



NEW STRATEGEM FOR NEW LITERACY: ENGAGING AND EMPOWERING LEARNING THROUGH DIGITAL TECHNOLOGY

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Abstract

Educational technology is a systematic and organized process of applying modern technology to improve the quality of education (efficiency, optimal, true, etc.). It is a systematic way of conceptualizing the execution and evaluation of the educational process, i.e. learning and teaching and help with the application of modern educational teaching techniques. Teaching is one of the main components in educational planning which is a key factor in conducting educational plans. Despite the importance of good teaching, the outcomes are far from ideal.

The communication tools of the 21st century require a rethinking of our 19th century educational approach to fully integrate digital tools into the classroom. The skills and strategies of effective communication are at the heart of literacy teaching and learning; engaging with digital technologies to communicate puts new demands on teachers and students. Today, more than ever, the role of educational technology in teaching is of great importance because of the use of information and communication technologies. We must help pre-service teachers learn how to leverage technology to build students' communication skills across the curriculum.

This paper is based on a review and synthesis of secondary data and published work and identifies the roles that technology plays in enhancing teaching and learning through digital technology, and discusses how these strategies benefit teachers and learners. The present qualitative study aimed to investigate effective teaching in higher education in Indian based on the experiences of best professors in the country. The paper concludes with an agenda for future research in this area.

Key words: *New Literacy, New Strategies, Digital instructional strategies, Technology integration, Technology and learning, Attitudes.*

Introduction

“As a young citizen of India, armed with technology and love for my nation, I realize, a small aim is a crime”

~ Bharat ratna Dr.A.P.J. Abdul Kalam

Education is a powerful instrument that unlocks the door to prosperity of a nation. It is one of the main keys to the development and the improvement of mankind. Since education is regarded as the bedrock for nation building. Its quality management is necessary. It is the most prominent factor that affects the overall development and prosperity of any nation. It is the acquisition of knowledge or information that empowers a person towards a better and higher way of life. Historically, higher education has been viewed through the lens of its institutions and our public dialogue has been framed by these categorizations. Higher education has never mattered so much and to so many as a means of social mobility, an engine of economic growth, and a defender of democracy. In order for higher education to fulfill its promise as a great equalizer, we need continued innovation that can move us toward increased access, affordability and equity. Humanity the world over is at the cusp of a tectonic shift the production, consumption, dissemination and distribution of knowledge. This warrants changes in frameworks of looking at knowledge, information and data in the digital era at multiple levels and by multiple players including students, academics, entrepreneurs, researchers, civil society, universities and the state. This innovation will develop an ecosystem that will include a range of opportunities for a variety of high-quality educational experiences and credentials with marketplace value suited for the differing needs of students. Effective communication requires that all parties (readers, writers, speakers, and listeners) carefully craft, evaluate, and/or respond to messages. Education needs to transform to fully integrate digital tools into the classroom. We must



prepare pre-service teachers to leverage technology to build students' communication skills across the curriculum. When communication is efficient, the process occurs with little interruption or misunderstanding of the intended message. The skills and strategies of effective communication are at the heart of literacy teaching and learning. With the tools of digital communication, literacy is no longer static. Engaging with digital technologies to communicate puts new demands on teachers and students because "the world has changed so fundamentally in the last few decades that the roles of learning and education in day-to-day living have also changed forever." Educational technology is a systematic and organized process of applying modern technology to improve the quality of education (efficiency, optimal, true, etc.). It is a systematic way of conceptualizing the execution and evaluation of the educational process, i.e. learning and teaching and help with the application of modern educational teaching techniques.

Literature Review

Over the years, educational technology has been providing both teachers and students with more options and flexibility in their teaching and learning practices. With the availability of Internet, educational technology becomes increasingly indispensable in the field of education (Oh & Russell, 2004). E-Learning has progressed through a number of stages and transformations over the past thirty years. In the 1970s and 1980s, it was called Computer Assisted Learning, Computer Based Training or Technology Based Training. By the 1990s this learning was being supplemented by other media, particularly the e-mail and discussion groups. A higher frequency of more teacher-centered uses of technology was also found in another study in Spain (Marcelo & Yot-Domínguez, 2018), with three of the most used being presentations, selecting text documents and facilitating videos for students. Today virtual learning environments (VLEs) provide facilities for both the course management and interaction via a range of communication tools (Gray et al., 2003). Thus, the expanded use of computers in education continues despite research having failed to show definite benefits for learners (Cagiltay et al., 2006; Nawaz et al., 2007). Designing and delivering e-learning is not simply a matter of selecting a tutoring team with expertise in subject matter and technical skills, but is also finding educationalists with pedagogical, information and communication skills required to manage online learning (McPherson & Nunes, 2004). ICT is changing the face of education, nature of work and the workplace, for example, the knowledge revolution has assisted countries to develop knowledge based industries and thereby earn significant rewards. But this requires a digitally literate workforce who command and can harness ICT (Ezziane, 2007; Nawaz & Kundi, 2010).

In some cases, integrating technology into the teaching-learning transaction has been found to transform the teacher's role from being the traditional "sage on the stage" to also being a "guide on the side", and student roles also change from being passive receivers of content to being more active participants and partners in the learning process (Mehra & Mital, 2007; Nawaz & Kundi, 2010). There is need to consider several other aspects of eLearning beyond technical training. It is precisely because of the multifaceted character of the term that meanings need to be established at the outset. The educational meaning, which places e-learning in an environment of teaching and learning as a particular approach for designing new instructional environments or new areas for research. The relationship between eLearning, academic environments and academic teaching is of a complex nature because of the ambiguous meaning of the term as well as the variability of its consequences (Aviram & Eshet-Alkalai, 2006).

A teaching skill is a set of teaching behaviors of the teacher which is especially effective in bringing about desired changes in pupils' behavior. The name of micro-teaching was coined for this method of developing teaching skills in 1963. The idea of micro-teaching originated for the first time at Stanford University in USA, when an Experimental Project on the identification of teaching skills was in progress under the guidance and supervision of the faculty members (Bush, Allen, McDonald Acheson and many others). This project was aided by Ford Foundation and Kettering Foundation. The team of experts was assigned the development of testing and evaluation tools to measure the attainment of teaching skills. At this juncture Keith Acheson, a research worker was investigating the utility of video tape recorder in the development of technical teaching skills. This instrument



could be used for recording the class interaction and the behavior of the trainee vividly and accurately. This leads to the development of a systematic and accurate method of giving feedback to the teacher trainee.

Objectives of the Study

The objectives of the study were as under:

1. To understand the current concepts and contents of digital technology to develop teaching competencies.
2. To find out the level of ICT Usage by the Students of Higher Education institutions.
3. To develop practice, procedure and internalize the steps involved for effective delivery of the lesson.
4. To determine the level of improvement of teaching skill of prospective student in following the digital technology teaching technique.

Methodology of the Study

This paper is based on secondary data, primarily through literature, study of journals, articles and textual analysis. Overall this exploratory research tries to explore the existing condition of the variables and engaging and empowering learning through digital technology. Qualitative research approaches and procedures have been applied to explore pertinent information for this study.

Understanding Student Learning

It is unfortunate, but true, that some academics teach students without having much formal knowledge of how students learn. Many Professors know how they learnt/learn best, but do not necessarily consider how their students learn and if the way they teach is predicated on enabling learning to happen. Nor do they necessarily have the concepts to understand, explain and articulate the process they sense is happening in their students.

Learning is about how we perceive and understand the world, about making meaning (Marton and Booth, 1997). But 'learning' is not a single thing; it may involve mastering abstract principles, understanding proofs, remembering factual information, acquiring methods, techniques and approaches, recognition, reasoning, debating ideas, or developing behaviour appropriate to specific situations; it is about change. Despite many years of research into learning, it is not easy to translate this knowledge into practical implications for teaching. There are no simple answers to the questions 'how do we learn?' and 'how as teachers can we bring about learning?' This is partly because education deals with specific purposes and contexts that differ from each other and with students as people, who are diverse in all respects, and ever changing. Not everyone learns in the same way, or equally readily about all types of material. The discipline and level of material to be learnt have an influence. Students bring different backgrounds and expectations to learning. Our knowledge about the relationship between teaching and learning is incomplete and the attitudes and actions of both parties affect the outcome, but we do know enough to make some firm statements about types of action that will usually be helpful in enabling learning to happen. In the discipline of education a theory is something built from research evidence, which may have explanatory power; much educational research is not about proving or disproving theories, but about creating them from research data.

Increasingly teaching takes place at a distance or electronically rather than face-to-face, but the theories and ideas outlined still need to be considered. Motivation and assessment both play a large part in student learning in higher education.

Educational Technology

Educational Technology (ET) implies a behavioral science approach to teaching and learning. It makes use of pertinent scientific and technological methods and concepts developed in psychology. Sociology, linguistics and other related fields. 'Educational Technology as a concept does not necessarily imply the use of machines and other items of hardware. It refers to the systematic application of techniques and principles to achieve an objective



which results in new design and devices to improve human productivity. Education is the process of acquiring and imparting the knowledge, Crucial to the development of a learner. Therefore, it can be concluded that the educational technology is the application of the principles of education to improve human learning. The ET is the means for effective learning. But the effective learning could only come through the effective application of Educational Technology, Which in turn is dependent upon its proper use and integration. The growing use of ET in today's school has helped to release the teacher from the routine role of 'information giving', so that he can devote his time and effort to the more important test of planning, arranging and evaluating, learning experiences and Outcomes and to encourage, enthuse, guide and counsel pupils. The various technological media are used to communicate the needed factual information to the pupils and they are capable of doing this perhaps more accurately and efficiently than the teachers. So today's 'pupils acquire knowledge through the various media and behavioral changes via the teacher'.

Educational Technology in Teaching

Since computers are still not widely used in many schools, the teaching process is dominated by traditional methods. It is dominated by the frontal form of work where the teacher had enough interaction with students. Failure to thrive at their own pace and insufficient activity of students was one of the drawbacks of this type of learning. In class, we have student children who are not uniform in knowledge and never pay enough attention to those who are not sufficiently mastered the material and those who are above their average. This difference is often hampered by teacher assessment work and how to transfer knowledge to a group of student with different knowledge. The teacher chooses to keep average to good teaching where student with insufficient knowledge would not get the necessary knowledge. The student with insufficient knowledge can progress smoothly without unpleasant feeling of their ignorance, no frustration, and humiliation while for the most advanced student teaching will be boring.

With the development of information and communication technology, especially computers, a number of researchers (Morrison) were trying to see the benefits and the effect of their use compared to older traditional learning. For many years, we tried to give answers to the question of advantages and disadvantages between traditional and modern teaching where the prevailing educational technology. The period from 1967 to 1972 is considered to be a period of consolidation of educational technology, which has become the most commonly, used term in the science of pedagogy and the educational process. With the application of educational technology, students can independently progress in mastering teaching materials, to choose the pace of work, to repeat the material that is not sufficiently clear, that after tests performed immediately get results and track their progress. Interactive, multimedia content provides a great advantage of modern learning over traditional learning. With the application of educational technology we get feedback between the teacher and the student. Among the first studies on the comparison

Planning for a IT Enabled Classroom

Teachers were asked to prepare presentations and add presentation notes. Prepare some relevant notes on topic. Teacher was also asked to prepare an assignment and quiz based on the topic and publishes it using Module. This took about a months' time to plan the complete syllabus along with presentations and notes. EBooks were also downloaded from Internet and shared through this computer. Teachers were also motivated to download some relevant short videos from YouTube. To conduct a class 30 those students were selected who were considered weak in the subject. Students are advised to bring their laptops, net-books, Wi-Fi enabled smart-phones, tablets etc along with their notebooks. A teacher was advised to give 20 minutes presentation or lecture and then assign some assignment to students and observe the classroom and help them in case any student finds any difficulty.

Learning and Reflection

It is self-evident that experience gained through life, education and work should play a central role in learning; this, constructivist, perspective on learning is called experiential learning. The most widespread theory of learning from experience is associated with David Kolb (1984), who developed ideas from earlier models of experiential



learning; the Kolb model appears most frequently in the literature. An appreciation of experiential learning is a necessary underpinning to many of the different types of teaching and learning activity discussed elsewhere in this book, including work-based (or placement) learning, action learning, teaching laboratory work and reflective practice. The provision of vicarious experience such as by using case studies or role play, and many types of small group use experiential learning as an underlying rationale.

Experiential learning is based on the notion that understanding is not a fixed or unchangeable element of thought and that experiences can contribute to its forming and re-forming. Experiential learning is a continuous process and implies that we all bring to learning situations our own knowledge, ideas, beliefs and practices at different levels of elaboration that should in turn be amended or shaped by the experience – if we learn from it. The continuously cycling model of learning that has become known as the ‘Kolb Learning Cycle’ requires four kinds of abilities/ abilities/undertaking if learning is to be successful. By extension, this cyclical process has a part to play in even the most abstract and theoretical disciplines where the academic is concerned to help the learner acquire the ‘tools of the trade’ or the modes of thinking central to the discipline, such as in philosophy or literary criticism. The teacher needs to be aware that in practice learners do not cycle smoothly through the model, but may get stuck, fail to progress or ‘jump about’. The way in which the learner resolves these tensions will have an effect on the learning outcome and the development of different types of strength in the learner and, as will be seen, may pertain to personality traits and/or disciplinary differences.

Reflection is a key part of experiential learning as it ‘turns experience into learning’ (Boud *et al.*, 1985). Because of misunderstanding, overuse and its passive and negative connotations, reflection has had a worse press than it deserves, but it is also true that the research evidence about how it works is lacking. To learn from experience we need to examine and analyse the experience; this is what reflection means in this context. It may be a similar action to the one that we may consciously or subconsciously use when taking a deep approach to learning.

Reflection and reflective practice are not easy concepts. With regard to higher education they may be applied to the learning of students, and equally to the professional development of the lecturer (see Part 3). Schön (1987), in examining the relationship between professional knowledge and professional competence, suggests that rather than looking to another body of research knowledge, practitioners should become more adept at observing and learning through reflection on the artistry of their own particular profession. ‘Reflection on practice’ (on experience) is central to learning and development of knowledge in the professions. This artistry cannot be learned solely through conventional teaching methods – it requires role models, observation of competent practitioners, self-practice, mentors, experience in carrying out all the tasks of one’s job and reflection upon that practice. Support in developing reflection is often necessary, for example by using prompts and feedback. Such reflective practice is a key aspect of lifelong learning.

Role of ICT in Higher Education

ICT is an acronym that stands for “Information Communication Technologies”. Information and communication technologies are an umbrella term that includes all technologies for the manipulation and communication of information. ICT considers all the uses of digital technology that already exists to help individuals, business and organization. It is difficult to define ICT because it is difficult to keep up the changes they happen so fast.

ICT is concern with the storage, retrieval, manipulation, transmission or receipt of digital data. The definition taken from the guidance in the QCA schemes of work for ICT is “ICTs are the computing and communication facilities and features that variously support teaching, learning and a range of activities in education.”

1. Improvement in learning achievement;
2. Reduction of adult illiteracy rate, with sufficient emphasis on female literacy;
3. Expansion of provisions of basic education and training in other essential skills required by youth and adults;



4. Increased acquisition by individuals and families of the knowledge, skills and values required for better living and sound and sustainable development.
5. Increase variety of educational services & medium
6. Promote equal opportunities to obtain education & information.
7. Develop a system of collecting & disseminating educational information.
8. Promote technology literacy.

Design Principles for a Student in Higher Education

Students in Higher education need an ecosystem that is flexible, integrated, efficient and affordable. Institutions, instructors, and administrators should consider policies and practices that anticipate and adapt to learners' needs over the course of their lives, and may include both traditional and new structures, programs, and institutional practices. The following 10 principles can guide stakeholders envisioning and creating such an expanded ecosystem.

1. Guide students toward education that enables them to achieve their goals, is suitable to their needs, and aligns with their interests:

Students should have access to digital tools that allow them to explore their interests and that provide them resources for evaluating various education and career pathways.

2. Helps students make wise financial decisions about postsecondary education:

Institutions and other educational providers should provide prospective students with clear information on the potential return on educational investments and/or post-completion college employment outcomes for their institutions or academic programs. This could include transparent reporting of cost, financial aid, and outcomes.

3. Prepare students for postsecondary-level work:

Institutions should employ technology enabled approaches to meet students where they are through redesigned diagnostic tools and adaptive, targeted remediation for students in need of additional preparation to succeed in college-level courses.

4. Allow students to adjust the timing and format of education to fit other priorities in their lives:

Colleges, universities, and other education providers should consider how to offer programming at various times and through multiple means of delivery such as online, mobile, and blended, and through competency-based education models.

5. Provide students with affordable access to the high-quality resources they need to be successful and to empower them to become curators of their own learning:

Institutions should ensure that students have immediate access to affordable, up-to-date learning materials that are based on current learning research and are accessible to all students. Institutions should encourage practices that support student agency to find, evaluate, and use additional learning resources that are relevant to their needs and that will persist beyond a single course.

6. Enable advisors to help students progress through changing needs and circumstances:

Coaches, advisors, and mentors should leverage robust data to provide students with the guidance to succeed through times of transition. This support may include proactive advising and outreach by phone, text, and email. Actionable data should also be made available directly to students through analytics dashboards.

7. Help institutions identify and provide timely and targeted assistance to students:

Instructors and advisors should have appropriate access to course-specific learning analytics data that inform early and individualized interventions to help students connect with additional academic and social support they may need to succeed.

8. Allow students to build meaningful education pathways incrementally:

Institutions and education providers should offer stackable and transferrable credits to accommodate students who need to move seamlessly in and out of their institutions, and between systems of education, to efficiently accommodate their learning and life goals.



9. Allow students to document their learning in ways that can be applied to further education or meaningful work:

Institutions and education providers should leverage technology to allow students to accurately demonstrate a variety of learning outcomes and should provide transparent, portable credentials that are articulated and recognized across traditional or nontraditional systems.

10. Create a network of learning that supports students as creators and entrepreneurs and agents of their own learning:

Empower students to drive their own continuous learning through a digital infrastructure that enables everywhere, all-the-time learning. These will support the variety of learning and credentialing pathways that students pursue throughout the stages of their lives, and need to be flexible to the learner's needs, interests, and goals, and responsive to constraints around schedule, employment, financial means, and other life circumstances.

Recommendations

1. Revise practices, policies, and regulations to ensure privacy and information protection while enabling a model of assessment that includes ongoing gathering and sharing of data for continuous improvement of learning and teaching.
2. States, districts, and others should design, develop, and implement learning dashboards, response systems, and communication pathways that give students, educators, families, and other stakeholders' timely and actionable feedback about student learning to improve achievement and instructional practices.
3. Create and validate an integrated system for designing and implementing valid, reliable, and cost-effective assessments of complex aspects of 21st-century expertise and competencies across academic disciplines.
4. Research and development should be conducted that explores how embedded assessment technologies such as simulations, collaboration environments, virtual worlds, games, and cognitive tutors can be used to engage and motivate learners while assessing complex skills

Conclusion

Teaching is considered the most noble of all professions and for good reasons. A teacher helps in shaping future generations, guiding them on the right path and helping them acquire the skills necessary to lead a productive life and contribute to the society that we live in. Teachers also contribute immensely in the creation of a society that is healthy, productive and peaceful. An inspired and well-informed teacher is the singular most important factor that can influence learning outcomes in students and their future contribution to the society. Today we need to create a perfect balance between quantity and quality of education. The new generation of students comes ready to work with these new technologies, which play an important role in student's learning and acquiring different cognitive knowledge so that educational technology must be incorporated into future curriculum. With the help of new technology comes an explosion of learning and receiving new information, especially on mobile devices. The proposed technique of teaching with the help of Information and communication technologies (ICT) will surely increase the learning level of the student but setting up such infrastructure involves lot of expenditure on hardware (IT devices) as well as manpower, because we need to employ multiple people in a classroom. Leaving aside the financial aspect, we recommend that educational institutes must set up few IT Enabled classroom if they really want their students to be ready for competitive world ahead. Increased student satisfaction can lead to both increased faculty satisfaction and higher student retention. The Digital technology concept is helping the teacher to develop the teaching level and help the students to make the understanding level the critical factor in a short time with more understanding. The concept is developed under a conceptual frame work and applied according to the experimental design by the researcher. The main limitation of Digital technology is time limitation but the method is effective for proper understanding. For the current generation of students, a lot of their digital capabilities, in particular the use of mobile phones and social media have been gained informally where they explore these technologies themselves or with peers. There is a role for educators to expand their horizon in the use of digital technologies for educational purposes in formal settings.



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