Technologies for Smart Learning

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ABSTRACT

Technology is everywhere and we depend on technology. In this digital era, the role of teacher and student has changed dramatically. Learners utilize new technologies to gain knowledge more comfortably, effectively and seamlessly. Technology is used to provide opportunities for students to apply knowledge in the real world context and engage in active participation, exploration and research. Smart learning is a new approach of learning used by teachers and students both in the classroom and outside of the classroom, in daily life. It is a new vision, where internet, laptops, smart phones, multimedia etc utilize in the process of education. Smart learning technology provides a learning platform to every learner universally. In Smart learning technology, learning is more connect to the real world; the learner is more active than teacher. M-learning, digital pedagogy, social media, MOOC, OER, Edutainment, Blended learning and flipped classroom are some of the examples of smart learning technology. This paper explains the smart learning approach, technology being used in it and its pros and cons.

Keywords: Smart learning technology, M-learning, digital pedagogy, edutainment, blended learning

Technology is everywhere and we depend on technology. Television, by which our mothers saw their favourite daily soaps, movies, news channels, sports etc. is the result of technology. We can talk to our friends, relatives, dear ones on mobile is again the result of technology. We can travel hundreds of miles in some minutes by airplane because of the innovation of technology. Technology affects every sphere of life like, Medical, Engineering, Banking, Marketing, Scientific researches, Scanning, Printing, Education and many more. Technology is just a tool which makes our life easy.

New Technologies enables learners to learn smartly. Learners utilize new technologies to gain knowledge more comfortably, effectively and seamlessly. In this digital era, the role of teacher and student has changed dramatically. With the use of technology, the teacher can

extend his/her role beyond the classroom. Technology is used to provide opportunities for students to apply knowledge in the real world context and engage in active participation, exploration and research. " the richness of the technology permits us to provide a richer and more exciting (entertaining) learning environment......our concern is the new understanding and new capabilities that are possible through the use of technology" (Duffy & Cunningham, 1996).

SMART LEARNING

Smart learning is a new approach of learning used by teachers and students both in the classroom and outside of the classroom, in daily life. It is a new vision, where internet, laptops, smart phones, multimedia etc utilize in the process of education. In this modern era, it is very helpful and a smart way of teaching-learning. Smart learning can also be called as Technology enhanced learning (TEL). This learning (TEL) is a flexible mode of learning. Modern technologies like Learning management system (LMS), big data, cloud computing, learning analytics and ubiquitous technologies etc. promotes the smart learning in the process of education. Smart learning is a learner centric, effective, intelligent approach of learning. For smart learning, smart environment is necessary and it supports the teaching-learning system. Smart learning enables the creativity, intelligent, critical and analytical thinking and is able to classify the individual differences among students.
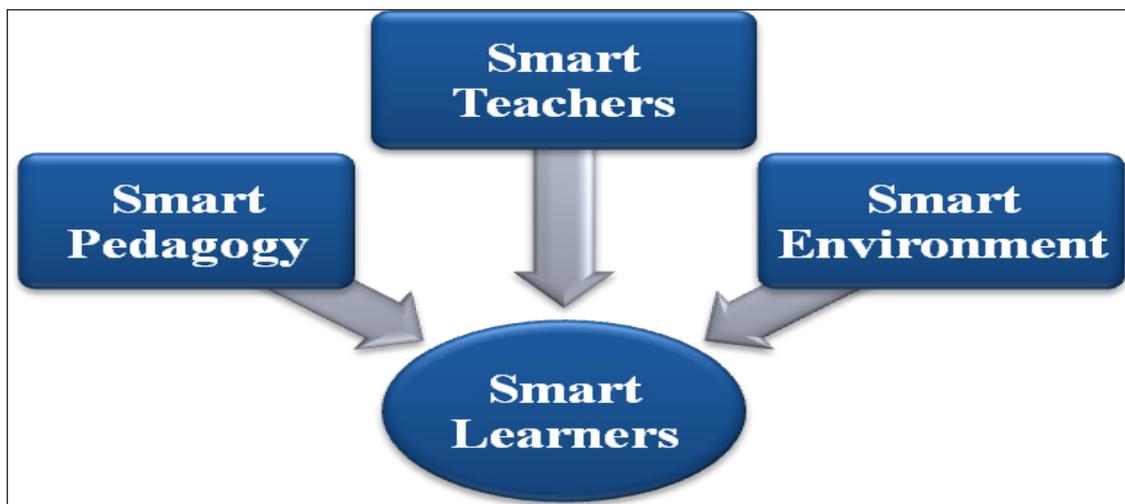
In smart learning, smart refers to wisdom and wisdom can be defined as an ability to abstract thinking, ability to adjust in new and different situations. Learning defined as a permanent change in behaviour. It is a process, we can learn by any means like by observation, imitation, training, reading, experiencing, talking etc. learning is a continuous process i.e.; it starts from birth and continuous till death.

The main aim to implement the smart learning in the field of education is to enhance and improve the quality of teaching and learning. A smart learning environment not only enables learners to access digital resources and interact with learning system in any place and at any time, but also actively provides the necessary learning guidance, hints, supportive tools or learning suggestions to them in the right place, at the right time and in the right form. Basically, a smart learning system can be perceived as a technology enhanced learning system that is capable of advising learners to learn in the real world with access to the digital world resources.

It is necessary that the environment of the school is smart, so that the whole process of smart learning can be take place. Smart teachers, Smart pedagogy and Smart environment make the Learner Smart and ready to face the challenges of the World. It is not important that we have to learn everything, but how we learn, what we learn, why we learn, where we learn and at what time we learn, is important. Smart Learning provides a facility to the learner that s/he can learn at any place and any time. Every student is not interested in all the subject matter; they are looking for the key notes, graphical presentation and concept building materials. YouTube, Slide share, Smart learning for All, Pinterest, BYJU's are some websites which provides learning materials to the students and in this smart environment students utilize these sites for learning. There are many free websites, tutorials and e-tutors that provide study materials in layman's language, which is easy to understand and it makes study even more interesting.

EVOLUTION OF LEARNING TECHNOLOGY

Emergence of technology from Blackboard to Smart board and Innovative techniques covers a huge distance. Blackboard, white board, chalk and talk, lecture methods are still in practice but these practices mixed with the technologies like Smart boards, OHP, video conferencing, virtual classroom, internet, e-tutorials. The new paradigm shift stimulates the learner-centric approach of education. Social technologies, mobile devices, wireless communication are the tools for smart learning. This evolution of technology satisfies the need of learners, as in this digital world their need has been changed. It has been proved with the researches that implementation of technology in the field of education resulted in improvement of educational quality. Today is the world of tech-savvy learners; they are dependent on internet, smart phones for their day to day work.

Smart learning technology provides a learning platform to every learner universally. The development of new technology is very useful for this digital world as it provides a broader and better vision at one click; learners come to know about the experts, educators at global level. The experts from all over the world can participate through internet, video conferencing and digital dialogues. Learners can find best of the best for themselves.
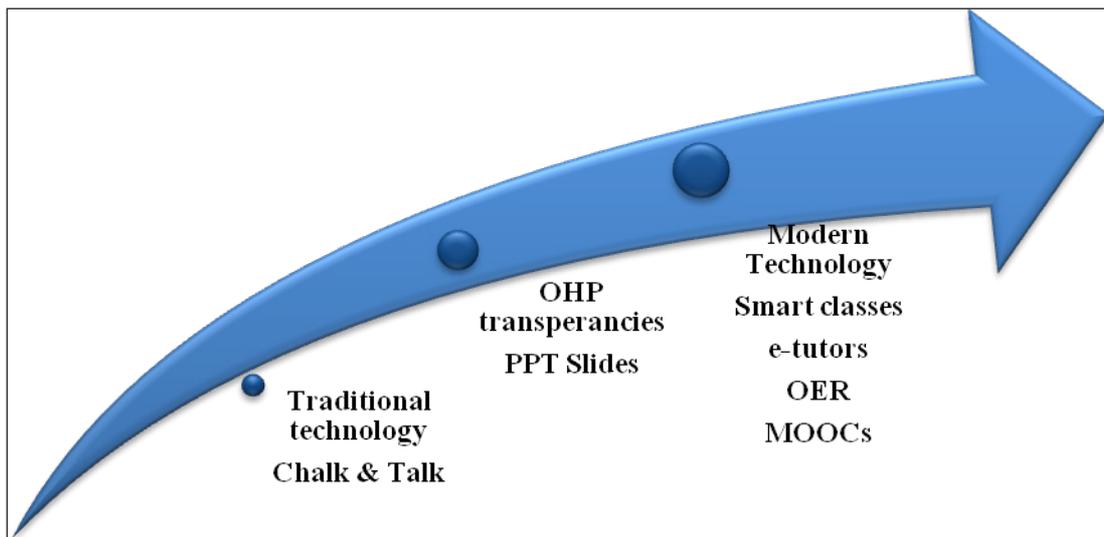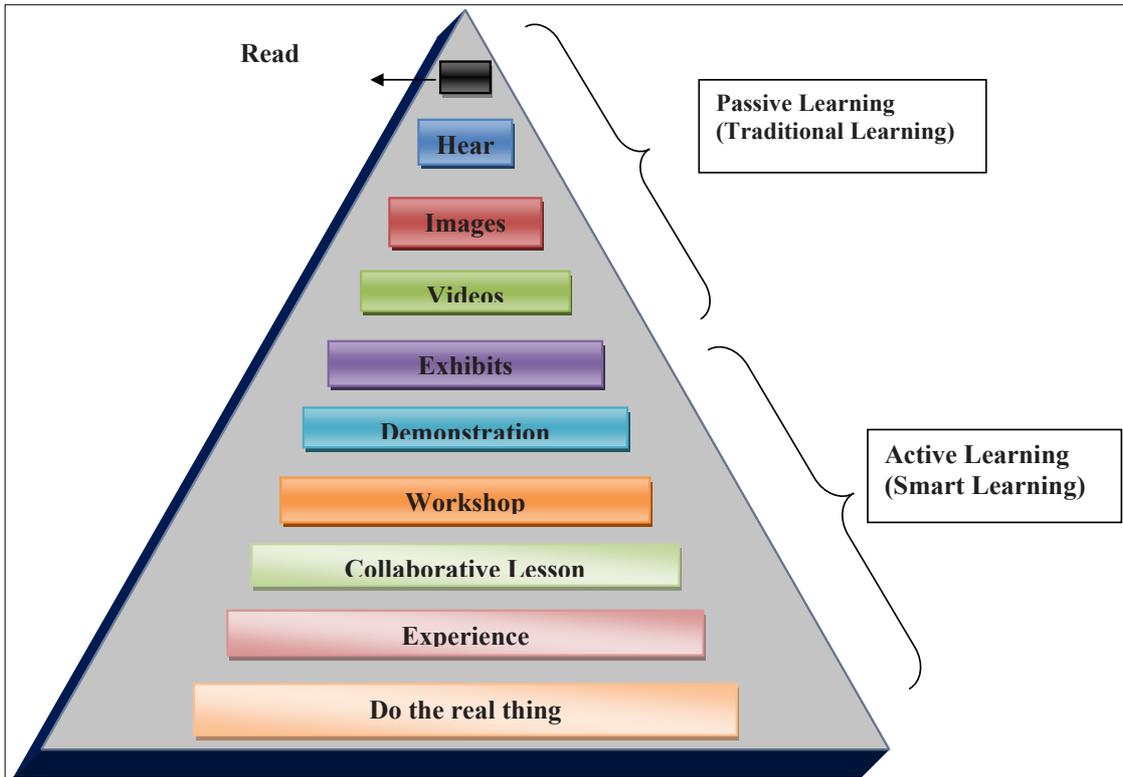
Difference between Traditional Learning & Smart Learning

	Traditional Learning	Smart Learning
Interaction	Face to Face	Online, Video Conferencing
Place	Physical Presence, Classroom	Anywhere, Anytime
Teacher	Active	As a Guide
Learner	Passive	Active Participation
Learning Material	Library, Books, Notes	Online Books, e-tutorials, Educational websites
Learning Pace	Learning pace determined by the teachers according to the length of the course	Learning pace determined by the learners
Global exposure	Learners did not get much opportunity for global experiences	Learners get the opportunity for global exposure. They can connect with the learners and experts from different countries

There is a lot of difference between traditional learning and smart learning. Smart learning is more fun and interesting whereas traditional learning is only based on chalk and talk. In traditional learning learners had to sit in the class but smart learning is flexible in nature. There is no fixed schedule and extra classes in smart learning. Smart teaching learning makes the content more interesting and easy to understand. It focuses on activity based learning in which students learn by doing the things themselves. Students pay attention when content designing is in 3D or animated. Students of low level of IQ also easily understand the topic and that is the ultimately goal of education. Traditional learning and Smart learning has

some similarities like, presentation of learning materials in front of students, discussion and brain storming among students over the topic. But Smart learning have some qualities such as, learners can utilize the online resources anytime, enhance communication skill by connect with the learners, experts from different countries. In Smart learning technology, learning is more connect to the real world; the learner is more active than teacher.

Read

Hear

Images

Videos

Exhibits

Demonstration

Workshop

Collaborative Lesson

Experience

Do the real thing

Passive Learning (Traditional Learning)

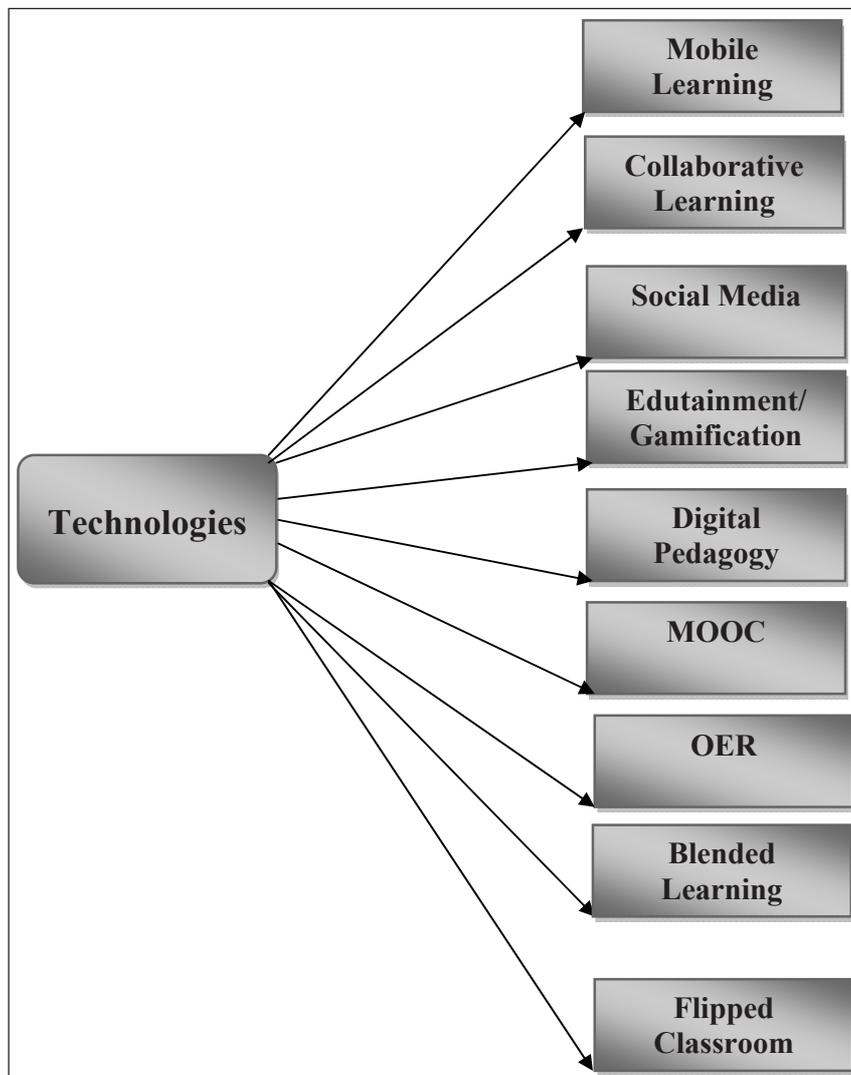**Active Learning (Smart Learning)**

The above picture shows the Edgar Dale's cone of learning experience but here it shows the differences between Traditional learning approach and Smart learning approach. According to Confucius, the most famous educator of China, *"I see and I forget, I hear and I remember, I do and I understand."*

TECHNOLOGIES FOR SMART LEARNING

Technology includes hardware and software:

❖ **Hardware**: For hardware, Smart refers to smart devices, which are smaller in size, portable and helps learners in learning anytime and anywhere. The examples of hardware technologies are: Smart phones, Laptops, Palmtops etc.

❖ **Software:** For software, smart could be called as flexible, supportive and adaptive devices. It helps the learners in learning according to their characteristics, i.e.; it gives importance to the individual differences. The examples for Software technologies are: big data, learning analytics, cloud computing etc.

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Technologies  →  Mobile Learning
              →  Collaborative Learning
              →  Social Media
              →  Edutainment/ Gamification
              →  Digital Pedagogy
              →  MOOC
              →  OER
              →  Blended Learning
              →  Flipped Classroom
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MOBILE LEARNING

Mobile learning or M-Learning is the most efficient technology anybody can have. In this digital era almost everyone has smart phones, we do lots of things by using our smart phones,

it makes our life easy and yes, that's why it is called Smart. Mobile learning is learning via mobile with the help of internet. It is the most flexible device, as learner access to education anywhere, anytime. It can be called as educational system. There are many educational apps for students and teachers. Mobile learning has become the area for research. Learners can watch videos, lectures on mobile to make better understanding on concepts, it makes learning more lively.

SOCIAL MEDIA

Social networking sites like facebook, twitter, LinkedIn, Instagram are the means of social media and these are very much popular among youth all over the world. Social media is not only for making friends, entertainment, posting photos but also social media helps in the field of education. Anybody can create group for discussion and exchanging their views on any topic, it develops our thought process as we connect many people globally and came to know about their culture, education, technology and lots more. When used carefully, social media can be a useful tool rather than a distraction. Some examples of social media are:

- ❖ **Wikipedia:** It is created by the community called Wikipedians community through collaborative effort. This was created in January, 2001. It is a free online encyclopaedia.

- ❖ **Facebook:** It is a free social networking site and it was launched on February 4, 2004b by Mark Zuckerberg. The users of facebook can create their account, make friends, create pages and connect with the people. Through chats, messages and connection, users can get the latest information regarding anything. Many resources persons and educational groups are there on facebook.

- ❖ **LinkedIn: It** is another social networking site. People can create profile and connect with the people they trust. It is a professional website especially for business community. It is very useful for the employers, entrepreneurs, job seekers, educators.

- ❖ **Google+:** It is a multilingual social networking site. It is launched in June 15, 2011. The users of Google+ can organise and categorise the connected people with the help of 'circles'. The users of Google+ can share links, photos, messages with the people connected users.

COLLABORATIVE LEARNING

Collaborative learning is a teaching-learning approach of education, in this approach two or more people or a group of people/learners work together to attain something, to solve any problem, to complete a project. "Collaborative Learning is based on the idea that learning is a naturally social act in which the participants talk among themselves. It is through talk that learning occurs" (Gerlach, 1994).

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EDUTAINMENT/GAMIFICATION

Education plus Entertainment i.e., education through entertainment, this makes learning more enjoyable. It is designed to entertain as well as to educate. For example, a game which requires the learner/player to answer science questions in an entertaining way may be considered as edutainment. Not only children but also young people like to learn in this way. It develops the communication skills and makes learning enjoyable. Some Edutainment channels are:

- ❖ National Geographic
- ❖ Discovery Channel
- ❖ Biography Channel
- ❖ Reel NASA
- ❖ PBS

Educational games or gamification is an emerging trend of education. it is an interesting way of learning. With the help of this technology we can mould any topic, subject, concept in the form of game and this provides learners an opportunity to learn as they play. Some free educational games sites are:

- ❖ Funbrain
- ❖ Discovery.com's games
- ❖ Sheppard Software
- ❖ Educational games (and simulations) on NobelPrize.org
- ❖ www.knowledgeadventure.com
- ❖ Funschool

DIGITAL PEDAGOGY

Pedagogy is the discipline of study related to the field of education and teaching methods.

The use of digital technologies in the process of teaching and learning to digitize the subject matter is called digital pedagogy. It captures the attention of learners and increases their curiosity towards the process. Digital practices in education system make the education more effective.

MOOC

MOOC stands for Massive Open Online Course; it is an online course with open access. It is web based
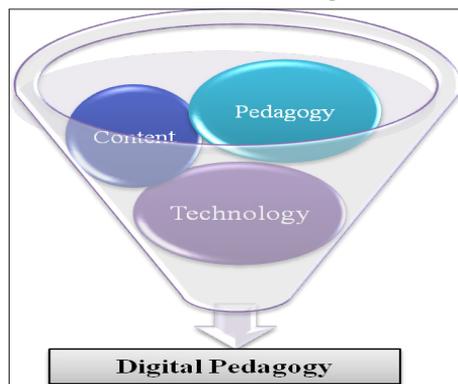
programme without charge, which is available to a large number of people. MOOC allows interactive learning for learners all over the world. The word MOOC was introduced by Dave Cormier in the year 2008. MOOC provides the world's best professors of different courses available there. Coursera, edx, udacity offers hundreds of MOOCs. Anyone who wants to take a MOOC can register themselves and choose the course of their interest. Variety of courses and subjects are available in MOOCs and learning material is available in easy and different language. Learner is able to see his/her progress during the course. The duration of courses is different and after completing the course learner get the valuable certificate of excellence. It helps to develop communication skills, provides global knowledge, great experience with eminent scholars.

OER

Open Educational Resources (OERs) are any type of educational materials that are in the public domain or introduced with an open license. The nature of these open materials means that anyone can legally and freely copy, use, adapt and re-share them. The learning materials are true and valid. OERs range from textbooks to curricula, syllabi, lectures, notes, assignments, tests, projects, audio-video and animation.

BLENDED LEARNING

In this Educational Pedagogy, traditional teaching and digital, online teaching blends i.e.; both the practices combines. Blended learning is also called mixed and hybrid learning. Blended learning involves online and face to face learning. Blended learning is flexible for both students and teachers. Teachers and students both can develop their technological skills.
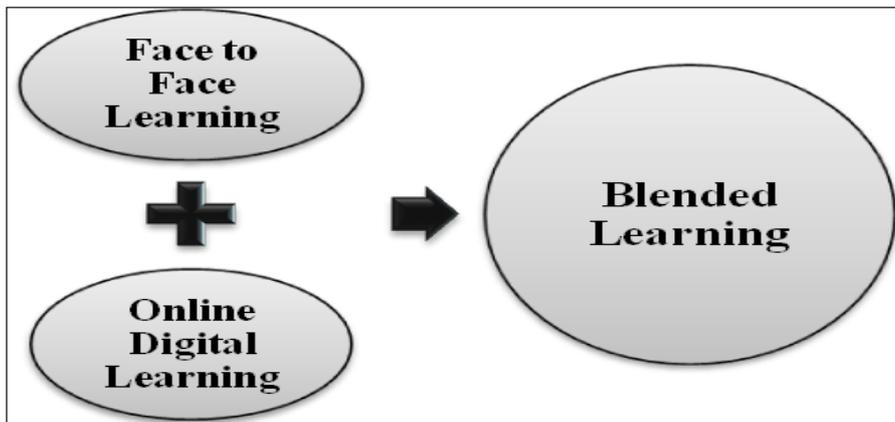
Before introducing the technology in the classroom, instructor or teacher must tell the students what that technology, how and why the technology is being mixed with the content and how we use the technology. Instructor had to encourage the learners for using the technology.

FLIPPED CLASSROOM

It is a student centric method. It encourages active learning among students. In flipped classroom students acquired learning material before the class by online mode and they utilize the classroom time in discussion, application, and practice aspect of knowledge. The term flipped classroom is popularised by the two teachers, Aaron Sams and Jon Bergman from woodland park high school, Colorado in the year 2007. They realised that the class time is actually for the activities not for the factual knowledge. This increases the active learning in the classroom.

PIZZA

With the help of this technology teachers can create virtual classrooms for students from different schools and areas. Students can join this classroom for open discussion; they can ask questions to their fellow mates. Teachers also take part in the discussion and solve the queries of the students.

UDACITY

It provides free online courses. Any learners can simply register himself/ herself and select the course which s/he wants to do. After completing the course, learner will get a certificate of excellence.

ADVANTAGES OF USING TECHNOLOGY IN LEARNING

The future of education is depends on the development of technology. Integration of technology in education brings positive change in teaching-learning process.

❖ Technology makes teaching interesting and easy for students and teachers.

❖ Technology is an unlimited source of resources.

❖ Promoting independent learning and storing materials for future use.

❖ With the help of technology distance learning become more accessible.

❖ It provides global connection.

❖ It provides world's best expert, which are anyways unavailable and unreachable.

❖ One can instant access to knowledge any time.

❖ It encourages active learning among students.

DISADVANTAGES OF TECHNOLOGY

❖ It can be called as distraction for studies.

❖ When not properly instructed, it is possible that learner access to inappropriate content.

❖ Not everything on internet is true and valid.

❖ Slow internet connection is another disadvantage.

❖ Technology makes the learners lazy. Instead of manual calculation, they use calculator to save the time.

CONCLUSION

In this digital world technology is the basic necessity for the today's society. We must learn about the new and emerging technologies in the field of education. Modern society has many challenges and we can overcome from the challenges with the help of technology. With the help of emerging trends in Education, learner is able to apply his knowledge in real life situations and this helps to facilitate the problem solving ability of learner. Smart Learning discourages the lecture method where teacher is playing the active part and decrease the cognitive load from learner. Smart learning emphasizes in sensible and concept building learning which is necessary in real world.

Smart Teacher + Smart Learner + Smart Technology + Smart Pedagogy = Smart Teaching and Learning.

"The essence of smart education is to create intelligent environment by using smart technologies so that smart pedagogies can be facilitated as to provide personalised learning services and empower learners, and thus talents of wisdom who have better value orientation, higher thinking quality and stronger conduct ability could be fostered" (Zhu and He, 2012).

Technology has more good things than bad, we need to indentify the good things of technology and integrate them with education, teaching-leaning process. Technology is emerging day by day and we have to be it. No technology can replace a teacher but it supports greatly in the process of teaching-learning.

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