

The impact of distance learning and technology on developing teaching process

Yousef Methkal Abd Algani
Faculty of Education, Department of Teaching
Mathematics, The Arab Academic College for Education in Israel-Haifa.
yousefabdalgani@gmail.com
ORCID: 0000-0003-2801-5880
Fuad Azzam
Sakhnin College, Academic College for Teacher Education, Israel.
fuazzam@yahoo.com

Abstract.

Distance education is a widespread phenomenon, in fact, a fast-growing educational strategy. It establishes flexible learning paths with the aim of increasing the accessibility of education to adults. Through the significant contribution, it promotes greater education on a large scale. Distance education programs have contributed significantly to improving the aspiration of students who could not attend campus-based classes due to varied reasons. Distance education has gained immense popularity amongst the students pursuing higher education. They find immense benefit in the flexibility that these courses offer in general.

Even before the advent of technology, there exists distance learning. Even many traditional schoolings have started to increase their proliferation of virtual training and online courses on a large scale. These changes can be witnessed off late amongst a larger part of the nation due to various reasons. Because of changing environment, expectations of students, parents, and society results in increased involvement in online classes. This article tries to analyze the impact of distance learning and technology in the field of teaching learning process.

Keywords:

Technology, education, flexibility, changing scenarios, interactive telecommunication.

Introduction

Online courses encourage setting goals, tracking progress, and meeting deadlines. It also enhances the teaching-learning environment by introducing many discussion forums, one-on-one support platforms. In order to promote effective teaching and learning environment, technology promotes visual experience. By incorporating animations in the process of teaching and learning, technology enhances interactivity amongst the learners. The onset of technology has made the process of education— teaching and learning— more viable.

Online learning platforms create an efficient way to deliver the lessons. Educators become more efficient in educating the students with the help of these technological educational tools. The educational institutions can reach an extensive network of students though they are restricted geographically. Online education can be personalized in many possible ways based on the need of the student community. They can cater to their needs and satisfy their goals in the process of learning.

This research article aims

- To offer an insight on the impact of distance learning
- To reinforce the social dimension of learning strategies
- To understand the changes in the students' study habits
- To apprehend the importance of digital learning
- To become aware of the factors that reshape the teaching-learning process

- To appreciate the potential impact of digital learning and distance education
- To become aware of the future educational possibilities

Literature review

There have been profound changes all over the world in all fields of life. With the advent of technology, we are witnessing changes and their impact in almost all fields. Technology has become an essential part of our daily lives. There is a paradigm shift in the field of education after the development of educational technological tools. Web technologies have brought increasing accessibility and open flexible workspace with new pedagogical models in the field of learning atmosphere.

Education has become transformative because teachers and students synthesize information across the globe. Educators can foster critical thinking and education with the integration of technology. In the journey of fostering critical thinking, educators have implemented new approaches. This has paved way for many online courses across the world at an exponential speed. Deepika Nambiar (2020, p. 783) highlights the impact of online learning in her research article in the following words,

Online learning and classes are increasingly becoming part of the education system worldwide. The online channel has made education convenient and easily accessible by one and all. The education sector in Israel has been an ever-growing entity. Though online and distance courses have been there from a long time, the introduction of the online mode of taking classes in comparison to the traditional face-to-face classroom approach in universities and colleges has been considered only in the last few years in Israel.

The teaching and learning process has gone through a sea change over the past few years. Technology has helped the progression of online courses as a path-breaker. Zahoor Ahmad Lone (2017, p. 13950) states the emergence of online education as,

Online education is learning, utilizing electronic technologies to access educational curriculum outside of a traditional classroom. In most cases, it refers to a course, program or degree delivered completely online. . . . Online learning is a combination of learning services and technology to provide high values.

The new technologies have created a greater impact in educational contexts. In addition, it has given the wider opportunity to enhance the knowledge and the skills of the educators. Therefore, it enhances the quality of education and widens the prospects to advance in their career.

Online education also instills a kind of self-belief and they, in turn, learn with a purpose under a constructive learning environment. It has become an effective and efficient tool for the development of educational sectors all over the world. Regarding the growth of online education in Israel, Zahoor Ahmad Lone (2017, p.13950) states,

Online learning is a combination of learning services and technology to provide high values. Though Israel is at a nascent stage when it comes to digital education compared to developed nations, none the less it's growing at a substantially rapid rate of 55 percent. Edutech is certainly ushering the new age of learning in Israel.

Discussion

Anna Sun and Xiufang Chen (2015, p. 160) defined the terms associated with online education as,

In the research literature, online education is variously termed as “distance education” “e-learning,” “online learning,” “blended learning,” “computer-based learning,” “web-based learning,” “virtual learning,” “tele-education,” “cyber learning,” “Internet-based learning,” “distributed learning,” etc.

Distance learning — a form of learning, which promotes physical separation of teachers and students during the instruction of education. In addition, it promotes the usage of technologies in facilitating student-teacher communication, and peer communication. Many universities promote distance learning on a large scale, especially after the pandemic situation. The University of Phoenix is one of the earlier adopters of distance education. In the early twenty-first century, the Indira Gandhi National Open University and the China Central Radio and TV University had more enrollment in the field of distance education. Through which the homeschooled students have gained wider access to the globalized central instruction through the means of distance education.

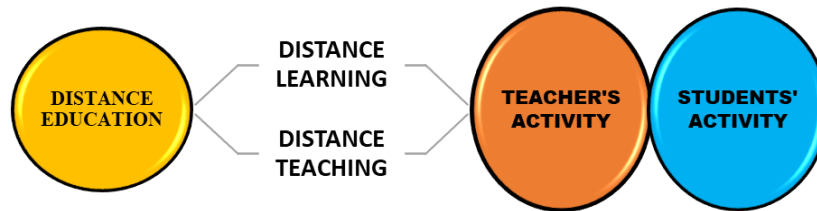


Figure 1. The Phenomenon of Distance Education

The phenomenon of distance education includes both the student’s activity and the teacher’s activity—including distance learning and distance teaching. Incorporating technology in the field of education provides a rich learning experience. This technology-based education can escalate engagement, reassure collaboration, stimulate innovation, and enrich student learning. Nevertheless, effort and strategy are required from the other end. Teachers act as a guide in the usage of this technology. If the technology is used with intention and purpose, it can be transformed into an effective teaching tool with lots of positive effects. In turn, this atmosphere promotes students in achieving their goals.

Distinguishing features of distance learning

Distance learning is carried out through institutions. It is the main characteristics that distinguish distance learning from others. Accessibility and convenience are the greatest advantages of this approach. The inevitable presence of interactive telecommunication — indeed connects many individuals across the nation—is added advantage. Establishment of the learning group which comprises students, teachers, and resources. Aras Bozkurt and others (2015, p. 331-332) highlight the emerging demand for distance education in their research article in the following word,

Distance education (DE) as a multidisciplinary field has reacted to these changes; it has and is still evolving and orienting itself to fulfill this demand. Thus, as the demands of educators and learners evolve, it is crucial to understand and get a deeper insight of trends and issues in DE so as to keep abreast of these constant changes.

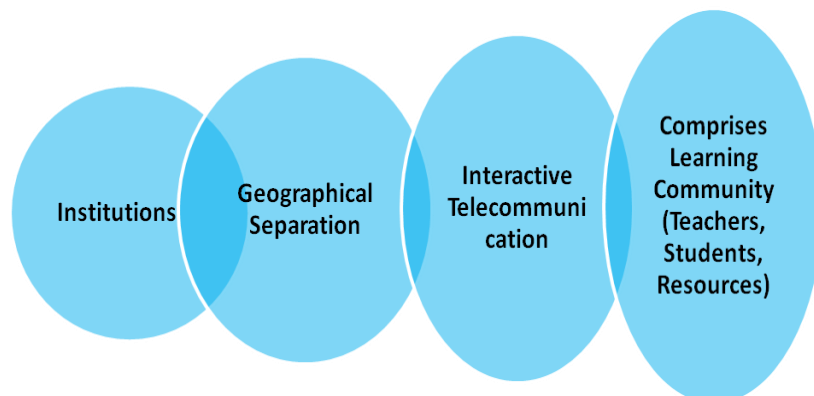


Figure 2. The Features Distinguishing Distance Learning

Characteristics of distance learning

- Distance learning is carried out through institutions
- It is not a self-study courses
- It comes under an academic learning environment
- It integrates geographical separation
- Accessibility and convenience are the greater benefits of distance learning
- Technology enhances distance education to a large extend
- Internet, mobile phones, and email contribute to the rapid growth of the teaching-learning process
- Interactive telecommunication turns to be a vital element in distance education
- Interactive telecommunication acts as a bridge between the learning community and the teaching community

Technology-based education enhances critical thinking which reinforces a better learning atmosphere. It helps to expand the horizon of the students by extending the learning experience beyond textbooks and lectures. This technology provides opportunities to connect to real-world experience. The self-paced learning components help to enhance the learning environment. The educational teaching tools provide an equitable classroom environment, where students get easy and equal access to the available information. It also further promotes numerous teaching innovations— in the form of experimenting with numerous teaching methodologies.

Technology brought various teaching innovations in the field of education. It promotes and enhances the efficiency of the learning process with the active learning environment. Technology paved the way for many innovations in the field of teaching and learning. The flipped classroom, collaborative learning, and hybrid classroom, etc are some of the teaching innovations.

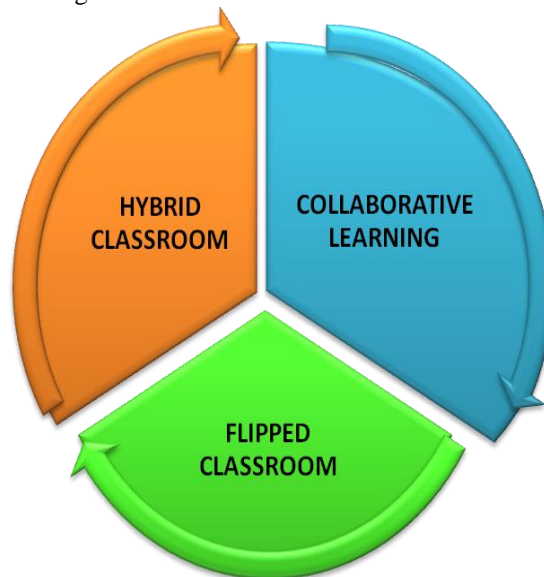


Figure 3. Teaching Innovations

Collaborative learning

Collaborative learning is an umbrella term, which aids in the joint venture of intellectual effort both by the teachers and the students. It involves a variety of educational approaches with the aim of increasing a better understanding of the learning process. It aims in creating higher-order thinking, self-management, leadership skills, and better communication. It also promotes student-faculty interaction, memory retention, increased self-esteem, and greater responsibility.

Through collaborative learning, teachers plan for the activities that kindle the opportunity to work and collaborate together which enhances a better learning environment. Collaborative teaching promotes the self-growth of an individual to a larger extend. The well-structured and communicated collaborative teaching approach can result in a consistent positive learning environment. It also enriches both the interpersonal and

intrapersonal qualities of the students. Collaboration is the process of learning that includes better communication, active listening, taking responsibility, respecting the diversity amongst peers.

Flipped classrooms

This pedagogical approach widens the understanding of the students through discussion with peers. Students are introduced to the learning material before class. In this approach, problem-solving activities are facilitated by the teachers. It creates more flexible, effective, active, and student-centered teaching strategies. This strategy inverts the traditional educational model. This model promotes more control over the education and collaboration in learning lessons.

Hybrid classrooms

It includes face-to-face classroom instruction along with the use of technology or online instruction. It focuses on students' engagement and participation. The mixture of on-campus and digital activities facilitates a better learning experience. It promotes learning audibly, visually, and hands-on experience by collaborating with their peers during the designed in-class time. This in turn promotes blended learning which inflect endorses a positive impact on students' skills. Hybrid classrooms include the advantages of in-person teachings as well as independent learning and technology. Thus it turns out to be a more effective methodology in this recent times. It aims to bring holistic development.

Distance learning promotes independent learning strategies amongst the learners. Distance education caters to the need of the students through open universities and distance learning programs. Despite that many online programs via open universities also promote distance learning to a larger extent. Anna Sun and Xiufang Chen (2016, p.161) quoted in (McAuley, Stewart, Siemens, & Cormier, 2010; Schroeder, 2012) to categorize online education, which is worth referring to here,

Online education can be categorized by its users: 1) University-Based Online Education, whose users are individuals enrolled in universities for the purpose of obtaining degrees and diplomas; 2) Massively Open Online Courses (MOOC) (some termed Massively Open Online Class), whose users are self-motivated individuals and whose programs are based on their learning goals, prior knowledge and skills, and similar interests

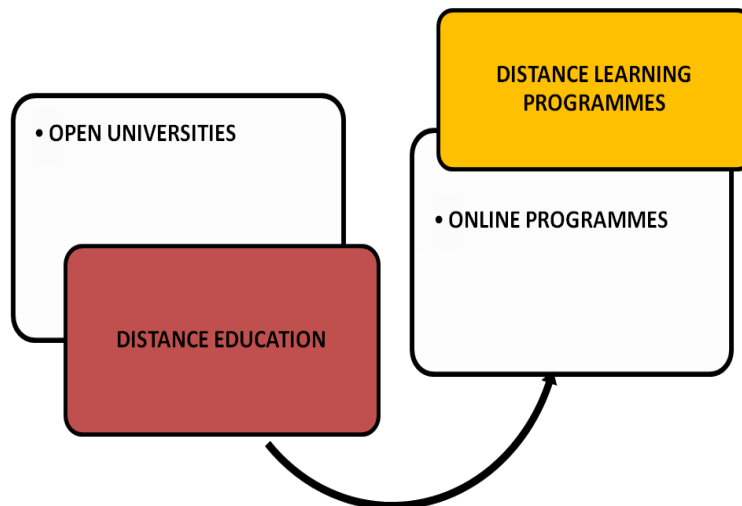


Figure 4. Promotion of Distance Education

Advantages of distance learning

- Pursue a job along with studies
- Money-saving
- Time-saving
- Learning at our own pace
- Possibility of studying anywhere anytime
- Recognition among employers
- Enhanced availability of the instructor
- Foster virtual communication
- Elimination of physical judgments
- Foster better class participation
- Adaptability and freedom
- Promotes self-inspiration
- Flexibility in choice of study
- Easy accessibility
- Better collaboration

Disadvantages of distance learning

- High chances of distraction
- Hidden costs
- Lack of technical knowledge
- Increase in scam operators
- Lack of interaction

Online education

Online education enables the students to gain educational experience through the collaboration of numerous technology. An educational experience that allows students to involve in the learning process from any location. In fact, online education has no boundaries. Zahoor Ahmad Lone (2017, p. 13951) comments on the flexibility of online learning in his research article, “With the flexibility of online courses, students can conserve more hours and more money, enabling them to learn with a purpose and instill a sense of self-belief in them”.

This type of learning relies completely on the internet to impart knowledge. This virtual learning environment employs various online platforms and teaching tools. This type of learning employs extensive planning over a period of time. In recent times, it is considered a dynamic platform for the implementation of education. In this platform, the communication takes place by one or more technological media— specifically electronic. Gina Ionela Butnaru and others (2021, p. 2) state,

Online education has the potential to transform the education system by expanding educational opportunities, transforming student populations, and encouraging the development of new pedagogical methods, making the learning process more reliable, more efficient, and less stressful for both instructors and students.

The world today is experiencing changes every now and then. Everything has become digital in this new era. COVID 19 has affected all the areas of human life including the educational sector. The covid 19 pandemic has resulted in significant upshots in almost all aspects of human life. Deepika Nambiar (2020. P. 783) rightly pinpoints the current situation and the changes experienced by the world as,

However, in the wake of the current COVID-19 pandemic situation conduction of online classes at the college and university level has been made mandatory by the educational boards. Covid-19 has brought out a drastic change in the educational system not only in Israel but rather the entire world. Universities across Israel as well as around the globe have moved to virtual classes suspending physical classrooms.

The field of education has changed tremendously with the distinctive rise of e-learning especially after the pandemic situation. The pandemic situation has utterly disrupted the entire educational setup. Teaching on digital platforms reached its maximum benefit during this current era.

Online learning seems to be the catalyst in creating new effective methods of the teaching-learning process. The adoption of online education continues even during the post-pandemic situation in many parts of the world. Gina Ionela Butnaru and others (2021, p. 2) comment on the advantages and disadvantages of online education in the following words is worth referring to in this context,

The impact of the COVID-19 pandemic has led to the temporary interruption of educational activities in the classroom. University students and high school students in their final years are in an unprecedented situation, which does not allow for a clear perspective of the future. The length of the pandemic and its effects on daily life, costs, and other financial issues can directly affect the continuation of the education of university student and high school students.

It is believed that the new emergence of the hybrid model of educational tools will accelerate the growth and significantly benefit the entire nation. It has become an integral part of the present educational system in all parts of the globe. In order to achieve academic continuity, especially during the pandemic situation, many educational institutions are promoting numerous online learning platforms.

Aras Bozkurt and others (2015, p. 331) put forth their view on the changes experienced by the educators around the world is worth referring to here,

Educators embraced the revolution, and the increased educational opportunities and especially the new learning models that have emerged are now influencing education and society as a whole. The 21st century thus begins with a paradigm shift in attitudes towards online education. Online learning is no longer peripheral or supplementary, yet an integral part of mainstream society. Our new understanding of the very nature of learning has affected the definition, design, and delivery of education. Paradigm shift in education has resulted in: new modes of educational delivery, new learning domains, new principles of learning, new learning processes and outcomes and new educational roles and entities.

Online education for teachers

The challenges due to the COVID19 pandemic situation have provided an insight into online education. The rapid shift of the teaching and learning process due to the outbreak of the global pandemic situation has brought challenges to educators. Teachers are undergoing a very tough period of time during this pandemic situation in juggling numerous challenges in the field of education.

Deepika Nambiar (2020, p. 784) identifies the challenges faced by the teachers in the adaptation of online technology as,

Teachers' perspective is equally important because if they as the provider of education are not satisfied and find the online mode unsatisfactory then the educational base itself becomes weaker. This new introduction of online classes has been equally challenging for teachers, who are also struggling to learn this new way or methodology of teaching.

Teachers should put in extra effort to incorporate the online curriculum in the most effective manner. The rapid move to online education can be best handled by the teacher with proper planning and training. Stephanie J. Blackmon (2012, p. 77) states the growth of online education in his research article in the following words,

The growth of online learning during the last decade has been remarkable. While in 1998 there were too few students enrolled online to count, according to a survey of more than 2500 institutions, by 2009 more than 5.6 million students were taking an online course (Allen & Seaman, 2010). Nearly 30% of students were taking a course online.

Sustainable growth can be witnessed with the help of teachers. In the process of disseminating knowledge teachers should effectively use the technology to its fullest in acquiring the benefits. There are multifaceted problems in the atmosphere of online education. Teachers can try their best in solving and predicting the issues and they could further suggest possible solutions to overcome the issues encountered. Anna Sun and Xiufang Chen (2016, p.165) state the importance of an online learning environment as,

An online learning community provides a potential environment that enables students to learn effectively through the growth of teaching, cognitive, and social presence. (Social presence is briefly defined as students' participation. Each presence has a distinctive role to play, but they are intertwined and interchangeable.

Implementation of online training programs

Online training programs help the educators in various dimensions namely

- It benefits in advancing the skills of the educators
- It helps in improving curriculum implementation, and educational policies.
- Educators can also collaborate with their peers in the process of teaching
- They try to implement new instructional skills to enhance their career.
- Aids in developing new skills and interdisciplinary approaches.
- It brings reformation in educational policies

Benefits of online education – students

- Students in higher education need intellectual freedom.
- It helps individuals in pursuing individualized learning programs.
- Enhances or promotes hands-on exercises, and real-world exploration.
- Promotes independent learning skills
- Possibility of learning beyond the norm
- Awareness of new methods of teaching and assessment

In the online learning environment, the learning community should create a sense of belongingness. Deepika Nambiar (2020, p. 791) highlights the positive aspects of online education as,

When it came to the positive aspect of online classes majority found it to be time saving, as it could be done from the comfort of the home which save time to travel and commute, don't have to rush to reach college. Other positive things reported were: faster completion of syllabus, recording of classes helped in referring to it later. The recorded classes could be watched again and again until the concept is clear. Classes can be attended anywhere, anytime thus, giving flexibility. Lesser disturbance from classmates, less anxiety in asking doubts and queries were also added among the others.

The effort in making interesting should start from the beginning of the course. The involvement should be found from both ends— instructors and students. Both the asynchronous and synchronous technologies should be used effectively for the success of the program. Discussions should be stimulated for the benefit of the students with the help of numerous technologies effectively. Collaborative tasks can be assigned and stimulated for the experience of social interactions.

Anna Sun and Xiufang Chen (2016, p. 169) quoted in (Yuan & Kim, 2014) to underline the key benefits of online education in the following words is worth referring here,

Online learners benefit greatly from online learning communities in the following ways: (1) because of their connectivity with one another, they are able to share knowledge and fulfill common goals, which can reduce students' dropout rates; (2) the relationship and interaction between the instructor and learners and among peer learners can increase student performances and their satisfaction of the course; and (3) learners can receive supports and help from their peers, and at the same time they can add their knowledge base through their interactive actions.

Impact of technology

Technology has brought a profound revolution in the history of mankind. It has created a greater impact on the personal lives of human beings. In addition, it has also produced a greater effect and impact nationally as well as globally in many possible ways. Technology has made human society rethink the meaning of education, teaching, and the learning process. The field of education is undergoing drastic changes with the arrival of new technologies every now and then. The impact of technology can be classified into the following criteria.

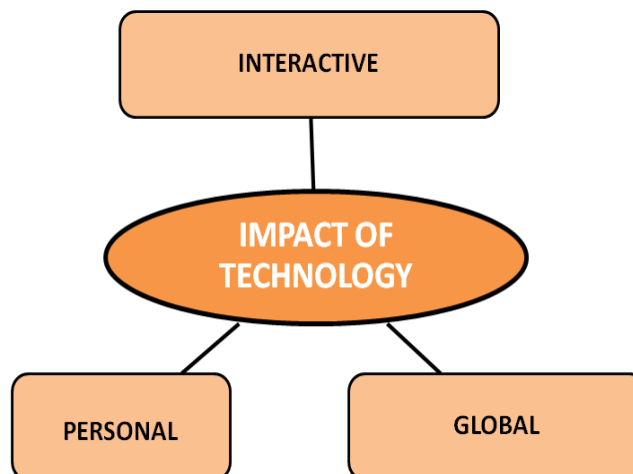


Figure 5. Impact of Technology

Personal. Technology has made learning programs more personalized. It has created a platform to share human talents and skills with millions of people around the world.

Interactive. Technology has created a new world of creative experiences. The new digital platforms made the learning process to be more interactive. It has made the process simple, easy, and fun. Learning by doing, interacting, and creating are made possible with the advent of technology. Viet Anh Nguyen (2017, p. 2) highlighted the importance of student-teacher interaction in the research article in the following words,

Student - teacher interaction is a key activity in the traditional teaching method when the teachers play a central role. With blended learning environment, learners play the central role, interaction between teacher and students become more flexible in many different forms.

Global. The expanding worldwide internet has made the combined knowledge of humans to be available virtually across the globe. A single tap of a digital keyboard or a touch screen will enable global knowledge sharing across the nation. The advent of the world wide web, search engines, and digital platforms have made easy accessibility of resources globally.

Interactive technology has made a significant impact on our lives. Technology plays a significant role in all walks of our lives. Technology has also automated various tasks of human life to be easy and efficient. The lifestyle of human life has changed a lot towards the betterment of livelihood. The interaction among students pave way for the exchange of information and ideas. For the establishment of the social interaction Kehrwald (2008) suggested some preconditions namely ability, opportunity, and motivation. In addition, he suggested that these preconditions should be structured and facilitated to promote productive interactions. The need for this learning environment should be balanced. Collective learning intends to promote deeper learning ability with enhanced teamwork skills. Online education is fueled by the outrageous growth of the internet. It is anticipated that online education will experience its outrageous growth with the initiation of technology. The vigorous reshaping, refining, and restructuring will attract more students' communities towards online learning platforms. It is gaining popularity with every passing day.

Impact of technology on education

During this twenty-first century, technology is considered an effective teaching tool. It has brought a great revolution in the field of education which includes the teaching and learning process. Educational institutions have realized the importance and the need for the implementation of technology in the field of education. Technology has made the job of teachers much easier. Students can acquire knowledge very easily with the help of interactive technology in the field of education. In this context, Gina Ionela Butnaru and others (2021, p. 2) rightly comment as,

The effectiveness of online education has shown a number of advantages due to increased flexibility and learning opportunities: easy access to experts, exposure to educational environments, a wide range of types of courses, and joining student communities.

The arrival of new technology has brought remarkable change in the thinking process of mankind. There is a paradigm shift from the local to global thinking perspective. It has brought a wide change in the outlook of mankind towards the world globally. Knowledge sharing across the nation has become more interactive. The entire process of education has been revolutionized in this present era due to the advancement of technology. Teachers employed numerous effective teaching methodologies in the process of teaching because of the technology and its growth. Fakhteh Mahini and et al. (2012, p. 2167) rightly refers the role of teachers in motivating the learners.

If the teacher can create a positive attitude in learning the lessons; it will motivate them in learning. Also, creating an appropriate emotional and spiritual space in classes will strengthen the intrinsic motivation in learners.

Benefits of technology for students

- Mobile apps promote an enhanced learning environment
- Of late due to the pandemic situation, mobile apps have become trending in enhancing learning opportunities
- Mobile apps have become the supplement for classroom learning
- Technology helps the weaker socioeconomic communities to have a wider and equal chance of accessing the learning resources.
- Technology promotes wider exposure which in turn enhances new perspectives.
- Technology aids visual experience in the teaching environment

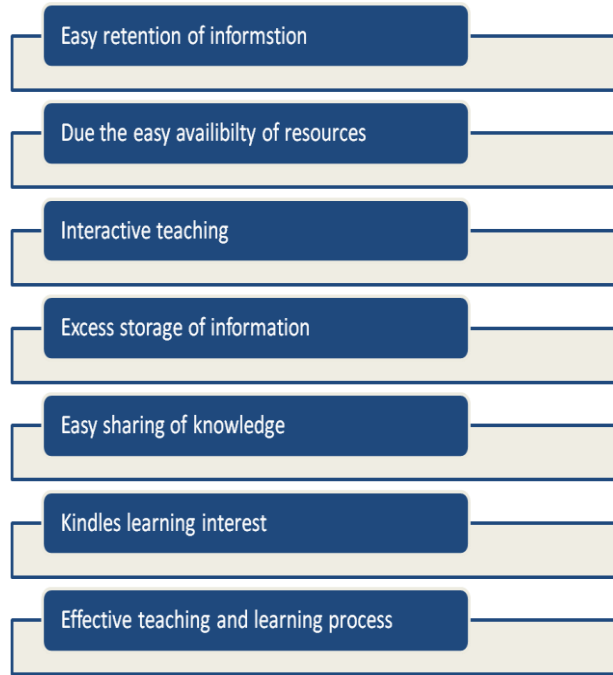


Figure 6. Impacts of Technology on Education

Technology as a teaching tool

Viet Anh Nguyen (2017, p. 3) puts forth the importance and benefits of the blended learning atmosphere in the field of education as,

A blended learning environment allows students to have more favorable conditions of time, space to perform the interactive operation. With the supported technology, the forms of interaction between the students in the course are increasingly diverse and more efficient.

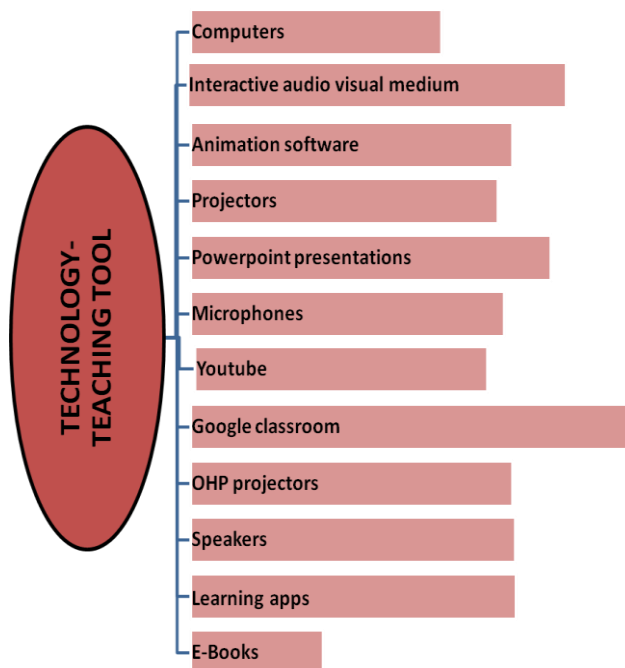


Figure 7. Technological Teaching Tools

The advent of various teaching technological tools has made numerous reformations in the field of education. The concept of blended learning, mobile learning, connectivism, hybrid classrooms, etc is made possible with the help of technology.

Technology-based education – teacher’s activities

In the world of technology-based education, teachers are much responsible for creating a better teaching atmosphere. The major task of the teachers lies in creating a good relationship between teacher and learners and further in planning and providing electronic content for learners. Fakhteh Mahini and et al. (2012, p. 1616) quoted in (Zamani & Azimi, 2008) while referring to the technology-based classroom teaching is worth referring here.

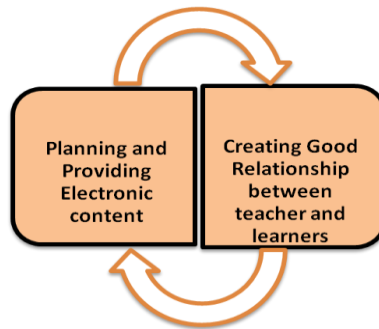


Figure 8. Teacher’s Activity in Implementing Technology

Since the technology-based training is learner-centered education rather than relying on the teacher, there have been fundamental changes in the roles and responsibilities of teacher and the learning process. Learners can facilitate their learning process with the help of technology and educated without time and place constraints; in such an atmosphere they can easily collect and analyze data, testing hypotheses, designing experiments and making conclusions. Because utilizing the tools and technologies will reduce some limitations in the classroom.

Teachers try hard in facilitating the learning process with the help of educational tools and technology. They also try hard in creating a positive attitude towards the learning process. Anna Sun and Xiufang Chen (2016, p. 167) quoted in Crawford-Ferre et al., (2012) highlighted the importance of online training programs for the educators in their research article as,

Professional development should emphasize how to promote effective online collaboration for students, how to set high expectations, how to adjust instructors’ teaching to conform to the online environment, and how to create proper online teaching strategies, etc. In addition, online faculty also need adequate training in the technologies applicable to online teaching: how to use the online system and course software, knowing what to do and whom to call when certain technology problems occur, etc.

In the world of technology-based education, in the view of creating cultured, moral citizens, the role of teachers cannot be ignored. Teachers help in converting the static status to a dynamic one in the process of learning. Teachers, with the help of their expertise, effective activities management skills, can create dynamic status in the world of the learners. This status enhances effective communication of the learners' community. The dynamic status in the learning environment creates better educational results. Further, it also triggers internal motivation of the learners' community by promoting a positive attitude of the students towards lessons and peers. Teachers on the whole ease and guide the process of teaching and learning. Fakhteh Mahini and et al (2012, p.1617) state the importance of teachers in the process of learning as,

The main task of a teacher is to enable the students in the learning matter and facilitate this process. So, with providing clear objectives, she should prepare and compile the appropriate content, and try to encourage the learner to have active participation in learning matter and group discussions (Berge, 1995). Our mean of active learning is that in teaching, instead of a simple speech teacher should act in a way that the learner could understand his learning and be responsible for his learning and engaged him in teaching. Here, knowledge has a role rather than listening; less emphasis on data transfer and more emphasis to skills in reading activities, discussion, and writing and etc.

These digital tools provide an effective way to implement text, images, audio, and video for an immersive teaching-learning experience amongst the teaching fraternity and the students' community. It also further helps in

bringing active involvement in constructing the content in the minds of the learners and novel ideas in the field of education.

Role of information and communicative technology in the field of education

It is a powerful tool in the field of the teaching and learning process. In addition, it also upgrades the quality and efficiency of the teaching and learning process. ICT helps in planning and facilitating the use of technology in the field of education. It helps in enhancing the teaching, learning, and seriousness of other activities in a better way. It tries to implement modern technologies to provide education in different ways. The efficiency of modern technology promotes the teaching-learning process in numerous ways.

The advent of technology helps in employing and developing numerous approaches in solving complex problems both as an individual as well as in a group. It also enhances individual accountability for the learning process. It promotes thinking skills and accelerates better problem-solving skills. Technology in the process of education helps in acquiring information in less span of time. Individual learning will be facilitated to a large extent by promoting flexibility and self-directed learning. The influence of technology in the education process promotes an active learning atmosphere and active participation in the process of acquiring knowledge. On the other hand, it increases the desire for learning. Technology turns to be the instrument of change in this modern world. It further leads to increased productivity in the world of educational setup.

In the new era of learning, technology occupies a pivotal role in the process of teaching and learning. Many digital educational tools come in handy in helping the teachers and students to a larger extent. These digital educational tools have been created with the purpose of bringing autonomy in the field of education. Further, it also aids in collaboration, facilitating communication, improving academic administration, etc.

Some of the twenty-first century digital educational tools includes:

Digital educational tools	Functions
Edmodo	Educational Tool-connects teachers and learners
Socrative	It allows teachers to create educational games
Project	It allows creating multimedia presentations
Thinglink	It allows creating interactive images with music and sound
TED-Ed	It creates educational lessons with the collaboration of teachers and students
CK-12	A website allows creating and distributing educational materials through the internet
ClassDojo	An educational tool to improve student behavior. It also provides real-time notification to the students
Storybird	A tool for creating interactive online books for improving the reading skills of the students
Animoto	A digital tool for creating high-quality videos to improve academic lessons
Kahoot	It promotes game-based learning
eduClipper	The platform allows teachers and students to share educational materials

These digital educational tools help in creating online collaborations. Further, it also assists in administering and providing educational materials, etc. The digital educational tools turn out to be more enriching and personalized in the field of education. It also measures the students' performance and communicates to the parents digitally.

Using these tools teachers can monitor the performance of the students and they can make their lessons more personalized based on their performance. By creating multimedia presentations and interactive images, teachers are awakening the curiosities of students through this interactive content. Teachers try to expand their knowledge with the help of these digital educational tools in all possible means. These digital educational tools also aim in enhancing active participation in the process of learning. These tools also cater to the needs of any

teachers and students in the process of creating audio-video content that adapts to all the educational needs. On the whole, these tools help the teachers in creating a dynamic, social, and fun-based educational environment for the student community.

Through online education with the help of technology, teachers can reach a wide range of students with more flexibility. The concept of learning anything from anywhere is made possible through this platform. The incredible invention of various devices, the advent of technology, and availability of the internet made this statement possible or true 'learning anything from anywhere. Online education enhances the sensible selection of choice. The positive response from the students and the teachers can make it the future of the education scenario. On the other hand, online education also has certain challenges. Online learning is not a new phenomenon. The emergence of digital technologies facilitated more online learning.

In the realm of the higher education sector, there is an increasing demand for online courses. Anna Sun and Xiufang Chen (2016, p. 171) rightly point out the necessity of things for the promotion of online education as, "Effective online instruction is dependent on well-designed course content, motivated interaction between the instructor and learners, well-prepared and fully supported instructors, etc". The global pandemic situation leads to an unprecedented shift in online education. Online learning is a new paradigm with varying degrees of eagerness and anxiety. It is important to consider both the pros and cons associated with it. Analyzing both factors leads to better preparation in facing challenges in the atmosphere of the teaching and learning process. In order to embrace the new opportunities, it is highly essential to tackle the challenges in the path of online education.

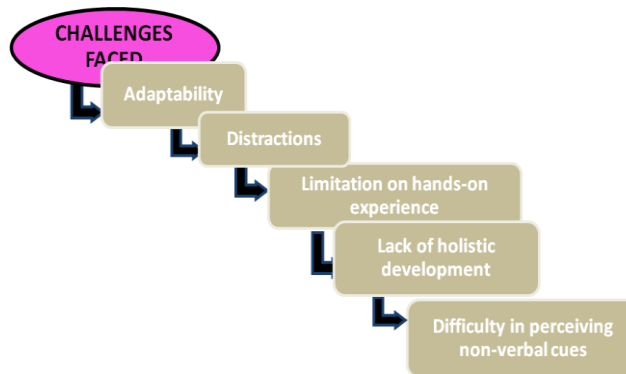


Figure 9. Challenges Faced in Online Education

There are certain challenges in the path of online education which in turn pose potential threats in attaining the success of online educational programs. User-friendly and reliable technology is a highly essential tool for the successful completion of the online program. Sometimes the technology may detract the learning experience which is indeed not reliable. This methodology seems to be an inappropriate learning environment for the dependent learners. Whereas it seems to be highly effective and the source of alternative medium for the mature and independent learners. Students must keep up their time limit, maintain their self-motivation for the successful completion of the courses. Sometimes, the environment turns out to be disruptive to the success of the course.

The curriculum and the technology must be balanced in order to experience the fullest benefit. The facilitators should be given proper training regarding online delivery and the methodologies to be implemented in online learning platforms. The facilitator must balance the class to attain the success of the virtual classroom. They should create a supportive environment to bring the feeling of comfortless amongst the learners. Failure in understanding the challenges and failure in adopting the right technology can alienate the class from each other. The institutions must understand the impact of the technology. The teachers must integrate the technology to its fullest to avoid pitfalls. Gina Ionela Butnaru and others (2021, p. 5) rightly points out the features necessary for the success of the online education from teachers perception is worth referring to her in this context,

Teaching staff must take into account three elements when designing the content for online courses: theoretical materials, pedagogy, and technology. If these elements are perfectly combined, they ensure efficient and high-quality teaching

Conclusion

Well-designed educational programs can bridge the gap of cultural, social, and intellectual differences amongst the students. Digital educational tools help in measuring students in online learning not only their academic progress but also change their mood and promote active participation. These tools are used by the

realm of academic educators especially during this pandemic situation on a large scale. Emotional wellbeing is much needed in the process of learning. When the emotional state of mind deteriorates— state of frustration, boredom, confusion, angry— the efficiency also decreases in the process of learning. The affordability and availability of technical educational tools help teachers in identifying the atmosphere of the learning process. Example tracking the facial movements, speed recognition, interactive voice recognition, etc. help in identifying the mood of the learners.

Teachers can customize the entire learning experience of the students based on their needs and benefit. The educational institutions need to decode and analyze both the positives and negatives which will enhance the strategies in creating a better and efficient learning atmosphere. The uninterrupted learning journey for the students can be provided with the proper understanding of the technology both by the teachers and the educational institutions. Thus, the hybridization of technology in the process of teaching and learning has become the new normal in the world of digitalization. This technology has the real potential to unlock the world of opportunities both for the learners as well as educators.

References

- Adnan, M., & Anwar, K. (2020). Online learning amid the COVID-19 pandemic: Students' Perspectives. *Journal of Pedagogical Sociology and Psychology*, Vol. 2, Iss. 1, pp. 45–51. <https://doi.org/10.33902/JPS>
- Aslani, E. (2003). Naghshe moshavere moallem, *Journal of teacher development*, Vol. 176, pp.29-32.
- Bernard, R., Abrami, P., Borokhovski, E., Wade, C.A., Tamim, R., Surkes, M., & Bethel, E. (2009). A meta-analysis of three types of interaction treatments in distance education. *Review of Educational Research*, Vol. 79, Iss. 3, pp. 1243-1289.
- Blackmon J. Stephanie and Claire Major (2012), Student Experiences In Online Courses A Qualitative Research Synthesis, *The Quarterly Review of Distance Education*, Vol. 13, Iss. 2, 2012, pp. 77–85.
- Bozkurt, A. and Etal (2015). Trends in distance education research: A content analysis of journals 2009-2013. *The International Review of Research in Open and Distributed Learning*, Vol. 16, Iss. 1, pp. 330-363.
- Butnaru, G.I and et al (2021), The Effectiveness of Online Education during Covid 19 Pandemic— A Comparative Analysis between the Perceptions of Academic Students and High School Students from Romania, *Sustainability*, Vol. 13, pp. 1- 20. <https://doi.org/10.3390/su1309531>
- Davies, R., Howell, S., & Petrie, J. (2010). A review of trends in distance education scholarship at research universities in North America, 1998-2007. *The International Review of Research in Open and Distance Learning*, Vol. 11, Iss. 3, pp. 42-56.
- Fortune M, Spielman M and Pangelinan D. (2011), Students' perceptions of online or face-to-face learning and social media in hospitality, recreation and tourism, *Journal of Online Learning and Teaching*, Vol. 7, Iss. 1, pp 1-16.
- Hara, N., & Kling, R. (2000). Student distress in a web-based distance education course. *Information, Communication & Society*, Vol. 4, pp. 557-579.
- Harasim, L. (2000). Shift happens: Online education as a new paradigm in learning. *The Internet and Higher Education*, Vol. 3, Iss. 1, pp. 41-61.
- Jegade, O. J. (1994). Distance education research priorities for Australia: A study of the opinions of distance educators and practitioners. *Distance Education*, Vol. 15, Iss. 2, pp. 234-253.
- Kayode, E.-O., & Teng, T.-L. (2014), The impact of transactional distance dialogic interactions on student learning outcomes in online and blended environments. *Comput Educ*, Vol. 78, pp. 414–427. <http://doi.org/10.1016/j.compedu.2014.06.011>
- Lone, Ahmad Zahoor. (2017), The Effectiveness of Online Education during Covid 19 Pandemic—A Comparative Analysis between the Perceptions of Academic Students and High School Students from Romania, *International Journal of Engineering Science and Computing*, Vol. 7, Iss. 7, pp.13950-13952.
- Lou, Y., Bernard, R. M., & Abrami, P. C. (2006), Media and pedagogy in undergraduate distance education: A theory-based meta-analysis of empirical literature. *Educational Technology Research and Development*, Vol. 54, Iss. 2, pp. 141–176. <http://doi.org/10.1007/s11423-006-8252-x>
- Mahini, Fakhteh and et al. (2012), The importance of teacher's role in technology-based education, *Procedia - Social and Behavioral Sciences*, Vol. 46, pp. 1614 – 1618.
- McBrien, J. L., Jones, P., & Cheng, R. (2009), Virtual spaces: Employing a synchronous online classroom to facilitate student engagement in online learning. *International Review of Research in Open and Distance Learning*, Vol. 10, Iss. 3, pp. 1–17.
- Melrose, S., & Bergeron, K. (2007). Instructor immediacy strategies to facilitate group work in online graduate study. *Australasian Journal of Educational Technology*, Vol. 23, Iss. 1, pp. 132-148.

- Motternam, G., & Forrester, G. (2005). Becoming an online distance learner: What can be learned from students' experiences of induction to distance programmes. *Distance Education*, Vol. 26, Iss. 3, pp. 281-298.
- Nambiar, Deepika. (2020), The impact of online learning during COVID-19: students' and teachers' perspective, *The International Journal of Indian Psychology*, Vol. 8. Iss. 2, pp. 783-793.
- Nguyen, Anh Viet (2017), The Impact of Online Learning Activities on Student Learning Outcome in Blended Learning Course, *Journal of Information & Knowledge Management*, Vol. 16, Iss.1, pp. 1 - 15.
- Panda, S. (1992). Distance educational research in India: Stock-taking, concerns and prospects, *Distance Education*, Vol. 13, Iss. 2, pp. 309-326.
- Russo, T., & Benson, S. (2005), Learning with invisible others: Perceptions of online presence and their relationship to cognitive and affective learning. *Educational Technology and Society*, Vol. 8, Iss. 1, pp. 54-62. http://doi.org/ica_proceeding_11822
- Shoarinejad, A. (1970). Naghsh-haye moallem, *Journal of education*, Vol. 119, pp.1-5.
- Sun, Anna and Xiufang Chen. (2016), Online Education and Its Effective Practice: A Research Review, *Journal of Information Technology Education: Research*. Vol. 15, pp. 157-190.
- Tratnik A. (2017), Student satisfaction with an online and a face-to-face Business English course in a higher education context, *Journal Innovations in Education and Teaching International*, Vol. 15. Iss. 1, pp. 1-10.
- Yang, J., Quadir, B., Chen, N.-S., & Miao, Q. (2016), Effects of online presence on learning performance in a blog-based online course. *Internet High Educ*, Vol. 30, pp. 11-20. <http://doi.org/10.1016/j.iheduc.2016.04.002>
- Zawacki-Richter, O., & Anderson, T. (2011). The geography of distance education-bibliographic characteristics of a journal network, *Distance Education*, Vol. 32, Iss. 3, pp. 441-456.
- Zembylas, M., Theodorou, M., & Pavlakis, A. (2008). The role of emotions in the experience of online learning: Challenges and opportunities, *Educational Media International*, Vol. 45, Iss. 2, 107-117.