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Study on the Awareness Level of Postgraduate Students on Digital Education (With Special Reference to Sri HD Devegowda Government First Grade College, Hassan, Karnataka)

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Abstract

Digital education is an innovative use of digital tools and technology during teaching and learning and is often referred to as technology enhanced learning or e-learning. Higher education covers undergraduate, postgraduate, and doctoral level education Through this, one can learn throughout their life and continue to improve their knowledge and abilities to better meet their needs. Upon the emergence of the pandemic, we have seen the essentiality of digital learning in the field of education. It is very significant in higher education as it provides a wide range of sources for the understanding of concepts and also it is easily accessible to everyone. The study was conducted to understand postgraduate students' perception of digital education in the higher education field. The study's objectives included (a) knowing the level of awareness about digital education among postgraduate students;(b)understanding the advantages and disadvantages of digital education in higher education; and (3) collecting suggestions from postgraduate students on how to increase the effectiveness of digital learning. The study used a descriptive research design to report the characteristics of the phenomenon. The scope of the study covers only first year postgraduate students who are studying at Sri HD Devegowda Government First Grade College, Paduvalahippe, Hassan District in the year 2022–2023. The researchers took both primary and secondary data for the study and used an online questionnaire as a tool. The questions are framed in a Likert scale. For this study, 105 samples are taken through the convenience sampling technique of the non-probability sampling method. The study significantly describes the demographic profile of respondents that includes the majority of the respondents studying postgraduation in the particular institution falling in the age group 20–22 years, most of them belong to rural areas and reside in hostels. Additionally, women made up the bulk of the respondents. More than 70% of respondents were aware of E-education and knew its advantages. More than 80% of respondents knew about its disadvantages and agreed to provide suggestions for improving the effectiveness of E-education.

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INTRODUCTION

Digital education is an innovative use of digital tools and technology during teaching and learning and is often referred to as technology enhanced learning or E-learning. E-education is taught through digital learning. E-education is not only

useful for students but also for whoever is eager to learn despite age. Anyone who is familiar with online education can make use of it whenever necessary. The human brain cannot remember everything; through E-resources it is easy to recall information anytime. E-education guides one to gain in-depth knowledge about any subject. The modern world is transforming into a digital world. Digital technology is widely used in all areas, and now the world is completely dependent on it. So, in this digital era, E-education will become a strong foundation and the recent pandemic crisis has shown the importance of E-education [1].

Whether E-education can be used as an alternative to traditional education is a matter of debate. Using E-education as an adjunct to traditional education gives better results, and also it is currently being used as an adjunct.

Nowadays E-education is fundamental to all students, especially those in higher education, who are predominantly dependent on E-learning. Higher education covers undergraduate, postgraduate, and doctoral level education. It offers continuous education and enables people to improve their knowledge and skills in accordance with their social needs. Upon the emergence of the pandemic, we have seen the essentiality of digital learning in the field of education. It is very significant in higher education as it provides a wide range of sources for the understanding of concepts and it is also easily accessible to everyone. Even though E-education is very convenient, it depends on some technical factors. Consequently, students might face trouble while accessing and using it. So, students should take some awareness steps personally to overcome these problems and learn about the necessary factors to effectively utilize the advantages of E-education. Therefore, a study is needed to understand the awareness level of students on E-education, find out the advantages and disadvantages of E-education, and collect suitable suggestions to improve the effectiveness of E-education from students.

REVIEW OF LITERATURE

Understanding the terms “digital”, “digitalization”, “learning”, and “digital learning” or “E-learning”, as well as its advantages and disadvantages can be helpful after reading this review.

Typically, the term “digital” refers to something that uses discrete, frequently binary, digits. [1]. Electronic technology that produces, stores, and processes data in terms of two states—positive and non-positive—is referred to as digital [2]. The number 1 expresses or represents the positive, and the number 0 the negative. As a result, information that is communicated or stored via digital technology is represented as a series of 0s and 1s. These state digits are each referred to as bits and a string of bits that a computer can address individually as a group is a byte [1, 2]. The phenomenon of digitalization is the conversion of analog data into digital language, which can then enhance customer-company business interactions and contribute value to the entire economy and society [3]. Information is transformed into a digital (i.e., computer-readable) format through the process of digitization. The end result is the representation of a physical entity, such as an object, image, sound, document, or signal (often an analog signal), which is created by generating a string of numbers that each describe a discrete collection of points or samples. For the object, the outcome is known as digital representation, or more specifically, a digital picture, and for the signal, it is known as digital form. However, digitizing simply refers to “the conversion of analogue source material into a numerical format”; the decimal or any other number system may be used in its place. In modern practice, the digitized data is in the form of binary numbers, which facilitates processing by digital computers and other operations. Learning is a generally long-lasting behaviour change carried on by repetition or experience [4]. Because a teacher instils change in pupils by methods like helping them acquire particular abilities, altering their attitudes, or understanding a particular scientific rule underlying a learning environment, learning can be seen as a change that is permanent in nature [5]. The process of gaining new information, skills, behaviours, beliefs, attitudes, and preferences is called learning [2].

The creative application of digital resources and innovations during learning is referred to as digital education, sometimes known as technology-enhanced learning (TEL) or E-learning. It can also be

characterized as classrooms where instructors can create dynamic learning environments through hybrid or entirely online courses and programmes that study the application of cutting-edge technology [6]. The use of sophisticated digital technology for teaching and learning in both formal and informal educational settings within a community, as well as the infrastructure needed to enable such service, is referred to as "digital education" [7]. The delivery of education or any kind of training through electronic teaching techniques is known as E-education or E-learning. This electronic device can be either a computer or a smartphone, and the internet is typically used to access the educational materials. E-learning can also be done through media like CDs, DVDs, television, and other comparable devices aside from the internet. Online courses are currently available on a number of E-learning portals in India and worldwide. A large number of people enrol in these professional. Digital literacy education is essential for preparing students for the workforce, postsecondary education, and higher education. Digital literacy is increasingly replacing written correspondence, phone calls, and even face-to-face interactions as the major method of information transfer and communication. Twenty years ago, it would have been unusual to do business without a face-to-face meeting. Utilizing new technologies to communicate effectively across technological, linguistic, social, cultural, and intellectual obstacles is referred to as digital literacy [8]. Students prefer to employ digital literacy in the real world when they are looking for information. The amount of information that can be easily and rapidly accessible has greatly increased, and digital literacy has made it easier to collaborate and share computer skills. Digital modes of communication are growing along with other forms of digital literacy. The use of e-mail and URLs (uniform resource locators) has spread around the globe, and word processing is now the norm for writing. In order to construct meaning, students must learn how to utilize information and communications technology (ICT), but most importantly, in ways that are suitable for their needs. The computer is particularly significant in the modern era because it is used in practically all fields [8]. The best method for getting students interested in learning new technology and different concepts is to utilize E-learning. They will become more interested in researching and expanding their knowledge as a result of using new technology [9]. The delivery and transformation of information and communication through digital methods has changed how people work, learn, conduct research, and perhaps even think. Students and teachers in the educational setting are not exempt from this shift, and they develop the need for those who use technological tools. Computer literacy is an important competency in the 21st century. Creating, accessing, and sharing information across different parts of the world has greatly reduced the burden on people [10].

Advantages

Through the use of the internet, students can participate in courses through online learning. They can choose to learn anything they want from the convenience of their own homes without having to travel to lecture halls or classrooms [11]. The continued and expanding emphasis on teaching digital literacy to students might lessen their burden in terms of knowledge-seeking and new technology learning [10]. Students are increasingly gaining access to the expansive online learning environment, particularly in the university setting [12]. Flexibility, lower costs, networking possibilities, documentation, more instructor-student time, and access to expertise are the advantages of online education. There are potential benefits of investing in online learning, for example, increased access, improved quality of learning, better preparation of students for a knowledge-based society, "lifelong" learning opportunity, profit making, and many more [13].

Disadvantages

Accessing these online venues is difficult for both students and teachers. Students lack access to the internet, electronic devices including laptops, phones, computers, and even radios and TVs due to financial limitations [14]. Online classes cannot be accessed by all students due to the lack of cell phones, laptops, and mobile networks available to students, especially in low-income households and rural locations. Online teaching and learning are an attempt to offset educational loss. Additionally, the proper face-to-face interaction and interface between the teacher and students, as well as among the students, are not provided by online teaching and learning [15]. The online class involves many

uses of technology. It makes use of internet technology, software, and online platforms for running online sessions. It also makes use of gadget technology. One of the biggest obstacles is access to the internet, along with the costs of buying devices that can be used for online learning and internet usage. Other significant technological challenges include power and internet problems. The main drawback of e-learning, according to the students, is the absence of in-person interaction during class [12]. Digital education limitations are online learning start-up funding, organizational preparedness, and student readiness [13].

METHODOLOGY

Objectives of the Study

- To know the level of awareness about digital education among postgraduate students.
- To comprehend the benefits and drawbacks of digital learning in higher education.
- To collect suggestions from postgraduate students on how to increase the effectiveness of digital learning.

Study Design

In the study, the researcher used a descriptive research design to describe the understanding of students' attitudes and opinions toward E-education. It is cross-sectional and participant data is gathered at a specific point in time. The study uses the Likert scale for measuring the responses of students and to assess them quantitatively.

The study has collected information on the awareness level of E-education, opinions on advantages, disadvantages, and suggestions from the students for the advancement of E-education. The study will explain the benefits of E-education and the drawbacks that students face. It also elaborates on the prominent suggestion of students for the improvement of E-education.

Instrument

In this study, the researcher has used the self-made Google form questionnaire for the data collection. It has five parts, namely, the demographic of informant, the awareness level of E-education, advantages, disadvantages, and suggestions. Each part contains 8 to 11 questions. The Google form link is sent to the student's mail ID and WhatsApp number. Before collecting the data, the researcher has given orientation about E-education and research objectives and explained the questions in the tool to the students.

Population and Sampling

The study covers who were studying first-year postgraduate students of MSW, MCom, MSc, and MA of Sri H.D. Devegowda First Grade College in the academic year 2022–2023. The study's target population (universe) comprises 143 students, 58 of whom are men and 85 of whom are women. For the study, the researcher used the convenience sampling technique of non-probability sampling and took 105 students as samples for the research.

Data Analysis

In the study, the data is interpreted through tables and used descriptive statistics through percentage interpretation of the data. The researcher has used four tables that cover all the objectives and findings of the research.

Inclusion and Exclusion Criteria

The study has considered only first-year postgraduate (higher education) students of Sri H.D. Devegowda First-Grade College who are pursuing MSW, MCom, MSc, and MA history courses during the 2022–2023 academic year. No other students or teachers, other courses, and other colleges are included in this research.

Ethical Responsibilities

- The researcher informed the objectives of research to all the respondents and encouraged them to participate voluntarily.
- The researcher also took permission from the college administration and class teachers of the respondents to conduct the research.
- In the study, every respondent is respected, and the data collected from them is kept confidential.

RESULTS

Table 1 represents the demographic data of the respondents. There are 105 respondents among which 59% are female and 41% are male, 85% of the respondents come under the age group of 20–22 years, 12% under 23–25 years, and 3% are 26 years and older. In all, 88% of the respondents belong to rural areas whereas 12% to urban. A total of 70% stay in hostels and 30% do not stay in hostel. Overall, 23% of the respondents belong to class MA, 32% to MCom., 20% to MSc., and 25% to MSW.

Table 2 shows that majority of respondents are aware of E-education, of which 69% know how to use MS Office, 72% know web browser, 78% of the students can interact in video conferences in webinars, 80% and above of students can search and download the E-resource and have knowledge of photo and video editing applications, used audio or visual media for e-learning, their teachers use ICT in the classroom and it is easy for them to understand and they can make online payment through BHIM (Bharat Interface for Money) or UPI (unified payments interface) code or Phone Pay, Google Pay, etc. A total of 90% of the students can send an e-mail and 94% can use Google Maps for navigation [16].

Table 1. Demographic profile.

Variables		Frequency	Percentage
Gender	Male	43	41
	Female	62	59
Age, years	20–22	90	85
	23–25	13	12
	26 and above	2	3
Place of living	Urban	13	12
	Rural	92	88
Residence	Hotel	73	70
	Non-hostel	32	30
Class	MA	24	23
	MCom	34	32
	MSc	21	20
	MSW	26	25

Table 2. Awareness level of E-education.

Questions	Disagree	Neutral	Agree
	Frequency (%)		
I have knowledge of browser	3 (3)	26 (25)	76 (72)
I can search and download the E-resource	7 (7)	13 (12)	85 (81)
I have interacted in video conferences or webinars	8 (8)	15 (14)	82 (78)
I have used audio or visual media for E-learning	5 (5)	11 (10)	89 (85)
I have my email id and send emails to others	3 (2.5)	8 (7.5)	94 (90)
Our teachers use ICT in our classroom and it is easy for me to understand	11 (10.5)	10 (9.5)	84 (80)
I know how to use MS Office software (MS Word, MS Excel, MS PowerPoint)	15 (14)	18 (17)	72 (69)
I know photo and video editing applications and tools	4 (4)	17 (16)	84 (80)
I have used BHIM or UPI code or Phone Pay, Google pay, etc for online payment	9 (8.5)	4 (3.5)	92 (88)
I know how to use Google map for navigation purposes	2 (2)	4 (4)	99 (94)

Table 3 indicates that 70% of the respondents agree that E-education can reduce the usage of pen and paper, 79% of students agreed that E-source is accessible at any time and place, 80% and above percent of the respondents agree E-learning can reduce the travel to a classroom, it encourages students to learn efficiently through audiovisual media and graphics, gives chance to spend more time with family and make students talk, chat and discuss with the teacher. A total of 90% of students agree that people of any age group can use E-learning and it benefits physically challenged persons and vulnerable groups. More than 90% of the respondents agree that E-education benefits both part-time and full-time students. E-education leads to awareness of new technology and upgrade knowledge level and also enhance the searching attitude and self-learning skill among students.

Table 4 indicates that more than 80% of the respondents agreed that E-education creates a lack of student-teacher interactions and even students miss out on teachers' expression, body language, and appreciation from the teachers, and long duration of online classes develop less interest in students and respondents concurred that E-education leads to addiction for games social media and other irrelevant online activities, and long exposure of screen leads to anxiety depression anger. Respondents also agree that E-education is difficult due to network and internet issues, power and battery issues, and unaffordable digital devices. Furthermore, E-resources do not provide quality information all the time. A total of 90% of the respondents agree that E-education may develop an addiction to digital devices and 93% agree that E-education creates social distance with friends and teachers.

Table 3. Advantages of digital education.

Questions	Disagree	Neutral	Agree
	Frequency (%)		
E-source can be accessed frequently at any time and place	12 (11)	10 (10)	83 (79)
Digital learning can reduce the travel to the classroom	8 (7.5)	7 (6.5)	90 (86)
Digital learning benefits both part-time and full-time students	5 (5)	3 (3)	97 (92)
People of any age group can use E-learning	5 (5)	5 (5)	95 (90)
Digital learning can lead to awareness of new technology and upgrade the knowledge level	2 (2)	7 (7)	96 (91)
E-learning enhances the searching attitude and self-learning skills among students	2 (2)	5 (5)	98 (93)
Digital learning reduces the usage of pen and paper	22 (21)	9 (9)	74 (70)
Physically challenged persons, and vulnerable groups can get benefits through E-learning	3 (3)	8 (8)	94 (90)
Through E-learning it is easy to talk, chat and discuss with teachers	9 (9)	12 (11)	84 (80)
Digital learning encourages students to learn efficiently through audio-visual media and graphics	4 (3.5)	9 (8.5)	92 (88)
E-education provides the chance of spending more time with family	5 (5)	12 (11)	88 (84)

Table 4. Disadvantages of digital education.

Questions	Disagree	Neutral	Agree
	Frequency (%)		
In remote areas, digital learning is difficult due to network and internet issues	11 (10)	8 (8)	86 (82)
Digital learning creates a lack of student-teacher interaction because of no face-to-face communication	7 (6.5)	5 (4.5)	93 (89)
Digital learning is difficult due availability of power and battery issues	8 (7.5)	7 (6.5)	90 (86)
Digital learning is difficult due to unaffordable digital devices the students for learning	6 (6)	14 (13)	85 (81)
Digital learning creates social distance between friends and teachers	4 (4)	3 (3)	98 (93)
E-resources do not provide quality information all the time	8 (7.5)	9 (8.5)	88 (84)
Long duration of digital classes or online classes develops less interest in students	7 (6.5)	5 (4.5)	93 (89)
Digital learning may lead students to miss out on teacher's expressions, body language, and appreciation from teachers	8 (8)	5 (5)	92 (88)

Long duration of E-education may develop addiction in students to the digital devices	1 (1)	10 (10)	94 (90)
In E-education long exposure to screens may lead to anxiety, depression, anger	7 (7)	12 (11)	86 (82)
E-education leads students to indulge in irrelevant online activities, such as addiction to games, social media etc.	8 (7.5)	10 (9.5)	87 (83)

Table 5. Suggestions for increasing the effectiveness of E-education.

Questions	Disagree	Neutral	Agree
	Frequency (%)		
Provide good E-education infrastructure facilities	2 (2)	12 (11)	91 (87)
Provide training programs on E-education to teachers and students	4 (4)	7 (7)	94 (89)
Every college library should take initiative to provide E-library and related infrastructure to the students	2 (2)	4 (4)	99 (94)
In E-education, teachers should frequently interact with parents regarding students' performance	8 (8)	8 (8)	89 (84)
E-education should encourage physical activities, yoga exercises, etc. during the break time	8 (8)	8 (8)	89 (84)
E-education should implement internet safety rules to ensure the quality of education	5 (4.5)	8 (7.5)	92 (88)
Students should concentrate on the proper environment like lighting, ventilation, and sitting arrangements during the E-learning process	4 (3.5)	9 (8.5)	92 (88)
E-education should provide guidelines to students on eye protection, body gestures, and postures while learning	6 (5.5)	8 (7.5)	91 (87)
E-education should include activities and fun games to make it interesting.	6 (6)	12 (11)	87 (83)

Table 5 shows that 94% of the respondent agree that every college library should take initiative to provide an E-library and related infrastructure to the students. More than 80% of the respondents agree with the above suggestions in the table for the betterment of E-education.

DISCUSSION

The majority of the respondents studying postgraduation in the particular institution come under the age group of 20–22 years. Most of them belong to rural areas and reside in hostels. Also, the majority of the respondents were female.

More than 90% of respondents agreed that they were able to use Google Maps for navigation, UPI apps for online payment, and have an e-mail id for documentation, registration, application, and mailing purposes. These were found to be necessary for them to learn and the present situation demands dependency on them.

Some respondents do not have that much knowledge of browsers, MS office, search and downloading E-resources, photos, and video editing applications. So, the government should establish E-education and ICT awareness centres at the institutional level to make students aware of it. Institutions and concerned teachers should use ICT and audio-visual media at the institutional level and give practical awareness of this and help students to learn basic software programs, even encourage the students to self-learn the software by watching quality YouTube channels.

More than 80% of respondents agreed with all advantages of E-education although 30% of respondents stayed neutral or disagreed with the statement "Digital learning reduces the usage of pen and paper". This shows that usage of pen and paper is still needed for E-education.

More than 90% of students agreed that E-education is beneficial for part-time and full-time students, physically challenged persons, and vulnerable groups because they can access it from anywhere and thus reduce their burden of dependency on circumstances. Respondents personally felt

that E-education could develop searching skills, self-learning, understanding, and upgrading knowledge. This shows that modernization interlinks with E-learning.

Predominately students felt that E-education creates distance with their friends and teachers because of the experience during the COVID pandemic. E-education is not fully dependent on online classes. In-person classes can also use ICT, which will reduce social distance and give chance for face-to-face interaction with teachers and friends. Internet and network issues should be sorted out by the government. The government can provide internet facilities at the colleges and take measures to maintain them. For power and electricity issues, students can use a power bank and power backups like UPS (uninterrupted power supply) at the institutional level and maintain stable electricity management at the government level. Some students are unable to use digital devices because of their financial conditions, so the government under the students' welfare program, corporates under the corporate social responsibility program, institutions under the CDC program, and alumni can financially aid or provide digital devices to needy students. The government should concentrate on ensuring the quality of E-resources and keep the online data up-to-date and also take safety measures against malicious websites for security purposes. E-education should be used as complementary to traditional education and not fully depend on online classes. The government or institutions should provide a guideline for accessing E-education and using digital devices that should be physically and mentally safe and healthy for students and teachers.

As suggestions, students mainly were of the view that institutional-level libraries should take initiative to provide an E-library and related infrastructure and also a training program for teachers, and students. These basic infrastructure and training programs should be organized by the government and maintained by the library and committees should be formed at the institutional level to list out the challenges faced by all stakeholders who get benefits from E-education and should prepare for handling the challenges. Government should encourage innovative ideas through recognition and utilize them to make E-education reach every student's doorstep and uplift the education system. Success of E-education depends on government programs, institutions and teachers' responsibilities, parents' support, and finally on the student's performance.

CONCLUSION

Education is a broad concept. Any information which is learned through digital devices is known as digital education. People from any age group can learn via E-education. In the present world people from childhood to old age, everybody is dependent on E-education. With such a significance of E-education, a study was conducted on postgraduate students to know their level of awareness about E-education, its advantage, and disadvantages, and their suggestions to improve the effectiveness of E-education. The research found that the majority of the students are aware of education and its pros and cons and provided suitable suggestions for its effectiveness. On the other hand, research can be conducted on accessing E-education, effectively delivering E-education to the students, problems encountered in its implementation and related solutions, and creating awareness about E-education. E-education is suitable for the new education policy and with the cooperation of the government, educational institutions, teachers students, and parents E-education can yield good results.

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