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Accessibility and Application of E-learning: A Study among Higher Secondary and College Students in Kerala, India

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Abstract

This study aims to explore the accessibility and application of e-learning among higher secondary and college students in the Uzhavoor Block Panchayath, with a specific focus on Emmanuel's Higher Secondary School (HSS) Kothanalloor, St. Ann's HSS Kurianad, and Deva Matha College Kuravilangadu. The research population consists of students from the seven higher secondary schools and two aided arts and science colleges within the block. The study investigates the level of access students have to e-learning resources, the effectiveness of e-learning platforms, and the challenges faced by students in utilising these resources. The findings are expected to provide valuable insights into the current state of e-learning in this region, identify gaps in accessibility, and offer recommendations for enhancing the integration of digital learning tools in the educational process for both secondary and college students. This research will contribute to a deeper understanding of the role of e-learning in rural educational settings and its potential to improve academic outcomes.

Keywords: E-learning, Accessibility, Digital Learning, Educational Process, Outcomes

Introduction

E-learning can be defined as the act of getting access to educational materials outside a classroom with the help of an electronic device. It is mostly used when referring to the entirely online course, programme or degree. Distance education, computerised electronic learning, online learning and internet learning, among many others, are some of the names that can be used to refer to online and internet-based learning. Courses in which the instructor is specifically offered online to a place not in a classroom, are termed e-learning. You can discuss with your professors, teachers and other students in your classroom, and hence it is interactive. There are lectures, which are taped, and which are delivered live, so that you can raise your hand electronically and participate in the interaction. You are constantly receiving correspondence and grading on your assignments, quizzes, and participation on the part of a teacher or professor.

Technological development and the internet have changed people's lives on different scales, especially in teaching and learning. The web has become one of the channels of learning that opens the door for people around the world to access education for free or at a lower cost. The booming of the internet has opened the door to unlimited knowledge, high-quality education and training. This easy access using information systems and the web can improve people's skills for fewer cost. Knowledge delivery to some people would have never been possible without the opportunities offered by technology and the web. As we know, the internet nowadays has become a basic amenity for living. The concept of e-learning emerges from an innovative concept that the wider network of the internet can be used for accessing knowledge. The barriers of learning contributed to the growth of e-learning, and it emerged as one of the most profitable online ventures for entrepreneurs. So the study on E-Learning nowadays has greater significance.

Education is one among the many social services that have enjoyed information technology as an enabler. The digital media and e-learning systems have played a significant role as a learning content as well as a learning platform with the aim of enhancing access to education and the quality of learning. In this paper, we investigate the practice of adopting digital media (a combination of text, images, audio and video) into the school curricula (taking Ethiopia as a case study) (Misfit and Gembermarim, 2020). Several studies have shown that apart from the mechanics of specific technologies involved in such educational solutions, the successful implementation of e-learning is also based on behavioural and social factors. However, no substantial studies have been conducted to understand the importance of these factors in developing countries as they relate to the acceptance and use of e-learning (Vilulleh and Pee, 2021).

The purpose of this paper is to explore the value of e-learning from a student's perspective and to develop a dynamic model for evaluating e-learning perceived value in an emerging market context. A qualitative research design, via semi-structured interviews, was adopted with a group of respondents composed of undergraduate and postgraduate students (Toufaily and Elisser, 2022). The article presents a model for evaluating the effectiveness of learning systems. Topics discussed include the improvements in the field of education as a result of advances in information and communications technology (ICT); the Technology Acceptance Model (TAM) to evaluate e-learning systems; and the e-learning quality models (Al-Fraihat and Dimah, 2018). The adoption of social media in e-learning signals the end of distance education as we know it in higher education. However, it appears to have very little impact on how open and distance learning (ODL) institutions are functioning. Earlier research suggests that a significant part of the explanation for the slow uptake of social media in e-learning lies in (Mnkandla and Ernest, 2017).

E-learning refers to a form of formalised teaching-based learning system that involves the use of electronic materials. E-learning, also referred to as network-enabled transfer of skills and information, provides education to many recipients at the same or different times. Hall and Higgins (2005) further explain that any kind of education delivered electronically, either wholly or partially via a Web browser, the Internet, an intranet, or even multimedia such as DVD, is referred to as e-learning.

The point of the research was to investigate the way students studied and could use online education. Another objective of the study is the level of student adoption and the rate at which e-learning platforms are used. Even though the scope of e-learning is growing by the day, not all students are familiar with the benefits of the different e-learning systems. Most students are now able to access the internet at home or in different learning institutions. The use of the internet

among students is increasing according to recent trends; however, the issue is that they are not fully harnessing the various educational and intellectual benefits of the internet. The aim of this research, which was called A study on the accessibility and usage of e-learning among students in higher secondary and colleges with regards to Uzhavoor Block Panchayath, was to find out how much the students are utilising the internet to access e-learning and also the quality of the e-learning infrastructure in the institutions they are in.

The objectives of the study will be to establish the importance of e-learning in broadening knowledge, identify the most appropriate methods of tapping and utilising the benefits of e-learning in our academic endeavours, compare college and upper secondary students based on the availability of the e-learning portal by their individual institutions, and provide a worthy recommendation on ways of improving access to the e-learning portal.

Materials and Methods

The research was conducted among higher secondary and college students studying in educational institutions within Uzhavoor Block Panchayath over three months (December 2018-February 2019). There is a wider scope in conducting research on e-learning within this geographical area, as there are almost 7 higher secondary schools and 2 arts and science colleges. The nature of the problem under investigation requires that the study be a combination of descriptive and analytical methods of research. The research is conducted on students to check their awareness about e-learning and the frequency of their application of e-learning to their regular academics.

The primary data demanded by the study was obtained by use of the questionnaire technique, where the respondents used the questionnaire to provide the required data. Secondary data were obtained through journals, books, periodicals, websites and discussions with them. The population of the study will include upper secondary schools and supported arts and science colleges found in the Uzhavoor block panchayath, because of the seven upper secondary schools and two assisted arts and science institutes found in the block. The study is analysed on the sample population of 60 individuals (30 college students and 30 upper secondary students) of HSS Kothanalloor Emmanuel, Kuravilangadu Deva Matha College, and Kurianad. Sixty individuals (30 college students and 30 upper secondary students) constitute the sample population of the study. The sampling was based on convenience sampling of the population. The data derived from surveys is analysed and represented in tables and graphs through some statistical methods such as weighted averages and percentages.

E-learning involves the target audience, learning goals, real material, tests, and tracking the progress made by the learners. Some of the benefits of online learning include time management, actual education, cost effectiveness, a high level of interaction and convenience. Some of the characteristics of e-learning are learner-centric learning, lifelong learning and flexible learning. The two types rely on synchronous and asynchronous E-learning. Through synchronous e-learning, individuals can interact live and get knowledge in real time. It is characterised by simultaneous, bi-directional and real-time communication. This is often supported by media such as chat sessions, virtual classes and video conferencing. The most familiar form of synchronous electronic communication is real-time two-way text-based online chat and is regularly used in e-learning. More advanced forms of synchronous training are virtual classrooms that mimic the environment of

a normal classroom, but utilise information and communication technology. This can include video meetings or the use of shared electronic whiteboards, which enable students or teachers to produce and revise learning resources in real-time. Questions are asked and answered simultaneously; thus, a teacher and a student perceive synchronous e-learning as sociable, and it helps them to avoid frustration. Synchronous sessions are also advantageous to e-learners since they make the learners feel like participants rather than being isolated.

Email, being a two-way communication method, does not require the sender and the recipient of the message to be online simultaneously. This gives you freedom. You can check your email at any time that is convenient to you. Asynchronous, therefore, does not require you to be Snap On at the same time. Asynchronous e-learning, which is commonly facilitated by email and discussion boards, helps in encouraging professional exchange between students and the instructor even when they are not able to be together at the same time. Flexible learning is thus very important. Training asynchronously, the participants can establish their own schedules and incorporate learning into their other responsibilities. This particularly works well with adult learners. Asynchronous e-learning allows students to communicate with their professors or peers, share materials, and use an online learning platform anytime. Compared to synchronous communication, students should devote more time to perfecting their contributions that are perceived as more planned.

Individualised e-learning is a term that is used to describe situations whereby a single learner uses an intranet or the internet to get learning resources, like a database or course materials, either offline or online. One typical example of this would be a learner studying individually, conducting research online, on a local network or on a CD or a DVD. Group-based e-learning refers to situations when groups of students work in real time or with a time lag through the Internet or an intranet. It may include one-directional or two-way audio and video conferencing, e-mail, online discussion forums and text conferencing. Two examples of this are students who are involved in an audio-video or real-time chat.

The e-learning coursework is usually availed in CD-ROM or online learning platform in a self-paced approach. Students can choose the learning activities and learn at their own pace depending on their own needs and interests. E-learning content is presented through various media elements such as text, image, audio and video and is designed based on a collection of learning objectives. It should provide as much learning assistance as it can (through glossaries, examples, interaction, feedback, and explanations, among others) to ensure that the students become self-sufficient. The course involves an instructor-led approach that is planned and delivered by an instructor and/or facilitator on an online learning platform. E-learning materials can be used alongside the lectures by the instructor, individual homework and even group projects to study on a solitary basis. Among the communication tools that can be used to interact and collaborate between students, teachers, and facilitators are email, discussion boards, chats, polls, whiteboard, application sharing, and audio and video conferencing, just to mention a few. After the learning process, an activity or assessment to provide an evaluation is typically an activity that is added as a final step.

E-learning communication tools are email, Instant messaging(in), Chat, and Blogging. E-learning collaborative tools for communication Wik**i**, a social networking site, and Web conferencing. Disadvantages/limitations of e-learning are difficulty staying motivated, difficulty

staying in contact with instructors, difficulty interacting with peers, and difficulty staying connected at all times. For many people, not having a classroom and set classroom times can make it difficult to remember to check in, or even to want to check in. It's important for you to have all the motivation necessary within yourself to look at the website, complete the assignments and get them in on time, even though everything is still required to be completed on a timely basis, just like with a more traditional classroom atmosphere. If you ever have trouble with assignments or questions about a lecture while in a traditional class, it's generally quite simple to talk to your instructor before or after class or schedule meetings online at a different time. When you're doing distance learning, however, you're going to have more difficulty getting in touch with your instructor. Difficulty interacting with peers because there's no classroom, and therefore no opportunity to work on group projects or converse with fellow students in a face-to-face environment, makes it difficult to build relationships of any kind. Not only that, but it's very easy to start to feel isolated from your peers and others because you're working on assignments and all school-related activities entirely alone. For those who don't have a reliable source of electricity or internet, it can be challenging to consistently access a friend's house, a café, a library, or another location with readily available internet.

Results and Discussions

Comparative study on the e-learning infrastructures of schools and colleges within the samples selected shows the following results:

Table 1 - Comparison between HSS and College

Statements	HSS	College	Statement favourable for:
Quality of your e-learning classroom	3.13	4.1	College
Accessibility to the internet and a computer	3.76	4	College
Teachers' motivation to use e-learning	3.46	3.86	College
E-learning awareness programmes	3.86	3.66	Higher secondary
Total	**14.21**	**15.62**	**College**

The following table outlines the methods for improving the accessibility of e-learning.

Table 2 -Methods for Improvement

Statements	Responds	Percentage
Conducting e-learning awareness classes at the school level	35	58.33%
Building a good e-learning infrastructure in classrooms.	11	18.33%
Making e-learning a part of academics and the syllabus	14	23.33%
Total	60	100%

Respondents of the study consist of 60 students who use e-learning. Among the total respondents, 30 are higher secondary students and 30 are college students. It was found that 38% of the respondents are 17 years old, 21.6% are 18 years old,20% are 20 years old, 10% are 16 years old, 6.66% are 19 years and 3.33% are 21 years old. It was found that 43.33% of the respondents are in plus 1(higher secondary),26.6% are in plus 2(higher secondary),10% are pursuing 1st year(college) ,13.33% are pursuing 2nd year(college), and 26.67% are pursuing 3rd year(college). It was found that 86.67%of the respondents are males, 13.33% are females.

With regard to the significance of e-learning in enhancing knowledge, among the respondents, 44.58% agree with the argument that e-learning has significance in enhancing knowledge. Among the respondents, 35.8% agree with the argument that e-learning has significance in enhancing knowledge. According to the opinion of the respondents, the best way to extract the benefits of e-learning is by making e-learning a part of the syllabus (56.66%). The majority (30.36%) of the respondents have a neutral opinion about their level of optimum utilisation of the benefits of e-learning. (26.31%) Of the respondents agree that they are optimally using the benefits of e-learning. (20.64%) Of the respondents strongly agree that they are optimally using the benefits of e-learning. In the case of adoption towards e-learning, mobile applications are the most frequently used e-learning platform. 75% of the respondents most frequently use mobile apps for accessing e-learning. The most preferred mobile application is Biju's app (43.33%) among the respondents. The most preferred website is Wikipedia (66.66%) among the respondents. The most preferred social media is YouTube (35%) among the respondents.

Comparative study between higher secondary and college based on e-learning infrastructure facilities shows that concerning the quality of e-learning classroom, the data shows that college (weightage 4.1) students have better quality in their smart classrooms when compared with higher secondary students. Access to a computer and the internet, the data shows that college (weightage 4) students have better quality in their smart classrooms when compared with higher secondary

students. Motivation of teachers to use e-learning, the data shows that college (weightage 3.86) students have a better quality in their smart classrooms when compared with higher secondary students. Awareness programmer, the data shows that higher secondary (weightage 3.86) students have better quality in their smart classrooms when compared with higher secondary students. To improve the accessibility of e-learning, according to the opinion of the respondents, the accessibility of e-learning can be improved by conducting e-learning awareness classes at the school level (58.33%).

The report indicates that e-learning is to be incorporated into the curriculum. Most learning institutions nowadays offer smart classrooms to their students. Nonetheless, children have already been through it at the discretion of the teacher. research has established that smart classrooms assist in attaining more concentration on the topic by the students. To do this, the e-learning was supposed to form an obligatory part of the college and upper secondary curriculum. This implied that the students would be expected to be taught the basics of e-learning, such as its advantages, functions, significance, and extent. Moreover, the students would be assigned time to work with smart classrooms. From the study, it is clear that the respondents opt for their e-learning platform on the basis of its popularity, apart from its utility and other features. In the study, the most preferred mobile application is Biju's app, which nowadays is highly popular among youth due to advertisements through social media and other platforms. There are also options for selecting another application which have more advanced features, but people responded to the media which has the maximum popularity. According to the opinion of the respondents, e-learning awareness programs are conducted at the elementary or primary level. A wide awareness about the importance, scope, and advantages of e-learning helps in efficiently utilising the benefits of e-learning and increasing the accessibility of e-learning. Thereby, students can efficiently integrate their study materials with e-learning resources.

Conclusion

The study was done to establish how students utilised and accessed e-learning. In the modern world of advanced technologies, the appearance of electronic devices is the key to human relationships. To that extent, e-learning, which interconnects teachers and aspiring learners through the deployment of computers and other electronic gadgets, can be regarded as one of the greatest assets of technology. The report showed that e-learning was an unlimited source of knowledge that could be accessed anytime and without considering time constraints. The most common platforms that are favoured by respondents who use the Bijou app are Wikipedia and YouTube, which provides the implication that the popularity exerts a significant impact on the choice. As to their level of maximum utilisation of e-learning benefits, most of the respondents are neutral. According

to the respondents, the best way to achieve the benefits of this kind of learning is to incorporate e-learning into the curriculum. The study further carried out a comparative analysis of the e-learning infrastructure of every learning institution. The survey shows that colleges have better e-learning classrooms, more motivated professors and awareness campaigns as compared to upper secondary schools. The internet and computers are very common in the upper secondary schools. E-learning is very significant in this contemporary time. When the breadth and accessibility are expanded, it can become a very important part of human resource development.

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