Visualising future classrooms with blended teaching and learning

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Abstract

ICTs are a differing set of innovative devices and assets wont to convey, and to form, scatter, store and oversee data. Correspondence and data are at the very heart of the instructive procedure, in formal and non-formal settings, in programs gave by administrative offices, open and personal instructive establishments, benefit companies and non-benefit gatherings, and customary and strict networks. this paper deals with the new possibilities in regular classrooms to improve the learning process and enhance the outcomes of students. The future classrooms may have 3D printers, big display screens, augmented reality, artificial intelligence and many more. ICT is a very effective tool for the improvement of teaching learning process.

Key Word: *Visualising, Future Classrooms, Blended Teaching and learning.*

Introduction

In the time of globalization, the blast of advancements is affecting the world in more manners that can be envisioned. For instance, the manner in which ventures and economies are overseen have impressively changed. The quick transmission of information and data has empowered cross-fringe coordinated efforts to be all the more productively executed, along these lines permitting organizations to be run all the more effectively. Out-sourcing hence become increasingly pervasive and new economies, for example, those of China and India have succeeded thus. Innovation has encouraged and now and again caused change in perspective in the manner in which business used to be worked (Friedman, 2006). Inventive and basic speculation just as and critical thinking abilities are presently substantially more popular. Even with changing requests on the sort of human asset that ought to be created, teachers are likewise underscoring these new aptitudes in instructive curricular surveys. The utilization of data and correspondence advances (ICTS) in training is viewed as an approach to create an increasingly taught information based work power. The UNESCO World Education Report (1998) takes note of that the new innovations challenge customary originations both of instructing and learning and by reconfiguring how educators and students access information can possibly change instructing and learning forms. ICTs give a variety of incredible assets that may help in changing the present separated, instructor focused and message bound study halls into rich, student cantered intuitive information conditions. ICTs are a differing set of innovative devices and assets used to convey, and to make, scatter, store and oversee data. Correspondence and data are at the very heart of the instructive procedure, in formal and non-formal settings, in programs gave by administrative offices, open and private instructive establishments, benefit companies and non-benefit gatherings, and common and strict networks.

Development of ICT in India

India perceived the significance of ICT in training particularly in 1984-85 when the Computer Literacy And Studies in Schools (CLASS) was at first

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presented as a pilot venture with the presentation of BBC small scale PCs. An aggregate of 12,000 such PCs were circulated to optional and senior auxiliary schools through State Governments. NIC was identified as the nodal agency for finalizing the contract for the supply of hardware. National Task Force on Information Technology and Software Development (IT Task Force) constituted by the Prime Minister in July, 1998 made specific recommendations on introduction of I.T. in the education sector including schools. The concept of SMART schools with emphasis is on Information technology and use of skills and values considered important, in the next millennium, gained momentum to be started on a pilot demonstrative basis in each state. A centrally sponsored scheme "Information and Communication Technology (ICT) in School" was launched, in December 2004, to provide opportunities to secondary state students to develop ICT. National council for teacher education (NCTE) took a landmark decision in the year 2000 to make ICT literacy a compulsory part of pre-service teacher education courses.

Types of ICT based learning

ICT based learning is basically of two types non-online learning and web-based learning. The non-online learning includes radio, television, movies, overhead projectors and language labs while the web-based learning includes google, youtube, emails, skype and cell phones(Shitole & Maruti, 2020).

Benefits of using various digital tools in educational institutions (Gupta, 2017)

By using various digital tools in the process of education following are the benefits for students, parents and school administration;

- It saved both time and money.
- Online exams are easy to conduct
- Transfer of knowledge from teacher to students is easy and equal
- Audio visual teaching content helps the students to understand the concepts and create interest in study
- Preferences over different schools and universities which can't give such incorporated highlight based learning and the management system
- It facilitates an easy communication between the educational institutions and parents of students
- Students can easily trace important events related to their studies
- Projects and assignments can be prepared online
- Students can give exams online and view their results easily
- Missed lectures can be recovered anytime
- Online library can be assessable
- Parents can easily trace the result, progress, attendance, time schedule etc. of their wards
- Parents can check the syllabus, assignment and projects of the student
- Exam schedule and result of semester is easily assessable by the parents
- Parents can track the school events conveniently
- Management of class time and content is easy for teacher
- Teaching material can be download from the internet anytime
- Difficult concepts can be taught easily
- School or college activities can be managed easily by the school administrators
- Administrators can easily assess the information regarding institution online and able to manage the institution even he/she on leave

- Administrator can check the teaching process and progress of students
- Assigning tasks to the staff members is easy for the administrators

Basic equipment in the classroom of the future (Smrikarov, 2019)

The vision will be provided by the implemented high-tech equipment, which will include: -

- Table with an intuitive screen to test the opportunities for the incorporation and utilization of the instructive process. 49-inch intuitive presentation for experimentation and testing to actualize and use in the learning cycle as a substitute for intelligent whiteboards.
- All-in-one PC and versatile PC for multi-stage testing of the created instructive models.
- Tablet for testing trials of instructive models; - Virtual Reality glasses - can be utilized for various instructive recreations including computer generated reality components and articles or spaces of the virtual world.
- Augmented Reality glasses will permit students to see computerized data superimposed on things they find in reality.
- Mixed Reality glasses will permit students to connect with genuine and virtual items, which exist together continuously. A future training space will be made at the University of Ruse. The future homeroom room will highlight an intuitive whiteboard and an intelligent screen. Understudies in the homeroom of things to come will find a seat at intelligent tables and they will record straightforwardly on the board utilizing the intuitive table so going out on the board will be uncommon. Every understudy will have a tablet that will supplant reading material and journals. The adjusted investigation material for singular requirements will be downloaded from the "cloud". The cell phones will be utilized as close to home collaborators.
- 3D scanners and 3D printers, computer generated reality, expanded reality and multi-dimensional images will be utilized as imaginative innovations in future study halls.
- Video conferencing exercises will be utilized to welcome instructors from everywhere the world.
- Virtual glasses can be utilized to reproduce learning re-enactments to beat fears and fears, and that's only the tip of the iceberg. This innovation can be particularly helpful for instructive games and reproductions for individuals with extraordinary instructive requirements to speak to situational exercises.

Active learning classrooms

Traditional classrooms should meet the desires for the computerized age. Dynamic learning is a strategy that help present day strategies, for example, learning by doing. Students in dynamic learning spaces partake in conversations and work in groups. Flipped model is likewise one illustration of creative learning strategy which can be utilized in dynamic learning spaces, (Kozov, V., 2019). The flipped study hall approach streamlines students time and spotlights on taking care of genuine issues in the homeroom, rather than dry hypothesis, which can act naturally learnt ahead of time.

Active v/s Passive learning	
Active Learning Classrooms	Traditional Classrooms
Learners are engaged and active in classroom	–
Learners team activities in classroom	Mostly verbal lectures
Learners take control and responsibility of their learning process. Learners center classroom	Boring lessons
Generate questions and find solutions in	Learners need to remember long information without time for practical lessons

The classroom can be arranged in several different

styles. Seating places in the classroom of the future will be able to be rearranged, depending on specific group tasks or specific activities. The walls of the classroom can be movable and, if necessary, the classroom will be expanding and allow joint lessons - mathematics and physics, for example, which will be an interesting multi disciplinary approach (Smrikarov, 2019).

Augmented reality in classrooms

Augmented reality is used today as innovative educational approach. Augmented reality use modern smart technologies (smart phones or tablets) which engage learners and give them more detailed quality digital learning content (Videnov, K, 2018). 3D augmented reality textbook is designed in University of Ruse used in the training of mechanical engineers (Aliev, Y., 2017). Augmented reality usage while interacting with the textbook leads to a more engaging experience and attractive learning for the students.

3D technology in classroom

Utilizing 3D models in the computer generated simulation offers the chance to quantify boundaries, which are hard to get, all things considered, with starter augmented reality reproductions, the danger of actual mischief for understudies is brought down; augmented experience offers the chance to gauge boundaries, which are hard to get, in actuality; costly hardware can be estimated in computer generated simulation, (Kozov, V., 2019). 3D scanners and 3D printing are likewise arising innovations that can discover various applications later on study hall (AbouHashem, Y., 2015, Szulżyk-Cieplak, J., 2014, Short, D. B., 2015, Wang, W., 2017).

Personalized learning environment

Future education will specialise in personal learning experiences to assist learners with individual learning needs, some disabilities or needs for private learning tempo and special knowledge. Modern technologies can have improved accessibility - learners with disabilities are often empowered through reading apps, audio books, computer-based games, dictation software and digital devices.

All exercises later in future classrooms, for example, study materials, schoolwork, projects also, student achievement will be put away in a shared cloud stage and information base to keep up individual student portfolios. The learning materials in the stage will be utilized by instructors for adaptable learning styles with adjusted advantageous showing materials, for instance for cutting edge understudies or understudies with extraordinary instructive requirements.

Internet of things

The classroom of the future is going to be a sensible environment with a network of connected smart devices. Internet of things wireless nodes are often placed within the room to trace learners and collect data about their activities: visit, homework, assignments and etc. the info about learner's activity and every one the learner's results are going to be stored during a common database so as to be analysed and shared from an educator to the learners or their parents. Such IoT devices within the future classroom are often wont to control the access to the classroom (Chang, F, 2016). Attendance information will automatically be entered into the database for every student. this may not take the time to see and record absences from the particular class time, and control over attendance and accuracy of scholars and teachers are going to be greater. Multi-location game scenarios are often also played within the classroom as an enticing learningactivities. Learners may use personal mobile device to return feedbacks in real time in

several learning activities.

Conclusion

The time for change within the education system is long overdue and digital transformation of education is required to satisfy the requirements of the digital learners. The vision of the classroom of the longer term is learner-oriented and decide to solve some challenges associated with individual learning needs, even for learners with some disabilities giving them a way of belonging and recognition within the educational system.

The presented future classroom vision is distinguished from the normal classroom by the addition and enhancement of recent technologies to complement the active learning within the classroom.

The subsequent common characteristics are often summarized for the vision of the longer term classroom: interactions, collaboration and adaptability - important active learning characteristics for the vision of the classroom of the longer term. Technologies will definitely be a serious think about the space of the longer term, but they're going to not beenough if teachers aren't involved. The teachers within the future classroom will place the requirements of every student at the middle of that education and every learner are going to be taught in a private flexible educational way consistent with special educational needs.

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