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SUFFERING SOCIETY NEEDS FLEXIBLE TEACHING-BLENDED LEARNING

Education

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ABSTRACT

This article tries to introduce the learners,teachers and audience to the new technologies and its use in instructional settings.There is an effort made to personalize the learning, individualize instruction, increase visualization, create opportunity to flexible presentations, learn to compare and contrast, design and develop, evaluate and improve for more successful two way communication in classrooms and outside the classrooms to feel more humane and understanding context to the whole.There is more scope for discussion, sharing, reflecting and presenting , evaluating for further improvement.

KEYWORDS

The onset of covid-19 in the beginning months of 2019 has disturbed the classroom and society drastically resulting in newer ways of thinking concerning teaching –learning and evaluation. At the same time, there is a great need felt for remedial teaching, analysis of needs for counseling and resilience. The problem remains big and strong to hold on for few more months or year. The combat with the disease through quarantine, chemotherapy, administering vaccine is implemented systematically in a phased manner with mixed results of hope and failure. The question arises as to how to coup with the new situation in terms of problem assessment, planning, organization, newer,flexible scheduling, mixing traditional methods with modern approaches, flexible scheduling to suit the needs of students, continuous and comprehensive evaluation. More opportunities are provided to the students'participation, initiation, peer learning and small group participation in larger time schedules with purposive approaches of effective delivery and efficacious methods of satisfaction of needs. The multi tasking on the part of the teacher, involvement of students in teaching, monitoring, guiding group discussion will facilitate better interaction and increase the health of students for more participation.

The focus of attention is gradually shifting to individualized learning along with small group learning promoting creation, sharing, co-operating, diagnosing, counseling, evaluating and trying to analyze and synthesize for some nascent theories to emerge. It involves guided, graded tasks of differential difficulty level with increasing quality, capacities and confidence to grow and develop as young academicians, laboratory researchers, and social engineers to guide solving problems and prevent the spread of the disease/sate positive approaches of emotional therapy, positive feedback for achievement, guided feedback for continuous progress needs to be planned and promoted.

In the state of Karnataka, Flexi schools were started. It involved flexible scheduling of the regular courses according to the needs of the students. This flexible scheduling involved multi tasking, multi level organization to cater to the needs. However, it is found that the flexi schools have achieved better and organized their concepts systematically to show sustained progress. The problem is that the environment was not supporting change; the traditional approaches were stronger in terms of conceptualization and implementation. The conditions of impoverished, resource fewer situations have created thinking minds without support to progress. The scaffolding in terms of time, the technology and effective guidance from teachers and peers are necessary for the growth.

The Rishi Valley school, Meerambika, New Delhi and other public schools have tried to incorporate the flexi scheduling, and making content more relevant for pupils , to increase pupils participation and successive achievements.Chaudhuri( ) in a doctoral study tried to find the effectiveness of the blended learning on achievement of pupils at the primary levels in Chandigarh. The investigator prepared lesson plans with flexible approaches of teaching including more of pupil participation. It was implemented systematically by the investigator to study the effectiveness. It was observed that the pupils were enthusiastic and receptive for the new technology. It was also found that the blended learning was useful for teaching children of younger age group.

Change occurs as folds of experience that develops with increasing consciousness and training for the concern of quality and environment. Educational sustainability increases the preparedness of the individual for change towards whole. This requires that the person becomes more aware of the goals to be achieved, the skills, and process of change, the training (for example, for the new technology and environment). The rising of consciousness brings in the gender awareness, goal discrepancy, the competencies needed for change process. Zeretsky (2005) has found that 'all students need immersion in creative and innovative instruction and inclusive assessment practices. (www.disabilitiesun.com).

Tasks:

Teaching the appropriate use of equipment, measuring instruments for data collection, analysis for graphing and data analysis for interpretation of results.

Reading tables, limits, co-ordinates, positioning (plotting), measure areas, relations for correlation, consistency and direction of change.

Using multiple modes,multi sensory devices and multimedia flexibly to give a synchronization of feel and thought of humane understanding and life of higher values.

Blended learning is a new concept coined by Meyers in the year 2000 in a talk over British Broadcasting Corporation. It is a user friendly mix of technology, needs and aspirations to meet the goals in reachable terms of development. It is also called hybrid learning as a combination of offline and online learning as complementary to each other with the required pace and space for reflection, discussion and sharing. It gives individuals more freedom to interact with more purpose, motivation and success in learning to develop capacities with practice. In this effort, blended learning takes different forms, modes in different micro educational environments.

Definitions:

Thorn (2003) describes blended learning as a way of meeting challenges of modifying learning and developing needs to meet one's capacities to integrate, innovate and use technology flexibly with the best of traditional learning.

Garrison and Vaughan (2008) defined blended learning as the organic integration of thoughtfully selected and optimally utilized to complement face to face and online approaches and technologies.

Carter (2009) defines blended learning as a strategic and considered approach to teaching and learning that effectively integrates different models of teaching and styles of learning whereby both face to face and online learning are each made better by the presence of the other.

North American Council for online learning, an international association for K-12 online learning, defines blended learning as combining online delivery of educational content with the best

features of classroom interaction and live instruction to personalize learning, allow thoughtful reflection, and differentiated instruction from student-to-student across a diverse group of learners. Meriden's Moore said that 'many people equate blended learning with online learning including and all digital media, all the time. Blended learning is a balance between digital and classroom learning. The balancing point may vary from student to student. Blended learning allows for variation supported by digital tools.

The knowledge intersection with pedagogy with respect to concepts and individualization proceeds from engaging and motivating, interactive, contextual, reducing cognitive load, scaffolding and finally, collaborative. Lee S.Shulman tried to visualize its application in medicine, science and mathematics. The ICT can bring abstract concept to life by bringing into the teaching and learning the real world experiences through simulation, modeling, capturing and analyzing real event. Blended learning envisages effective pedagogy with increased convenience and access and increased cost effectiveness in terms of time and space. Blended tools are common in representing and solving problems in various components of pre college curriculum (Ramis, S.P.2015).

Blended learning and artificial reality (AR): Chinese and people of Hongkong have used blended learning and artificial intelligence to teach science. The artificial reality is represented as Google Glass, gaming and awesome apps for astronomy. Jayswal, A ( ) developed a C.D on concept of Universe. It created artificially the universe in classroom. Apps like sky map lets you surf the sky for constellations and the seamless experience shows movement of the celestial bodies. Similar features you may find in the planetarium, Sayaji Baug, Vadodara. The AR (artificial reality) experience must be immersive to blend the information readily with the reality. With Google Glass and the other AR- enabled wearable devices that will soon follow, students explore the world.Science city, Ahmadabad has such facility to take the students to artificial reality and make an attempt to blend it with the astronomy (Astrophysics).

The New Physics teaching: Andrew Vanden Heuvel (Physics teacher) taught from inside the Large Hadron Collider in Switzerland, streaming what he sees through a beta Google Glass to his students thousands of miles away. They are able to see each other and it helps in assignments and collaborations, projects and discussions. (Venkateshwarulu,K and Rao,D.B 2015).The information obtained from Space Vehicle Rover, the collection of soil and rock from Mars and viewing it and developing models of the Martian) environment. Powell, an AR developer for Oxford, has developed a simpler version of the Google Glass. The video makes you enter a world with seamlessly integrated augmented reality.

In a 2012 report titled 'Engage to Excel, the United States President's Council of advisors on Science and Technology (PCAST) described how improved teaching methods, including engaging students in active learning, will increase student retention and improve performance in STEM courses. In one of the study cited, students in a Physics class that used active learning methods learned twice as much as those taught in a traditional class, as measured by test results. In "Does active learning work? A review of the research" Prince(2004) found that "there is broad but uneven support for the core elements of active,collaborative,co-operative and problem based learning" in engineering education.

Blended learning and Flipped Classroom: Flipped classrooms have become famous in Physics and Chemistry. In the flipped classroom, the home work and the students study is discussed. A video is shown for asking questions and rising discussion. Students carry many references, videos, database, papers, and reviews to read, refer, connect and contemplate to form concepts. Apply principles in classroom and outside the classroom for study and fun. A successful example of a blended and flipped class in accounting at Penn State accommodates 1,300 students. In-class time is used for open discussion, a featured guest speaker, or hands-on problems solving with instructor support as supplemented by student assistants.

A physics professor at Harvard University employed flipped model and also developed a correlative site, learning analytics that provides instructors with free interactive software enabling students to discuss, apply and get feedback from what they hear in lecture. A flipped classroom develops students' capacities, skills and caters to differential needs and aptitudes. A flexible web-based platform was used to accommodate the range of content being offered. Along with text and visual diagrams, Videos were identified and presented to address the alternative styles of the participants as well as improve understanding by providing a new perspective on the material. Flipped classroom gives more opportunity for students to discuss during classroom hours and see a video that is relevant for the theme. The homework is also carried out in the classroom. Students learn from visualization from video presented at home for study. They interact closely and come out with questions that may need some discussion. There are attempts made to blend the flipped classroom with blended learning. The software is available for Chemistry, Physics, and Astronomy. https://www.webquestchemistry.com.Blended learning as flipped classroom through the use of Learning Management sites (LMS) such as Course networking, Démodé, use of Powtoons and movie makers

- Blended learning in the use of Moodle
- Blended learning in the use of Edmodo
- Blended learning–Team (teaching,explicitinstructions,strategies and tactics, participatory research.
- Blended learning: Gamification

Blended learning using the methodology learn and play(Kalitu Naliyona programme) is used as a broadcast mode in Kannada in Karnataka to teach standards one to four.Classes are held Monday to Friday daily from 10 am to 10.45 am.The broadcast is carried out by Akashvani.

Blended learning using cellular phone based mobile learning
Blended learning as flipped classroom through the use of Learning Management sites (LMS) such as Course networking, Edmodo, use of Powtoons and movie makers.

i LEARN Learning styles of students for example, VARK learning style check list.

Blended learning as Concept mapping
Blended teaching with traditional structures of teaching in real setting is considered for studying concept mapping by student teachers in developing meta cognitive structures and achieving better.The concept mapping and developing Meta cognitive structures have emerged slowly to relate, focus and develop concepts in sequence for the realization of the experiences. In a project on concept mapping student teachers developed models, pictures/photographs. A chemical album was presented to them which contained a group of photographs of chemicals for its structural study and comparison. The chemical album was developed by the author. Further, the author in the project facilitated student teachers to develop chemical album. The students discussed models in small groups on structure and its properties of the chemicals. Students developed ball and stick models with the atomic set provided to them by the author. This helped them to chart the structure in drawing and compare it for its consonance of properties. Students discussed among themselves in small groups. This generated concept maps in their minds. (Mani, R.S.2019).

The author developed following concept maps for the study:

1. Concept map of hydrocarbons
2. Concept map of functional groups
3. Concept map of alkanet
4. Concept map of alkenes
5. Concept map of alkynes
6. Concept map of Arena

These concept maps could be compared with each other. The differences in structure and properties could be identified. Each of the concept maps showed the important chemical reactions, its characteristics, and changes as chemical transformation. This facilitates more of visualization and it also helps in learning chemistry better.

Concept charts were prepared by student teachers on Hydrogen per oxide, water and it was presented to students in the classroom for discussion in small groups. Students responded successfully.It gave them direction, linkage and the functional properties of chemicals presented. This was in two dimensional chart forms.The same material could be presented in three dimensions as web quest in interactive form. Students could identify the models and relate their properties with hydrocarbons. Students could classify the molecules into select groups. Samples, examples, and specimen were shown for each

category for example, paraffin wax, PET bottles, Low Density Polymer (LDPE).

Intellectual Capacity Building Networking (ICBN) using Blended approaches

Blended learning and computer based collaborative learning. Some institutions have started this course in the year 2014.Care and share computer programme-It essentially involves developing programmes in WORD and POWER POINT and sharing with care.TamilNadu Open University has the facility of developing, collecting the software and organizing it and facilitating teachers to teach in Tamilnadu.

Modern methods of activity learning and teaching:

1. A think –pair-share activity is when learners' take a minute to ponder the previous lesson, review and discuss later with peers and finally share it with the class as a part of a formal discussion. In this discussion, instructor would clarify the misconceptions. He/she would supply some basic background information, review, studies or data or table to students to converse in a meaningful way. A think-pair-share exercise is useful in situations in which learners can identify and relate what they already know to others. The preparation of teacher and students help in thinking, organizing and conducting discussion. The think-pair-share activity helps the students to relate, review and organize ideas to develop concepts. This facilitates more of student interaction and enables active thinking in students (Radhakrishna, Ewing, and Chikthimmah,2012). Ashok,S.N.(2020) incorporated Think-pair-share as an activity to enable students to become constructivist and build concepts and understand through discussion.Students have shown significant achievement in chemistry at higher secondary level.

2. A Learning Cell: It is an effective way of pairing students (one to one) and allow them to learn together. The chemistry, physics or biology laboratory work has been effectively organized as learning cell-teaching-learning in pair in equal or unequal sharing, complementarily and consideration for consensus. The learning cell was developed by Marcel Goldschmidt of the Swiss Federal Institute of Technology in Lausanne (Goldschmid, 1971). A learning cell is one where two students alternate in asking question and answer. The question is on commonly read materials. This is used in the regular classroom in organizing quiz for students. In the learning cell the students are asked to write assignment and present it in group. In the next meeting, students are organized as pairs in which the assignment questions are asked by one / a small group and answered by the other/other small group. Alternately, the other group asks a question on assignment and the first group tries to answer the same. In this activity, teacher would be moving in the classroom, giving feedback and answering questions, confirming correctness of answers. This system is also called as a student dyad.

3. A short written exercise: It is often referred to as one minute paper. It is the reflection of the person written in short form in around ten minutes time. It provides the focus for the thinking and reflection.

4. A student debate: Students are classified as two groups based on a question or theme to debate. They are given adequate resources, time and guidance to prepare for the debate. On the day and time scheduled, students debate on the topic/theme in front of the jury and other students. Then, the other group is given an opportunity to present argument. The teacher and jury alternatively review the situation, add comments, and give suggestive ideas to conclude.

5. A collaborative learning group: A comparable group of similar age, experience, and standard could be small groups of 3 to 6 to work on an assignment or task together, do an experiment for example to prepare a chart of carbon cycle, water cycle and Nitrogen cycle. Student takes each activity to their interest and competence for example, drawing, scaling. The other students in the group give links and do the required coloring. A group leader is chosen to present the theme for example carbon cycle. This is a good exercise and activity tried in Baroda High School, Alkapuri, and Vadodara. Students were participative and showed increased learning. It gives an opportunity for each group to review, revise, practice, change and modifies to conceptualize better. It was originally practiced and reported by Mc Kinney, Kathleen (2010) Active learning Normal, I, Center for Teaching, Learning and Technology. There is a need for flexible grouping, seating arrangements and movement for the activity, collaboration and thinking (Bens, 2005).According to Panitz(2011) Collaboration is a philosophy of interaction and personal lifestyle where individuals are responsible for their actions, including learning and respect the abilities and contributions of their peers; Co-operation is a structure of interaction designed to facilitate the accomplishment of a specific end product or goal through people working together in groups. Gerlach(1994) defines collaborative learning as the idea that learning is a naturall social act in which the participants talk among themselves. It is through the talk that learning occurs.Many a time teacher will not be able to hypothesize the students' research or thinking. In collaboration students team together to through people to work together in groups.A group of students discussing a lecture or students from different schools working together over the internet on a shared assignment are both examples of collaborative learning.

6. A class game: There are several games that form concepts for example, puzzles, exercises, matching activity etc. available in mobile as well as in programme form for classroom. Children have loved playing games and learnt many principles. Perhaps, that is the reason for naming one the broadcast programme as Learn and Play (Kalitu Naliyona in Kannada). It is for the children studying in standard one to four in Kannada telecast from Monday to Friday from 10 am to 10.45 am by Akash Vani.Teachers are facilitative , friendly, and fun loving engage in peer learning and co-operative learning .Some of the concepts are taught through co-operative learning using Jig Saw Puzzle, Video, games. Find the odd thing out etc,. They are found in different compositions, forms, and formats, for different age groups to try, play, learn, revise, review and reconnect the ideas and concepts together as a string. The reaction to video, could be recorded, replayed, and studied for its effectiveness.

7. Learning by Teaching: Students are given opportunity to choose their concept, prepare, consult and plan to teach to their peers. The feedback is also as important as teaching.

8. Touch Boards: Touch boards are used by students to see the inventoried information, time table, schedules, concept maps, family trees of main concept, games , use of applications such as forms, formats, usable symbols, codes and language. It is possible to do 3D printing with proper connection to device. It allows scanning, printing, saving, reviewing, revising, and running in sequence. One of the technology institute, developed a software for the touch board for the international year of chemistry 2011 in which the periodic table would come up as soon as the programme starts.Once a student touches the element,the characteristics of the element and its relations are presented in text form. The IUPAC 2018 Periodic table was a revised version updated for the new discoveries and innovations.

Qualitative Methods:

9. Case study approach: This approach is used for a single subject or a small group.In this, the study of case history of the person becomes important with the objective of improvement.The various dimensions of quality such as capacities of the individual, interest and conditions of work could be flexibly organized for suitable results for example, a person instead of working continuously for six hours could change to two hours with a break of few minutes or half an hour. This enables the person to be more productive. Japanese have tried this way of organization in industry with more productivity to achieve.

Case study involves:

- Writing of objectives
- Rapport building
- Catharsis
- Identify the important strength
- Counsel the person on strength
- The boosting of motivation brings more results.
- Raising self awareness

10. Dramatizing: The situation is studied carefully to categorize the characters based on the script and build relations through structured interaction of purpose, emotions and values.The dramatizing becomes helpful in the real setting for students to participate, take roles and play the role to identify with the characters. Drama helps in comparison, contrast, theme building, story, song, dance and change. It could be nicely organized to catch the values and develop appreciation. In one of the school, Sardar Vinay Mandir, secondary school students during internship of 2017-18 participated in a drama of one of the lesson in Gujarati. The lesson was interesting, dramatic to show how the

leadership is important for the political organization of the society. The student teacher planned organized and trained students to present their role in Gujarati. It was carried out very well. Students were highly satisfied. Student teacher was also enthusiastic about the whole programme of change and development. It is also possible to present it in video forms; it may be presented online on demand and support of the people for understanding. India has a rich heritage of stories, dramas, with lyrics and language, themes and purposes to play and learn. It is a live play or character/s across the ages in varied situations and cultures for example, Ramayana (producer being Sri Raman and Sager or Mahabharata is a difficult task which experienced visualized with zest and value for life.

11. Brain Storming: This method is used in business, science, technology and social sciences to reflect on the social issues and problems with purpose and collection of more information to see more relations and perspective to find newer ways of understanding problem solving and reflection.

12. Co-operative Learning: Cooperation is working together to accomplish shared goals within cooperative situation, individuals seek outcomes that are beneficial to themselves and to other members of the group. It promotes socialization, peer learning, and sharing of experiences across age groups and disciplines, and interests. It is used as a instructional technique that requires students to work together in small, fixed groups on a structured learning task (Slavin 1987).It helps in maximizing the ones learning (Johnson andJohnsonand Halubec (1998).Woolfolk (2001) visualizes the working together of the mixed ability groups for holistic learning and are rewarded on the basis of the success of the group as a whole. Felder and Brent(2007) have tried it on assignment or project under conditions in which certain criteria are satisfied, including that the team members be held individually accountable for the complete content of the assignment or project.

Co-operative learning has 6 essential elements. They are:

1. Positive interdependence,
2. Equal participation,
3. Individual accountability,
4. Simultaneous interaction,
5. Interpersonal and small group skills,
6. Structuring group processing.

Co Operative learning could take place in formal setting or informal setting. There are several co-operative learning techniques applied in the classroom for joyful learning.

Some of the common learning techniques are presented as under:

1. Student Teams-Acheivement Divisions(STAD)
2. Co-Operative Integrated Reading and Composition(CIRC)
3. Jigsaw
4. Learning Together
5. Group Investigation
6. Co-operative scripting

Co-Operative learning is team learning with more cohesive thinking and appropriate positive feelings of sharing and reflecting for improving the structuring of the situation and problem solving. It involves learning together and working together for team development. Tuchman (1965) states fives stages of team development that is forming, storming, forming, performing and adjourning.

The forming stage involves experiencing some uncertainty as they begin to work out what they need to do to accomplish the common task. However, one develops motivation to start the work together.Norming stage follows the forming stage to work together to take away some stress and tension as they work together with different ideas and forget the differences of background and abilities to accomplish the common task.Norming stage also involves the selection of the team leader and co-coordinator and the checker and so on. These allotment of responsibilities takes place with consensus of all.

Performing acts as the next stage in which the actual set of required actions takes place in co-ordination,tasks are accomplished with principles to solve problems and achieve common goals. The last stage as adjourning involves the closure. The team resolves to adjourn on achieving the goals and objectives.

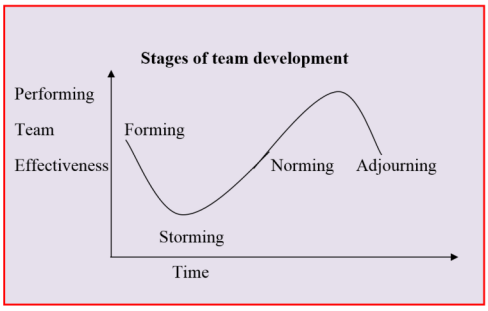

Figure No. 1 Showing Stages of team development

13.Integrating Skype into Education and Psychology: Skype is a software programme using voice over IP, or VoIP, Technology, IP stands for 'Internet Protocol". It is multilingual, it free for download and use. Skype software allows high quality audio and video'Phone calls' over the Internet, send instant messages, and do video conferencing online. This is possible in shorter distances for field studies, for example, Department of Psychology, Faculty of Education and Psychology, The Maharaja Sayajirao University of Baroda, Vadodara used Skype for the Internship and its supervision. It has resulted in some discussion that is useful for improvement. The master trainer programme type of intervention through online programme such as Skype is a unique application in psychology. Skype has over 663 million registered users as of September 2011, putting it at the top ranks along with Face book and Twitter. Teachers may download and use skype at school. The slogan of skype is "the whole world can talk for free". Internet connectivity in educational settings helps exchange of information inside the city, outside and other side of the planet. These synchronous , real time discussions using free software like Skype can expand the walls of the classroom and engage students to write, share, and communicate with the authentic audience, peers , teachers and experts. Skype allows for the computer to many computer sharing and limited broadcasting. This facilitates the confidentiality of the presentation, spread of message and content with accuracy and secure relationship with continued transaction and interaction.

It could be used to invite guest speakers to contribute who are at a distance and find it difficult to come to the institution. Guest speakers find it easier to load, spread, and speak at a coherent mode to engage in a fruitful discussion and satisfaction. It facilitates the peer relationship, discussion, sharing documents, events and visuals using tablets, computers, mobiles and database or portal links.

It could be used for parental conferences and tutoring: The parental support for education, teaching and learning has improved the quality of teaching and learning. The Skype provides the opportunity for any time transfer of information with questions to ponder. The personal engagement as a tutor or tutee will result in more productive quality time for learning and teaching. It is also possible to use it for after school help and to cater to the special needs of the students. Skype provides a multitasking teacher a hope for professional development at ease. It is possible to conduct debates and focused discussions on topics of interest, importance and relevance. It is used for learning of languages including foreign languages such as French, German, Chinese etc,. The francophone celebrates the use of French in different countries to relish, integrate and improve the quality of interaction, synchronization and development in various aspects such as science, technology, language, culture, music, dance and art and museum in its varied features. This year francophony was celebrated on March 19, 2021 by Amity University, Luck now, and India with fervor and global concerns.

Skype facilitates collaboration with prominent educational organizations to further empower teachers with educational resources through technology by offering skype in the classroom. Skype's latest initiative to reach its goal of connecting one million classrooms globally through Skype in the classroom , a free online community that helps teachers use Skype to enrich experiences of students.

Load the software Skype, prepare the hardware for the use. Connect the group. For this add the contact details of the people you wish to contact on your account and save them. Double click on the saved names and you are now connected. Skype allows you to call other computers as well as phones at a lower price than standard phone calls.

Display the video using a laptop or desktop wired to an overhead projector in front of the class and it allows students to ask questions to the presenter directly as well as in remote locations. Students could interact with the guest lecturer directly and discuss the problems and issues.

The Skype Educational Channel helps in scheduling, fixing time, slot and topic for the discussion. The time zone differences need to be accommodated. The students learning strategies will be varied and interesting to get challenged by the questions and experiences that foretell future. It is possible to connect through landline telephones, RTX dual phone handset, and 3G internet phone. It is facilitating to use Wi-Fi technology using the Net Gear as options. The advance in technology to 4G and entering into the 5G in the smart phones, i-phones provides easy access to the skype as an app for communication, video transfer, data transfer and audio recording. Integrating Skype into education is a important task that facilitates teachers, students and administrators for the ease of use and communication of decisions of importance(Sivakumar,R.2015).

Some efforts are made to do research in the use of Fifth generation communication technology to improve teaching.The major components of such programme are: Visualization, Flexible Color, design, gaming, use of apps, giving more freedom for the learner to interact with the material and personalize the learning. Such research work was presented in the international conference in Hong Kong.

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