrating Mobile Teaching and Learning in Indian Classrooms and Online

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ABSTRACT

Today learning is not just limited to classrooms. It has transcended the boundaries of traditional classrooms and can take place absolutely anywhere and anytime. In this unprecedented time, we humans have explored our potentials to the best and have tried our hands on every possible thing which could make our functioning possible in the smoothest way. The acceptance and adaptation of new ways of teaching and learning breaking the traditional restricted method, have been practiced every day at different platforms. This paper intends to study how mobile learning can aid in teaching and learning, its strengths surfaced over the period of time and what are its current challenges and how to overcome those. The study adopts an exploratory view. As these studies are favourable in gaining insights into a new area of research. It was studied that the acceptance or rejection of m-learning is not only influenced by the advancement of technologies. Human psyche, users' attitude, learner's intent, spending power, professional development and cultural influences plays a significant role in adapting m- learning and teaching. The paper then moves further providing suggestions by summarizing the views of various educators and learners. The recommendations stress for a stronger collaboration among the learners, educators, policy makers, research and development institutions who with practical implementation work on the ground reality, which will further result in the implementation of effective and scalable mobile learning projects and help in realizing the full potential of such technologies for learning and development.

Keywords: *Mobile Learning, M-Learning, Professional Development, Cell Phones, Apps, Teaching and Learning.*

Until recently a classroom was considered as a room with blackboards, chalks, heavy lectures, completing assignments etc. But in todays scenario a lot of things have changes. There has been an evident transition from rote learning to experiential based leaning or tech-based education which could be done anywhere at any time. Handheld technologies have reached almost every hand in todays scenario. It would not be wrong to say that education is considered incomplete without the use of swanky laptops, CD'S, smart tablets etc, as educational institutes themselves promote the use of these gadget by offering these at the time of admission.

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What m-teaching and learning is?

The notion that today's students are diverse than the previous generations has become a common one. Being said so they are labelled as "net generation" (Tapscott, 1998) or "millennials" (Rainer & Rainer, 2011). Such descriptions suggests that there has been an obvious difference in the way they are bought up surrounded by digital technology since birth and that has influenced how they live, think, play, learn and work. This advancement has not only brought a change in their thinking and learning pattern but has also have made them quicker in work at a phenomenal rate. Since these students are considered as techno savvy by the previous generations many schools and colleges have promoted integrative mobile computing devices in their curriculum designing. Until recently the use of these devices have been limited, it is due to the recent unforeseen pandemic that the use of mobile computing devices have been challenged and used to its best in the best possible way for both teaching and learning in the best possible ways.

According to Woodill (2010) mobile learning is not merely presentation of e-learning content into smaller snippets which can be accessed on a mobile device but about discovering those possibilities where learners are benefitted by mobility and connectedness of the devices. In simple terms mobile learning or m-learning is a type of content that is developed or consumed on mobile devices, such as smartphones and tablets, and including anything from podcasts to full e-learning courses.

Mobile teaching on the other hand is about planning and executing through mobile devices. When educators come on a platform where they communicate with the 'millennials' it becomes essential for them to understand the basic psyche of the younger generation so that the connectivity could be formed between the two. Keeping in mind the diverse variety of minds they interact with, it becomes more essential for the teacher to provide information to these variety of mind at once which requires stimulating their, sensory , visual, audio and kinesthetics skills. The best possible way of doing so in the limited time is adapting one or the other smart apps like EdTech, Duolingo, ClassDojo etc.

In a recent study by Central Square Foundation (2021) reported that 7 of 10 teachers use mobile phones and internet in their profession. The study analyses the availability and usage, perceptions, and challenges with technology adaption among educators across India. the study also highlighted the significance of ICT training of teacher which thereafter promotes the willingness to adapt the technology. The various work areas in which the teachers/educators adapted the technology are lesson planning, using the technology for audio visual lessons, in grading assessment, tracking student's data, maintaining portfolios and anecdotes etc. the study provides a snapshot of the use of the technology not only for the teaching but also helps to keep the educators organised with the student's data. The survey also found that the teachers showed high willingness to learn the new technology and easy adaptation to the new ones.

RELEVANT THEORETICAL FRAMEWORK

No two individuals are same, they differ in everything they do, they think differently, they behave differently, they process the information differently and the learn differently. Our brain functions uniquely on the kind of experiences we encounter on everyday basis, our these unique experiences contribute towards the way we learn. When we talk about m-learning the biggest challenge comes to understand the learner's style of learning so that the content creator/developer can inculcate all the variety of content which will fulfil the need of different kind of learners. An easy way to do this is to understand the different ways of

learning which helps the educator to use different techniques to cater a variety of learners. There are basic 5 educational learning theories develop by psychologist after spending countless hours in performing tests to better understand how learning takes pace.

- **Cognitive learning theory:** CLT is based simply on the idea that people first mentally process the information which they receive and then produce a response. It focuses on how the human mind functions/works while people learn. The theory pays attention on the process in which the information id processed by the brain and how learning occurs through that internal processing of information. The theory is credited to educational psychologist Jean Piaget. His major concentration always lied on what went on inside the learners head, instead of how they reacted.
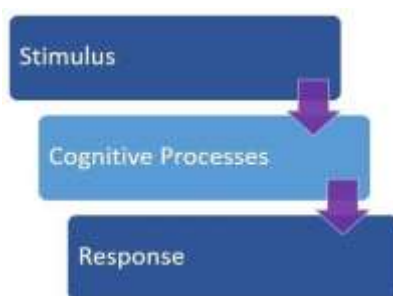
- **Behaviourism Learning Theory:** Stems from the work of B.F Skinner and operant and classical conditioning observed by Pavlov. Behaviourist believe that association leads to a change in behaviour. The theory states that learning begins with a cue from the environment to which the learner reacts in some type of response, the consequences to that response promotes the individual to continue that particular behaviour or bring a change in it. The behavioural pattern is further repeated until it becomes automatic, this permanent change in behaviour of the learner signifies learning has occurred.

- **Constructivist Learning Theory:** believes that learner creates their own learning base on the basis of their previous experiences. Learns learn new things everyday and keep adding their already existing knowledge to this newly learnt one, which ultimately leads them to create their new unique knowledge. This theory hold high significance in the field of education as it believes that learning is an active process which is personal and unique to each individual. Constructivist Learning Approach id considered as one of the crucial theory among educators as it helps them to understand that each individual will bring their own past to the classrooms every day.

- **Humanistic Learning Theory:** most significant and influential minds in humanistic approach were Abraham Maslow and Carl Rogers. The basic idea of the approach is to understand that learning is learner centred and individualized for each learner. The main goal for student is to become self – actualized. Students/learners are further motivated and able to learn according to specific needs through the use of technology. In this learning style, students are free to judge what is good for them to learn and what is bad for them to earn. As summarised Humanism is a "paradigm/pedagogical approach that believes learning is viewed as a personal act to fulfil one's potential.

- **Connectivism Learning Theory:** Connectivism is the integration of principles explored by chaos, network, and complexity and self-organization theories. Learning is a process that occurs within nebulous environments of shifting core elements – not entirely under the control of the individual. Learning (defined as actionable knowledge) can reside outside of ourselves (within an organization or a database), is

focused on connecting specialized information sets, and the connections that enable us to learn more are more important than our current state of knowing. It is one of the newest educational learning theories, and focuses on the idea that people learn and grow when they form connections. Mobile technologies have recognized the need for communication between members, with many learning management systems directly embedding discussion boards, chat and email applications directly into their software (Aleksic-Maslac, Magzan & Juric, 2009).

Current status of mobile technology usage.
Any nation progresses on the basis of its education system adopted in order to prepare and groom the upcoming generation. With the proliferation of m-technologies in the education system in India it has become highly significant to remodel and upgrade the current education delivery system. India being the second largest mobile user subscription base in the world, holds key promises for the use of m-technologies in delivery education and learning in India.

In the past few years the Indian government has taken a number of initiatives to promote e-learning and m-learning among the youths. One of such initiates is setting up of the 'National Program in Technology Enhanced Learning' (NPTEL, 2003), which is university level learning platform. The platform has around 2 million learners (2020) enrolled for about 392 courses, providing diversified learning opportunities to learners all over the world. The programme today has become a great success that in turn a no. of such programmes is today being run by both private and public parties.

Another initiative which was taken by the Ministry of Human resource development in 2010 in order to promote e-learning was the distribution of 'Aakash Tablets' in around 25000 colleges and 400 universities.

According to the results of a survey conducted and published by Sandhya Keelery, (Oct, 2020) during the first week of a nation-wide lockdown due to the coronavirus (COVID-19), educational mobile apps saw a spike in usage compared to week preceding the survey. Over 76 percent of respondents stated that they had increased their use of the educational app, Extramarks.
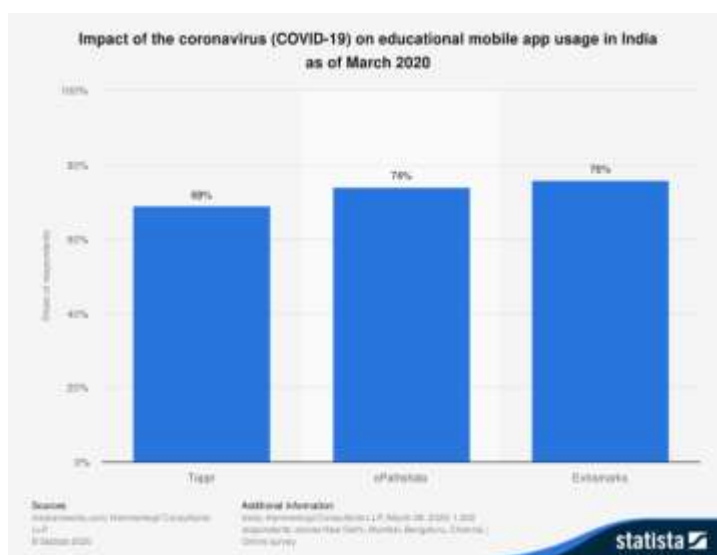
Fig1.1 Impact of covid-19 on educational mobile app usage in India as of march 2020 (Source: medianews4u.com; Hammerkopf Consultants LLP

M-learning: Boon and Bane

M-learning have undoubtedly become the strongest channel of interaction among learners and educators. It carries tremendous possibilities to alter the course of instructional delivery irrespective of the place time or date. The easy accessibility, portability is one of the most popular reason for its accelerated use. Mobile learning offers numerous benefits:

- Its function as a learning companion anywhere you go.
- Provides you a seamless experience.
- Makes the content more interesting and engaging for learners.
- Different levels could be set up according to the individuals abilities which challenges an individual to set their own targets.
- The content can be paused, replayed, recorded, downloaded and relearned is easily available through e learning, which helps the slow learners to access the information multiple times without being judged alike in live classrooms.
- Ease of use and ease of cost pays the most significant role in adapting m learning. The courses and classes which could cost thousands and lakhs to an individual otherwise are easily available either on various apps or just by registering up with the e course which costs far less amount.
- Availability of variety for the learner. A lot of content is present online, hence becoming easier for people to access it in a variety of styles.
- M-learning allows for more modern teaching methodologies. It is extremely friendly towards visual learners, and auditory learners which makes the content inherently dynamic.
- M-learning also saves the transportation cost and the fatigue which the learner would have to face on everyday basis, which eventually saves a lot of time for the learner to invest in something more productive and useful.
- Online classes are convenient for students who have more challenges and external commitments. For example, distance learning makes it possible for students to take courses not available to them where they live. Additionally, distance learning can teach students how to survive in a technology-oriented, globalized society.
- Learners get good opportunities to connect with larger and relatable communities where they get to interact and exchange ideas with people of similar interest and ideologies. And younger employees too get to collaborate with the larger group with fresh and unique ideas.

However, there are a number of challenges to overcome.

- Students without reliable internet access struggle in participate in such courses. Such gaps can be evidently seen across cities and between income backets of different economic zones of the country.
- Discrepancy in the functioning of public and privately functioning organizations. Few organizations promote the use by providing digital equipment's to students and for few it's still a concern.
- mobile learning suggests a positive perception and acceptance on part of the users to adopt m-learning but there are lot of negative effects of excess use of smartphones for things other than learning especially by downloading the most favoured apps among that age group. Apps like: Facebook, twitter, amazon, WhatsApp, and many other gaming apps. As an individual spends more time on these apps the ability to engage oneself in other important task declines eventually. Moreover, the notifications from these apps acts as one of the major distractions for the learners.

- Nevertheless, the effectiveness of the m-learning varies amongst different age groups. The basic generalization on younger children is that of have a structured environment for them to study as kids tend to get easily distracted elsewhere.
- Around 70% of the m-learners use smartphone, the non-ionizing radiations emitted from these smartphones when used for m-learning is a major health related hazard.
- The impact of covid-19 has been an adverse one on younger population when it comes to meeting their regular academics. Exposure to screen time which was earlier being controlled by other activities have been adversely affected the average screen time has been increased by 70%. This exposure leads to no. of heath related issues among all age groups like: obesity, sleep issues, chronic neck and back pain, depression and anxiety, decreases eyesight etc.
- Institutions have to invest in the training and development of the faculty on a continuous basis and invest more on special software through which such learning teaching would be possible. This eventually leads to an increase in the basic fee of the institution which later is to be borne by the students.
- The performance gap between demographic groups worsens with online learning. Equity-related efforts by schools include issuing students without access to technology digital devices such as laptops, tablets, mobile hotspots, and other items.

CONCLUSION

Since India is considered to be an emerging market for mobile assess ability, due to its millions of populations becoming equipped with mobile devices, this mobile workforce represents a great market and opportunity for m-learning in India. Though the mobile learning devises have already been used to deliver learning materials to learners, yet the designing of the material has to be done more appropriately so that it could be compensated in different screen sizes with ease. Another major component to throw light upon is the use of multiple approaches while designing the content and adapting multimedia strategies like use of visuals, photographs, audios, videos which are rich in information, attention seeking and challenging at the same time. The old or previous textual strategies are now to be enhanced.

Also, in the recent years mobile learning have already made a major impact on the educational functioning system. With the easy access to mobile technologies and devises becoming increasingly widespread, the ability for mobile learning to become a centrepiece of the future of education is emerging as a real possibility with increasing access to learning material, and instruction rich learning opportunities. M learning has evolved as a mechanism of support for learners to learning in both a synchronous and asynchronous climate.

Given the statistics available, there is no doubt that m-learning is going to define the future of learning. Many underprivileged communities in remote parts of the country struggle to provide sufficient technology to their students and lack the infrastructure to provide affordable Internet. Though it is currently estimated that Internet penetration rate in India went up to nearly around 50 percent in 2020, from just about four percent in 2007. Although these figures seem relatively low, it meant that around half of the population of 1.37 billion people had access to internet that year. This also ranked the country second in the world in terms of active internet users. Through government initiatives, private organizations and donations, students around the nation are slowly beginning to enjoy the affordances that mobile learning offers and are able to experience meaningful ways of incorporating technology into their learning experiences.

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