



Students' Perception on E-Learning in Punakha Dzongkhag in Bhutan

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Authors' contributions

This work was carried out in collaboration among all authors. Author UW designed the study, wrote the protocol and wrote the first draft of the manuscript. Authors MRN and SC performed the statistical analysis of the study. Author LO managed the literature searches. Authors KD, ND, NS and DW managed data collection and data coding. Author NT supervised every aspects of the study. All authors read and approved the final manuscript.

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ABSTRACT

This study aims to determine students' perspectives on E-Learning and also to explore other contributing factors that affect student learning outcomes. This research uses quantitative methods. This research was conducted in Punakha Dzongkhag (district) in Bhutan in 2020. The research subjects were secondary school students consisting of 165 students with 57 boys and 108 girls who were selected as random samples. The technique of collecting data uses telephone interviews, online Google forms and direct survey questionnaires. The findings reveal that students consider E-learning to be useful and interactive, if it is supported by teachers and parents. However, some students (82%) reported that E-learning would help them achieve individual learning goals if lessons were taught in individual classes rather than multigrade classes. It can be concluded that E-learning is useful and interactive, some students feel that being a first timer and without experience using E-learning media, it hinders the achievement of individual learning goals. Therefore, it is suggested that E-learning be applied further in everyday classroom learning as mixed learning.

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1. INTRODUCTION

Electronic learning or E-learning is used to provide teaching and learning lessons from the distance by teachers. With developments in the modern communication gateways, information takes no time to spread. The implications of E-learning through various technologies and its effect on students' ability to communicate has been researched around the world. With the revolution in technology and enhanced importance for lifelong learning, online learning has become a popular tool [1]. During the last three decades, access to technology has increased drastically [2].

Increasing numbers of institutions/organizations are embracing technology based virtual classrooms and google classroom is one of the best platforms out there of E-learning [3]. It is easy to use, mobile friendly, flexible, free, maintains better records, saves time and is organized [3]. However, this also creates a potential for inequalities in education delivery as learning outcome disparities will be one of the shortcomings. This arises because of the unequal distribution of internet accessibility.

Most importantly, the positive outcome of the E-Learning depends on the willingness, acceptance, parental support, and skills to use the E-learning as a learning tools or medium. It was learnt that students show more interest towards E-learning if the system is user friendly [4].

In Bhutan, pre- primary to secondary level education still uses the conventional face to face classroom. However, with the Covid - 19 Pandemic, schools were forced to close. This left both the students and teachers anxious about continuing syllabus. Teaching through wechat, google classroom, Radio and TV in a multi-grade was adopted rather suddenly to roll out Education in Emergency (EIE). There was not enough time to properly transform towards E - Learning. The aim of this study, was therefore to assess how well the E - Learning was received by the students. The study specifically aims to find out the students' perception on E- Learning in Punakha Dzongkhag. It will explore other contributing factors that have an effect on the final outcome of the student's learning. As with increasing accessibility to the internet, and availability of numerous E-learning tools, it is nowadays used as an option to replace the conventional face to face classroom.

E-learning is described as a learning processes and interactions between students and teachers that are supported by information and communication technologies [5]. This E-learning is supported by digital electronic tools and media and designed to deliver instruction through electronic devices such as CD-ROM or video-conferencing through satellite transmission [6]. The effectiveness of E-learning is understood as the transfer of learning, which positively impacts teaching practices and further explains that 'Learning outcome' occurs when participants acquire new understandings as a result of the E-Learning initiative [7].

In Bhutan to engage students, E-learning was officially launched by Ministry of Education [8]. The Ministry of Education in its iSherig Master plan (2014-2018) explicitly states the importance of E-learning. An effective teaching and learning environment enabled by ICT allows greater collaboration among educators and learners [9]. Further ICT has revolutionised the way people work and learn, and is transforming the education system in Bhutan [10].

The perception of the students is crucial to bring new developments for E-learning process as they are the end users of the ICT. Thus, if a student perceives E-learning to be useful and helpful for their study, then they are likely willing to accept it [11]. Researchers supports the perceived ease of use and perceived usefulness does lead to change in attitude to use E-Learning [12]. Further students' perceptions towards using technology influences their perception towards using technology in educational contexts [13].

Considering the paradigm shift in education, researchers have become increasingly interested in the field of E-learning. The theoretical frame work for this study is guided by Connectivism as proposed by George Siemens in 2005. He argues that the learning theories of Behaviorism, Cognitivism, and Constructivism do not address learning that occurs outside of people (i.e. learning that is stored and manipulated by technology) and further explains they also fail to describe how learning happens within organizations [14]. The ability to refer relevant sources (and filter useful and non -useful information) to learn what is desired, is a vital skill in a technology-based learning. Therefore, connectivism is an answer to how knowledge is acquired in a technological world, where society

is more complex, connected socially, global, and mediated by increasing advancements in technology [15]. Knowledge that resides in a database needs to be connected with the right people in the right context in order to be classified as learning [14] and the core skill is the ability to see connections between information sources and to maintain that connection to facilitate continual learning [15]. The continual learning can take place with collaboration tools such as discussion forums, chats, telecommunications and google classroom available on nationwide E-learning platform.

Several empirical studies have suggested that technologies have also brought alterations to students' ability to communicate [16], enhance lifelong education [17], improved learning [18], and overall transforms educational practices [10]. However, there is a lack of robust research on the use of E-learning or use of ICT by students in Bhutanese context. The agencies under Ministry of Education in order to facilitate students to continue learning and strengthen the resilience of the education system initiated the roll out of EIE phase 1 after the closure of school on 18th march 2020 [19]. The adapted curriculum for EIE phase 1 is based on literacy and numeracy at key stage I (classes pp to 3) and II (classes 4 to 6), and theme-based curriculum for key stage III (classes 7 & 8), IV (classes 9 & 10) and V (classes 11 & 12). This paradigm shift and proliferation of social networks have caused educators to embrace this new option for knowledge for use in the classroom [15].

2. RESEARCH METHODS

In the present study three data collection tools were used to obtain relevant data sets namely telephonic interview, online Google form and direct questionnaire using close ended questionnaire. The survey questionnaire consists of three key themes, each key theme contains five dichotomous questions. Theme 1 questions determine the students' level of accessibility to E-learning. Theme 2 investigates the parental support to E-learning, and theme 3 evaluates the E-learning experiences from students' perspective. Frequency count and percentage was used to analyze the data.

A survey research was carried out in Punakha Dzongkhag (district). It is located in western region of the country and it has seven schools that offer classes 7 to 10. The study was targeted to middle school students and the participants

consisted of 165 students with 57 male and 108 females. The simple random sampling technique was adopted to generalize about the larger group of students.

3. RESULTS AND DISCUSSION

3.1 Students' Level of Accessibility to E-Learning

The result of the student's accessibility to E-Learning the question was shown in Fig. 1 Most of the students (95%) have access to Google classroom and we chat. 67 % of student own smart phone and rest 33 % either use parent's or guardian's phone for eLearning. Sixty five percent of student feel that they learn well through Bhutan Broadcasting Service (BBS) lesson and correspond easily for E-Learning whereas 35 % of student does not feel the same. Most of the students think that E-Learning is beneficial and helps to meet their learning objectives though 19% of student and 18% of student does not agree with the statement respectively. In general, most of the students have access to E-Learning and they think that they can learn better through it.

Although, there was notable difference in accessible to google classroom and owning a smart phone, the majority about 81% agreed that E-learning is beneficial and is interactive strategy. It was clear that with tools used for communicating or conducting research were not as important as the communication itself [20]. Further, computer literate and ability to use the Internet and play computer games does not provide enough skills to tackle many E-Learning platforms [12]. This study proved that E-learning is effective in acquiring an individual learning objective as it provides interesting learning styles, students learn independently and increase their thinking abilities [21]. These clearly agrees with theory of connectivism in which the core skill of connectivism is the ability to see connections between information sources and to maintain that connection to facilitate continual learning [15], perhaps why 82% of students reported E-learning helps to meet individual learning objective.

3.2 Parental/guardian Support for E-Learning and Mental Wellbeing

The results of parental support for E-learning and wellbeing are shown in Fig. 2 Similar to the

traditional face to face teaching environment. A parent's role and impact on the student learning in E- learning both critical and apparent. From the Fig. 2, 90% of the students were supported by their parents or guardian in home assignments and 81% of students' state that they were helped with data charges for E-Learning. The students were monitored by their parents to use internet facilities in proper ways (62%), however 38% of the students were not monitored on the usage of internet facilities. Though parents supported students for E-Learning, 63% of the students' states that most of the time they were engaged in household chores such as cooking and babysitting.

Although 82% of the students feel confident to interact online for E-Learning, 58% of the students said they faced problems in studies at

their home. Sixty one percent of the students do not feel distracted while doing assignments online but 53% of the students still think that they feel stressed studying through e-learning means.

The major theme identified in the study was parents' ability to support the students in assignment and data recharges, students' safety at home, and student's confident to interact online that formed a basis for the mental wellbeing (see Figs 2 and 3). The ability to draw distinctions between important and unimportant information is vital in connectivism [14]. Parental guidance plays a vital role in identifying this information and engaging in E-learning. Sumak acknowledges the main challenge for E-learning is to provide system with services that will positively affect a user's learning experience [12].

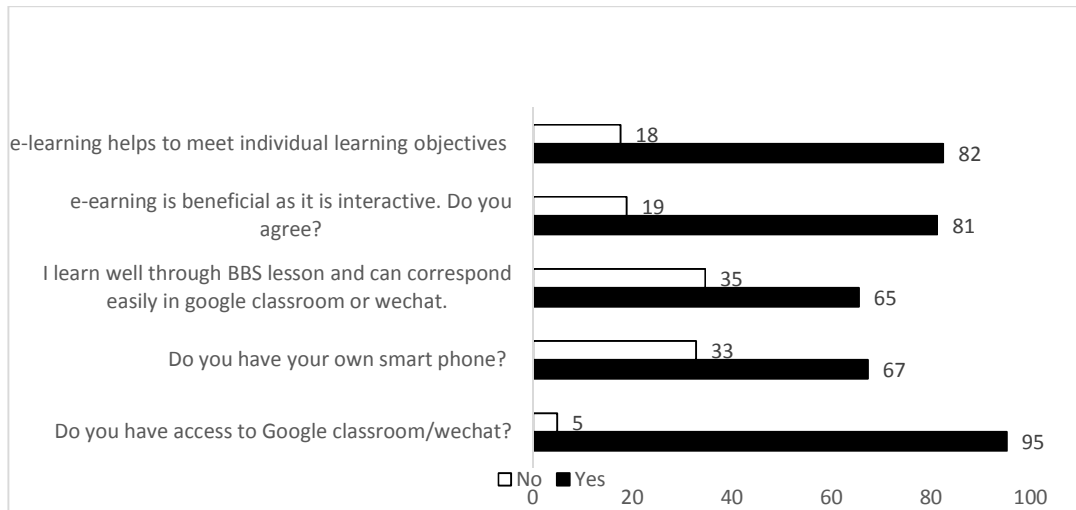


Fig. 1. Student's accessibility to E-learning

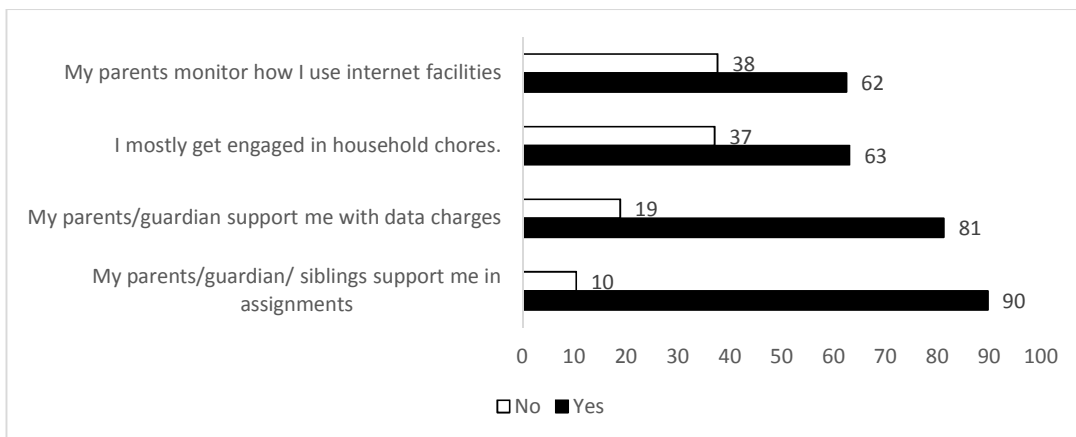


Fig. 2. Parental support for E-learning

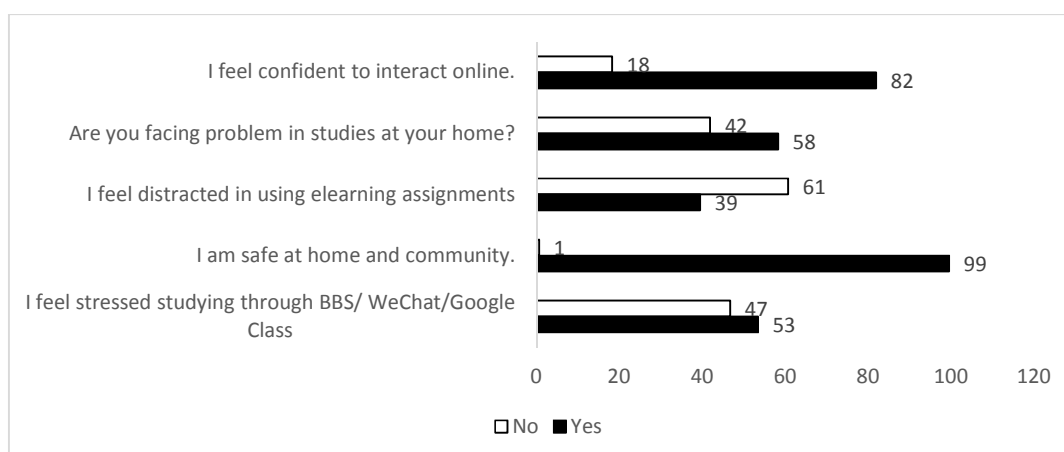


Fig. 3. E-Learning and student mental wellbeing

3.3 E-Learning Experiences from Students' Perspective

The change from traditional face to face teaching to online teaching/learning has not only affected teachers, who had to teach and assess online, but also students who have to adjust to new experience of learning. E-learning in Bhutan being the very recent strategy initiated by Ministry of Education. In the report that followed dichotomous questions in survey questionnaires, students described experiences in difficulties related to access to E-learning, parental support, and mental wellbeing faced in attending E-learning. The problems faced by the students included not being able to adapt to learning online, not having their personal smart phones, bad network connections, and not able to comprehend multi-grade lessons, uneducated parents, and distraction with other apps. Katzenstein explained that students in particular are struggling to create an environment free of distractions and develop the necessary organizational skills to stay on top of their assignments, noting that these difficulties can affect students' mental health [22]. In contrast to problems faced, some students described positive experiences. Generally, the students reported that if the lessons are not "multi-grade" and taught "chapter wise" as in textbook, and "with proper timetable", it is easier to achieve individual learning objectives. This clearly illustrates there is an apparent gap between the Government's intention to provide all children access to education and its intention to provide quality education to children in rural and remote parts of Bhutan [23].

4. CONCLUSION

Amidst the Covid-19 pandemic and school closure, students in Bhutan are provided with e-learning through various ICT tools. Despite many drawbacks identified by the students, the beneficial aspects outweighed negative aspects. Students perceived e-learning as beneficial and it assisted them to achieve individual learning objective. Certain online teaching and learning medium -for example google classroom have a potential to create interactive learning environment, but are subject to numerous technical problems, including difficulty to access, lack of adequate technical support, and expenses incurred for data charges.

Students identified the interaction with teachers and peers as the most prominent factor that provided learning coupled with E-learning. Most of the students have positive perception on E-learning and its benefits. However, E-learning needs to be combined with nurturing and maintaining connections from teachers. Therefore, teachers should be a proactive nurturer of this e-learning process.

Based on the data generated from the research, students perceived the learning objectives will be accomplished further. If E-learning is presented in lessons for individual classes and not in multi-grade. This will not only bring positive outcome in future but will also eliminate issues that are present today.

While it was generally agreed that the E-learning was beneficial and interactive, some students felt that being a first timer and without the

experiences of using E-learning medium, it was hindrance to attaining individual learning objective. Thus, it is recommended E-learning should be further applied in everyday classroom learning as a blended learning.

CONSENT

As per international standard or university standard, participant's written consent has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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