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# Importance Of E-Learning In Developing The Education System Of Bangladesh

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**Abstract:** This study discussed the concept of e-learning and its potential impact on the education sector in Bangladesh. It highlighted the importance of technology-based learning in today's digital age and emphasizes the benefits of e-learning in providing access to quality education, particularly for those in rural areas with limited resources. This research also acknowledges the challenges faced by the education sector in Bangladesh, such as the lack of quality teachers, content, and infrastructure. The significance of the study lies in promoting e-learning as a solution to these challenges and improving the education system in Bangladesh. The objectives of the study include understanding the importance of e-learning, assessing its acceptability, and exploring its potential for knowledge improvement. The methods employed in the study involve collaboration with international partners, addressing local needs and conditions, and conducting monitoring and evaluation to ensure the effectiveness of the e-learning system. This study also contains a literature review on e-learning, discussing its definition, effectiveness, and various tools and applications. It also explores the use of e-learning in rural areas of Bangladesh, distance education, and its contributions to higher education in the country. The review further explores the use of e-learning in rural areas of Bangladesh, where inadequate educational resources and a lack of qualified teachers and healthcare providers are common challenges. It suggests that e-learning can help address these issues by providing access to quality education and healthcare through the use of ICT tools.

Keywords: ICT, E-learning, Learning Management Systems, Collaboration Tools, Distance Education.

## 1. Introduction

A learning system based on formalized teaching but with the help of electronic resources is known as E-learning. While learning can take place in and out of classrooms, the use of computers and the Internet is a major component of e-learning. E-learning can also be termed as the networked transfer of skills and knowledge, where education is provided to a large number of recipients at the same or different times. Previously, it was not wholeheartedly accepted because the system was thought to lack the human element needed for learning. However, with the rapid advancement in technology and advancement in learning systems, it is now being accepted by the masses. The introduction of computers has been the basis of this revolution and with the passage of time as we have become aware of smart phones, tablets etc. These devices now have an important place in classrooms for learning. Books are gradually being replaced by electronic educational materials such as optical discs or mechanical pens. There is no doubt that it is equally important to promote the concept of non-electronic learning through books and lectures, but the importance and effectiveness of technology-based learning cannot be taken lightly or completely ignored. It is believed that the human brain can easily remember and compare what it sees and hears through moving images or videos. It has also been found that visuals, in addition to keeping the student's attention, are also retained in the brain for a longer period of time. Various sectors including agriculture, medicine, education, services, commerce and government institutions are adapting to the concept of e-learning to help in the progress of the nation (Times, 2022). E-learning platforms provide access to high-quality education to students who may not be able to access traditional educational institutions due to geographic or financial constraints. This is especially important in a country like Bangladesh, where a large portion of the population lives in rural areas and may not have access to quality educational resources. It gives students the flexibility to learn at their own pace and at times that suit them. This is important in a country like Bangladesh, where many students have to work to support their families and may not have time to attend traditional courses.

## 2. Statement of the problem

Bangladesh's education sector suffers from many deficiencies, including quality teachers, quality content and quality environment. Thus, a major challenge currently facing Bangladesh is to create a “knowledge-based society” and ensure that its citizens are equipped with information and communication technology (ICT) knowledge and skills. There is potential that the use of ICT in the education sector can reduce costs. It also improves the quality of education and adds uniformity. If a country wants to strengthen interest in the importance and excellence of education, then it is essential to expand educational opportunities for all, including the most vulnerable groups such as low-income and less-skilled people, girls and women, out-of-school children, as well as illiterate youth and adults. In general, e-learning is seen as a solution to several challenges currently facing the education sector in Bangladesh. So, this study was conducted to spread the necessity of e-learning in Bangladesh.

### 3. Significance of the study

E-learning refers to a platform where learning materials such as lecture notes, slides and videos can be accessed through Internet services in an outdoor environment. The main purpose of the platform is to provide students with various interactive learning contents to learn the lesson, communicate with the teacher and other students who are part of the system around the world. In Bangladesh, e-learning is still an emerging concept in the higher education system because many institutions are not using it that widely and most students are not aware of the benefits of using e-learning. In this regard, this study is very important for the development of education system using e-learning in Bangladesh.

### 3. Objectives of the study

The main and few objectives of this study are as follows:

a. To know the importance e-learning in developing the education system in Bangladesh;

b. To identify the acceptability of e-learning processes;

c. T explore the improvement of knowledge by e-learning;

### 4. Methods

When choosing technology and methods, the researcher addressed some important issues, such as the need for cooperation between international partners and experts from different fields, acceptance by end users, maintenance of communication infrastructure, adaptation of software and hardware solutions to local needs and conditions, use of easy-to-use and flexible application based on actual end-user needs, communication costs and service charges for the financial sustainability of ICT applications in low-resource environments. I carefully considered some important lessons learned from our earlier work, such as: keeping the technology simple and relevant; ensure it is manageable by the local team; engage users by demonstrating benefits; strengthen the ability to use, work and develop effective ICT; introduce greater monitoring and evaluation. Another important element of the work was to continue to research and share knowledge about what works and what fails to ensure that all people who use the e-learning system - teachers, students, patients and citizens - benefit.

### 5. Literature review

"E-learning" means "electronic learning". E-learning can be defined as a learning mechanism through electronic tools or techniques without the use of paper printed learning material. It can be used for both learning and teaching purposes. E-learning can be defined as both online and offline learning activities carried out by an individual or a group (Naidu, 2006). E-learning can be viewed as a mechanism for acquiring knowledge using a range of electronic media (Urdan and Weggen, 2000). In a narrower sense, e-learning can be defined as any educational activities that take place over the Internet (Wang et al., 2007). In this article, e-learning is defined as a technique

through which individuals can learn using a wide variety of tools (PC, laptop, mobile, notebook, tablet, etc.) on various platforms (google, Facebook, online library, google scholars, twitter, e-mail, wikipedia, you-tube). E-learning is the use of information, communication and Internet technologies to enrich knowledge to ensure better performance. E-learning provides opportunities to learn through computers and other electronic devices using technology to help improve individual, group and organizational performance (Pollard and Hillage, 2001). So e-learning is an electronic learning process that students can use through electronic media and of course they can learn with or without internet access.

E-learning is becoming a popular medium of education as the number of internet users is increasing day by day (Goyal, 2012). Gamage et al. (2014) used ten factors to analyze the effectiveness of e-learning and ranked the first five, which are interactivity, collaboration, motivation, opportunity network and pedagogy. Another study found that e-learning effectiveness is highly related to interactive learning activities, multimedia teaching and e-learning quality (Liaw, 2008). From the study of Noesgaard and Orngreen (2015), it was found that it is difficult to ensure the effectiveness of e-learning to improve the enactment of teaching, because the teacher can apply different strategies as needed.

The results of Goyal's (2012) study reveal that e-learning is both time and cost effective and can be easily used and updated to meet educational requirements. In addition, e-learning provides the freedom of learning that is interactive and fun. E-learning can be more effective for students than traditional classroom instruction, providing them with updated knowledge to achieve goals (Johnson et al., 2000). A similar result supported by the study of Rosenberg et al. (2003) and added that it is at least as effective as traditional teaching methods. E-learning significantly reduces the cost of learning, contributes to improving the quality of learning and increases access to education and training (Gilbert et al., 2007). Welsh et al., (2003) found that e-learning provides savings and proposed e-learning as a potential replacement for classroom instruction. E-learning is comparatively cheaper than traditional classroom learning (Strother, 2002). E-learning is a student gallop that facilitates the acquisition of skills through a wide variety of methods, including images, video, text, etc. Unwin (2008) conducted a survey on e-learning in Africa and the study showed that the majority of respondents noted that -learning is valuable and essential for fulfilling their educational and teaching needs. E-learning saves the student's time and students can learn at their convenient time. In addition, the quality of learning can also be better if the student can use the learning content wisely. E-learning allows learners to take control of content, control learning sequences, pace learning, fix time and choose media to meet their learning goals, as well as control access to e-learning methods and materials (Jethro et al., 2012). Liaw, Huang, and Chen (2007) surveyed 30 instructors and 168 students in Taiwan to measure attitudes toward using e-learning. The results showed that PU and SE play a significant role in the formation of behavioral intention to use e-learning as a teaching tool for instructors. In the case of students' attitude, the main factors for using e-learning as an effective learning tool are individual, teacher-led and multimedia teaching. Farahat (2012) identified the determinants of students' acceptance of online learning and examined how these determinants can shape students' intention to use online learning. The TAM was adapted and

tested on 153 undergraduate students of Egyptian universities. The result showed that PEOU, PU, ATU and social influence of students significantly determine the intention to practice online learning.

## 6. Discussion

**E-learning Tools:** E-learning or electronic learning is the process of using digital technology to deliver educational content and facilitate learning experiences. There are many e-learning tools available that can enhance the learning process and make it more engaging and interactive. Here are some popular e-learning tools:

Learning Management Systems (LMS): LMS platforms such as Moodle, Canvas, and Blackboard provide a comprehensive set of tools for managing online courses, tracking student progress, delivering content, and facilitating communication between instructors and students.

Video Conferencing Tools: Tools like Zoom, Microsoft Teams, and Google Meet enable real-time virtual meetings, webinars, and live courses, allowing instructors and students to communicate and collaborate remotely.

Content creation tools: Software such as Articulate Storyline, Adobe Captivate, and Camtasia help create interactive multimedia content, including videos, presentations, quizzes, and simulations.

Online Assessment Tools: Platforms such as Kahoot! Quizlet, and Google Forms allow instructors to create and administer quizzes, tests, and assessments online, provide instant feedback, and automate grading.

Collaboration tools: Tools like Google Docs, Microsoft Office 365, and Trello enable real-time collaboration and document sharing, facilitating group work and project-based learning.

Virtual Reality (VR) and Augmented Reality (AR): VR and AR technologies offer immersive learning experiences and allow students to interact with virtual objects and environments. Examples include apps like Nearpod VR and Google Expeditions.

Gamification Platforms: Platforms like Classcraft and Kahoot! Make learning fun by incorporating game elements such as quizzes, leaderboards and badges into the learning experience.

Social Media and Online Discussion Forums: Platforms like Edmodo, Schoology, and Reddit facilitate online discussions and provide spaces for students and instructors to engage in collaborative learning and knowledge sharing.

Mobile Education Apps: Mobile apps like Duolingo, Khan Academy, and Coursera allow students to access educational content on their smartphones or tablets, enabling learning on the go.

Adaptive Learning Systems: These systems, such as Smart Sparrow and Knewton, personalize learning by adapting content and delivery based on individual learner needs and performance.

**E-Learning for rural people in Bangladesh:** Inadequate educational resources, insufficient and unqualified teachers and health care providers, and lack of community involvement are some of the causes that contribute to the poor state of education and health in rural Bangladesh. It is well known that access to quality education and scientific knowledge is essential for generating economic growth and sustainable human development, including alleviating poverty and improving human health. In all countries, and especially in developing countries, there is a need to use information and communication technologies, ICT, to gain a global approach to education. ICT can address issues of educational equity, social exclusion and can provide more effective and accessible learning opportunities. It can also reduce the cost of reaching and educating the many rural students who are deprived of creative education due to lack of qualified teaching force. In Bangladesh, the education curriculum has been modernized to meet international standards. Qualified teachers do not want to move to rural areas for various reasons. The same is true in areas of healthcare where qualified doctors do not want to move to rural areas. Therefore, the researcher found a huge potential for the contribution of e-Learning and e-Health in empowering rural educators as well as health care providers. A pilot project is underway in the villages to test the potential of e-learning. It uses ICT tools to communicate, learn and access international quality educational content. International high-quality teachers conduct the lessons using a video conference system. Various relevant e-learning aids have been developed to suit local needs and conditions; you tube programs covering different topics are carefully selected to meet the respective requirements of different target groups. The links are downloaded so that students, teachers, health professionals, patients can watch the links offline as many times as they want and discuss with each other. ICT tools are the quality-of-service delivery; improve the effectiveness of public health and primary care interventions; improve health worker shortages through collaboration and training. ICT tools offer solutions for emergency medical care, remote consultation, quality assurance supervision, and education and training for healthcare professionals and providers. The main challenges are to empower rural people through the creation of locally relevant content to improve knowledge of English language, mathematics, science and health care applications and services with regard to socio-cultural factors, achieve health, education and economic development. By carefully selecting and creating relevant e-learning materials, we intend to develop the rural community by harnessing the potential of rural people and adopting participatory approaches to building knowledge, skills and

capacity (Mridha, et al., 2013).

**E-learning for distance education:** In Bangladesh, e-learning was first introduced in the 1960s. It started with the distribution of 200 radio receivers throughout the country, which led to the creation of the Audiovisual Cell (AVC), later the Audiovisual Education Center (AVEC) in 1962. In 1978-1980, a pilot project called the 'School Broadcasting Program (SBP)' was launched. . In 1983, SBP and AVEC were merged to form the National Institute of Educational Media and Technology (NIEMT). In 1995, Bangladesh Institute of Distance Education (BIDE) was established and NIEMT was incorporated into BIDE. In 1989, at the request of the Bangladeshi government, the Asian Development Bank (ADB) sent an "Open University Fact-Finding Mission" to Bangladesh. A

feasibility study was then carried out at an open university through the "Technical Assistance Project (TAP)" assisted by ADB. Finally, the Bangladesh Open University (BOU) was established in 1992 by an Act passed in the Bangladesh National Parliament. BIDE contacted her. BOU came under the government budget in 1999 with the condition that it would generate sufficient income for its and trained workforce by extending to them a wide range of academic programs, both formal and informal, using various delivery technologies. BOU provides tertiary education and training in broad fields such as agriculture, commerce, education, arts, science and technology (Al-Masum & Chowdhury, 2013). E-learning is naturally suitable for distance education and flexible education. Distance education in the form of e-learning is the only way to stay current. E-learning can also be used in conjunction with face-to-face teaching, in this case the term Blended learning is commonly used. E-learning pioneer Bernard Luskin argues that for e-learning to be effective, the "E" must be understood to have a broad meaning. Luskin says the "E" should be interpreted to mean exciting, energetic, enthusiastic, emotional, extended, excellent and educational in addition to "electronic," which is the traditional national interpretation. This broader interpretation allows for 21st century applications and brings the psychology of learning and media into the equation. Figure 1 shows the relationship between e-learning and distance learning (Hoque Chowdhury & Khatun, 2013).

**E-learning in higher education:** E-learning has made significant contributions to higher education in Bangladesh, particularly by improving access to quality education, improving the teaching and learning experience, and promoting lifelong learning. Here are some key contributions of e-learning in higher education in Bangladesh:

Access to Education: E-learning has helped overcome geographical barriers and provided access to education for students who cannot attend traditional brick-and-mortar institutions. It has enabled students from remote areas, working professionals and individuals with disabilities to pursue higher education without the need for physical presence on campus.

Flexibility and Convenience: E-learning platforms offer flexible learning schedules that allow students to study at their own pace and convenience. This flexibility is especially beneficial for working professionals who can balance their work and education at the same time.

Diverse course offerings: E-learning has expanded the range of courses available to students, offering a wider range of subjects and disciplines. It has enabled institutions to introduce new programs and courses that may not have been feasible in traditional classrooms, thereby meeting the diverse educational needs of students.

Enhanced teaching and learning opportunities: E-learning platforms include various multimedia resources, interactive modules and simulations that enhance the learning experience. It offers students the opportunity to engage with content in a variety of formats, making learning more engaging.

**E-learning in primary education:** E-learning has made significant contributions to primary education in Bangladesh. Here are some key contributions of e-learning in primary education:

Access to Education: E-learning has helped bridge the educational gap by providing access to quality education in areas where schools and teachers are scarce. It has enabled students in remote and disadvantaged areas of Bangladesh to receive education through online platforms and digital resources.

Interactive Learning: E-learning platforms offer interactive and engaging learning experiences for primary students. Through multimedia elements such as videos, animations, and quizzes, students can learn in a more dynamic and stimulating environment, enhancing their understanding and retention of concepts.

Flexible Learning: E-learning provides flexibility in terms of time and location. Students can access learning materials at their convenience, allowing them to learn at their own pace. This flexibility is especially beneficial for students who have other responsibilities or face challenges attending traditional schools regularly.

Enriched Curriculum: E-learning platforms often offer a wide range of educational resources, including multimedia content, interactive exercises, and assessments. These resources complement the traditional curriculum and provide additional learning opportunities to primary students. They can explore various subjects and topics beyond the limitations of textbooks, promoting a holistic education.

Teacher Support and Professional Development: E-learning platforms can serve as valuable tools for teachers. They offer resources, lesson plans, and teaching materials that can enhance the effectiveness of classroom instruction. Additionally, e-learning platforms provide opportunities for teachers' professional development through online courses and communities, enabling them to upgrade their skills and knowledge.

Digital Literacy and 21st-century Skills: By utilizing e-learning tools and digital resources, primary students in Bangladesh can develop digital literacy skills from an early age. They become familiar with technology, online research, collaboration, and critical thinking, which are essential skills in the digital era.

Cost-Effective Solution: E-learning can be a cost-effective solution for primary education in Bangladesh. It reduces the need for physical infrastructure and can reach a large number of students simultaneously. By leveraging existing technology and connectivity, e-learning can provide quality education at a relatively lower cost compared to traditional education systems.

**E-learning for teachers:** E-learning has made significant contributions to the teaching profession in Bangladesh. Here are some of the key ways e-learning has benefited teachers in the country:

Professional Development Opportunities: E-learning platforms offer numerous professional development courses and training modules for teachers. These courses cover various topics such as pedagogy, subject-specific teaching techniques, classroom management, and the integration of technology in education. Teachers can conveniently access these resources to upgrade their skills and stay abreast of the latest teaching methodologies.

Collaboration and Networking: E-learning facilitates collaboration and networking among teachers. Online platforms and communities enable teachers from different regions of Bangladesh to connect, share ideas, and collaborate on projects. This exchange of knowledge and experiences can greatly enhance teaching practices and foster a sense of community among educators.

Flexibility in Learning: E-learning allows teachers to engage in self-paced learning. They can access resources and complete courses at their convenience, fitting their professional development around their busy schedules. This flexibility enables teachers to continuously improve their skills without disrupting their daily teaching responsibilities.

Integration of Technology: E-learning promotes the integration of technology in teaching practices. Teachers can learn how to effectively use digital tools, educational apps, and online platforms to create engaging and interactive

learning experiences for their students. By incorporating technology, teachers can make their lessons more interactive, accessible, and tailored to the diverse learning needs of their students.

Improved Teaching Efficiency: E-learning can streamline administrative tasks and improve teaching efficiency. Online platforms often include features such as automated grading systems, digital attendance tracking, and communication tools, which help teachers manage their classes more effectively. By reducing administrative burdens, teachers can allocate more time and energy to instruction and student support.

**7. Findings of the study**

The findings of this study highlight the positive impact of e-learning in Bangladesh, particularly in rural areas and higher education. Some key findings include:

1. E-learning can address issues of educational equity and social exclusion by providing access to quality education for students in rural and remote areas.
2. The use of ICT tools and e-learning platforms can overcome the shortage of qualified teachers in rural areas, enabling students to access international quality educational content and receive instruction through videoconferencing systems.
3. E-learning in the health sector can improve the effectiveness of public health and primary care interventions, enhance the skills of healthcare professionals, and provide solutions for emergency medical assistance and long-distance consultation.
4. The challenges in empowering rural communities through e-learning include creating locally relevant content, improving proficiency in English, mathematics, science, and healthcare, and considering sociocultural factors for health, education, and economic development.
5. E-learning has a long history in Bangladesh, starting from radio-based programs in the 1960s to the establishment of institutions like the Bangladesh Open University (BOU) that provide distance education through e-learning.
6. E-learning has significantly contributed to higher education in Bangladesh by improving access, flexibility, and convenience, expanding course offerings, enhancing teaching and learning experiences, promoting collaborative learning, reducing costs, and providing lifelong learning opportunities.
7. In primary education, e-learning has improved access to quality education, provided interactive and engaging content, personalized learning experiences, flexibility in learning schedules, teacher support and professional development, parental involvement, access to digital resources, development of digital literacy skills, and continuous assessment and feedback.

## 8. Recommendations of the study

Based on the findings mentioned, the following recommendations can be made:

1. Expand e-learning infrastructure in rural and remote areas: Governments and educational institutions should invest in developing robust e-learning infrastructure, including internet connectivity and access to devices, in rural and remote areas. This will ensure that students in these areas have equal opportunities to access quality education.
2. Develop locally relevant content: It is important to create e-learning content that is tailored to the local context, culture, and needs of rural communities. This can help in engaging students and making the learning materials more relatable and applicable to their daily lives.
3. Focus on key subjects and skills: Prioritize the development of e-learning resources in subjects such as English, mathematics, science, and healthcare, as these are essential for personal and economic development. Additionally, providing training and resources to improve proficiency in these subjects among teachers and students will be beneficial.
4. Enhance digital literacy skills: To ensure effective utilization of e-learning platforms, efforts should be made to enhance digital literacy skills among students, teachers, and the wider community. Training programs and resources can be provided to improve their proficiency in using ICT tools and navigating online learning environments.
5. Invest in teacher training and support: Teachers play a crucial role in facilitating e-learning. Providing adequate training and support to teachers in using e-learning platforms, delivering instruction through videoconferencing systems, and adapting teaching methods for online environments is essential. Continuous professional development opportunities should be offered to teachers to keep them updated with the latest teaching techniques and technologies.
6. Foster collaboration and networking: Encourage collaboration among educational institutions, both locally and internationally, to share resources, expertise, and best practices in e-learning. This can help in enriching the quality of educational content and providing diverse learning opportunities for students in rural areas.
7. Involve parents and the community: Promote parental involvement in e-learning by providing guidance on how parents can support their children's learning at home. Community engagement programs can also be organized to create awareness about the benefits of e-learning and to involve local stakeholders in the design and implementation of e-learning initiatives.
8. Continuous monitoring and evaluation: Regular monitoring and evaluation of e-learning programs and initiatives will help identify areas of improvement, measure the impact of e-learning on educational outcomes, and make necessary adjustments to ensure their effectiveness.

## 9. Conclusion

This research sets the stage for the study by providing an overview of e-learning, highlighting its relevance to Bangladesh's education system, and outlining the objectives and methodology of the study. The researcher also found that the use of e-learning tools in various contexts, including rural areas in Bangladesh, distance education, and higher education. It highlights the positive impact of e-learning in addressing issues of educational equity, improving access to quality education, enhancing teaching and learning experiences, and fostering student engagement. E-learning can address educational equity and social exclusion by providing access to quality education for students in rural and remote areas. ICT tools and e-learning platforms can overcome the shortage of qualified teachers in rural areas by enabling students to access international quality educational content and receive instruction through videoconferencing systems. E-learning in the health sector can improve the effectiveness of public health and primary care interventions, enhance the skills of healthcare professionals, and provide solutions for emergency medical assistance and long-distance consultation. Challenges in empowering rural communities through e-learning include creating locally relevant content, improving proficiency in key subjects, and considering sociocultural factors for health, education, and economic development. E-learning has significantly contributed to higher education by improving access, flexibility, expanding course offerings, enhancing teaching and learning experiences, reducing costs, and providing lifelong learning opportunities. In primary education, e-learning has improved access to quality education, provided interactive and engaging content, personalized learning experiences, flexibility in learning schedules, teacher support and professional development, parental involvement, access to digital resources, and continuous assessment and feedback. Based on these findings, the recommendations include expanding e-learning infrastructure in rural areas, developing locally relevant content, focusing on key subjects and skills, enhancing digital literacy skills, investing in teacher training and support, fostering collaboration and networking, and involving parents and the community in e-learning initiatives. These recommendations aim to improve the effectiveness and accessibility of e-learning in Bangladesh.

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