
Technology and Development

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A classroom is a room in which teaching or learning activities can take place. Classrooms are found in educational institutions of all kinds, including public and private schools, home schools, corporations, and religious and humanitarian organizations. The classroom attempts to provide a safe space where learning can be taken place uninterrupted by other distractions (Judith Langer, 2012). Over the last few decades, everything has changed in our lives with the all pervasive intervention of technology. However classrooms have remained untouched by technology. The classrooms that our grandparents went to are exactly the kind of classrooms our children study in. Chalk and blackboard, a packed classroom, text books, regimented curriculum, a teacher painstakingly explaining abstract concepts with the limited tools at her disposal. Imagine a Science teacher explaining how a DNA replicates, a History teacher teaching a class about the Harappan Civilization, or a Geography teacher teaching how Block mountains are formed. The best of teachers take pains to explain the concepts largely depending on their own abilities. The students listen to the teachers, try to decipher the figures drawn on the blackboard and read from their text books, take notes and try hard to visualize how it happens and remember. At the end of the class, the teacher asks a few random questions to assess how the class fared. Invariably a few hands (mostly of the same set of brightest students in class), go up, the answers are given and the class ends. The way of teaching is same as it was earlier but the things students need to learn in school today are different than what they were 20 years ago (Peter D. Hart, 2010). Teaching and learning 21st century skills are very important to country's future economy (Amit Gupta, 2008). He further said that the classrooms will require knowledge generation, not just information delivery. Since everybody is seeking towards technology for betterment of traditional classrooms or technology equipped classrooms but there is ongoing debate as to what role technology should play in the classroom. The UMIACS (2006) emphasized on the use of technology and said to keep pace with a changing world classrooms need to offer more rigorous, relevant and engaging opportunities for students to learn and to apply their knowledge and skills in meaningful ways. Used comprehensively, technology supports new, research-based approaches and promising practices in teaching and learning. Educational Technology (ET) is the efficient organization of any learning system adapting or adopting methods, processes, and products to serve identified educational goals. This involves systematic identification of the goals of education, recognition of the diversity of learners' needs, the contexts in which learning will take place, and the range of provisions needed for each of these. The challenge is to design appropriate systems that will provide for and enable appropriate teaching-learning systems that could realise the identified goals (NCERT, 2006). The use of technology is not a new concept in the field of education. Efforts are being made since last many decades. A project called Computer Literacy and Studies (CLASS) launched in 1984 was a joint initiative of MHRD, Department of Electronics, and NCERT. It covered 42 Resource Centres and 2,582 schools. To make sure the use of technology in classrooms and to make the future classrooms more effective Educational Technology is being shaped. Under the University Grants Commission's (UGC's) Consortium of Educational Communication, a network of over 17 Educational Media Research Centre (EMRCs) and Audio Visual Research Centres (AVRCs). More than 250 universities offer ET as an optional subject in B.Ed. and M.Ed. (NCERT, 2006).

Smart Classroom is an emerging concept in the field of education. Smart Classroom using Web Service technology, provides more extensible and scalable features to tackle the new requirements and challenges of

learning. Smart Classroom is developed based on Smart Platform, the software computing infrastructure for Smart Space, which provide numerous new features which show a novel and interesting experience to both of the teachers and students. The smart classrooms will make the distance education formal classroom learning. Smart classrooms emphasis on outcome-based instead of time based. To meet the demands of present and future the focus should be given on what students KNOW, CAN DO and ARE LIKE after all the details are forgotten rather than memorizing facts. The classroom should be designed to fulfill the demands of active learning rather than passive learning or textbook reading. Study must be Student-centered and teacher is facilitator/coach. Fragmented curriculum may damage the interest of a well equipped classroom so the curriculum should be integrated and interdisciplinary. Performances projects and multiple Performances, forms of media are used for learning and assessment can change classrooms for future needs. Multi Sensory teaching is a good substitute of Single Sensory Simulation to make a classroom active. Using such techniques, the challenges of present classrooms may tackle for future.

Technology can have a reciprocal relationship with teaching and future classrooms. The emergence of new technologies pushes educators to understanding and leveraging these technologies for classroom use; at the same time, the on-the-ground implementation of these technologies in the classroom can (and does) directly impact how these technologies continue to take shape (Eric Klopfer, 2009). Technology allows for innovative ways of creating, presenting and delivering ideas. Animations, colorful graphic design, and audio engage students and sustain their interest. Teachers can address different learning styles and new ways of looking at and solving problem. Technology can help students become familiar with the problem solving skills (David, 2009). To keep pace with changing world classrooms need to offer more rigorous, relevant and engaging opportunities for students to learn and to apply their knowledge and skills in meaningful ways. Used comprehensively technology supports new, research-based approaches and promising practices in teaching and learning in classrooms. Undoubtedly, without these recent technologies, like smart board, use of projectors and internet, in the classroom, strong lessons can still be achieved, but there's a sharp disconnect between the way students are taught in school and the way the outside world approaches socialization, meaning-making, and accomplishment (Scot Osterweil, 2009). The further said that High quality, core-curriculum products correlated to the syllabus, various methods of classroom deliver (interactive white boards, projector, computer lab, LCD TV), Blended teaching approach (software designed to be used in conjunction with teachers' textbooks or directly with the syllabi), Interactive tools and activities that supplement and extend classroom Learning and Teacher training for ICT-led curriculum education equipped a classroom for future generations.

On the road to a smart classroom, make sure that empowered teacher is in the driving seat, and Technology is in the passenger seat with the content & resources. Learning decides the destination, Technology helps you get there (Jason, 2009).

An entire generation of kids will fail to make the grade in the global economy because they can't think their way through abstract problems, work in teams, distinguish good formation from bad, or speak a language formally; and smart classroom with well trained teachers is a hope in this regard (TIME Magazine, 2006).

Our newest generation, currently in K-12, is demonstrating for us the impact of having developed under the digital wave. Youth is being normalized by digital technologies (Green & Hannon, 2007). Many students use new media and technologies to create new things in new ways, learn new things in new ways, and communicate in new ways with new people behaviors that have become hardwired in their ways of thinking and operating in the world. By the use of technology in the field of education whole generation can be enriched with such qualities. "The concept of future classroom will not only emphasize on the use of information and technology, but also on teaching skills and value that will help students in the future. It will also help in being abreast with the upcoming reforms in the education system," (Amit Sharma, 2009)

"As the world is moving towards technology driven education system, India is also not far behind and capturing the pace very fast," foresees Pankaj Kayathwal, Business Vertical Manager LG Electronics India. Day by day use of technology in schools and classrooms is increasing; and this point outs the lead of technology in future classrooms.

Many researches show that lack of money is the main barrier of installing ICT which is soul of future classrooms. Installation can be difficult due to the huge distances and lack of knowledge of such technologies. The school environment also causes many challenges like power supplies, distance and basic infrastructure. To make the future classrooms well equipped and smart it is needed to cover such rifts, first. There is no doubt that technology usage is /will be prior and elite for the manifestation of new topic.

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