NOTES AND COMMENTS

VIRTUAL TEACHING IS NOT AN ALTERNATE TO THE REAL CLASSROOM TEACHING

Jagdish Singh*
Pitam Singh**

ABSTRACT

"Education is a process of living through a continuous reconstruction of experiences" (Dewey, 1916). The educational experiences have changed throughout the progress of human civilization and so has the means of teaching-learning. In a conventional classroom condition a teacher has to take care of every aspect of teaching-learning in a controlled atmosphere and it is the teacher-centric approach. In the modern approach, students get some space and the process becomes student-centric to some extent whereas the teacher loses partial control over class.

With the advent of virtual mode of teaching-learning there is a complete loss of teacher's command. In the present pandemic situation, the virtual mode has become the only option for engaging students and teachers. However, this mode cannot be an alternate to the real classroom teaching-learning. It has to be used in a blended mode and partial control of teacher over students is also required. Post-pandemic conditions need to be chalked out carefully with the use of all platforms without losing pedagogic values.

Key words: *Education, virtual teaching, conventional classroom learning*

*   Deputy Secretary, NCMEI, Department of Higher Education, MHRD, corresponding author E-mail:jagdish.singh72@gov.in

**   Former Joint Adviser, NITI Aayog, E-mail: pitam@gov.in

1.   Introduction

The aim of education is not merely the acquisition of information or technical skills, but the development of a bent of *mind* and an attitude of *reasoning* that would make students of today the responsible citizens of tomorrow. Further, the aims of education are expected to reflect, besides its lasting values, the current needs and aspirations of a society, facilitate socio-economic progress, provide opportunities for groups as well as individuals to achieve greater access to their entitlements and better livelihoods and enhance work efficiency. Education augments democratic participation of the citizens, ensuring overall quality improvement of the individuals in their social life. Above all, education fosters international cooperation and has led the society towards globalization. The great values and democratic goals of education cannot be achieved until and unless there is a real classroom teaching-learning process as observed in every educational institution, more particularly at school level, since the children in schools are of tender age and they need constant mentorship.

The development of any nation state depends upon the quality of its citizens; the quality of citizens depends upon the quality of education being provided in that State; the quality of education to a larger extent depends upon its teachers; and the quality of its teachers depends upon the quality of teacher education being provided besides many other factors. Quality teacher education can be given only in real classroom teaching-learning conditions, which ensure better quality of the entire education system.

In real classroom teaching and learning, the role and responsibilities of teachers is pivotal. He is the master of student's destinies. Role of teacher in a society is like the backbone in the body. A teacher is designed with the responsibility to prepare the child for future. There is a great role of teacher (Khan, 2011). The sound methodology used by the teacher in classroom conditions is crucial for quality of education which in turn ensures progress of any nation State. The roles and responsibilities of teachers have evolved throughout the history of any country. In India too, such roles and responsibilities have changed through different ages. Teachers were considered as Gurus in ancient India. The Guru was supposed to be well-versed in temporal knowledge and deeply steeped in spiritual knowledge and s/he commanded great respect for his/her high personal qualities of hand, head and heart. In the medieval times the expectations of society changed the role of a teacher, making him/her a master of his/her subject area. Further, in the modern times the teacher is expected to perform different roles to meet the challenges of the present-day socio-economic and political demands of the world. It is interesting to note that s/he has been prepared for the different roles at different times and has adopted methods and strategies of rapidly evolving world. By doing so at all the time s/he has come up to the expectations of the society in the real classroom teaching-learning. The role of a teacher yet once again changed in the time of virtual teaching-learning era.

A virtual classroom is an online learning environment that allows little or negligible space for live interaction between the tutor and the learners as they are indirectly participating in teaching-learning activities. In other words, virtual classroom is a shared online space where the teacher and learners work together almost simultaneously, however, they are geographically distant from each other. The learners may interact with the teacher and also with each other with restrictions. They all cannot interact with full ease as in the conventional form of real classrooms. Further, there is no socialization and close interaction found among the students. There are spatial and physical distances which may range from few meters to up to several hundred or even thousands of kilometers between the teacher and the learners and also amongst learners. Virtual classroom is a supplementary form of education and proved to be crucial during emergencies including present days' lockdown situations due to Covid-19. However, it is not a good strategy for all times and cannot be universalized. It is not an alternate to the conventional classroom system of teaching-learning where there is a true socialization and interaction constantly taking place amongst teachers and learners, and also among the learners. Further, many of co-curricular activities are excluded in virtual classroom methods. Let's now discuss in detail the advantages and disadvantages of both the systems and also compare these systems to establish the fact that 'Virtual Classroom is not an Alternate to the Real Classroom Teaching'.

2. Real Classroom Teaching-Learning

The real classroom teaching-learning process involves a formal set-up, i.e., an institution, classrooms, teachers, students and other such facilities that are required for transaction of knowledge and relevant skills to the students. This set-up is found in conventional system of education where a teacher-centric approach is operational. Further, this is found in modern approach also where interactive teaching is predominant in a student-centric approach. In both the approaches the teacher plays a crucial role and direct interaction between students and teachers and also among students is observed.

2.1 The Conventional Classroom Teaching-Learning

The conventional teaching-learning is a teacher-centric approach in which lecture is the most common method of delivery in a classroom. This is very effective in sharing information that is not found elsewhere other than from the teacher. The teacher is the sole knowledge authority in such a system. This is a method in which the information is presented in a quicker manner. This is considered to be one of the best methods of teaching-learning for those who are good listeners.

However, this method has many challenges like, all the learners are not good listeners and eliciting constant interest from the students in the subject

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matter is also quite difficult. Further, the approach is without much scope of critical thinking. There is also a wrong assumption that all the learners learn in the same impersonal way. More challenges in this method of teaching include: learners feel bored, there is little space for activities, knowledge transaction is one-way etc.

2.2 Role of Teacher in Conventional Classroom Teaching-Learning

Education is necessary for politicians, businessmen, artists, farmers, religious patrons, students and for all the citizens of any country. Some of the great teachers were instrumental in many of the political, industrial, agricultural and economic revolutions across the world in the past. Their vision helped various societies to gain self-sufficiency and financial freedom from time to time. Some of them helped constantly and consistently in the spread of knowledge and in the establishment of good educational institutions.

In classroom education system teachers play a vital role in shaping students' life. A teacher with proper vision, experience and qualification can make a huge difference in the student's life. Today's teacher is quite diverse in comparison to the past and has an extensive role to play in the educational institutions as well as in our rapidly evolving society. Behind many successful people, there are good teachers who groomed them so meticulously that they could achieve success in their lives. The relation between the teacher and the taught becomes very harmonious when both sides have complete dedication and respect for each other. History is full of such examples like Guru Dronacharaya and Arjuna of Mahabharata – they had such a wonderful relationship in gurukul system. The gurukul system of education has been modified to the present-day conventional classroom system. This is a healthy phenomenon and is very useful for progress and prosperity of the entire community and hence the entire human race.

Starting from pre-primary to higher education, a teacher plays an important role only next to the parents and sometimes even more than parents in molding the children's mind. In educational institutions the students are to be handled with affection, courtesy, and discipline. A child generally keeps a constant watch on the teacher's life and follows his/her actions. So, a teacher is always supposed to maintain a good set of manners and s/he always has to be a role model for his/her students without breaking their beliefs. This behavior not only helps children to adopt good manners but also develop mutual respect and regards. Teachers should always encourage students to participate in welfare programmes, sports, tutoring, extra-curricular activities, excursions, quiz competitions, role play, dramas etc. during their regular school days.

Children imitate their teachers in the educational institution and get inspiration from his/her actions in day-to-day life. Therefore, a teacher needs to remain calm and cool and has to depict a balanced mindset without showing anxiety, fear, over-excitement, stress and pressure in front of the student. It is

better to take the opinion of the students by the teacher before s/he applies his/her own opinion on them. The teacher must be open to meet the parents or guardian of the students for listening to their views for the betterment of the students, in fact, s/he has to devise such a mechanism that a regular parent-teacher meeting is ensured. This would provide space for triangular communication among the student, parents, and teacher. This may be helpful in observance of all round development of the student at home as well as in the institution. This will also ensure a better student-teacher relationship with informed decisions being taken by the students and parents. Some of the activities mentioned above are quite often seen in school education, however, it is missing in higher education. Though the students in higher education are mature enough to take decisions, but there is no harm if the decisions are taken together by the students, teachers and parents for the betterment of the students.

In the classroom a teacher has to ensure before the beginning of the lecture/ teaching that every student is ready to listen and participate in the process of learning. S/he has to ensure (i) active involvement of the students; (ii) discipline, equity, transparency and un-biasness; (iii) gradual increase in the level of difficulty of knowledge; (iv) students to take note in the classroom; (v) students to feel free to raise questions with open mind; (vi) answer all the queries of the students with practical demonstration wherever possible; (vii) effective use of teaching strategies like use of blackboard, pictures, models, power-point presentation, material for live demonstration or any other such teaching aids; (viii) provision of information with regard to references including web-references of the topics being taught in the classroom (better to provide references in the beginning of the lesson); (ix) learning and understanding of the subject matter by the students; (x) give other related information like career opportunities, scholarships available; practical use of the subject matter in their daily life and provide other relevant information; (xi) tackling of some unusual situations that arise in the classroom by using his/her management and professional skills; (xii) proper class management; (xiii) encourage participation of students in all co-curricular activities as per their caliber etc.

In addition, a teacher acts as the controller of the class as s/he is in complete charge of his/her class. The teacher is mostly the centre of focus in the classroom. The teacher may have the proficiency of instruction and an authority of knowledge and s/he can self-inspire through his/her own knowledge and expertise. S/he transfers some of his/her knowledge to the students through lecture method or demonstration method and students are to be provided with chances of variety of interactions. There needs to have ample scope of asking questions and possibility of enjoyable learning. Further, there is a possibility of transfer of appropriate knowledge through teaching of pedagogically legitimate and valid lesson/course to the students. The teacher has to arrange for as many as possible lesson-appropriate activities and s/he has to involve in such activities

along with students. A teacher should do everything to make learning enjoyable so that learning doesn't feel like a burden to the students.

2.3 Modern Teaching-Learning Practices

Modern teaching-learning practices are a learner-centric approach that includes spaced learning, engagement of learners in variety of ways and tech-based teaching-learning. In spaced learning a space is given for activities between the teaching subjects. The space is given as per availability of slots in the institution. It is better to give space for play or fun activities between each subject being taught in the class. This will enhance learning as students take more interest in the intermittent activities and learn the concept with better understanding. Students' engagements are pivotal in providing enhanced learning. The engagement could be Activity Based Learning (ABL), Project Based Learning (PBL), Practical Learning or Demonstration-Cum-Practical Learning etc. In all such learning conditions the students are involved with all their senses and observe and conceive a concept on their own and take it to the point of development of full understanding or mastery in such areas. This will also help them to get engaged in critical thinking and provide space for innovations.

The Tech-Based Learning involves use of Information Communication Techniques (ICT) including online mode in teaching-learning process. There is abundant use of ICT and there are enumerable tools of ICT available in the market which are making knowledge transmission very convenient and brining the teachers and students to such a level where they are engaging in a modern way. However, the tech-based teaching-learning cannot be used as an alternate to the real-classroom teaching-learning. It can be an additional option and can act as a supplementary system to the current real-classroom system.

2.4 Role of Teachers in Modern Teaching-Learning Practices

Education is an ocean of knowledge and it has grown to a large extent in the last century and so has the evolution of methodology of teaching and learning in the modern teaching-learning practices. Many fields related to science, commerce, arts have been hugely expanded and their areas of study have become vast by addition of narrow specializations. So, considering these developments, a teacher has to update himself/herself not only on the one front, but also venture into many dimensions of professionalism so as to impart better education to his/her students by using all possible resources including tech-based and ICT. Besides this, the teacher has to (i) imbibe the education of his/her subject to the fuller extent and to deliver it effectively whenever and wherever needed; (ii) write books, articles, conduct seminars, etc. in order to disseminate the earned knowledge as per the growing needs of the society; (iii) design a system of education in such a way that learners can serve the society in a better way; (iv) strongly avoid creating confusion by misrepresenting any

knowledge with relation to his/her subject matter; (v) help parents and students to select the courses of study relating to job prospects and career opportunities by removing their confusion regarding this; (vi) guide the students and parents in such a way that the course of study helps the student in building his/her career; (vii) set himself/herself as a role model for fellow and future teachers.

The teacher has to act as a prompter, resource person, assessor, organizer, participant and a tutor besides others. These different roles can be played by a teacher by utilizing all the available resources and by using various rapidly evolving means of education. S/he has to be vigilant and then deliver in an understandable manner.

3. Advantages of Real Classroom Teaching-Learning

A real classroom environment offers students the opportunity to have face-to-face interactions with their peers and instructors/teachers. This is an added social benefit of the real classroom teaching-learning. This also acts as an educational aid by developing various skills among the students which possibly may not be developed through pure virtual classroom conditions. On the educational front, students get a chance to participate in lectures or class discussions/demonstrations physically. If students do not understand something, they can always ask the instructor/teacher. Seeking clarification from their peers is an added advantage for them.

The real-time classroom teaching-learning needs involvement of teacher and the students in formal conditions and in the working hours of the institution. Also, this interaction may sometimes continue beyond the working hours of the educational institution. The social interaction between the teacher and the taught is prominent in this system. Further, different sets of interactions such as between peer to peer, between student and non-teaching staff etc. co-exist within the premises of an educational institution and also outside. Inter-institutional level interactions are also evident. These interactions may be for short period or lifelong. Since students see the same peers in every session, they get a chance to become life-long friends or relatives. In the case of higher learning, students can find potential lifelong professional connections also.

In some cases, classroom environment is the only style of education that students know and feel most comfortable to learn in, as they are unaware of any other form of teaching-learning. In the classroom, students get the opportunity for hands-on, structured and tailor-made learning instead of being presented with the course books, written lectures and self-directed activities as provided by the distance mode or open learning or even in the virtual mode of teaching-learning. Many students rely only on this structure for learning and skilling. Whereas, changing to an online virtual learning experience might pose various unmatchable challenges to such students. They may be lost somewhere in the middle of completion of their course-work and simply become dropouts.

3.1 Added advantages of real classroom teaching-learning

The added advantages of real classroom teaching-learning are given as under:

3.1.1 Promoting collaborative learning: Collaborative learning is the learning that happens from peer-to-peer and more particularly in larger groups. It involves students to work in pair or in small groups to discuss concepts/subject matter and find best possible solutions to problems. Similar to the idea that two or three heads are better than one, through peer instruction, students teach each other by clarifying misunderstandings and misconceptions and solve their problems while establishing rapport with each other. The notion viz., "Every student is teacher of the other" becomes true in this interactive atmosphere of collaborative learning.

3.1.2 Enhancing critical thinking skills: Critical thinking goes far beyond memorization. This could be developed by encouraging students in a variety of ways including connecting the dots between concepts, problem solving, thinking creatively on the new ideas, and also applying knowledge in different ways. Critical thinking skills are applicable to all subjects including Science and Mathematics, Statistics, Economics, Business Studies, Engineering, Medical etc., which are based on the evaluation and application of knowledge in the real-life situation. So, the real classroom conditions are better suited for enhancement of critical thinking among students in different subject areas/courses which could augment their learning with better understanding and application. This ability is hard to be developed through virtual teaching-learning method as there is limited scope of peer-to-peer interaction and teacher-taught interactions.

3.1.3 Improving social skills: The real and inclusive classrooms represent the real world where students of all backgrounds (caste, class and gender) and abilities co-exist in the educational ecosystem. In fact, the curriculum itself at all levels of education including teacher education has acknowledged the need for social and emotional development of the children. The students have to play different roles for different curricula and co-curricular activities in an educational institution which provides a better atmosphere for improvement/enrichment/enhancement of their social skills. Classroom meetings of the students are held on various occasions to discuss and plan different day-to-day issues such as co-curricular activities, games, sports, tournaments, cultural programmes, hygiene of campus, their day-to-day needs in the campus and many more. Students even discuss their familial and personal problems with each other. Therefore, the real classroom is one of the finest platforms where the students socialize and become socially responsible, adaptable and democratic citizens of any country.

3.1.4 Developing organizational skills: Effective class management is vital in smooth running of a classroom. An instructor/teacher cannot justify his/her job without applying adequate management skills in his/her classroom. Classroom

management includes establishing set of rules and routines, addressing possible disciplinary actions, developing relationships with and among students, inculcating punctuality, finishing all the activities as per lesson plan and also administering the way of engaging education. An effective class management is necessary in keeping a classroom organized and running it smoothly and effectively in order to achieve bigger educational goals. This creates a positive and healthy learning environment which further leads to attainment of desirable learning outcomes. These organizational skills of the teachers are learnt by the students without attending any formal conceptual training on organizational skills.

3.1.5 Keeping Students stimulated and motivated: One way to encourage students and teach them with responsibility is to get them involved in classroom activities. Activity-based learning is one of the best methods for engaging students and making learning joyful. Certain activities without fear of evaluation may provide a better stimulus for learning among the students along with boosting their motivation level. Motivation is the key to ensuring desired learning outcomes for all age groups of students. In order to make students work in groups and assigning each group a task or role to accomplish in a given time-frame and also provide reason for giving some rewards will be more motivational way of teaching. Besides teaching as per curriculum, the teacher has to be a role model for students to reinforce their positive actions and motivate them for ensuring higher order of learning. S/he to ensure that classroom rules and regulations are defined in detail so that students feel safe to participate and share their opinions and comments without being ridiculed. Feeling free to express themselves will encourage students to be more engaged and ensure development of responsible behaviour among them. All this is possible in real classroom conditions only.

3.1.6 Modification in teaching style by the teacher: Students have different abilities and different levels of grasping powers. Therefore, one method of teaching cannot be effective for learning of all students and there is a need for adapting different methods, styles and a blended approach of teaching, which is much more beneficial as every student gets benefited almost equally from one method/style/approach or the other. It is the real classroom conditions only that provides space for adapting different teaching methods/styles/approaches. The teacher has to modify and adapt his/her teaching method by identifying the individual student characteristics and accordingly use diverse methods of teaching. This adaptation of teacher is required as per the ability levels, patterns of abilities, learning styles, personality and cultural backgrounds of the students. However, this is a herculean task for the teacher to adapt different methods of teaching as per the levels of students' abilities and characteristics, but a good teacher proves his/her mettle by developing the state-of-the-art teaching method suitable for the entire class. The real

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classroom conditions only can provide space for more differentiated teaching strategies. Teachers are often asked to modify styles and methods of providing instruction to accommodate special and differentially abled students also in order to provide proper direction to entire class. S/he has to be ready with alternative methods/plans for the coverage of entire class.

3.1.7 Developing of personality: Personality may be defined as the dynamic organization within the individual of those psychophysical systems that determine his/her unique adjustments to his environment. Personality development occurs as per the age group of students. A teacher in real classroom conditions can take special care of personality development as per psychological development of the students. This is related to the mental and physical activities of the students. Therefore, classroom activities and co-curricular activities have crucial roles in such development. Personality traits can be developed well only in conditions where variety of interactions occurs among the students and between students and their teachers and also with non-teaching staff in formal set of conditions. Virtual classroom conditions are actually missing this component of the student development.

3.1.8 Developing Workable Skills: Skills may be defined as the traits which develop in an individual the competence and excellence in his/her performance, expertise and agility for a certain kind of job or work. The skills have a wider range and requirements at the workplace. Like personality development skill development also occurs as per the developmental stages of a child. Skill development is related to physical activities, experimentation and practical done in a laboratory or workshop. This set up is available only in real classroom conditions.

3.2 Disadvantages of Real Classroom Teaching-Learning

Although real classroom conditions of teaching and learning has a big edge over virtual teaching-learning, it has some disadvantages also. Some of the disadvantages of real classroom teaching and learning are given as under:

3.2.1 Non-flexibility: Campus-based or real-classroom learning experience means the class schedule is pre-determined and not subject to change. Students must adjust their personal schedules with educational institution instead of the other way around. If plans unexpectedly change or an emergency comes up like Covid-19 lockdown or flood situation or any other calamity in different parts of the country, the student cannot adjust themselves as per their class schedule to turn in the work at a different time. If a scheduling conflict arises between professional work or household chores and study in an institution, students is forced to choose either of them. They cannot take up both the activities simultaneously because of fixed schedules of institutions.

3.2.2 Travel considerations: In a situation of real-classroom learning, students must physically attend the classes/courses to get credit for attendance. Those who use to travel long distances to get to their educational institution must start well in time for reaching the institution on time. Sometimes traveling time is far more than the time spent by the students in the institution. Further, there are many instances such as inclement weather, poor transport facility, poor surface connectivity between residence and the institution etc., due to which reaching educational institution on time becomes a cumbersome exercise. A long commute may also mean spending more money for a longer period of time which, when combined with the cost of education, may make the issue graver for financially challenged students.

3.2.3 Teacher related problems: Some of the educational institutions all over the world have in sufficient number of teachers. On the other hand, there are some regions where the number of teachers is in excess. This uneven distribution of teachers is hindering the smooth conduct of teaching-learning process. In India the problem of this uneven distribution is bigger than many of the countries of the world. We are facing a lot of challenges in rationalization and redeployment of teachers. Further, it is observed that teachers are untrained/ or not professionally qualified. All this disturbs not only the student-teacher ratios but also the overall learning outcomes. The situation of poor teaching-learning outcomes is further aggravated by teacher absenteeism, disinterest, incompetency, and their involvement in other activities than teaching. All this reflects unprofessional attitude of some of the teachers. All teachers' related problems are big impediments in the path of achievement of desired learning goals through the real classroom teaching-learning.

3.2.4 Boredom and lack of diversity in content and presentation

It has been learnt through experiences that most of the time classroom teaching-learning is based on fixed syllabus and follows a tailor-made pattern. Teachers use age-old notes which are hardly ever updated. The course material is poor in diversity and teachers use the same content and presentation in the class all the times. Students feel bored due to this and the learning outcomes could not reach to the desired levels in such a situation.

In view of such drawbacks virtual teaching-learning has advantage over real classroom conditions; however, this has to be applied with utmost care and in scientific manner. It is always better to use blended mode of teaching-learning by using real as well as virtual teaching-learning. Now let's discuss the virtual teaching-learning practices in detail.

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4.   Virtual Teaching-Learning Practices

The Virtual Classroom is an e-learning concept whose primary objective is to enable instructors/educators/teachers to impart course material and the students to receive education indirectly and even without being present physically. The most probable mode of virtual teaching-learning is the use of transfer of knowledge/instructional material through Internet. However, it allows teachers and students to communicate, interact with limited space virtually. They can work together indirectly while being present remotely and from any location with the use of technology. Without being in close physical contact, face-to-face interactions are possible through webinars, audio and video conferences, web presentations, live streaming, text chats, Learning Management System (LMS), online training courses etc.

Virtual classes are provided through various channels such as e-mail, short messaging services (SMSs), multimedia messaging services (MMSs), group e-mails, blogs, chats etc. through which students and teachers/instructors can interact with each other. It also provides students and teachers multiple channels of interactions and helps them to come out of the scenario of only one channel of communication in real classroom. Many students who have best visual memory take more interest and learn better in online modes of learning. The reverse is also true for those students who are poor in perception and slow learners.

This form of education is being provided with the help of rapidly emerging and continuously unfolding technology. It is focusing on the achievement of digital transformation in the classroom as well as outside with the help of rapidly growing use of Internet. It also provides an opportunity of distance education to remotely located students by means of web-based online learning programmes. It may be used for training of instructors/teachers through the use of innovative teaching-learning tools in virtual mode from anywhere and at any time. It provides learning and training opportunities without limitations of physical and geographical boundaries. In emergency situation like Covid-19 lockdown, it is one of the best tools used across the world which provides an unconventional form of education to the students as well as teachers/instructors. For now, it appears to be the only alternative solution available. However, in real sense there are other alternatives that could also be invented with limited interactions among the teachers and learners. Use of blended mode of teaching-learning could be one step forward in this direction. The role of a teacher in virtual teaching-learning becomes very crucial. Now let's discuss the role of teacher in the next section.

4.1 Role of Teacher in Virtual Teaching-Learning Practices

In conventional mode of teaching, the teacher would be happy to have flocks of students in a classroom and provide them tailor-made instructions.

The teacher's role is to perform a group function rather than a personalized function. This may be considered as a non-flexible and rigid form of teaching. The teachers have little scope to explore or innovate in these teaching practices. There are also several impediments in using improved instructional material in conventional mode of teaching. However, in modern method of real classroom teaching, the chances of innovation and exploration of new things came into existence. Further, with the advent of web-based and online teaching-learning process learning has become highly personalized activity with full flexibility of time and space available with teachers as well with students.

The role of a teacher in such a personalized form of teaching-learning becomes somewhat different. Though the teachers have a lot of scope for exploration, their interaction with students are negligible and they are unable to interact fully as they remain away from the students. They cannot get direct feedback from their students. The role of a teacher, although not visible, becomes very crucial in a virtual teaching-learning process as they have to handle their students remotely. S/he has to take care not only of the content production but also to ascertain that the right kind of information could reach students. Further, students should choose right material from the pool of abundantly available resources and rightly perceive the information available in the virtual content. The teacher has an added responsibility to look after individual students and their personalized needs in this form of teaching-learning. The role of a teacher in virtual teaching-learning can be of a facilitator, promoter, content enricher, mentor, collaborator, content creator etc.

4.2 Advantages of Virtual Teaching-Learning: The advantages of this mode are given as under:

4.2.1 Personalized learning: Learning by virtual mode gives the students liberty to learn at their own time and space, therefore, learning becomes a personalized affair. Students need not attend the regular conventional classes. Further, different students are adapted to different styles of learning and if the virtual learning is suited best for them then this style becomes an advantage to such students.

4.2.2 Self-learning: Virtual learning keeps full faith in development of capacity of self-learning among children, therefore there is a need for evolving a proper educative programme to create a suitable atmosphere. The learner is an actively participating person in the process of learning. His/her capabilities or potentials are seen not as fixed entities but they are capable of achieving development through their own experiences. The teacher is a facilitator or a mentor who only supports and encourages learner's self-learning. In this system knowledge is not treated as fixed, static or confined in books but as something which is being constructed through various types of experiences of the learners. So, virtual platform can be utilized for new knowledge creation and recreation.

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4.2.3 Long distance learning: In virtual learning the teacher posts either live instructions or pre-recorded material from a distance place and there are no physical boundaries to stop this form of teaching-learning, therefore, it becomes a long-distance learning form. It is also a transnational or a global form of teaching-learning as its access has no national boundaries.

4.2.4 Collaboration and communication: There are interactive learning programmes on internet which provide space for collaboration and communication between the teacher and students and also among peers. However, this collaboration and communication cannot be more than that in real classroom teaching-learning.

4.2.5 Effective and efficient time management: Students have their own pace and place of learning and they need not cover any distance from their residence or hostel. They also need not waste their time intermittent to different classes as observed in the real classroom teaching-learning. Therefore, this mode may be effective and efficient in time management as it reduces the student's time wastage.

4.2.6 Gives students and teacher a global exposure: A lot of content from different experts of different countries is available on almost every topic, so, students have plenty of options to choose the best one. The teacher also has plenty of international exposure on the contents. Therefore, both teachers and students have global exposure. However, there is an added responsibility of the teacher to select the best information for his/her students and to discard the vague and misleading material from the oceanic form of knowledge. Further, the students must learn proper skills of filtration of best content, otherwise, it will become a futile exercise for them to learn from plenty of irrelevant and poor-quality material.

4.2.7 Access to everyone equally from anywhere and at anytime: The online material is available to everyone on anywhere and anytime basis. This learning material available in public domain does not have any discrimination in access.

4.2.8 Cost effective: This method of teaching and learning is cost-effective, since the teaching-learning material once prepared may be utilized many times. Also, physical presence of teacher is not required all the time. Further, comparative to the real classroom practice lesser infrastructure is required for providing such lessons. Therefore, this is a cost-effective method of teaching and learning.

4.2.9 Introduction to education technology: This is the best way of introduction to education technology to both the students and teachers as it is primarily technology-enabled teaching and learning. Technology always reduces efforts of completion of any assignment; therefore, this saves a lot of efforts from both sides i.e., from teachers and the taught in the process of teaching and learning.

4.2.10 Means of providing online tutorials comprehensively: Virtual teaching method is the way of providing online tutorials on the larger scale. A lot of electronic material has been prepared in the recent past on every topic in each subject area which is used quite extensively for providing online tutorials. Students are given certain user IDs and passwords with which they may login for certain programme and participate in online tutorials. Large number of students from distant locations can be covered under this method.

4.2.11 Encourages digital and smart classrooms: Smart classrooms are classrooms where there is a possibility of recording lectures digitally. Smart board and computers for keeping records of the lectures/demonstrations are required. Whatever is being taught in such classrooms is stored digitally which may in future course of time be either edited or used as such number of times by both students as well as teachers. The teacher can select best of their lectures and present them in the class from their digital store as and when such need arises. Students can be benefited by repeating the lecture if they are unable to understand the same in one goes. Therefore, virtual classrooms encourage digital and smart teaching-learning.

4.3 Disadvantages of Virtual Classroom Teaching-Learning: Although there are many advantages of the virtual form of learning, yet it has various disadvantages also. Some of the disadvantages are given as under:

4.3.1 Lesser control over the students or classroom: In virtual teaching-learning there is little control of the teacher over the students. The students learn at their own pace and they have choice of timings also. Therefore, command of the teacher is lost somehow or diluted in comparison to the real classroom form of teaching.

4.3.2 Lesser control over the learning atmosphere: The virtual learning is self-directed for students and the teacher has lesser control over learning atmosphere. Students even sometimes lose direction and are unable to search the best material for them. They sometimes are not able to frame their timetable appropriately. There are no peer groups for direct interaction. Therefore, this form provides a poor and less controlled learning atmosphere.

4.3.3 Accessibility problem of computers and internet and other impediments: Virtual Classroom requires computers and internet access, which might not be at hand for everyone. Further, there is a huge disparity in terms of availability of the digital devices in rural and urban, socio-economic groupings, tribal populations, vulnerable groups, homeless people and others. Interrupted networks or electricity supply further augment the problem of poor accessibility. The accessibility issue hinders the achievement of goal of smooth provision of virtual classroom teaching-learning for large number of students.

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4.3.4 Expensive for students: Enrolling into online live class or courses sometimes can be costlier than the conventional classes. Further, costly gadgets are also required for online classes. The internet and electricity consumption are added expenditure on the part of students. Although this is economical from the side of the provider, however, it has proven costlier for the recipients.

4.3.5 Lack of real-time teaching-learning experience: Students are devoid of real time teaching-learning experience in the case of online method. A lot of peer interactions and student-teacher interactions take place in the real teaching-learning classroom conditions. The physical, emotional and psychological developments occur well in real time classroom teaching-learning which is missing in the virtual form.

4.3.6 Risk of the loss of traditional student-teacher collaboration: The teacher-taught collaboration which is one of the finest value additions in our traditional teaching-learning is at the risk of extermination. This is another drawback of virtual teaching-learning process.

4.3.7 Surfing of unrelated material by the students: Online education is one of the necessities these days. Although it gives a student an opportunity to learn, it also distracts them from concentrating on their mainstream education as there is a lot of unrelated material available on internet. First of all, the students struggle for surfing the right content, and even if they do so and are able to find their educational lessons, they start surfing other irrelevant items on the internet. Therefore, the overall impact of education through virtual means is uncertain and may not be always optimum.

4.3.8 Absence of values and morals: The education does not remain limited to the coursework only, rather it includes development of values and morals which come through peer interaction and interaction of students and teachers. It is difficult to inject values and beliefs through online teaching-learning.

4.3.9 Poor credibility of course material: The learning material available on the websites is being prepared by the technical experts and many of them are unaware about the concept of pedagogy and also, are poor in the subject areas. Therefore, the subject matter/course material which is being taught through online mode may be impressive for watching as it is full of visuals but it may skip the real concepts and create misunderstanding among the learners. On the other hand, sometimes poor-quality picture or text which is being prepared by non-experts creates problems for students.

4.3.10 Little scope for assessment: Various types of problems in assessment of virtual form of education are also evident. There could be technical problems, inadequate infrastructure, supervisory problem, lack of expertise in assessment among the teachers etc. These problems sometimes break the cycle of assessment and the system is unable to get proper feedback for improvement in teaching-learning process.

4.3.11 Unfriendly for the differently abled students: It has been observed that the virtual form of teaching-learning is less friendly to the differently abled students such as blind, deaf, dumb and also for mentally retarded students. Such students have different learning needs and the material so far available is not prepared for keeping their needs in mind. Besides, their pace of learning and adaptability is different from the normal students, therefore, the current virtual form is not suitable for these differently abled students.

4.3.12 Cyber-crimes: Virtual learning may sometimes become hot-spots for cyber-crimes. The data theft through the use of unsecured applications is quite evident these days. This is another problematic area of virtual teaching-learning which needs to be addressed immediately.

5. Critical Appraisal of Virtual teaching-learning vis-à-vis Real Classroom Teaching-Learning

Schools which are associated with traditional and modern real-time classroom teaching and learning are expected to not just impart education in its narrow sense but to mold children's attitudes to the expectations of the society. Egalitarian values, compassion, tolerance, concern towards others, respect for cultural diversity, gender sensitivity and health education are integral part of curriculum which helps in development of healthy and humanitarian attitudes in the students. This curriculum could be better transacted through real classroom teaching-learning. Probably value addition and character-building concept is missing to the larger extent in virtual teaching-learning.

The Twelfth Plan in one of its targets in Secondary education envisages that development of life skills including skills of critical and constructive thinking, use of ICT, organisation and leadership, and community services would be ensured during the Plan period (Social Sector, Vol. III, 2012-17, p.72).[1]Such a vision of the 12th Plan with regard to development of life skills in school education could only be realized through real-classroom teaching-learning with use of ICT as a facilitator. Hundred percent use of virtual teaching-learning would not enable us to achieve the target of development of life skills.

The National Curriculum Framework (NCF), 2005 envisaged that one of the aims of education is to have a commitment to democracy and values of equality, justice, freedom, concern for others' well-being, secularism, respect for human dignity and rights. Education should aim at building a commitment to these values which are based on reason and understanding. The curriculum should provide adequate experience and space for dialogue and discourse in the school to build such a commitment in children (NCF, 2005, p.10).[2]Though

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1 https://niti.gov.in/planningcommission.gov.in/docs/plans/planrel/fiveyr/12th/pdf/12fyp_vol3.pdf

2 https://ncert.nic.in/pdf/nc-framework/nf2005-english.pdf

some of the provisions can be made in curriculum to accommodate processes of digital learning or learning through ICT, however, value addition as mentioned in the NCF, 2005 could not be ensured while conducting teaching-learning only in virtual mode. This value laden education could be provided through real classroom teaching-learning and having use of ICT to some extent.

Further, if we look from a purely pedagogic point of view, it is clear that technology will play a bigger role in education in the coming years. However, it will be highly subject-specific. Courses that traditionally need a laboratory or practical component are obvious examples where online classes cannot offer an alternative to the real classroom teaching. The adoption or integration of technology in education also depends on the specific conditions in an institution. There is a huge digital divide in the country in terms of band-width and off-course reliable connectivity. Further, the financial availability is different in different areas which cause differential access to the technology.

Apart from classroom lectures and courses, there will be a serious impact on academic research in all disciplines if we switch over completely to the virtual mode of teaching and learning. There is a need for close personal interaction and constant discussion in research supervision which is not fully possible in virtual mode. Certain crucial points of interaction would be missing in virtual mode which restricts the interaction needed in academic research to certain minimum.

It is the hard fact that due to Covid-19 lockdown, many schools and colleges across the world have chosen the method of taking online classes, however, such classes cannot ensure understanding of the concepts, clearing of doubts, full interaction with the teacher and many more such aspects which real classroom provides. The environment of a real classroom is quite different which itself acts as a motivator for students to learn more effectively. However, as quoted, "something is better than nothing", it is good to have virtual classes since no real classroom teaching is possible in an emergency situation like in Covid-19 lockdown.

In a nutshell it can be viewed that virtual teaching-learning is opted these days due to shutdown of schools and institutions of higher education. This can be an additional option even after opening of the schools, if it is blended with real classroom teaching-learning in scientific manner. It is beneficial to the students to certain extent as they enjoy late waking up in the morning. Also, there is no fear of getting bullied by the peers and sometimes scolded by the teachers, one can study comfortably as per their own time-table. However, the teacher-taught relationship cannot be established in a cordial manner which can be shaped only in real classroom conditions. Different kinds of interactions including raising queries by the students in the classroom cannot happen with ease in an online interaction. Virtual learning can offer a substitute to classroom

learning in the time of emergency only but it cannot replace the classroom teaching in ordinary days. Classroom learning still remains a dominant option of teaching-learning considering the fact that it is a better mode of imparting education and knowledge.

6. Way Forward

In the present educational context it is noticed that new and important developments have taken place in the field of Information and Communication Technologies (ICT) including virtual learning. On the other hand, there are numerous obstacles to draw best from ICTs which include lack of electricity, absence of telephone, computer, smart phone, besides other impediments. The use of learning programmes via satellite has been grown substantially, while at the same time traditional and distance education programmes have been using the technical means such as video, TV, radio, radio cassettes, etc. to a larger extent. As for the present trend of utilization of technologies in traditional classroom teaching, either to compensate for the lack of quality schoolbooks or to enrich classical face-to-face teaching, emphasis needs to be placed on the role of technology to supplement teacher's knowledge, for example, in distant areas or provinces where teacher's knowledge up-gradation is arduous and in some places indeed highly impossible, the virtual means can become a medium for achievement of milestones. Virtual mode of teaching-learning has also established a reliable link between distant cities and towns and a large number of isolated small village schools where little knowledge is available on daily basis in conventional mode. However, since not much is known about their pedagogical effectiveness, a first step is the need to identify experiences in the field which describes the modus operandi and also points towards the areas where more research and knowledge gathering is required to substantiate the prospects of technology in the field of education.

Although almost the entire world switched over to the online teaching-learning mode in the Covid-19 pandemic time, it was needed to be planned properly. In post-pandemic period also we have to think about blending the online teaching-learning with real classroom teaching-learning with great caution and after determining the long-term goals and more specific evidence-based pedagogic objectives. Further, subjectivity needs to be taken into consideration while looking for the future prospect of virtual teaching-learning. Online teaching is a separate didactic genre in itself which requires investment of time and resources by all the stakeholders and particularly by teachers. Most of the time, teachers remain less enthusiastic towards online classes. There are other reasons as well for such reluctance as they are not getting supportive infrastructure or may even have techno-fear. Many online classes have been poorly executed video version of regular classroom lectures which themselves become boring for students. Therefore, there is a great need for rectification of

our ways of using virtual classroom teaching and it has to be used with great caution along with real classroom teaching in the future.

Further, there is a need for utilization of services of programmes/schemes of the Government of India to the level best. The Government of India is keen to use the technological resources in helping its mission to make Education accessible to all deserving students. In this regard, it has launched its National Mission on Education through Information and Communication Technology (NMEICT) in 2009 in Higher Education (MHRD, 2009). 'Study Webs of Active-Learning for Young Aspiring Minds' (SWAYAM) and SWAYAM PRABHA are ICT initiatives of the Department of Higher Education. SWAYAM was initiated in 2017. It was designed to achieve the three cardinal principles of our Education Policy viz. access, equity and quality. This is a platform created with the objective of brining the best teaching resources accessible to all more particularly to the most disadvantaged section of the students. This has to bridge the digital divide and help students to join the mainstream. SWAYAM operates Massive Open and Online Courses (MOOCs) learning resources. SWAYAM PRABHA is a group of 34 DTH channels devoted to telecasting of high-quality educational programmes on 24X7 basis using the GSAT-15 satellite.[3] Everyday there is a new content for at least four hours which is repeated five more times in a day, allowing students to choose time of their convenience. The channels are up-linked from Bhaskaracharya Institute for Space Applications and Geoinformatics (BISAG), Gandhinagar. The contents are provided by the National Programme on Technology Enhanced Learning (NPTEL), Indian Institutes of Technology (IITs), University Grants Commission (UGC), Consortium for Educational Communication (CEC), Indira Gandhi National Open University (IGNOU), National Council for Educational Research and Training (NCERT), and National Institute of Open Schooling (NIOS). The Information and Library Network (INFLIBNET) Centre, Gandhinagar maintains the web portal. If this is to make a serious difference via virtual teaching-learning, both quality and quantity of the online courses need to be enhanced. These practices are presently being used to augment classroom instruction and only to some extent in earning credits by students. We may utilize these services for full credit earning by the students. There could be a positive aspect of even a partial switch over to online education by making lectures available online in public and open websites, which will accelerate the democratization of knowledge and the wide distribution of learning opportunities without any discrimination.

Similarly, the National Digital Infrastructure for Teachers i.e., DIKSHA is a platform for e-learning in school education initiated by NCERT. It has study material available from class I to XII on its website in different languages and for different states also. It has also started Vidya Daan which is a call to the nation,

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3   https://www.swayamprabha.gov.in/index.php/about

particularly individuals and organizations across the country to contribute to e-learning resources in the educational domain in order to ensure that quality learning remains available for learners across India[4]. Further, possibilities need to be explored to make this kind of programmes more users friendly and make them available to the masses. Suitable motivation and encouragement are required for the educationists and professionals so that they can come up with sharing of their useful knowledge on the online portals.

The adoption of online education needs to be done with utmost sensitivity since it has a very little role of teacher as s/he is not guiding the students directly. An imagination and commitment to decentralization of education is a need of the hour. Pedagogic material must be made available in different languages and, if possible, in different dialects which will certainly extend access and make contents user-friendly. The virtual teaching-learning, if used in blended mode, will address the issue of staff shortages that afflicts teaching-learning process in remote institutions. The roles of the states become crucial in implementation and blending of online programme with real classroom teaching-learning. They have to take responsibility of not only improving their digital infrastructure but to ensure that every needy student gets access to digital devices so that real classroom teaching-learning remains continued.

We have to be prepared for the situation when educational institutions reopen, and extreme caution is required for continuation of online teaching-learning. Blended mode of education is certainly unavoidable. Online instruction could be provided under the guidance of a teacher and along with real-classroom lectures. The laboratory programmes and academic research require provisioning of direct instructions and mentoring which also has to be provided as usual. If blended mode leads to the emergence of a new pedagogic paradigm, we would have made the sweetest use of this adversity of pandemic and this could be the emergence of a new era of education across the globe.

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