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Research Article

INCORPORATING INFORMATION AND COMMUNICATION TECHNOLOGIES IN TEACHER EDUCATION: WITH SPECIAL REFERENCE TO MOBILE LEARNING

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A B S T R A C T

In this digital information age, ICT has made huge impact on all spheres of human activity. ICT facilitates access to a wide range of information sources that enriches the possibilities for communication and collaboration. ICT has considerable potential for supporting a teacher in his everyday classroom role and their continuing training and development. It is the need of the hour to integrate technology in teacher education as an efficient tool to communicate, to create, to disseminate, store and manage information and to promote learner motivation and engagement. In India, teacher educational institutions are using ICT for education and skills development. ICT-enabled education has emerged to be the most viable solution not only due to its availability at a cost effective rate, but also due to the fact that an overwhelming proportion of knowledge seeking teachers and adults are born and socialized in the e-culture now may be termed as m-culture. Mobile devices are transforming the way we communicate, live and learn. Mobile learning has now become the part of a new learning landscape created by the availability of technologies supporting flexible, accessible, personalized education and creative thinking. The advent of mobile technologies has created opportunities for delivery of learning via mobile phones, laptops and PC tablets. Collectively this type of delivery is called m-learning. Whether it is blended learning or pure ICT enabled learning, the effective use of ICT is to be implemented in such a way that, it would facilitate acquisition and absorption of knowledge in a collaborative way only then the teacher education would be able to equip with Technological Pedagogical Content (TPC) knowledge. This paper focuses upon the integration of recent innovative practices of ICTs and mobile technologies in teacher education and how these technologies are changing the pedagogical skills required in teaching and learning process. Thus, mobile technologies holds the key to turning digital divide into digital dividends, bringing equitable and quality education for all.

INTRODUCTION

Today teacher education in India is being overhauled and redesigned so as to include the changes taking place across the world. The modern technologies can provide teachers' new opportunities and possibilities especially those in electronic and other related applications for skill development outside formal learning arrangements that were earlier not possible. Incorporation of technology into the classrooms of twenty first century has converted raw hand teachers into really effective and efficient ones by equipping them with practical teaching.

Teaching and learning in the information era witnessed a paradigm shift. A teacher who takes up the role of a facilitator is a multi-resourced person. Mc Laughlin and Oliver (1999) define pedagogic roles for teachers in a technology supported classroom which include setting joint tasks, rotating roles, promoting pupils, self-management, supporting meta-cognition, fostering multiple perspectives and scaffolding learning. Technology Enhanced Learning (TEL) can provide alternative ways of offering a more authentic learning context. Framework of UNESCO emphasizes that it is not enough for teachers to have information and communication technology skills and be able to teach them to their students. Teachers need to be able to help the students to become collaborative, problem solving, creative learners through using ICT so that they will be effective citizens and members of work force.

ICTs are now a major force in shaping the new global economy and producing rapid changes in society. Within the decade, the new ICT tools have fundamentally changed the way people communicate and do business. They produced significant transformation in industry, agriculture, medicine, business engineering and other fields. ICTs can now provide powerful tools to help learners access vast knowledge resources, collaborate with others, consult with experts and sole complex problems using cognitive tools.

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The teacher training programmes should help teachers to make effective use of technology and relate it to the pedagogical and educational gains that it will bring to the classroom. Furthermore teachers need to be transformed from information consumers, using the Internet to access resources, into information producers, adapting the information for their particular cultural and educational reality. Now various countries have established online networks and have provided online courses or communities of practice, in which teachers share resources that enhance their curriculum, get peer reviews of lesson plans they have created, and exchange ideas and good practices with other teachers of their subjects.

As new concepts of learning have evolved, teachers are expected to facilitate learning and make it meaningful to individual learners rather than just to provide knowledge and skills. Recent developments of innovative technologies have provided new possibilities to teaching profession but at the same time have placed more demands on teachers to learn how to use these technologies in their teaching (Robinson and Latchem, 2003).

ICT and Teacher Education

In almost all sectors of education, Information and communication technologies has changed the paradigm and role of teacher and teacher education from being not only a transmitter of knowledge but also that of facilitator of teaching-learning process. New applications of technology and enhanced accessibility to it are introducing new possibilities of teaching and learning. The traditional boundaries of the classroom are giving way to virtual learning and other online courses. All these development have profound impact on teacher education and teacher education programmes and processes.

Teachers need to complement their content and pedagogy expertise by utilizing online facilities. Use of ICTs effectively requires a change in classroom practice rather than mere acquisition of technical skills. Teachers need to familiarize themselves with possibilities approaches and application in the use of ICT. These technologies along with overhead projector and computer projections have the potential in making teaching-learning and training processes more efficient and cost effective.

How ICT Empowers Teacher education

Information and communication technology integrated teacher education is important to Indian education system. "*ICTs are changing the methods of content generation, content storage, content packaging and content delivery and hence offers a new paradigm of education*" (Takwale, Ram, 2003).

ICT in the context of teacher education has empowered teacher education in the following ways:

1. ICT fulfills the needs of learners by providing items and packages of higher standard and interest.
2. It helps in transforming the definition of literacy, learning and knowledge, a definition that includes multi-media digitized literacy.
3. Multi-media provides a kind of control over the learning environment to the pupil teachers and they experience learning from their failures and practices.
4. ICT facilitates the learner to have control on lesson, pace the sequence, content, feedback, which in turn enhances the efficiency of learning.
5. It envisages excitement to the learner's eyes, ears, and more importantly the brain.
6. It is interactive in nature and creates motivation and interest among the learners, in turn meeting the individual's unique needs effectively and efficiently.
7. It develops the ability of self-learning and interacting individually, as the learner attains vast experience effectively, efficiently and expeditiously.
8. ICT is a powerful new development with ambitious role in teacher education. Digital and Internet-based multimedia transforms the present trends in the field. It takes just a computer to play multitude of media enabled programmes and packages.
9. Teachers can access with colleagues, students, schools, institutions and University and expertise rich resources.
10. Intelligent tutoring systems and other software can significantly reduce the cost of teacher training.
11. ICTs provide life-long professional development providing courses at a virtual situation, training on demand, orientation and refresher courses through video-conferencing and online.
12. ICTs enable to facilitate sharing of ideas, experience as well as collaborating on projects, exchanged materials, through virtual communities.

Therefore teachers should have deep knowledge and attitude towards the skillful use of ICT.

Strategies for Integrating ICTs into Teaching and Teacher Education

In an effort to implement Information and communication technology standards in a variety of courses and course work taken by pre and in-service teachers across all disciplines, a number of methods and strategies can be employed. Some of the strategies that are multipurpose in application that can be used to help teachers are:

Multimedia Presentations*:* Multi-media combine media objects such as: text, graphics, video, animation, and sound to represent and convey information. Some examples of multimedia presentations include creating a web page or site; developing a branching hypermedia stack; using a multi-media slide show application to create a computer presentation; shooting and editing video to create a computer-generated movie.

Tele-commuting Projects*:* Tele-commuting projects are Internet-enriched learning activities that often involves students in one location collaborating with students in one or more locations.

Online discussions*:* A common type of tele-commuting activity is online discussion. Students and teacher candidates can connect to experts and peers through a variety of formats, such as: chat rooms, electronic bulletin boards, and e-mail. Communication online offers participants the freedom to send and receive information efficiently across diverse geographic locations.

Web questions*:* A web quest is an enquiry oriented activity in which most or all of the information used by learners is drawn from the web. Web quests are designed to use learners' time well, to focus on gathering information rather than looking at

it, and to support learners' thinking at the levels of analysis, synthesis, and evaluation. It provides teachers an option of reviewing and selecting web-based learning activities in a lesson type format. This model encourages teachers to create for their students new activities and adapt successful ones to take advantage of the Web's power.

***Cyber Guides**:* Cyber guides include standards-based, web-delivered units of instruction centered on core works of a subject are. Cyber Guide provide a quick supplementary set of activities for students and pre-service teachers, as they explore specific pierces of content area.

***Teaching Tele Apprenticeships**:* These are frameworks that allow teacher education to take place within the context of remote classroom settings. For example, different ways would be developed to allow teacher education students to participate in the conventional face-to-face apprenticeships of early field experience and student teaching. This interactional framework works best when it satisfied important goals for the participants within available resources.

Mobile Learning and its integration in Teacher Education

Mobile technologies can be used to improve educational access, equity and quality around the world. The advent of mobile technologies has created opportunities for delivery of learning via devices such as PDAs, mobile phones, Laptops and PC tablets. Collectively this type delivery is called as mobile or m-learning.

Mobile learning can be seen as a repertoire of learning and teaching practices rooted in the belief that interaction and collaboration within a traditional classroom are often not as effective as they could be. 'Mobile learning is not something that people do; learning is what people do' (Walker, 2006). Mobile learning is the study of how to harness personal and portable technologies for effective education.

Mobile devices such as tablet computers and wireless touch-screen readers will be significantly more affordable and accessible in the year 2030. Furthermore, mobile data will be seamlessly available across all personal devices. Thus, mobile devices include any portable, connected technology, such as basic mobile phones, e-readers, smart phones and tablet computers, as well as embedded technologies like smartcard readers etc.

Mobile Learning Changing the Trajectory of Pedagogical Practices

Mobile learning eliminates the need to have special computer rooms and offers teachers full freedom to let students work with these mobile devices whenever they need to. The mobile device allows learners to communicate and retrieve information on one hand while continuing to perform their job or practice a skill on the other hand. Mobile learning is used more as a tool that helps learners access audio material, receive and send text messages, respond to quizzes, participate in instant chat, make brief notes, or reflect on their learning.
Mobile learning helps to transform the traditional pedagogical practices in the following ways:

Classroom Dynamics

Mobile learning provides new means of communication and collaboration, and a way to connect classroom learning with learning elsewhere.

Connecting remote learners

Providing distributed learners with opportunities to exchange information, ask questions, and practice new skills. In this way through mobile technology the remote learners are connected.

Learners as Knowledge producers

When learners are commenting, discussing, or creating and sharing digital resources, the teacher's traditional authority function shifts towards a more collaborative or mentoring role. Learner generated content represents a significant pedagogical resource and a shift towards authentic learning.

Promote quality Lifelong Learning

Lifelong learning represents a paradigm for continuous, seamless, multifaceted learning opportunities and participation that deliver recognized outcomes for personal and professional development in all aspects of people's lives. Over time, students become more able to take responsibility and the habits of lifelong learning can take root. This is facilitated by mobile access to social networks that can support a person's learning goals and career development over a lifetime. Integration of mobile learning with institutional learning management systems, or virtual learning environments is equally important.

Literacy Development

As twenty first century learners, they need to have the skills and knowledge to operate effectively in a technology driven society. The portability and connectivity of mobile devices offer learners the opportunity to carry out a wide range of activities related to the searching, collecting, storage and interpretation of data and information relevant to their course work and course material.

Quality Education and Equity

Mobile learning carries significant potential to extend educational opportunities to learners with disabilities. Mobile devices deliver flexible and personalized learning experiences that meet the unique and varied needs of the disabled. For example, audio voice messaging is easily accessible to hearing impaired users, and assistive programs that read text aloud or enlarge text size on screens are useful to learners with visual impairments.

Professional Development

M-learning supports new forms of learning and acknowledges twenty first skills and literacy that require revisiting current curricula, learning outcomes and assessments to ensure workforce capabilities. Learners need to be taught digital literacy skills that allow them to navigate the online world effectively, safely and appropriately.

Professional Adult and Continuing Education Literacy and Non formal basic education

M-learning will assist as a modern technology for imparting teaching and learning process in a new methodical way to achieve Education for All (EFA).

Innovative Practices in mobile technology mediated learning approach

The increasing proliferation of mobile devices that connect to the Internet and the development of applications (apps) are already having an impact on education. Mobile technology in education has the potential to transform teaching and leanring

as it personalizes education solutions for individual learners, helping educators customize the teaching process, using software and interactive media that adapt levels of difficulty to individual students. M-learning support learners in accessing the curriculum and facilitates teaching learning process in the following ways:

Seamless Learning

Seamless learning is defined as uninterrupted learning across different environments including formal and informal settings. Use of mobile devices as 'learning hubs' to integrate personal learning tools and provide a single place to store each students' learning history and resources.

Geographic Specific Information Tools

Map application on mobiles which are capable of accessing geographic information and location can support both teaching and learning process.

The potential for the mobile device to control other pieces of technology

The mobile device has the potential to control other pieces of technology such as the Digital TV or set top box.

Interactive whiteboards, virtual learning environments and portable computers

Emerging technologies that are likely to have a large impact on teaching, learning, research or creative expression within education are interactive whiteboards, virtual learning environments and portable computers and laptops etc.

Learners with Dyslexia

The mobile technology can help learners with dyslexia by providing them with a 'virtual technology toolkit at their fingertips' that can support reading, composing text, note taking, organization as well as studying skills.

Deeper learning practices of learners

Portable touch-screen tablets has accelerated digital skills and motivation, towards building upon learner-centered and personalized learning, addressing innovative pedagogical strategies and narrowing the digital divide

Accessing Digital textbooks and m/e -- Readers

In formal education settings, the transition to digital textbooks is one of the most fast gaining mobile learning trends. As e-readers and e-reading applications continue to improve which are now termed as m-readers and m-reading applications, the experience of reading through mobile technology is becoming more conducive to learning.

Mobile learning ecosystem

If mobile learning apps are mapped to curriculum targets and designed for use in classroom or homework settings, in future rather than investing in the same textbook set or software solution for an entire classroom, school or colleges, educators will be able to choose from a variety of apps that are tailored to each individual learner, empowering the personalized learning that characterizes formal education.

New forms of assessment

Mobile technologies play an important role in educational assessment. Advances in how learning practices are recorded and evaluated, using different types of data collected across multiple settings sand contexts, will allow researchers to monitor the various activities learners engage in and better determine the effectiveness of mobile learning interventions. Mobile technologies will also enable more self evaluation and reflection throughout the learning process.

Furthermore, it can be said that m-learning has definitely proved to be a great boon for making the teaching-learning environment a techno-friendly and techno-rich environment. In this regard, Mobile learning has developed new models of learning in a mobile environment, in order to support the creation, delivery and tracking of learning content, new methods to adapt learning materials to mobile devices and new business models for sustainable deployment of mobile technologies for learning.

Mobile technology has brought about a paradigm shift in the process of teaching and learning in the following ways:

Supply every learner with mobile devices in formal education system

To allow the use of mobile devices in formal education systems, we need programs, through which all students are supplied with their own device at no cost to them of their families and in this regard '**Bring Your Owen Device (BYOD)**' initiatives has caused a paradigm shift in higher education and distance learning by allowing more students to access course materials via mobile technology.

In informal education system

Mobile learning has developed, to a large extent, outside of formal education contexts, and the vast majority of mobile learning projects are designed for informal learning. For example, mobile technology is being used informally in agriculture sector, horticulture sector, plant tissue culture technology, open and distance learning systems, in developing online courses, massive open online courses, in developing open educational resources, used in creating and developing modular object oriented dynamic learning environment, in flipped classrooms, in cloud computing and ultimately in blended learning systems.

Mobility of technology

Portable tools and resources are available to be carried around, or conveniently packed into a single lightweight device. It is also possible to transfer attention across devices, moving form a laptop to a mobile phone, to a notepad.

Mobility in social space

Learners perform within various social groups, including encounters in the family, office, or classroom context.

Learning dispersed over time

Learning is a cumulative process involving connections and reinforcement among a variety of learning experiences (Dierking *et al*., 2003), across formal and informal learning contexts.

Advantages of using Mobile technologies in Teacher Education

Improved and easy access to education and technology aspects

- Use of relatively inexpensive everyday technologies.

- Provides better equipped opportunities to acquire skills at one's own pace, with a high degree of privacy that may be missing when using shared computer facilitates or relying on equipment belonging to somebody else. This is particularly beneficial for women and girls and also for other professionals mainly involved in some other jobs and professions.
- Good and healthy support for preferred modes of interaction, for example, accessing audio content or participating in social networks on the move.

Relevance to authentic learning needs

- Catering for interests beyond what is provided in class, through access to additional content such as podcasts or free learning materials (for example, open learning).
- Handheld devices have now become an everyday part of business, so learning can contribute directly to enhancing employability, life skills and work practices.

Provides support for vital communication

- Opportunities for learners to give immediate feedback on their learning experience.
- Better assessment and diagnosis of learning problems as they occur.
- Psychological motivation and support for those at risk of dropping out, through social networks or personal guidance from a mentor or from a specialist teacher.

Beneficial for educational establishments

Attracting large populations of potential students

- Learning materials like Self instructional material and various teaching learning materials (TLM) can become accessible to a larger number of students, through podcasts, mobile applications, blogs and e-books.
- Catering for disadvantaged social groups for whom mobile learning presents an opportunity to improve their life chances and an improvement in quality of teaching.
- Revitalizing the curriculum, rethinking teaching methods and implementing improved feedback to learners.
- Turning geographically and topographically dispersed learners into a valuable teaching resource by enabling them to contribute their local knowledge and research data more easily.
- Support leaner retention, progression and transition.

Supporting continuing education

- Making the learning experience more tailored to the changing needs of individuals, encouraging learners to return for knowledge updating and further study.
- More equitable access to education, for those suffering exclusion for social or socio-economic reasons.
- A culture of lifelong learners taking part in organized education but also habitually using personal technologies to support inquiry.
- A culture of life-wide learning, whereby individuals recognize the value of learning in unconventional or everyday contexts and are enabled to realize the full breadth of their potential contributions to society.
- A stronger global, intercultural perspective, fostered by increasing learner mobility which thrives on unconstrained access to learning resources and flexible study.

Disadvantages in Mobile learning

The disadvantages of mobile learning are as following:

The most serious issue faced by mobile learning is the lack of solid theoretical framework which can guide effective instructional design and evaluate the quality of programs that rely significantly on mobile technologies.

Usability challenges

The need to keep a mobile device charged for longer periods of use remains an issue. Small screen size can limit activities such as reading, although many learners are contend to read in this way. Cost of connectivity and cost of mobile device is perceived as a barrier to widespread use.

Constraints on mobile learning in rural areas

Well established broadband technologies such as Digital Subscriber Line (DSL) which use telephone lines, and Cable Internet, which use the cable television infrastructure, are less prevalent in areas of low population density. Wireless Internet Service Providers provide broadband built around wireless networking, however hotspots are small so coverage is sparse unless roaming is used. Wi Fi is expected to become the most dominant broadband technology in rural areas in the near future, largely due to its low cost of deployment.

Competence challenges

Educators often lack the competencies required to develop and use the modern mobile learning opportunities for their students. Learners may be familiar with mobile devices in general but not as learning tools in particular,

Management challenges

Educational establishments face the challenge of persuading educators in using mobile technology.

Professional Challenges

Main stream policies should actively promote the development and sharing of best practices for professional development of teachers using mobile devices.

Trained staff and technical support: roles and responsibilities

It may be necessary to train staff or to employ people with relevant experience in technical support or development. Experience in mobile pedagogies need to be brought in or developed internally.

Best Practices in Teaching and Learning

Mobile learning works best when used to support individual education and it is achieved in the following way:

1. Learner-led inquiry;
2. Communities;
3. Social networks;
4. work-based;
5. field-based;
6. As a way to collect evidence of achievement

7. To promote social inclusion and to sustain lifelong learning;
8. Share knowledge with others
9. Supports the needs of learners with disabilities;

Mobile learning works best when used to support Mass Education

1. To support wide-scale literacy;
2. Numeracy increase and teacher training
3. Improve classroom interaction---giving learners the chance to communicate and respond to survey.
4. Leads to improved participation
5. A way to capture experiences and data at an ease.

Teachers Training

Teacher education for mobile learning should cover mobile pedagogy. It needs immense opportunities to use mobile technology for personal learning and preparation of teaching materials. Develop skill to use application for formative evaluation as well as to receive feedback from the students.

Gender related and child education

Mobile learning supports empowerment of underprivileged, marginalized groups, particularly women and children in rural areas. For example: women can take part in mobile learning programmes which enable them to receive text messages on the phone to practice their reading and writing. Mobile games have been used by children and elders in rural areas in India to learn the English language.

Learners with Disabilities

Mobile technology is useful for those with learning difficulties. Through mobile devices, dictionaries can be downloaded to mobile phones and it would be helpful as reference tools for learners with dyslexia and other leaning difficulties. Text-to-speech conversion and voice recognition are valuable for users with disabilities or learning difficulties.

Future of Mobile Technology

With over 5.9 billion mobile phone subscriptions worldwide, mobile devices have already revolutionized the way we live. The next decade of the twenty first century could be transformational in incorporating mobile technologies in both formal and informal education to better meet the needs of learners and teachers everywhere. Thus, ideally technology and education will co-evolve, with educational needs driving technological progress as well as adapting to it.

Through mobile learning, one can build strong multi-sector partnerships so as to foster widespread uptake, linking mobile learning analytics to learning theory, training teachers in mobile learning design and promoting mobile learning for all. Mobile technology can support learners in exploring the world around them and developing their own solutions to complex problems while working in collaboration with peers under the guidance of skilled teachers. New sensor technologies on mobile phones, coupled with new visualization technologies in the classroom, will open up insights into physical phenomena that will be particularly useful for teaching and learning of science. Mobile technologies will enable greater levels of International collaboration among various teacher educational institutions including the collective compilation of vast global databases for educational purposes exposing learners to a wide variety of different cultures and perspectives.

Educational Implications of the Present Study

1. The result of the study leads to encourage teacher and other teacher educators to be digitally skilled and hyper diversified.
2. The usage of virtual classroom, virtual world and virtual mobile classroom can be enhanced in colleges to develop skills and build capacity as part of professional life.
3. Create and edit digital audios.
4. Optimize use of digital libraries.
5. Use social book marking in order to share resources with and between teachers and learners.
6. Use video content to engage students.
7. Use blogs and wikis to create online platforms for students.
8. Exploit and use of digital images for learning and teaching in the classroom.
9. Use info-graphics to visually stimulate students.
10. Use social networking sites to connect with other professionals and e-managers.
11. Compile a digital e-portfolio for their own development.
12. Developing e-security systems by using online network security modules.
13. Create screen capture videos and tutorials.
14. Curate web content for classroom learning.
15. Use and provide students with tasks management tools to organize their work and plan their learning.
16. Understand issues related to copyright and fair use of online materials.
17. Exploit computer games for pedagogical purposes.
18. Use digital assessment tools to create quizzes.
19. Use of collaborative tools for text construction and editing.
20. Collaboration between academic specialists and learning technologists.
21. External collaboration with other universities.
22. Enhancing access to multimedia resources.
23. Find and evaluate authentic web-based content.
24. Identify online resources that are safe for students browsing.
25. Use digital tools for time management purposes.
26. Learn different ways of using you tube in the process of teaching and learning.
27. Use note taking tools so as to share interesting content with your students.
28. Annotate web pages and highlight parts of text to share with your class.
29. Learn about hyper-linking in text information and classroom presentations.
30. Use of online graphic organizers and printables.
31. Use of online sticky notes to capture interesting ideas.
32. Use of screen casting tools to create ands share tutorials.
33. Exploit group text messaging tools for collaborative project work.
34. Conduct an effective search query within the minimum time possible.
35. Writing and conducting a research paper through effectively using digital tools.
36. Use file sharing tools to share documents and files with students online.
37. Optimum use of online courses like Massive Open Online Courses (MOOCS)

38. Exploit and maximize the use of Open Educational Resources (OERs) as TLMs.
39. Using Cloud computing as a technology for sharing of software, hardware, application and other packages with the help of web technology.
40. Creating Modular Object Oriented Dynamic Learning Environment in cyber space.
41. Virtualize the most demanding workloads.
42. Improve security and reliability with Microkernelized Hypervisor.
43. Exploit antivirus for use in systems safety and their protection.
44. Protect important data using live backup.
45. Reduce support time with Integrated Management.
46. Save time and money with a more flexible test environment.
47. Exploit face book, you tube, Flickr and other social networking sites for sharing information.
48. Use and create smart phones, iphones, PC tablets as educational resources.
49. Accomplish content delivery and student engagement by creating and maintaining a Fan Page, at no cost to anyone involved, and completely away from the limitations of course management systems such as Blackboard, Angel, WebCt.

CONCLUSION

In teacher education, technology should work dynamically with pedagogies and in the process they should become mutually determining. It is has now become imperative to integrate technology in teacher education as an efficient tool to communicate, to create, to disseminate, store and manage information and to promote learner motivation and engagement. ICTs have the potential for increasing access to and improving the relevance and quality of education transcending time and space. Finally, the benefits for integration of mobile technologies in education are apparent, however, they form only a sub-set of what is required to improve teaching and learning. While mobile leanring is not a panacea for the challenges facing education, yet it fosters the use of pedagogies that encourage engagement and innovation in teaching and learning whilst promoting individual learning and empowering the learner and thus trying to impart education to every person irrespective of caste, religion, gender, age, physically challenged, drop outs……..

In tune with the EFA agenda, the concept of 'mobile learning for all' focuses on the need to develop mobile interventions for those of all learning abilities around the world, irrespective of their current access to formal education. Mobile learning has great potential to support people who are currently marginalized from education due to socio-economic circumstances or due to lack of resources and facilities. The potential of mobile learning is to bring educational material and support to resource-poor communities. One key measure of success in the promotion of mobile learning for all will be the development of mobile learning interventions that are designed to directly address the Education for All goals.

As commercial interests play an increasingly important role in educational technology over the next few years, policy makers will need to make sure that equity of opportunity is not eclipsed by a market-driven agenda. In this technology driven pedagogy integration, the main beneficiaries of ICT and mobile learning are those who can afford to pay for educational content and access to technology and connectivity. In economically motivated ventures, content, and potentially teacher driven curriculum as well, will be dictated by what consumers view as popular or valuable. Policy-makers will need to ensure that marginalized communities are not excluded from mobile learning opportunities, and that initiatives are designed to address the needs of all teachers, learners and not just those who can pay for services. Finally, inofrnmation sharing through mobile technology will be crucial to the promotion of mobile and ICT learning for all thus promoting teacher education in all its dimensions.

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