

Classrooms of 2020

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ABSTRACT

This work envisions the profile of future classrooms, circa 2020. The idea is to sketch the horizon for its growth by keeping in mind the current and future trends in technology vis-à-vis the objectives of learning. Future education system will be completely revamped and there will be a need to redesign our classroom in accordance with technological advancements. Technology is a powerful means to enhance our abilities, to think, to learn, to communicate and to use our brains creatively and logically. Use of technology in learning proved to be a boon and a solution to the problems in this fast learning environment. No doubt that technology can transform traditional classrooms into digital smart classrooms, but to what extent it interfaces with the probable or real developments remains to be seen. Further will these digital smart classrooms provide best learning environment, which is need of 2020 education system.

Keywords: ICT: Information and Communication Technology, Virtual Reality, Harkness Discussion Method, competency and Attitude, IFC (innovation, futuristic vision and challenge)

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THE MYOPIA

Do you think classroom teaching needs a change? If yes, then what will be changes and what will be the role of teacher and technology? From the purpose of “A classroom is a room in which teaching or learning activities can take place”, (as Wikipedia defines it, emphasis original), the answer is No!

Adapting to what a place of Learning implies, as [1]:

A classroom is

... Room where students are taught by the teacher

...A place where students... “get connected with other students around the world, on topics of study...”

Is this picture of current classrooms?... One may contest- Not yet!

And as Klopfer et al insist [1]: the requirements for good learning include...

“ “students collaborating and discussing ideas, possible solutions...”

“...immersing students in a learning experience that allows them to grapple with a problem, gaining higher-order thinking skills from pursuing the solution...”

Well! We are yet far behind from the rosy picture? Reportedly, from an expected scenario, the class room today is envisaged as provisioning an:

“interpersonal environments to construct knowledge and meaning” [2], where teacher is not the meaning provider, rather the students are seeking from .. inside out?

CLEANING THE LENSES

In today's scenario of classroom teaching, only faculty talks, with students intently listen and take notes. Students' progress toward a degree is measured by time spent in classrooms [3].

The teacher acts as a surrogate mother (read teacher), as if the student is not a responsibility, and all the prospects of innovation, futuristic vision and challenge (IFC) are kept at bay [4]. The daily pulse of a college or university is largely dictated by the classroom schedule as bells ring and the halls fill with students and faculty rushing to the next class, as if they are all machines. The class rooms do not provide the opportunity for learning, or at best these are not world class [5]. These classrooms are largely ineffective as learning environments and those they should not continue to be built because teacher is the prime source of the learning and they shape the knowledge of the students according to their thinking, which is not good [6]. The confluence of powerful and rapidly shifting educational and technological forces will shape the structure of educational systems across the globe.

The UNESCO World Education Report (1998) notes that the new technologies challenge traditional conceptions of both teaching and learning and, by reconfiguring

how teachers and learners gain access to knowledge, have the potential to transform teaching and learning processes. Information and Communication Technology (ICT) provide an array of powerful tools that may help in transforming the present isolated, teacher-centred and text-bound classrooms into rich, student-focused, interactive knowledge environments [6]. This transformation helps students to be engaged learners, able to take greater responsibility for their own learning and constructing their own knowledge.

Napoleon Bonaparte said "One must change one's tactics every ten years if one wishes to maintain one's superiority". As we know, Change is law of nature and technology is changing our world at great pace. There is no doubt that, the technology will also change our learning and teaching style. It is important to continue to add new technology to a classroom to keep the learning process fresh and interesting. As technology is a powerful means to enhance our abilities, to think, to learn, to communicate and to use our brains creatively and logically [7]. So In order to cope with the requirement of the future education and changing trends in the education it is necessary to upgrade our classroom regularly with the upcoming technologies.

Keeping limitation of today's classrooms in mind, we visualize classrooms of 2020. The classroom of 2020 will be digital smart classrooms, much different from the bland, dusty class rooms with lots of chalk and picture less talks. The transformation to a new scenario is shown in Figure 1. In these new generation classrooms the virtual reality and gesture reorganization along with ICT will be used by teachers for explanation [8]. Virtual reality will provide virtual environment for deep understanding. Making studies more practical and informative.

Important concepts can be discussed with the experts through video conferencing. We can even consider an era of open classroom i.e. no physical classrooms at all. In chat rooms and blogs students share information worldwide and multimedia makes studies more interesting. Students and teachers are working in a group linked to worldwide resources. Answer can be check by simulator. All these technologies making your studies more innovative, learning and interesting and classrooms are no more boring.

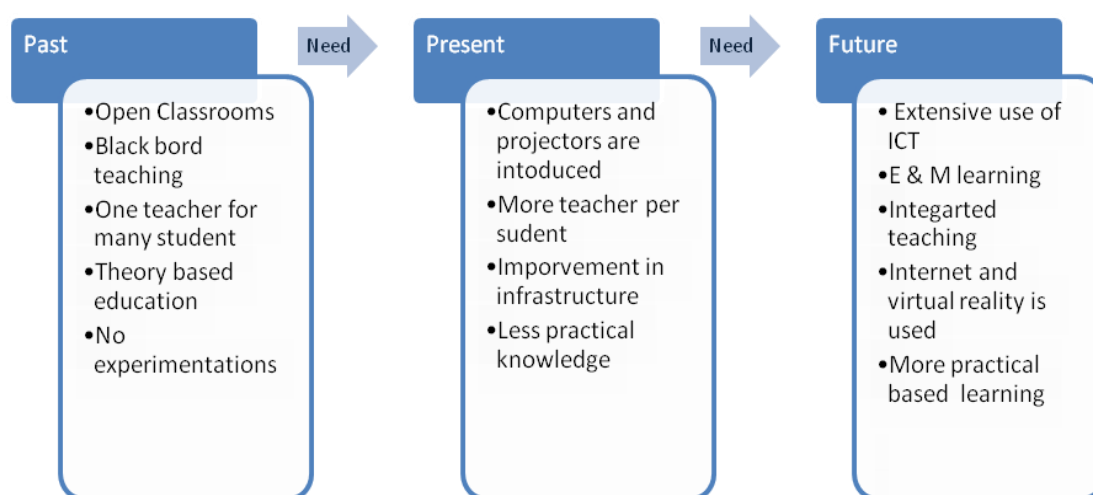


Fig. 1 Comparison of Classroom of Past, Present and Future.

PAST, PRESENT AND FUTURE OF CLASSROOMS

Education system too has changed with time, in response to the Changes. As illustrated in schematic above, many new technologies have been added to our learning process, though the pace is terribly slow when compared to

equivalent developments in manufacturing industry. Nevertheless since the role of training is enhancing in manufacturing sector, the same is likely to be adopted by education sector also. From the times when the education system was based on the chalk2blackboard and the teacher from rote to read (cramming of

output, to mere reading of PowerPoint presentations in class), teaching has not still come further away [9]. Sometimes teacher used chart and models to explain deep concepts. Then come the time of the transparencies. Teachers started using these in order to describe concepts in efficient way and in less time. Reduction in incorporated context of higher order matter made education bland and meaningless as far as spiritual developments were concerned [10]. Use of computer had teaching style dramatically Making Projector and computers are essential part of the classrooms. In the future, learning process will be fully computerized. ICT will play important role in shaping the learning process. Virtual reality will be used to demonstrate the concepts. Integrated teaching will bind expert of different field with the students.

It is clear now, that education system is very dynamic and changes with time. We advocate these changes because we believe our current formal educational institutions are not taking enough advantage of the modes of digital and participatory learning available to students today. Youth who learn via peer-to-peer mediated forms may be less likely to be excited and motivated by the typical forms of learning than they were even a decade ago. Too many conventional modes of learning tend to be passive, lecture driven, hierarchical, and largely unidirectional from instructor to

student. Digital technologies increasingly enable and encourage social networking and interactive, collaborative engagements, including those implicating and impacting learning Digital technologies have dramatically encouraged self-learning. Web interfaces have made for less hierarchical and more horizontal modes of access [11].

New technologies can help students and teachers acquire these vital skills and knowledge. ICT can help student and teacher in many ways. Use of sophisticated computers and telecommunications do have unique capabilities for enhancing learning, especially through a new model of education called distributed learning in which classrooms, workplaces, homes, and community settings are linked for educational activities. Students will be engaged in virtual communities for creating, sharing, and mastering knowledge: exchanging real-time data, deliberating alternative interpretations of that information, using groupware tools to discuss the meaning of findings and create new conceptual frameworks [12].

CONSIDERATIONS OF COMPETENCY AND PRODUCT REALISATION

All developments usually take place at the pull of customers, physical or conceptual. Learning is also considered as a product, and the conceptual component is the realisation of competency required by market forces. The success of the desired requisites is based

upon the use of tools and techniques, the core knowledge providers, and the third dimension of new concepts and fundas which must be constantly invented by student, as shown in Figure 2. From competency it is understood that one can implement all that should be learnt or there is a need to learn.

It is stipulated that only those who are innovative will survive through the class room of 2020. Thus if new competences are

to be achieved in future class rooms, these three requisites must be met, before any implementation is initiated.

This is the onus of Instructional Systems Design (ISD) to assure requisite competencies are developed as an affect of interaction of these three components. The modus operandi is to align with the needs and criticalities of the job, which is evidenced from the definition of competency:



Fig.2 Competency Trilogy Incorporating Concepts and Fundas.

“A competency is a cluster of related knowledge, skills, and attitudes that affect a major part of one’s job (a role or responsibility), that correlates with performance on the job, that can be measured against well accepted standards, and can be improved via training and development” [13].

PHYSICAL AND PSYCHOLOGICAL REQUIREMENTS

In case of education, Competency-based education specializes as an instructional system in which a performance-based learning process is used. It is a synonym of the

Instructional Systems Design (ISD) model, and is at a metaphorical variation from Competency Based Education/Training, which does not address unit (organization/team) training, yet it recognizes levels of performance on any skill using the workplace as the benchmark [14].

The idea of meeting challenges reminds on to use assure ‘competency’ as part of the everyday language of teacher education, further education, and community education. While the learner demonstrates his/her level of attainment on subject-area, Intensive Competence Based course format, gives the

participants to take more responsibility for their own learning process.

The challenges are many: viz problems - of relevance, of access, of privilege and of comparability and transfer. The function therefore is to 'solve' various problems.

The Indian Institute of Science, Bangalore offers Competence Based Education accessible in four different modes for the students:

Downloadable mode: The objective is to empower the student with knowledge infrastructure preferably in a dynamic form. The static mode is however more common. Students can access lessons, assignments and submit their scripts online.

Read only mode: Students will be able to only read the course concepts, downloading or interaction is unavailable.

Classroom interaction: The interactive learning provides an environment for students to talk and discuss freely about any related topics on line or off line.

There are two ways of interaction:

Xchat: Client Server Model that works with Internet Relay Chat Server Protocol, it allows Instructor and participants can talk with each other and discuss on related topic for stipulated time given by the instructor.

Mailing-Group: Participants can become member of Mailing-group by registering. Once approved by the instructor, participants can post their questions to this group ID. There are many mailing groups, on statistics, metal casting et al. The authors also use the mailing groups for enriching their class room interaction for 24 X 7 learning.

Practice orientation: Participants progress through the curriculum by demonstrating their competence in a variety of skill and knowledge areas. Student who demonstrates a competency and equip themselves with the ability "to do" something, learn better. The metric is to put knowledge and principles into practice.

In all these modes of teaching, planned structuring of course is essential. The design process should be able to fuse all the three core components of competency like attitude and behaviours, skills and knowledge, and the core competency like IFC (innovation, futuristic vision and challenge) [4, 15]. An attempt is made in the following discussion clarify the role of basic metaphors:

Attitude

Attitudes involve things we think about a person, a thing or an event. It is person's disposition towards something, as to how a person feels about the idea [16].

Guru Gobind Singh argued attitudes towards us as learners [5]. Without the development of attitudes and skills, individuals will not be well prepared to acquire the new knowledge and skills necessary for successful adaptation to changing circumstances [17]. Teacher student working in team help students understand the effects that their attitudes endorse on learning.

The effective attitudes and actions employed by teachers ultimately can make a positive difference on the lives of their students.

How attitude integrates with other traits, tools and techniques, resources, and components of IFC is illustrated in Figure 3.

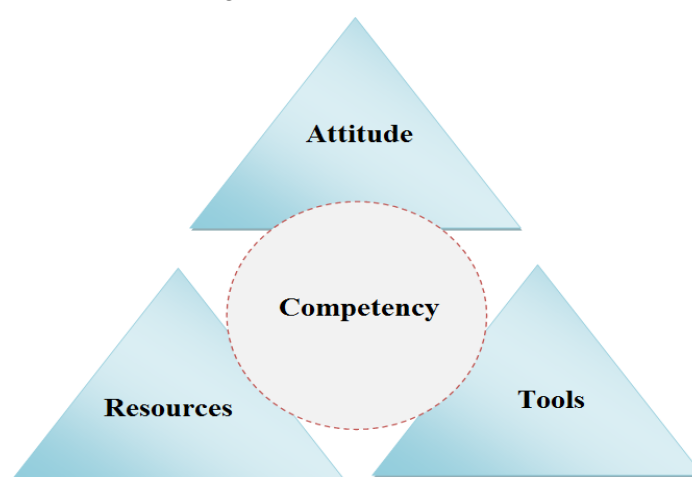


Fig. 3 Competency in Terms of Attitude, Resources and Tools

The five frequently discussed attitudes and actions include:

- (a) A genuine caring and kindness of the teacher,
- (b) A willingness to share the responsibility involved in a classroom,
- (c) A sincere sensitivity to the students' diversity,
- (d) A motivation to provide meaningful learning experiences for all students,
- (e) An enthusiasm for stimulating the students' creativity [18].

Pea contests that learner's beliefs about the appropriate context for a skill will strongly influence its transfer. However, attitudes about what can be learned and where it is appropriate to apply certain knowledge are culturally conditioned [19]. Thus Pea concludes that teachers should focus on helping students become more metacognitively aware, so that they can use their knowledge more effectively for transfer. McCombs and Marzano also support that attitudes are key to self-regulation models affecting metacognition. Before a student becomes metacognitively aware, he or

she must believe that this is possible and desirable [20].

TOOLS & TECHNOLOGIES

The fundamental issue is how emerging media can provide an effective means of reaching essential educational objectives in the technology-driven, knowledge-based economy of this new century. Since computers and telecommunications increasingly enable students and teachers to have rich interactions with resources outside of classroom walls, the mission of schooling is inevitably changing, too [21]. Institutions must rethink and recast their role as part of community and distributed networks supporting learning and collaborative knowledge development. Few tools and technology that will be needed to be integrated as a part of classrooms of 2020 are:

Information and Communication

Technology: One major impact of ICT will be to move access to learning and knowledge outside of classrooms boundaries. The internet provides ready and often free access to a wealth of books, papers, videos, blogs, scientific research, news and opinion [9]. It also provides access to expertise in the form of networks of people. Schools and universities can no longer claim a monopoly as seats of learning or of knowledge. Such learning and knowledge now resides in distributed networks. Learning can take place in the

home, in work or in the community as easily as within schools. A series of studies and reports have provided rich evidence of the ways young people are using technology and the internet for socializing, communicating and for learning [22].

Integrated network: Integrate technology into every area of the learning community, including curriculum delivery, community collaboration, office support, content creation, and sharing content and assessments. Generate innovative education practices and new models for learning. Microsoft demonstrates the paradigm through their school of future programme implemented in Philadelphia. The objective is to “Create an environment that engages all learning community members and helps to inspire passionate, personal responsibility for learning” [23].

Virtual reality (VR): The term applies to computer-simulated environments that can simulate physical presence in places in the real world, as well as in imaginary worlds.

Virtual reality helps student to learn in better way. Student find learning from the real experience is interesting, primarily because current virtual reality environments primarily provided visual experiences, displayed either on a computer screen or through special stereoscopic displays.

Through better use of Innovation and Challenge VR may provide futuristic solutions the IFC way. Though titled Virtual, these experiences are real in terms of 'learning for fun', i.e. phenomenon in which student engage in a learning experience because they value and enjoy the process of learning itself. The commonalities between learning for fun and other theoretical constructs such as 'experience,' 'flow', 'intrinsic motivation', and 'curiosity' are explored by Fuller [24]. Learning for fun is a unique and distinctive offering of educational leisure experiences.

IFC (innovation, futuristic vision and challenge)

The road map of a students' transformation should spiral through the acronym IFC. "It calls for perfection in innovation, forecasting and challenge. One definitively can forecast the need and meet the challenge of being a

[teacher, like a device, who implies the student should echo what he teaches;] but innovating to meet the outcome through a use of [teacher, who is a] device as a part of clever innovation can never be the right answer." [4]. It is because "people with technology and the right winning trajectory hold the claim to predict success. The enabling is through knowledge based competency" [4] for which the class room of 2020 should be empowered.

Envisioning the Classroom of 2020

A classroom of 2020 will be centred on student where simulator, multimedia, virtual reality are integral part of it. There is mentor or teacher and peer groups present along with students, but their role is expected to be marginalised to that of an initiator or governor. Such a futuristic class room will deploy rich use of technology. The function is likely to be poised logistically, around a model set up as shown in Figure 4.

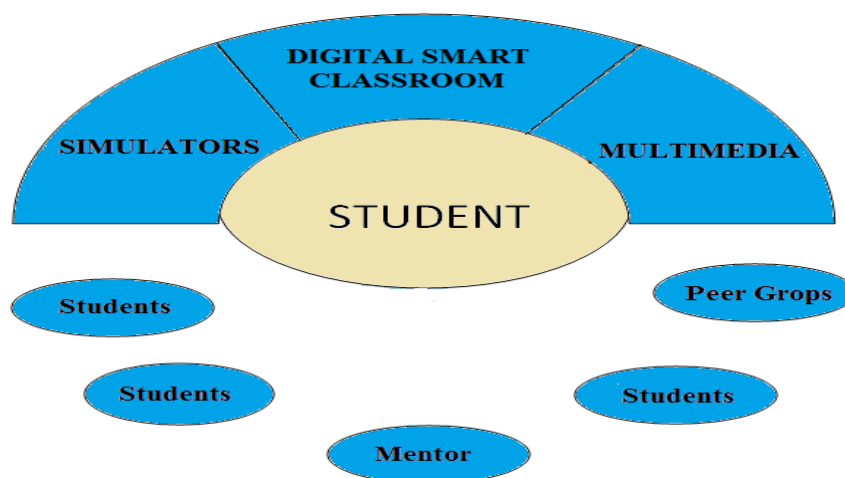


Fig. 4 Basic Model of Classroom Of 2020

The class room shall essentially deploy the developmental energies of the student. The role of the teacher is just to orient the student with right attitude and zest for knowledge. Once the student is oriented/ aligned, the motivated student shall invoke the second level of learning hierarchy up from the Alignment zone as paradigmmed by Thareja's AUM model [25].

This phase of aligned student should invoke all knowledge in the domain of peers to synergise to unprecedented competencies albeit at the level of student's group (call it utilisation phase.) Soon it shall be time to realise the benefits with a class metamorphosis. The AUM model tenders the holistic student development in a holean way [10].

The 2020 class room will thus see holistic alignment with technology both at their best. This shall be the society's demand for a sustainable Quality of life.

Thanks to Current Technological revolution (CTR), the class room envisaged will be capable of reaching places fro learning. Video conferencing support distance learning and teacher is available to its worldwide students. In classroom of 2020, students and teacher will be working as team to innovate and learn in better and efficient way. Innovative learning

will be encouraged and new discoveries and findings can be made. The research work can be carried out in more collaborative and cooperative environment.

Digital Smart Classroom

A unique model for Integration of smart classrooms for teaching or delivering academic lectures with digital technology, capturing and Simulating academe (for accumulated knowledge) promises the student to end results much more effectively then today, where the student is at all pains listening to boring lectures [26].

By use of Multimedia graphics one can enhance teacher's ability to explain concepts [9]. It is designed for easy class room teaching, lecture recording and broadcast locally or lives over the internet without much knowledge or assistance of IT.

Smart classroom is a unique solution for knowledge/information transferring and capturing which provides complete teaching and learning solution. With the Digital Classroom technology you can broadcast your lecture live over the local or web based network. Furthermore the teacher can package and publish it and thereafter deliver it either on the local network or on the web based network [26].



Fig. 5a Digital Smart Classroom.

Digital Smart Classroom also provide the reusability of the content that in turn saves the time and energy of the teacher, giving them an opportunity to come up with new ideas and enlightenment on the topic. The classroom of the future isn't a classroom. Today's students are to be prepared for a digital world where time and place simply don't matter. Not only the classroom lecture but the entire classroom experience can be captured and can be used anywhere and anytime in future providing the re-usability of content. Digital Smart Classroom methodology also compensates for the lack of expert faculty [26].

The modus operandi is sketched at Phillips Exeter Academy who titles it as "Harkness" discussion method.

Learning through Peer Groups

The Harkness Discussion Method (used by many schools, viz. St Peters College, Figure 5 [27]) involves students seated in a circle, motivating and controlling their own discussion. The teacher acts as little as possible. Perhaps the teacher's only function is to observe, although he/she might begin or shift or even direct a discussion. The students get it rolling, direct it, and focus it. They act as

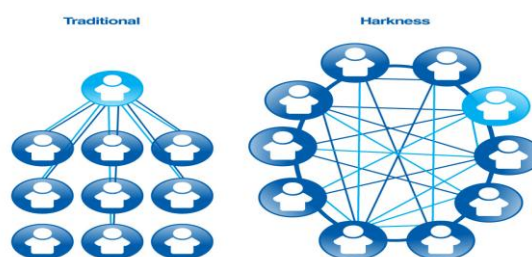
a team, cooperatively, to make it work. They all participate, but not in a competitive way. Rather, they all share in the responsibility and the goals, much as any members share in any team sport. Everyone is expected to contribute by using these skills. Students become "experts" on one part of a group project and teach it to the others in their group.

By Utilizing the Harkness Table Model it is claimed:

- one student will trace the flow of the discussion
- encourages all students to take a role in the discussion and allows students to analyze their part at the conclusion.

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Fig. 5b A Typical Class Layout in The Harkness Discussion Method.

Learning through Constructivism

The importance of encouraging guesswork and **intuitive thinking** in learners is not to be relegated. It also encourages experimentation and the result is constructivist learning. It delves upon a set of assumptions about the nature of human learning, while it supports the right attitude for deploying theories and teaching methods of education constructively.

The theory of constructivism suggests that learners construct knowledge out of their experiences, whether it is to understand a lecture or following the instructions for building a model airplane. Therefore, constructivist theories are becoming influential throughout much of the non-formal learning sector. Wikipedia asserts Constructivism values developmentally appropriate teacher-supported learning that

is initiated and directed by the student [28]. Jean Piaget considered play as an important and necessary part of the student's cognitive development and provided scientific evidence for his views [29]. He suggested that through processes of accommodation and assimilation, individuals construct new knowledge from their experiences [29].

One good example of constructivist learning in a non-formal setting is the Investigate Centre at The Natural History Museum, London. Here visitors are encouraged to explore a collection of real natural history specimens, to practice some scientific skills and make discoveries for themselves. [30]. Operationally individuals'

experiences are aligned with their internal representation of the world. They assimilate the new experience into an already existing framework. After Assimilation, the accommodation characterizes the process of reframing one's mental representation of the external world to fit new experiences. Accommodation can be understood as the mechanism by which failure leads to learning. By accommodating this new experience and reframing our model of the way the world works, we learn from the experience of failure [27].

The Joy of Fulfillments of Competency based Product Realisation

Transformation on Learner's Part

Changes in the education system will directly affect the students. Whether it is achieved by student him/herself deploying constructivist learning or through spiritual realisation – the holy way (as paradigmmed in Holean education, [10]), the purpose is the same. The students of the future will be completely different from present age student. S/he shall be more versatile and innovative with use of tools and resources.

Student of future have to deal with new technologies by becoming an integrated part of them. Intentions of the students will cause the technology to change and vice versa. In fact, what a student considers near or far transfer can depend on his or her individual perceptions or expectations of what is similar

or novel. In terms of the transfer of specific skills, Salomon and Perkins suggest that it may be easier to transfer physical skills from one context to another, while transferring generalized concepts may be more difficult. A student better aligned in first phase of AUM model shall be better facilitated. Transferring learning from one context to another, problem-based learning and inquiry learning can encourage transfer in Utilisation phase. The goal of transfer and its theoretical framework underlies these techniques. The goal of a university education, however, is to promote students' knowledge to transfer beyond the college experience [31]. This competency is the agenda of realisation when the student has begun Transforming (in third phase of AUM model [25]).

Perkins asserts one basic assumption of the educational process is that students may not always perceive all the options for using what they have learned in different, novel situations. Within the framework of transfer of learning, he outlined an attitudinal survey concerning faculty and student attitudes about transfer of learning. Faculty and students completed a measure of expectations for transfer and potential barriers to transfer (i.e. the ability to apply knowledge or procedures learned in one context to new contexts). The transfer of learning is defined as “prior knowledge affecting new learning or performance [32].

It is argued that the responsibility of learning should reside increasingly with the learner [31]. Social constructivism thus emphasizes the importance of the learner being actively involved in the learning process, unlike previous educational viewpoints where the responsibility rested with the instructor to teach and where the learner played a passive, receptive role [31].

Learning is enhanced if students can manage it themselves [18]. The method of learning itself comes handy, and must be practiced [10]. Active learning techniques affect the engagement and general understanding of the immediate subject matter, which encourages transfer. Active learning strategies encourage creative application of knowledge by changing attitudes about the variety of opportunities to use the material from class. The assumption of transfer underlies the entire educational system—universities are predicated on the belief that students will be able to apply in their careers what they learned in the classroom [18].

Transformation on Teacher's Part

Though teacher will not be the media of instruction and sole source of information but still s/he would perform a vital role in future learning process. Teachers need to upgrade their skill, very actively to support the system of future classrooms. They would record their lectures and share it with their students and

also worldwide. To achieve all these and build a more efficient and effective future classrooms, teacher required to plan and implement their plans with the help of technologies and feedback from their students.

The authors deeply realise that a teacher will remain a pole star of righteousness, values and so on, for the student duly assigned this responsibility by the stakeholders of education. In many cases this is leading to the alignment of vision, goals and policies across governing education bodies, schools and Teacher Education Institutions. This will be realised by judicious design and development of student samples, evaluation tools, resources to support the unit and an implementation plan.

At the same time it is acknowledged that to adequately prepare future teachers; teacher educators need professional development, not only in technology skills and applications, but also in new pedagogical methods of incorporating technology into the classroom [33]. It calls for a context in which the teachers can further develop their technology skills and their understanding of the impact and implications of using technology to enhance 21st century learning. [33]

To support innovation, value, and knowledge competency the teacher can play role of instructor and facilitators [34]. Whereas a teacher gives a didactic lecture that covers the

subject matter, a facilitator helps the learner to get to his or her own understanding of the content. In the former scenario the learner plays a passive role and in the latter scenario the learner plays an active role in the learning process. The emphasis thus turns away from the instructor and the content, and towards the learner [35].

This dramatic change of role implies that a facilitator needs to display a totally different set of skills than a teacher [36] as under:

A teacher tells, a facilitator asks;
a teacher lectures from the front, a facilitator supports from the back;
a teacher gives answers according to a set curriculum; a facilitator provides guidelines and creates the environment for the learner to arrive at his or her own conclusions;
a teacher mostly gives a monologue; a facilitator is in continuous dialogue with the learners. [36]

A facilitator should also be able to adapt the learning experience ‘in mid-air’ by taking the initiative to steer the learning experience to where the learners want to create value.

A characteristic of the role of the facilitator in the social constructivist viewpoint is that the instructor and the learners are equally involved in learning from each other as well [37]. This means that the learning experience is both subjective and objective and requires that the

instructor's culture, values and background become an essential part of the interplay between learners and tasks in the shaping of meaning. This is corroborated from the alignment phase in AUM model [25].

Preparing for the Change

The authors envisage following Changes with time:

Increase learner independence

In future student have choice of study time. They may not have time bound schooling system, so school dropouts like Henry Ford, Winston Churchill, Bill Gates and Albert Einstein will be rare [10].

Collaborative and Cooperative learning

This is strongest advantage of future classrooms. Web pages live chat rooms and blogs give space to student and teacher to share information worldwide [6].

Global Awareness among the students

Information can be exchanged easily between people in different in the world, connecting students around the globe. This enhances their chances of gaining knowledge and increases global understanding.

Environmental Friendliness of teaching process

Use of the Internet can decrease the amount of paper used in the classroom. Much of the

writing can be done on the computer. Web sites can replace some printed materials thereby conserving natural resources.

All Students will be benefitted

Future classrooms offers numerous advantages and provides opportunities for facilitating learning for children who have different learning styles and abilities, including slow learners, the socially disadvantaged, the mentally and physically handicapped, the talented, and those living in remote rural areas; making learning more effective, involving more senses in a multimedia context [38].

Space for Personalized Learning

Personalized learning means designing a blend of courses, internships and experiences that responds to the needs and interests of every student. This means helping students understand their own learning styles and developing teaching and learning strategies that fit individual abilities. The school maintains learning profiles that provide detailed information about each student's strengths and weaknesses, which teachers use to personalize learning [38].

Less social interaction

In the coming time, Class rooms change into a box, and the blackboard a hi-definition screen 3-D but virtual. The learning process will be web based. Students required sitting in front of computer to access all the resources. Lack of

the classrooms will promote a peer as a loner child of a nuclear family. This change will cause less face to face social interaction.

Increase in spoon feeding

Many resources are available to student. This will increase spoon feeding to student and their imagination power will decrease.

Learning will be chair locked

To learn things students can access the worldwide resource though internet. All the learning will be technology based and student required to sit on the chair for long time. This will reduce their outdoor play time, a large head resting on a thin frame

Costly implementations

Moreover, all the learning will be computer and technology based and because of its cost it may not reach to the all section of society.

CONCLUDING REMARKS

In the past and certainly in the present education system is classroom centred. Teacher is centre of instruction and sole source of information in the class. In the future, that is in the classrooms of 2020 the education will be student centred. The learning process is completely changed and information and communication technology will play an important role. New advancement will nourish the transformation of education system. The

classroom 2020 will be interactive, authentic, collaborative, media rich and student cantered.

The Future will spell plethora of innovation and its impacts clearly visible in 3-D and virtual reality as if they were real. The challenge will drive the children crazy with all sorts of peer around. The role of teacher as a counsellor will prevail, less frequent but more intensified, as she/ he will have to make a strong foundation to protect the taught from drifting away.

The onus on academe is to prepare well, for equipping with the challenge of learning technology and also for avoiding the fear, lest the student escape the ethical part!

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