21st Century Learning Strategies by Using ICT Tools

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Abstract

We are facing the impact of science and technology in many areas except learning environment. Over decades there is no dissimilarities in the learning environment such as classroom, curriculum and learning strategies. Recently, all over the world many researches are conducted related to 21st century education. This study has clearly represented that every student has different attitudes and the traditional pedagogy does not fulfil the today's requirements. Inclusion of technology only can improve the quality of education and achieve global education.

Keywords: *21st century learning, 21st century skills, Higher Education, ICT integration.*

1. Introduction

The economy of a nation depends on the quality of the education. There are no significant changes in the learning environment except the classroom which shifts from blackboard to whiteboard. The global competition is accelerated by the integration of Information and Communication Technology (ICT). By redesigning the learning environment with Information, knowledge and innovation will boost up the economy.

The objective of education ought to be the full flowering of the human in this world. According to a UNESCO study, "the physical, intellectual, emotional and ethical integration of the individual into a complete man/woman is the fundamental aim of education". In the 21st century, the objective of education is the mastery of information, embedded in knowledge and understanding the propelled utilization of innovation in society.

2. Background

In the ancient days, the education was communicated orally by the sages (Vedic age). The information was conceded from one generation to the other. The palm leaves and the barks of trees were used in spreading the written literature, before the development of letters. The Gurukuls typically in the teacher's house or a monastery, was the traditional Hindu residential schools for learning which is referred to as the oldest and the most effective system of education. At the Gurukuls, the teacher imparted knowledge on various aspects of the religion, the scriptures, the philosophy, the literature, the warfare, the statecraft, the medicine astrology and the history. Education was free to all. Character building was the main objective of the traditional system

Higher education was imparted by world-renowned universities in the medieval ages in India. Each university was specialized in a particular field of study. Nalanda is the oldest university that handled all branches of knowledge. Ujjain had emphasis on mathematics and astronomy. Takshila was specialized in the field of medicine. The

existing system of education is introduced by the British in the 20th century, by Macaulay. The British government did not recognize the traditional structures. Gandhi also described that the traditional educational system of India was destroyed during the British rule.

In the Modern Indian Education System, education became the responsibility of the states and central government. They coordinated the technical and higher education by specifying standards. The education system is divided into pre-primary, primary, elementary, secondary, higher secondary, under graduate and post graduate. Under the Right of Children for free and Compulsory Education Act 2009, Education has been made free for all children of age 6 to 14 years. Indian Higher Education System is the third largest in the world after China and USA.

21st Century literacy is an enhancement of traditional education system, where children educated by themselves through self-directed play and exploration. The key components of the 21st century are learning, communication and collaboration. Learner-centric environment engages the students with hands-on activities for collecting information on their own with the help of the teacher. Collaborative learning encourages students to work together to explore the information. It is supported by the high-quality infrastructure and technology. It also creates a way to enrich the knowledge apart from class room

3. Literature Study

According to Stacey, Smith, & Barty (2004) effective ICT is very necessary to be successful in careers and lifelong learning. It was confirmed by a great number of researches that the usage of ICT in teaching and learning could improve students' skills (thinking ability, self-direction, self-regulation, communication and collaboration) in many ways. Kay (2010) has discussed that in the ICT-driven age, students are anticipated with digital environment for effective learning and to become competent in information literacy, media literacy and ICT literacy.

Pearlman (2010) has stated that ICT is one of the powerful tools to enhance learning and also transform potential learning. With ICT, students are able to access, share, analyze, and present information collected from a variety of sources and in different ways. The practice of ICT offers opportunities for students to work both collaboratively and independently. Therefore, the role of ICT within the curriculum is not only to enhance the learning experience of students but also to help them developing the skills essentially to participate effectively for working in group, and developing team spirit, cohesion, and social values.

4. 21st Learning Strategies

With the advent of imminent technologies like Social media, Mobility, Analytics and Cloud computing (SMAC), it is the right time to transform or to adapt to the system for the improvement of the quality of education especially for the sake of higher education. It is our duty to establish a respectable caring environment for the students. The education demonstrates leadership and understand the content clearly. Facilitate learning must reflect on their practice. 21st century skills (7Cs) are given below:

1. Care—Teachers who take care are emotionally supportive and interested to the students.

2. Confer—Teachers who confer talk with students would welcome and respect the students' perspectives.
3. Captivate—Teachers who captivate make learning interesting and relevant.
4. Clarify—Teachers who clarify explain things clearly, provide informative feedback, and clear up confusion in order to make lessons understandable
5. Consolidate—Teachers who consolidate summarize and integrate learning.
6. Challenge—Teachers who challenge students press them to think rigorously and to persist when experiencing difficulty.
7. Classroom Management—Effective classroom management entails developing a respectful, cooperative classroom climate with on-task behavior.

Visual	• Slides, Presentations, Audio Tutorial
Verbal	• Reading, Writing, Assignment
Aural	• Music, Dance, Photograph, Drawing
Knesthetic	• Role play, Drama, Skit, Project, Model
Logical	• Debate, Crossword, Puzzle, Gaming
Social	• Field trip, Forum, Survey, Investigation
Solitary	• Peer teaching

5. Information and Communication Technology

Information Communication Technology represents the technology, used to communicate information. It is used to capture, store, process and transmit data in digital format via networks. Video conference and electronic mail are simple examples for ICT.

5.1 Benefits of ICT

ICT based education is classified into three objectives – learning about the use of ICT tools (how to use them in daily life), improve the professional skills for the development of ICT and focuses the use of ICT especially for the enhancement of teaching and learning. Digital literacy paves a new horizon for curriculum framework. The flipped classroom, interactive whiteboards, e-readers, laptop, computer, internet, projector, tablet and smartphone are some examples of ICT tools. Some key benefits of ICT in education is given below:

Remote access to resources from anytime, anywhere: The information can be shared anytime and anywhere over the cloud efficiently. Digital library is one of the best examples for accessing the students with information more than textbook. Students can gain more reference.

Encourage individual learning for knowledge retention: Understanding the core concepts of the subject matter is more effective through ICT methods. Delivering teaching through gamification makes content more enjoyable. Taking students on virtual field trips will bring the session more interactive.

Collaborative learning: Collaborative learning can give an experience to work with team with fun and enjoyment. It helps deep learning, self-confidence and leadership skill. Group activity or small discussion forum are engaging individuals in interdependent learning activities.

Benefits to teachers: Transform some theoretical concept into digitization and providing access to online saves time to explain in the classroom and mentoring students than lecturing.

5.1 Challenges of ICT

Key challenges related to utilize ICT in teaching learning process is categorized into the following:

- Teachers are not aware of the technology due to the vast changes in the computer software and hardware. Also, it takes more time for preparing the content.
- Inadequate technical supports and limited access of internet prevent the usage of ICT in the class rooms.
- ICT demands a lot of funds for setting and maintaining the tools and technology.
- Web based content are English in nature. Preparing the content in the regional language is very difficult one.
- Sustainability is also more important.
- Train a teacher not only to use ICT tools, but also motivate them to improve their skills how to implement ICT in the classroom more effectively.

We should not forget the fact that the teachers only determine the quality of learning but not technology. Technology cannot replace teaching but it can enhance it. Teachers must show positive attitude towards ICT and aware of the impact on education. It is our duty to enhance our skills for meeting the technological advancements.

6. Improve the Quality of Education by Using ICT

The quality of education depends on the way of pedagogy, which focuses on teaching-learning methods and the opportunities for the acquisition of knowledge. Education can be categorized into formal (well planned, structured – school, college, university), informal (by experience) and nonformal (vocational, distance learning – no age limit) types.

Learning practices can be classified into two types: active learning and passive learning. Traditional way of learning (active) includes lecturing, reading/writing by using audio-visual aids and demonstration. These includes lecturing by the teacher, guest lecture, reading textbook, other than textbook like journals, assignments, presentations by the teacher/students/guest lecture/student, poster presentation, radio, TV programs, role play, skit, workshop, exhibition and lab experiments.

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that you have access to. Please avoid using bit-mapped fonts if possible. True-Type 1 fonts are preferred.

7. Conclusions

The study is concluded with the following:

- 21st century learning environment comprises critical thinking, creativity, communication, collaboration, multidisciplinary skill, computing technology and career learning.
- The students are practiced to be resilient, reflective and risk taker.
- Teacher should motivate students by praising intelligence.
- Learning in group develops better understanding and decision-making skills to the students.
- Technology can never replace a teacher. Teacher should assist students with the help of technology.
- Virtual learning acts as an efficient instructional model.
- Flipped classroom provides personalized learning.
- The effectiveness of ICT integration in the classroom has to be subjected to the active participations of the students.
- Good learning environment, motivation of teachers, availability of learning tools, technology usage inside and outside campus and the active participation of the student can only achieve the 21st century skills.
- It is mandatory to gain collaborating, communicating, creative and critical skill due to the vast changes in the technology. Also, life skill and career skill also needed to face better employability.

8. Acknowledgments

9. References

9.1. Journal Article

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