Impact of E-Learning on the Academic Performance of the Students

Srividhya. P[1], T. Senthil Rajeswari[2]

[1] M.Com, M. Phil
[2] M.Com, MBA, B.Ed, M.Phil, PhD, SET

ABSTRACT

Over the past two decades, the development of new information technology has brought about significant changes in all sectors of society. Accordingly, the rhythm of contemporary life and the process of interaction with the external world is accelerated. Internet use has allowed people to create and develop remote employment, enabling them to access information and educational resources worldwide. These changes have inevitably affected education through the frequent use of teachers and students for Internet resources, Internet services, various online educational programs and established applications and other types of distance education. E-Learning influences technologies in education and practice. E-Learning is the future of education as its features extends beyond Integration, Tracking & Reports, Automated evaluation, Content in the cloud, Virtual classroom and Flexibility. This study examined the attitudes and perceptions towards E-Learning by looking at the factors regarding E-Learning and Traditional Learning in Vellore. Drawing on the data collected from the survey of 158 students in Vellore, the research indicates that E-Learning lacks good network connection for good effect of audio and video and proper course instructor to use and teach via online. The survey results that the students were not fully satisfied with the present E-Learning systems and the need for personalized and more adaptive E-Learning systems with possible moderator support to satisfy the needs of contemporary learner.

Keywords: E-Learning, Information and communication technology (ICT), Online learning.

INTRODUCTION

Stockley (2003) defined E –Learning as the means of delivering of a training or education program by electronic means. It essentially encompasses the use of a computer or electronic device such as mobile phone, in some way to endow training, education or material for learning.

The introduction of multimedia technologies and the internet in learning in many universities has been observed as means of improving accessibility and quality of delivery and learning among the students and teachers [1].

Educators and institutions can also realize the great benefits from the adoption of e-learning programs like students can perform better when online learning is incorporated because the student can study the lesson in advance and will increase interaction and collaboration of students, peers, and instructors compared to traditional learning. The use of e-learning can lower the operating cost while also lowering the costs associated with the production of materials for the activities, hand-outs and laboratory manuals. Today's students and instructors engaged to work on their mobile devices and other digital tools. By incorporating technology into our daily activities, classroom instruction, educational materials it can give more improvements in student learning [2].

E-Learning has become the most suitable learning environment. Its user interface and social communication are its attracting features that every teaching community wants to implement it.

E-Learning has entered the education as well as the corporate world in a major way and it also complements the traditional delivery methods. It has definitely facilitated the conventionally complex paradigms of education like adult learning and distance learning. E-learning can be viewed as an alternative to the face-to-face teaching method or as a complement to it [3].

History of E-Learning
Ever since the Internet was adopted and developed as a means of communication by educational institutions in the 1970s, scholars have been aware of its great potential as a learning tool. In recent years, governments of both developed

and developing countries have increasingly enjoyed online learning opportunities to provide affordable, easily accessible, and lasting education for all ages and social backgrounds, regardless of time and place.

In an 'information age' where the need for 'knowledge workers' increases as the demand for manual labor decreases, 'lifelong learning' is seen as the key to the continued success of modern society. 'E-Learning' is considered by many to be an effective solution to the problem of delivering the necessary resources to aid lifelong learning.

Information and communication technology (ICT) provides new opportunities for education and training, as it enhances learning and teaching, and facilitates collaboration, innovation, and creativity for individuals and organizations. Although it is often used as an extension of other teaching tools, the use of ICT has the potential to open up new avenues of practice, thereby enhancing learning skills.

An education system that is adaptable to the changing needs of the world and that has a negative impact on science will provide a variety of training and learning experiences to support students' intelligence and learning ability. In fact, such an education system can provide better-thinking skills and abilities for students as the program prepares them to better understand the world and the need for innovative innovations [4].

The use of teaching and learning methods that promote in-depth and effective learning and skills for learners is an emphasis on the modern education system. Many scholars have suggested that there is a strong connection between reading and art and in fact that art can be considered as a form of learning. Higher education, as a social institution, must function by the needs of the community, that is, it must develop the people who teach it to be creative and to consider higher academic skills. To achieve this goal, traditional teaching methods (courses, etc.) do not have the required functionality, but the implementation of e-learning in the teaching and learning process can be a way to achieve this goal.

E-learning is one of the most important learning areas in the information age. Therefore, the efforts and experiences associated with this type of learning are given appropriate attention around the world. In Iran, many universities are making extensive use of this technology. E-learning can gain self-control through self-directed e-learning. The current study aims to investigate the impact of e-learning self-discipline on the success of students.

Although few studies have reported various aspects of ILT in the field of further education, very few have collected data on actual levels of e-learning / ILT usage. Some economic-based reports, however, seem to have begun with the view that, given the huge public investment in e-learning and new technologies in the FE field, it is appropriate to ask what the evidence tells us about the contribution of e-learning to improving teaching and learning in colleges. . In other words, it can be assumed that a large portion of e-learning infrastructure already exists (although this requires a consistent process of change and renewal), but there seems to be a great deal of variability in the efficient operation of this infrastructure. This raises questions about the difference in grade and type of e-learning in all courses, departments, and institutions, and the capacity of e-learning colleges, as well as variations in technology progress [5].

E-learning domain
E-learning has a wide domain. It is divided into several categories based on its use and features:

- Web-Based Training: This type of training is Internet-based. In most cases, the tests and document delivery via email and web are below. Classrooms, lecture notes, pamphlets, discussion rooms, e-mails, and ... are some of the features of this method and they are stored on the web. However, due to the added convenience of e-learning, you can design and implement a training methodology tailored to your work, existing conditions, and facilities.
- Computer-based training: This method does not require an internet or network connection except in special cases. In this method, the information stored in the electronic interface (media) and the user can access the computer or reader device of this interface. A common example is educational CDs.
- Education through mobile devices and digital devices: This method of training is provided through digital devices including mobile devices and tablets and PDAs.
- Education by mobile phone: This training method is completely new and can be placed in the above group. But as the number of mobile phone users is increasing and the focus on this method called m-learning is considered as a separate group. This method can be well implemented but requires the provision of telecommunication infrastructure.

Benefits of e-learning
There are some benefits to e-learning over traditional learning methods. The main advantages of e-learning are the flexibility and elimination of unnecessary and expensive travel to attend classes. E-learning has many other benefits.

- We can reduce the cost of training courses by using e-learning techniques. By using relevant software and tools, we can try to create e-learning courses.

- Practitioners are consistent with the teaching. Most elemental programs can be used when it's only needed.
- The learning speed of e-learning is higher than traditional learning. Practitioners who use e-learning can focus on new and preferred issues so they can ignore previously known and unnecessary issues.
- E-learning methods are independent of time and space parameters. Therefore they can be used anytime and anywhere.
- The updated syllabus based on -e-learning can be done quickly and easily. This way the subjects and content on the server will be edited faster and then the learners will immediately benefit from the results.
- E-learning programs are easily accessible and manageable to large groups of students. [6]

Disadvantages of Online Learning
Inability to focus on the screen
For many students, the biggest challenge of online learning is focusing longer on the screen. With online learning, students have the opportunity to be easily distracted by social media or other sites. Therefore, teachers should help students focus on the lesson by keeping their online classes clear, engaging and interactive.

Technology issues
Another important challenge of online classes is internet connectivity. Despite the increase in internet access over the past few years, in small cities and towns, a consistent network with good speed is still a major concern. For students or teachers often without an internet connection, there may be a continuum error in learning for children. This is detrimental to the educational process.

Loneliness feel
Students can learn a lot by being with their peers. However, in the online classroom, physical interaction between students and teachers is minimal. This often creates a sense of loneliness in students. In this situation, it is imperative that the school allow other types of communication between students, peers and teachers. This can include online messaging, email and video conferencing, which allows for face-to-face interaction and reduces feelings of loneliness.

Technology Knowledge of teachers
Teachers should have a basic understanding of the use of digital forms of learning for online learning. However, this is not always the case. Many times, teachers have a very basic understanding of technology. Sometimes, they do not even have the resources and equipment needed to conduct online classes.

To deal with this, schools need to invest in training teachers with the latest technological updates so that they can run their online classes smoothly.

Screen time management
Many parents are worried about health risks, as their children spend many hours looking at the screen. The increase in screen time is one of the biggest concerns and main disadvantage of online learning. Students also thrive due to being in a hump in front of the screen sometimes due to posture and other physical issues.
A good solution to this is to give students a full screen break to refresh their mind and body [7].

Problem Statement
 "Online learning" or "E-Learning" has become an increasingly important and most used method of teaching. There is a time limitation for the student to communicate with the teacher. This has given rise to the flexible E-Learning method. To avoid problems faced by both teaching faculty and students or learners E-Learning method is being adopted by several educational institutions. E-Learning methods are sometimes characterized as a flexible active choice and sometimes as an exploitative method of teaching. To gain a full understanding of whether E-Learning has increased the academic performance of students, in-depth qualitative research is required. Focusing on students' behavioral attitudes can help to analyze the learning abilities of a student [8.]

REVIEW OF LITERATURE

With entering to information age, education is one of the important areas which were heavily influenced by information and information technology. Information and Communication Technology (ICT) can be used as important and powerful tool to improve quality and efficiency of education. By means of e-learning the traditional teaching methods can be changed so that it is not necessary to attend in the classroom physically. In fact e-learning is a new paradigm of remote education. The continuous evolution of ICT requires that all citizens have the necessary skills to use these technologies and to access information for efficient individual functioning in the information society [9].

In the past two decades, the development of new information technology has brought significant changes in all areas of society. Accordingly, the rhythm of a contemporary life and the process of interaction with the outside world have been accelerated. The use of the Internet has allowed the creation and development of remote employment of people,

providing them with access to information and educational resources throughout the world. These changes have inevitably affected education, as evidenced by the increasingly frequent use of teachers and students themselves to Internet resources, Internet services, various online educational programs and installed applications and other forms of distance learning.

Black Board Learning or BBL is a web-based server software which emphasizes course management and scalable design that allows integration with student information systems and authentication protocols. BBL has been implemented in researched higher education institution and used as a tool to deliver e-content. Additionally, BBL provides faculty to add resources for students to access online courses for students to enhance teaching and learning efforts [10].

Objectives
To study the varied aspects of E-Learning on stakeholders i.e., Learners and Students

- To assess the perceptions and attitudes of potential learners regarding E-Learning education
- To study the key challenges featured by learners between traditional learning and E-Learning program
- To study the impact of E-Learning ways on the academic performance of the scholars
- To assess the educational performance of the scholars between traditional learning and E-Learning or combined learning (both Traditional and E-Learning)

As noted higher as, it must be acknowledged that the relationships between the employment of E-Learning and outcomes for learners' area unit is complicated and influenced by a large kind of factors. This makes it terribly tough to live, even indirectly, the impact of victimization of these technologies on accomplishment and attainment. In exploring these problems the analysis has investigated a variety of key analysis queries, together with the subsequent research queries.

RESEARCH METHODOLOGY

Rationale of Study
India is a developing country, in which education is the prime thrust of the country. Due to Covid 19, many education institutions have continued their academic progress through E-Learning. In this pandemic, online classes are the only source through which education was delivered to students. In order to know and measure whether e-learning is better mode of deliverance; the present study has been conducted to find the impact of e-learning in the academic performance of the students in India.

Scope of study
The limitations are its technologies, which cannot be implemented without it. Other limitations of e-learning systems are that it does not support experiments when physical presence is required. If learning is not justified without laboratory work, that kind of practice cannot be achieved by watching and reading only from a distance.

Hypothesis
H01: There is no significant difference in the impact of e-learning among students in Vellore
HA1: There is a significant difference in the impact of e-learning among students in Vellore

H02: There is no significant difference in the impact of e-learning across gender in Vellore
HA2: There is a significant difference in the impact of e-learning across gender in Vellore

H03: There is no significant difference in the impact of e-learning among school students across the cities
HA3: There is a significant difference in the impact of e-learning among school students across the cities

H04: There is no significant difference in the impact of e-learning among college students across the cities
HA4: There is a significant difference in the impact of e-learning among college students across the cities

Sample Design
A simple random sampling technique was selected to collect the data. The sample consisted of 158 students, 43 students from Vellore district and 115 from other districts inside India. Out of the 158 students, 76 students are school students and 82 students are college students.

Research tool
Data was collected using self designed questionnaire via online, which was on the 5 point Likert scale from highly dissatisfied to highly satisfied.

Data analysis

The collected data was analyzed using mean, f-test, t-test and ANOVAs.

RESULTS

A null hypothesis is accepted. There is no significant difference in the impact of e-learning among students in Vellore as the t value is not significant

A null hypothesis is accepted. There is no significant difference in the impact of e-learning across gender in Vellore as the z value is not significant

A null hypothesis is accepted. There is no significant difference in the impact of e-learning among school students across the cities as the t value is not significant

A null hypothesis is accepted. There is no significant difference in the impact of e-learning among college students across the cities as the t value is not significant

Research limitation

A small sample size is taken for the research, which limits the researcher to make broad generalizations' from the results. The researcher could not make statistical inferences from sample to the population due to its small sample size.

Implications

This study is valuable in supporting earlier research along with some new results. The sample for this is from some students of the school and college. This study needs to be repeated for many students from schools and colleges in different districts to find out if the results are true in these different contexts. The researcher was unable to study all the variables that affect the impact of the e-learning environment. The research may expand on future research hypotheses to figure other factors affecting the impact of e-learning. Research will further aid in the development and evaluation of e-learning theories. It helps course designers and teachers to design their own curriculum and create new strategies.

CONCLUSIONS

The present study found that in contemporary education system it is important for the educational institutions to use blended learning which means learning via both Traditional Black Board learning and online learning (E-Learning). Blended learning provides convenience and flexibility to the students. It is apparent from the results of this research that e-learning has not been accepted by students, due to poor connectivity, the effect of audio and visual during an online course and also due to non availability of proper gadget for e-learning. It is found out from the study that college students are good and comfortable with online learning than school students. The effectiveness of e-learning does change with the course the student is pursuing. The research indicates that both school and college students need a mixture of traditional black board learning, online learning and self study to perform well in their academics. The effectiveness of e-Learning does not vary with the place. It is likely that the results may differ in case the samples are from A class and C class cities.

Declarations

Acknowledgements

Study Limitations

This study did not consider all aspects of the e-learning effect but was limited to aspects of e-learning that affect performance in one way or another. The limitations of this study also include the possibility of unreliable data collection. The use of web-based surveys reveals the potential problem of incomplete data and duplicate submissions.

REFERENCES

[1]. Elfaki, N & Ahmad, I & Abdelrahim, R. (2019). Impact of e-learning vs traditional learning on students' performance and attitude. International Medical Journal (1994). 24. 225-233.
[2]. Burac. M. A. P; Fernandez. J. M; Cruz. M. M. A and Cruz. J. D (2019). Assessing the impact of e-learning system of higher education institution's instructors and students. IOP Conf. Ser.: Mater. Sci. Eng. 482 012009
[3]. Trakru. M; Jha. T. K. (2019) "E-Learning Effectiveness in Higher Education", International Research Journal of Engineering and Technology, Vol. 06, Iss. 05, Pp 2395-0072.
[4]. Dewath. G. (2007). An Introduction to e-Learning; A Study of the Current State of e-Learning in the United Kingdom. http://idp.bl.uk/4DCGI/education/e_learning/index.a4d

[5]. Golden S., McCrone T.; Walker. M.; Rudd. P. (2005). Impact of e-learning in Further Education National Foundation for Educational Research, (pg rr745)

[6]. Nejad, M. B.; Nejad, E. B. (2012). Impact of E-Learning on Learning and Realizing Information Society. Research Journal of Applied Sciences, Engineering and Technology, Vol. 4(23): 5016-5020, 2012 ISSN: 2040-7467.

[7]. "2 technology issues another key challenge of online". https://www.coursehero.com/file/p4taoibn/2-Technology-Issues-Another-key-challenge-of-online-classes-is-internet/

[8]. Suanpang. P, Petocz. P, Kaleeff. W "Student attitudes to learning business statistics comparison of online and traditional methods". https://www.jstor.org/stable/jeductechsoci.7.3.9

[9]. Nejad. M. B., Nejad. E. B. (2012). Impact of E-Learning on Learning and Realizing Information Society. Research Journal of Applied Sciences, Engineering and Technology. 4. 5016-5020.

[10]. A. Sandybayev, "The Impact of E-Learning Technologies on Student's Motivation: Student Centered Interaction in Business Education" International Journal of Research in Tourism and Hospitality, Vol. 6, Iss. 1, 2020, PP 16-24, 2020. https://www.arcjournals.org/pdfs/ijrth/v6-i1/2.pdf

[11]. Chitra, A. & Raj, M.. (2018). E-Learning. Journal of Applied and Advanced Research. 3. 11. 10.21839/jaar.2018.v3iS1.158.

[12]. Goyal. S. (2012). E-Learning: Future of Education. Journal of Education and Learning (EduLearn). 6. 239. 10.11591/edulearn.v6i4.168.

[13]. Gunasekaran, A & McNeil, R. D & Shaul, D. (2002). E-learning: Research and applications. Industrial and Commercial Training. 34. 44-53. 10.1108/00197850210417528.

[14]. Alexander, S. (2001). E-learning developments and experiences. Education + Training. 43. 240-248. 10.1108/00400910110399247.

[15]. Rengasamy, Elango & Gudep, Vijaya & Selvam, Manu. (2008). Quality of e-learning: An analysis based on e-learners' perception of e-learning. The Electronic Journal of E-Learning. 6.

[16]. Oye, N.D. & Salleh, Mazleena. (2012). E-Learning Methodologies and Tools. International Journal of Advanced Computer Science and Applications. 3. 10.14569/IJACSA.2012.030208.

[17]. Katoua, Taghreed & AL-Lozi, Musa & Alrowwad, Alaaldin. (2016). A Review of Literature on E-Learning Systems in Higher Education. International Journal of Business Management and Economic Research. 7. 754-762.

[18]. Sivalingam, D. & Balachandar, R. & Ajith, P.. (2018). E-Learning approach in Teacher Education. Journal of Applied and Advanced Research. 3. 14. 10.21839/jaar.2018.v3iS1.159.

[19]. Craig, Annemieke & Coldwell-Neilson, Jo & Goold, A. & Beekhuyzen, Jenine. (2012). A Review of E-Learning Technologies: Opportunities for Teaching and Learning. CSEDU 2012 - Proceedings of the 4th International Conference on Computer Supported Education. 1.

[20]. Henry, Paul. (2001). E-Learning Technology, Content and Service. Education + Training. 43. 249-255. 10.1108/EUM0000000005485.