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Technological Advancement in Education Sector is the Demand of Time: Bangladesh Perspective

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Abstract:- The present world is facing a crisis moment where every country regardless developed, developing, or underdeveloped fighting to overcome such a Pandemic disastrous Covid-19 in all spheres of economic, educational, or political activities. Such unwanted issues hinder the normal speed of work all over the world and Bangladesh is no exception. In Bangladesh, educational institutions are closed for an unlimited time, and the students face a huge loss when they are not attending their regular classes on their campus. There needs some solution to come up with normal life and educational technology would be the best solution. E-learning and instructional technology can take place within or outside of the classroom. The term "educational technology" describes the application of both hardware and theoretical concepts in education. However, Bangladesh's educational system is outdated in terms of technology. The study is an attempt to find the necessity of technological improvements in Bangladesh's education sector to cope with the changing first-world country and to ensure quality education for all in any awkward situation, the world is facing now. Finally, the study has illustrated the scope of technological improvements in Bangladesh's education sector by identifying their needs.

Keywords:- *Educational Technology; Scientific Advancement; Bangladesh's Education Sector; SDGs.*

I. INTRODUCTION

Science and technology are one of the biggest contributors to the changing and dynamic world we see today in the 21st century. It's like moving towards a great ocean of technology. Humanity's way of life has undergone an enormous transformation, which may be credited to the advancement of science and technology. Therefore, it would be accurate to describe this globalization coalition as a scientific and technological explosion. Bangladesh is not an exception to the global trend toward the development of fundamental human requirements like food, clothes, shelter, medicine, and education, which is based on science and technology. Bangladesh is now committed to achieving all of the Millennium Development Goals by the end of first half of the twenty-first century, including the Sustainable Development Goals. However, the ideal can only be realized when science and technology are integrated into every aspect of life, including health, education, agriculture, commerce, and industry. Therefore, if technological advancement in the education sector receives preferential treatment, it will be much easier to achieve SDGs in Bangladesh such as- Good health and well-being; Quality education, Industry, innovation, and infrastructure; Reduced inequalities; Sustainable cities and communities; Climate action; etc.

The present paper deals with the necessity of technological improvement in the education sector concerning Bangladesh's perspective to accomplish some SDGs goals by analyzing various crisis moments around the globe.

II. OBJECTIVES OF THE STUDY

Investigating the importance of technological advancement in the education sector from Bangladesh's current perspective is the study's main goal. There are also some other partial goals and objectives of the study as follow:

- To assess the needs of modern technology in ensuring quality education at all levels beyond the walls of a classroom at present state of socio-economic and environmental pandemic situation
- To find the scope of technological advancements in education sector to overcome such a situation like the Covid-19 pandemic and the others

III. METHODOLOGY

This paper is descriptive type research based on secondary data studies with few primary data reviews that were analyzed for a better understanding of the necessity of science and technology in the education sector concerning Bangladesh's Perspective as a whole and the present state of condition for pandemic Covid-19 and other unwanted events. To achieve the above objectives of the study a qualitative content analytical and judgmental technique was attributed.

IV. KNOWLEDGE AND EDUCATION

There is a little bit difference between knowledge and education. The main distinction between the two is that knowledge is informal and education is formal. Knowledge is learned from practical experiences; education is acquired from official institutions like schools, colleges, and universities. Education is thus the process of learning for a particular aim, whereas knowledge is information that is learned through good education, peer learning, consultations, and in-depth reading. As a result, they are connected and one causes the other (Kumar, 2011).

The world we live in today is the fruit of the relentless work of wise men in various fields. It is said that knowledge is power and that is why there is no alternative to education for acquiring knowledge. Only proper education can make a knowledgeable and capable person in a society, a country, or the globe. However, this procedure is only successful if it is ensured that high-quality education is available throughout the nation. The shocking reality, however, is that Bangladesh has an extremely low literacy rate due to a subpar educational system. When the education system of the advanced world is updated frequently, our education system remains to lag. The education system of our country is still confined to the classroom regardless of primary, secondary, higher, or tertiary levels. Again, the knowledge is also confined within the classroom. The students of the country are not habituated to thinking independently beyond the classroom.

A. Bangladesh's Education System

There are three levels of primary education system in Bangladesh are as follows:

- Primary level (classes 1-8): Classes one through eight make up the primary level. Primary education has a few significant systems as well. In general, there are three main systems: Madrassa, Private (Nongovernment), and Public Schools (Government and Registered). The majority of pupils in Bangladesh attend government-run schools (both registered and government-run). However, a large portion of pupils attend Madrasah elementary schools, while English-medium schools are limited and largely located in large cities (Benbeis, 2008).
- The Secondary level (9–12): Classes nine through twelve make up the secondary level. Bangladesh doesn't have a middle school system. On September 2, the Committee of National Education Policy Formulation will present the government with the eagerly anticipated National Education Policy suggestions to raise the secondary education level to class XII and the basic education level to class VIII (Correspondent, 2009).
- The Tertiary level: Tertiary level includes all the above twelve class studies in Bangladesh or abroad. It may be Honors, Master, M. Phil, or Ph.D., and so on.

Students have the option of receiving their education in Bangla or English at all levels of education. Most study materials used in private schools are English-based, whereas those in government-sponsored institutions are Bangla-based. Again at all levels of study students are encouraged to go into the classroom and receive conventional studies. Though some scientific tools and techniques are used in the classroom they are very poor and obsolete and are not updated over time.

B. Educational Technology

Technology is simply the application of tools and methods to a task to facilitate it. Technology, or as it is frequently referred to, the alteration and manipulation of the environment, might be characterized as the use of scientific information to the real-world objectives of human life. A definition of educational technology is the use of such scientific tools and methods in the educational field to facilitate learning and make it affordable and accessible to all. Education and technology are the two words that make up educational technology. We advance technology when we use communication and learning science in the classroom. In general, educational technology aims to enhance the learning process of people by applying, developing, and evaluating systems and procedures.

Potential attempts of teaching tools sparked the creation of educational technology techniques, which have since quickly expanded to include flipped classrooms, augmented and virtual realities, simulations, immersive environments, group work, social networking, and more (Huang et al., 2019).

V. USAGES OF TECHNOLOGY IN BANGLADESH EDUCATION SECTOR

Rapid technological change can affect people's personal, social, and professional growth everywhere in the world, and Bangladesh is no different in this situation. Whiteboards, erasable markers, radio, TV channels, mobile phones, computers, projectors, webcams, and other various social networking sites like Facebook, Twitter, Messenger, imo, WhatsApp, WeChat, Viber, Google Classroom, class marker, timify me, LinkedIn, Zoom, are some technological tools and techniques that are used frequently in the Bangladeshi education to adjust to shifting knowledge and skill demands as well as growing teaching and learning possibilities. One of the fundamental human instincts that can be satisfied in simple and engaging ways is the urge to accomplish something new. They differ from other animals because they have a sense of enjoyment and leisure. A long-standing struggle among students and teachers is how to learn quickly and enjoyably. For whatever reason, educational technology's function in teaching, and particularly in the teaching of law to Bangladeshi students, is more important than ever (Islam, 2016). With the aid of technology-based resources, the traditional situation in higher education has changed from a four-walled classroom to a no-walls virtual platform. These resources include interactive whiteboards, multimedia-projectors, mobile devices, social

networking sites, TV channels, MOODLE, podcasts, search engine, websites, e-dictionaries, e-journals, e-books, and other virtual resources that are utilized to enhance teaching and learning (Mahmuda, 2016).

VI. NEEDS FOR TECHNOLOGICAL IMPROVEMENT IN BANGLADESH'S EDUCATION SECTOR

An essential current trend to address the difficulties of education and teacher preparation in a changing environment is the growing utilization media and technologies to enhance teaching and learning. In an effort to meet the United Nations Millennium Development Goals, many Global South nations are attempting to integrate technology into their educational and teacher preparation systems. Despite some recent study demonstrating the benefits of using technology to enhance education and learning in situations with limited access to it, no research has specifically addressed the constraints and limitations that come with using the technology in those particular contexts (Shohel & Kirkwood, 2012). Online education is a significant application area. Students in that system are able to take online lessons whenever they have free time. Therefore, online learning systems must provide enormous funding to prepare lectures using a multimedia technology. Millions of students can attend lessons from a single instructor online at any time and from any location (Shohel & Power, 2010). One of the most important factors in the advancement of the economy and of human wellbeing is education. Information and communication technology (ICT) has shown to be an effective educational tool that supports some significant improvements in the way that people teach and learn. ICT has the potential to alter a nation's economic structure and educational system. Despite the myriad issues facing Bangladesh's education sector, ICT has the power to alter the current situation (Sultana & Haque, 2018). Human societies depend on education since it is a key tool for promoting social cohesion and economic development. The teaching approach has remained mostly unchanged over the years: the teacher talks and acts, and the students listen, observe, and write. Numerous technological advancements, such as printing presses, increased access to textbooks and sped up the dissemination of knowledge. As a result, educational institutions sprung up and expanded globally. However, the actual education system remained largely unchanged and teacher-centered. New avenues for knowledge transfer opened up with the creation and assistance of new technological equipment for processing images and sounds. In physics or biology classes, for instance, images might be used to teach material instead of hand-drawn illustrations. Students learning foreign languages can practice their lessons at their convenience by listening to native speakers through audio and video recordings and translating software (Assar, 2015). The teacher serves as a facility for information and knowledge, while the student serves as a learner of information and knowledge, both of which play vital roles in education. Teachers convey information to the pupils after compiling it from a variety of sources, including textbooks, personal notes, the library, etc. This indicates that communication is crucial in the transfer of knowledge and information from professors to pupils. Technology helps pupils work more productively than in a traditional classroom, but the teacher's job in classrooms with lots of technology is more difficult (Keswani et al., 2008). Today, students prefer to use modern technology, tools, and equipment that enhance their interactivity of students. When technology is used, it is far more engaging and filled with interesting regions, according to the study. Knowledge transfer is made incredibly simple, practical, and efficient with the application of new technologies and technical tools. This indicates that, whether it is in school or other areas of life, students' minds tend to function more swiftly when given access to modern technology. These days, it is impossible to resist relying on such innovation, which only makes life a simple, smooth journey, even at schools, colleges, or universities (Raja & Nagasubramani, 2018). Educational technology can benefit both teachers and students in a variety of ways. The manner that teaching and learning are conducted is changing because too smart boards, clickers, cloud platforms, and student laptops. Electronic information solutions and paperless practices are changing communications within the school while still saving time and money. Like many other sectors, the education industry can benefit greatly from technology, including Increase student enjoyment, improve feedback, establish relationships, promote tech skills, and save costs while increasing adaptability and collaboration (Mittha, 2021). Academicians can deepen their knowledge, guarantee decent education, keep improving real work skills, collaborate and interact with students easily, encourage students to participate in class, make information easy to access and store, and facilitate an even more constructive learning experience by embracing modern technology (Islam, 2021).

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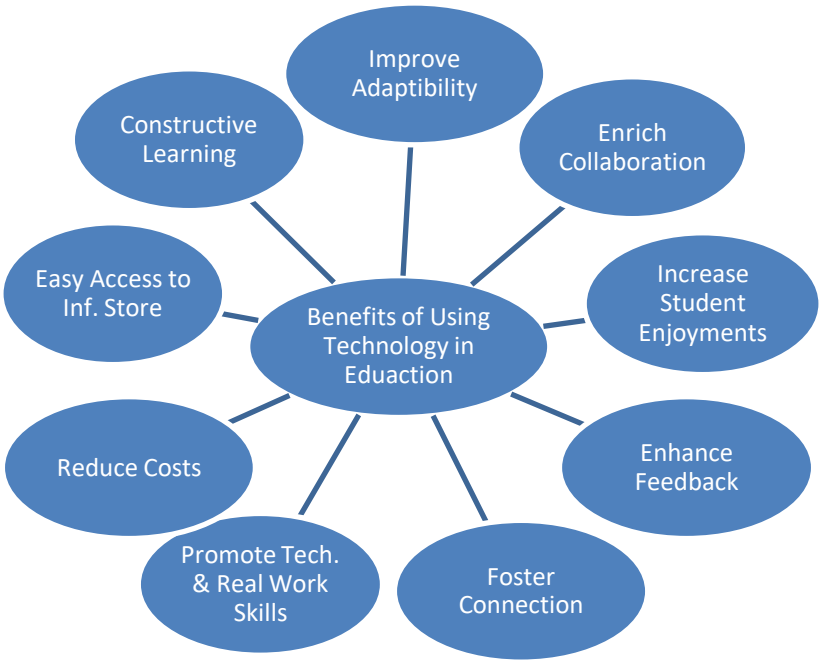

Fig 1: Benefits of Using Technology in Education Sector (Source: Mittha, 2021; Islam, 2021)

The world is currently awash in information, and information and communication technology has taken over. The nation that is making much progress in science and technology is moving up the developed world-class the fastest. Because of this, the modern world is advancing quickly in the direction of technology. In Bangladesh, technology and technological devices greatly contribute to cost savings in a variety of ways. For example, many students use various apps and download helpful study-related software, and students from all fields who are geographically or economically disadvantaged can gain access to online software or resources that are affordable for them. But regrettably, even in higher-level institutions or universities in Bangladesh, technology is not widely utilized in many educational institutions. To maintain the nation's growth process across all sectors and prevail in this cutthroat global marketplace, technological advancement in Bangladesh's education sector is the only viable alternative.

Finally, the need for technological improvement in Bangladesh's education sector can be summed up with the following statements:

- For the entrance of the teachers, students, learners, or researchers into the ocean of endless information.
- For the implementation of online education at all levels of study (Primary level, Secondary level, Tertiary level) in any unwanted crisis moment, or a situation like the Pandemic Covid-19 and others to overcome the challenges of continuing education all over the country.
- To ensure quality education beyond the classroom to reach the SDGs within the scheduled period set by the United Nations (UN).
- To present the best way of teaching and learning that is innovative in the Bangladesh education sector.
- To know the best uses of up-to-date information and communication technology in the day-to-day dealings of users.
- To make the students knowledgeable person rather educated only in all the fields of education like- agriculture, industry, or commerce.
- To apply a suitable management structure in Bangladesh's education sector.
- For the meeting of extended educational needs for a growing population with less infrastructure development.
- To make education affordable or very low cost for the disadvantaged group of people in the society or country to ensure the reduction of inequalities in the education sector of the country.
- To ensure active learning in the education sector at all levels that is collaborative and cooperative by ignoring the geographical barriers in the age of globalization.

VII. SCOPE OF TECHNOLOGICAL IMPROVEMENT IN BANGLADESH EDUCATION SECTOR

Since the beginning, the Bangladeshi government has been attempting to fulfill its role. As part of her role, she has used a variety of educational methods and strategies. Information and communications technology (ICT) is among the most recent methods being used in the globe today, including Bangladesh, in the subject of education. The present, so the saying goes, is an ICT blessing. Without the use of technology, every area of a nation, including business, agriculture, travel, transportation, and manufacturing, cannot

function effectively or produce the desired results. However, the need for technology-based higher education is becoming increasingly apparent. Higher education that relies on technology and the internet is expected to offer its students opportunities like real-time access to course materials both on and off campus, online submission of assignments and term papers, access to an online transcript for the student and their advisor, use of a log to track students' online activities, online discussion forums, and the provision of a digital library.

The processes of teaching and learning in higher education around the world have undergone a considerable upheaval as a result of the rapid advancement in modern technologies. In higher education, digital technology opens up new opportunities for teachers and encourages blended, online, and e-learning. It also proposes a variety of ways to converse, learn, interact, cooperate, and interact. Additionally, higher education is using digital technology more and more frequently as a result of the economy's ongoing growth. E-learning, Learning Management Systems (LMS), Content Management Systems (CMS), and other current and well-liked technical developments in the higher education teaching and learning process may also be used in Bangladesh (Islam, 2021). To use current technology, well-designed distant learning and online programs & courses should be created. These should include clear goals, preparation for student variability, flexible methods and resources, and timely progress tracking (Nelson & Basham, 2014). When choosing the ideal style of instruction, the future importance of the technological instruments available for content distribution was also taken into account (Shand et al., 2013). A nation's progress is thought to be greatly aided by education. Education has aided in the advancement of many nations. However, several of them additionally failed to maintain the progress made because they were unable to provide the trained labor force needed for the growing economies brought on by globalization and the swift change in economic patterns. Policymakers are now under pressure to give the creation of skilled labor that can support sustainable growth first priority. In developing their educational policies, the nations that have attained sustainable growth have given technology and science education a high emphasis. Bangladesh's only remaining option for development is to make effective use of its population (Alam, 2009). The adoption of technologies to improve teaching and learning in situations with limited access to technology is fraught with difficulties. Economic, technical, socio-political, attitudinal, and educational difficulties are frequently implicated and must be handled concurrently. Mobile technologies can help students when they need them and in ways that suit their personal preferences. It appears that the use of a mobile device or iPod within a curriculum can help teach and learn in a setting with limited access to technology (Shohel & Kirkwood, 2012). Since the beginning, the Bangladeshi government has been attempting to fulfill its role. As part of her role, she has used a variety of educational methods and strategies. Information and communications technology (ICT) is among the most recent methods being used in the globe today, including Bangladesh, in the subject of education. The present, so the saying goes, is an ICT blessing. Without the use of technology, every area of a nation, including business, agriculture, travel, transportation, and manufacturing, cannot function effectively or produce the desired results (Rahman et al., 2012). Since technological improvement has positive impacts on education and still the Bangladesh education sector is not technologically up-to-date, the scope of technological improvement here is huge. The government and the other parties involved in education must devise a plan to modernize Bangladesh's educational environment to adapt to the shifting educational environment of first-world countries. However, improving technology in the education sector is not a simple task that could be implemented overnight. So, only joint venture efforts of the government and private sector can make it possible to present an education sector in the country that is technologically improved and competent enough to beat the competitive world. Finally, it can be said that if the government or other entity wants to implement the strategy of changing the Bangladesh education sector as a technologically improved sector in the country then the scope is open to fulfill the need for technological improvement in the education sector mentioned in the above previous statements.

VIII. THE CONCLUSION

Once there was a very popular proverb that ‘Go to China if necessary to acquire knowledge but now the time has changed and no one needs to go physically to China to acquire knowledge rather needs technology. In the age of mobile devices, education is undergoing certain changes. The impoverished now have more accessible educational options because to technology. Use of such new technologies has been promoted by donor organizations as a way to lower the cost of accessing and educating numerous children and people who are not already enrolled in the educational institutions in place in developing nations. Because technology makes it possible the same knowledge and information for all regardless of the geographical boundary if someone has internet access and a device. So anybody can get help to know the world's knowledge and information with a sudden click on their internet devices like- computer, laptop, iPod, mobile and so on. There is no class that he or she is rich or poor, in air or water, the home or abroad. Because of this, using technology to educate and learn makes it simpler and more engaging for both the teacher and the pupils, or the researchers. The world is not too far away from implementing paperless education at all levels. However, it is unclear if Bangladesh is prepared to accept the reforms in the educational system. So it is high time for the implementation of modern technology in the education sector of the country at all levels to face the changes. If the education sector is modernized, then all the other sectors will also be modernized chronologically and Bangladesh will reach the class of modern families of the high-tech-based first world.

Abbreviation
SDGs – Sustainable Development Goals

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