

A LEARNING ANALYTICS ON DIGITAL LEARNING SUPPORT SERVICES IN PRE AND DURING COVID 19 LOCKDOWN: AN INSTITUTIONAL STUDY

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ABSTRACT

When the whole world was hard hit by the Covid 19 pandemic, digital learning support services played a significant role in the entire state of Assam by providing uninterrupted academic and administrative support to its learners even during the nationwide Lockdown. Based on the Learning Analytics approach, this paper seeks to explore how in the pre and in post Lockdown periods, the provisions of digital support services in KKHSOU kept the learners busy when the entire educational institutions of the state had to be shut down. Thus, the main objective of this micro institutional study, which covered learners from nearly all districts of Assam, is to find out the prospects and challenges of providing digital learning support services to the learners. Then, by adopting Learning Analytics, attempt has been made to examine how the usefulness of techno-pedagogy could be further enhanced with the help of learner's feedback received through Google form on the academic services provided by the university in both pre and during Lockdown periods.

Keywords: ODL, Digital Learning, Digital Support Service, Covid-19, Sustainable Education, Learning Analytics

INTRODUCTION

The teaching-learning transactions in the 21st century have undergone significant changes due to the emphasis on a learning-centred pedagogy whose basic philosophy is to provide suitable and sustainable learning environment to the learners. However, the principles of extending educational opportunities in terms of access, equity, quality, excellence and sustainability can be cherished in the true sense only if the ICT based educational tools are made learner-centred and affordable. It is because, today's learning activities are based on techno-pedagogy and the basic value of education depends on providing experiential learning to the learners. In a digital society, various digital technologies are used for transmitting and disseminating knowledge and information to the learners. Subsequently, the traditional chalk and talk method is replaced by a host of other methodologies including personalized and customized learning with the help of technology that provide myriad opportunities to the learners for inculcating creativity and generating innovative ideas and thoughts.

The emergence of what we can call experiential learning has enabled the learners to develop life skills, which are perhaps the most essential requirements of the 21st century. In fact, education must be planned in such a way that it helps to develop the abilities for adaptive and positive behaviour that enable individuals to deal effectively with the demand and challenges of everyday life, as defined by WHO. It has also been increasingly being felt that everyone should be well equipped with digital skills as the pre-requisite for getting jobs and livelihood in the 21st century digital economy. Given the fact that the use of online learning has made learning truly global, it has necessitated the entire educational system convert itself from traditional education to independent ICT-based digital education. This has further helped in promoting inclusive and equitable education and lifelong learning that would reduce the inequalities between the rich and the poor, between haves and have nots, while also keeping the learners up-to-date based on their learnt skills.

The sudden outbreak of the Covid 19 pandemic had hit the entire educational systems across the globe. However, at the same time, ICT based education had played an important role in providing undisrupted learning opportunity to all even during the Crisis. It is reported that more than 1.5 billion learners of all ages from around the globe are affected due to school and university closures owing to the Covid-19 (UNESCO, 2020; UNICEF, 2020). The affected number of students equals around 90% of the world's enrolled students and the shutting down of schools further widened learning inequalities and have hit the vulnerable children and youth disproportionately. However, the Pandemic has also played the role of an eye opener for several educational institutions across the world as it enhanced our understanding of the importance and utility of the blended or

online technologies for educating the learners irrespective of their age, geographical location, time, sex, class and caste etc.

In India, along with IGNOU, the other state open universities have played a prominent role in providing education at the doorstep of thousands of learners. Along with a modest digital presence, KKHSOU has also rendered a significant service in the state of Assam even during the ongoing Pandemic following which the learners of the University could access academic and administrative services of the University even during the Lockdown. Therefore, it is the right time we studied whether the university has been actually able to provide uninterrupted learning services to the learners through the existing digital services. This paper intends to find out the prospects and challenges of providing the benefits of digital learning to the learners of KKHSOU in general. Then, attempt is also made to examine how the usefulness of techno-based teaching learning could be further enhanced with the help of learner's feedback received through Google analytics on the academic services of the university during the Pandemic and in post pandemic period.

LITERATURE REVIEW

Following the outbreak of the Pandemic and the consequent closure of the educational institutions across the globe, a number of important researches have been conducted globally on the measures taken in different parts of the world to provide education to the affected learners. For example, Bozkurt, A. et. al. (2020) in their collaborative paper stated that the current educational practices caused by the outbreak of the Pandemic, starting from K12 to higher education, can be defined as Emergency Remote Education and this practice is different from planned practices such as distance education, online learning or other derivations. However, they also pointed out how social injustice, inequity and the digital divide had been exacerbated during the Pandemic necessitating unique and targeted measures by the educational institutions. While there were support communities and mechanisms in place, all parties experienced trauma, psychological pressure and anxiety to various degrees, which necessitated a pedagogy of care, affection and empathy.

Around the same time, Kanwar & Daniel (2020) came up with their "Report to Commonwealth Education Ministers: From Response to Resilience" in which they made some interesting observations on the emergent education systems following the Pandemic. They stated that a resilient education system is the need of the hour to adapt to situations when teaching-learning had to be carried out in new circumstances in which all activities will have two essential components—an interactive component where teacher and student communicate directly and simultaneously and an independent component where students study or prepare material, suggested by the teacher—or determined by themselves—in their own time. The entire process becomes easier if the educators, both teachers and administrators, are aware of the strengths and weaknesses of each component. Given the current pandemic, when institutions had to change within a matter of days to operating online, preparing for resilience means investing in quality learning materials, either developed in-house or chosen from among the variety of OER available from many sources. Asynchronous teaching through such materials gives teachers flexibility in preparing learning contexts and enables students to juggle the demands of home and study. Secondly, such materials are cost effective as they can be reproduced and reused.

The Education Horizon Report (2021) instead revealed certain other important points regarding the educational arrangements during crises as well as the emergent need to extend education against the Covid 19 Pandemic. It stated that the pandemic laid bare the digital inequities that exist in our known world. To the extent that higher education in the future will continue to rely on remote technologies and digital networks for course delivery and learning experiences, the gap will only widen between those with every digital advantage and those struggling to access even the basic devices and network necessities. These gaps will become evident among students not only over the course of their postsecondary education attainment but, in many cases, long before they enter college. With the divide beginning to emerge, many students will begin their postsecondary education already far behind some of their peers. This Report further advocated for three aspects—Widespread Adoption of Hybrid and Flexible Learning Models, Increased Use of Blended and Hybrid Learning Technologies and Online Faculty Development which would have far reaching implications in the future of education.

Netta, I. et.al. (2020) stated that the Covid 19 pandemic initiated an extensive, sudden and dramatic digital transformation in the society. It forced all to take an extraordinary digital leap in the basic education of children as well. This required significant adjustments not only from children and their teachers, but also from their families, school administration and the entire society. Teachers and schools had to take the lead in this sudden, unexpected digital transformation of children's basic education, without being well prepared for it. A great burden was placed also on children and their families who suddenly had to possess a variety of skills, competencies and resources. However, digital divides picture unfortunately strong in the current Covid 19 new normalcy. Definitely not all children are in equal position to engage in their digitalized basic education. There

are issues with technology access and use– among both adults and children involved–as well as with skills and competences needed to integrate the digital tools into teaching-learning practices in meaningful ways to gain benefits from them. The world has dramatically changed during the past couple of months and we need to better understand the life worlds and worldviews of the new kinds of digitalized students who will be entering higher education institutions soon. We should also be more active in preparing the society for digital transformation.

The chapters in *The Handbook of Research on Emerging Pedagogies for the Future of Education: Trauma-Informed, Care, and Pandemic Pedagogy* by Bozkurt (2021) which was targeted towards the professionals, researchers, instructional designers, decision-makers, institutions, and most importantly, the actors from the educational landscape interested in interpreting the emerging pedagogies and future of education due to the pandemic, evaluates the interruption of education, reports best-practices, identifies the strengths and weaknesses of educational systems, and provides a base for emerging pedagogies. The chapters in the book also provides an overview of education in the new normal by distilling lessons learned and extracting the knowledge and experience gained through the Covid-19 global crisis to better envision the emerging pedagogies for the future of education.

Almost all the works cited above discuss how the Pandemic affected the educational institutions as well as millions of learners of all ages, leading to explorations of new ways to provide education during a crisis. Subsequently, Emergency Remote Education was put into practice to ensure the continuity of education causing the need to reinterpret the pedagogical approaches across the globe. This situation on the one hand, revealed the flaws within our education systems, on the other also hinted at the need of extensive use of digital services to provide uninterrupted and flexible education. Here comes the role and relevance of digital learning support services to be offered by an educational institution like KKHSOU as well as their assessment.

OBJECTIVES OF THE PAPER

The basic objectives of the paper are

- To discuss the context of extending education following the Covid-19 pandemic.
- To find out the prospects and challenges of providing the benefits of digital learning to the learners of KKHSOU.
- To examine how the usefulness of techno-based education can be further enhanced with the help of learner's feedback received through Google form on the academic services of KKHSOU during pre and current Lockdown periods.
- To look at the future prospects of delivering sustainable learning through digital education so that suitable measures can be adopted to meet the challenges in testing times.

METHODOLOGY

This paper is based on both primary and secondary data. While writing this paper, descriptive research methodology has been used. Besides, the Learning Analytics approach has also been adopted as it helped to utilise the data for improving the teaching-learning environment for the learners of the University. As Learning Analytics provides a better understanding of learners' data as well as their learning, it can help educational institutions to deal with the issues and problems that directly impact the lives of those affected. The study is based on representative samples spread across the entire state of Assam. Following the use of Learning Analytics, this study helped to get an idea of the perceptions of the learners regarding the use of digital support services provided by KKHSOU in the Indian state of Assam and how it promoted a personalised learning pedagogy for the learners.

Primary Data:

For collecting the data, questionnaires were served to identify the factors affecting learning on the part of the targeted learners as well as their acceptability of techno-pedagogy in the learning processes. The feedback helped the researchers to identify the factors influencing learners' progress and also to adopt futuristic actions for ensuring better academic environment for the learners in the state as a whole.

Learners pursuing the various academic programmes from the university were chosen as the samples for the study. This study was divided into two parts: Taking feedback from the learners in Pre and During Covid-19 Lockdown. Learners' feedback in Pre-Covid 19 period was collected during the month of December 2019 to February 2020. While, feedback, during Covid-19 were received from the months of April to June 2020.

Random Sampling technique was used for collecting the data. Structured Questionnaires for both cases were designed in Google form covering the learners' perspective and feedback on the digital services of KKHSOU.

Although the questionnaire was sent to 1000 learners in each cycle (pre and during COVID 19), however the responses of 480 learners were received in the pre-Covid period and the responses of 410 learners were received during the pandemic COVID 19. Analysis of the data received had been done by using simple statistical tool like percentage.

Secondary Data:

The data of various online activities of KKHSOU, the official records of KKHSOU etc. had been used.

PERCEPTIONS OF THE LEARNERS OF KKHSOU ON THE DIGITAL SERVICES OF THE UNIVERSITY DURING THE PRE-LOCKDOWN AND LOCKDOWN PERIODS

Krishna Kanta Handiqui State Open University was established with the motto of providing access, equity, and quality education to a vast majority of people. Apart from providing Self Learning Materials in both print and soft forms and conducting counselling sessions in the study centres, the university has also been producing important educational audio-visual programmes as OERs, which are regularly uploaded in the university’s YouTube channel. The learners of the University can also access their specific e-SLMs, assignments, library facilities, question paper banks and other relevant information from the university website, which is updated regularly for keeping all stakeholders up-to-date about the various activities and resources of the university. Besides, the university is also trying to provide some live and audio classes on the different contents of the SLMs through its official Facebook page for the learners particularly during the Covid 19 Lockdown. The most important digital services of the university can be discussed in terms of the following.

The University Website:

The University website i.e. www.kkhsou.in can be easily surfed by the learners as well as by the common people. As per University record, on daily basis, nearly 2000 people searched the website for accessing information in both pre and during Lockdown periods. As we checked the visitors’ data from 1st January 2019 to 14th April 2020, we found that 273,797 visitors had so far accessed the website, and interestingly most of them are women. Again, most of the visitors are found from the age group of 25 to 34. Apart from these, it was found that more than 66% people searched the website through mobile app. Regarding visitors’ location, the majority are from India. But visitors from various other developed and developing countries such as United States, Bangladesh, Bhutan, United Kingdom, Pakistan, Brazil, Algeria and Indonesia also accessed the University website. During the 1st and 2nd cycles of COVID 19, it has been seen that from the period June 2020 to June 2021, more than 25 lac people visited the website where majority (70.8%) were female visitors.

KKHSOU Official Facebook:

Social media has played a crucial role during the Pandemic led Lockdown. Facebook, as one of the strongest social media, has been able to create a knowledge movement across the world. Today, everyone can access information and share ideas in Facebook with the help of smart phones. The Facebook page of KKHSOU became even more popular during the Lock down period. If we see the trend of Facebook viewers, it ranges from 3000 to 4500 viewers on daily basis from the period of 17th March 2020 to 13th April 2020. From 8th June 2020 to June 7th, 2021 it was found that 7,356 viewers accessed the University Facebook page and the learners were very active in uploading posts during the Pandemic. From the study, it has also been found that Sunday is the most popular day on which a majority of the viewers or learners accessed the Facebook page and their most comfortable time is around 12 noon. However, the data also reveal that the benefits are always one sided and always accessed by the people of advanced and metropolitan cities compared to other places.

From the University data, it has been seen that a majority of the viewers (more than 2000 viewers per day) are from Guwahati itself followed by the cities like Silchar, Nagaon, Jorhat, Tinsukia and Tezpur (ranges from 500-200 viewers per day). There are less than 50 viewers per day in the cities like Lakhimpur, Barpeta and Sivsagar. Again, if we see the visitors’ profile in terms of age and sex, it has been found that unlike the University website, the majority of the viewers are from the age group of 25-34. However, there are more male viewers than female in the Facebook page. The following **Table 1** shows the age and sex of the visitors of the KKHSOU Facebook page by considering the percentage of the visitors, which is as the following:

Table 1: Viewers’ age and sex (total visitors 7356 as on 7th June 2021)

| Age | Female (Percentage) | | Male (Percentage) | |
|-------|---------------------|---------|-------------------|---------|
| 13-17 | 14 | (0.2%) | 23 | (0.3%) |
| 18-24 | 819 | (9.1%) | 1143 | (12.7%) |
| 25-34 | 1661 | (18.5%) | 3343 | (37.2%) |

| | | | | |
|-------|-----|--------|------|---------|
| 35-44 | 377 | (4.2%) | 1005 | (11.2%) |
| 45-54 | 120 | (1.3%) | 267 | (3%) |
| 55-64 | 27 | (0.3%) | 52 | (0.6%) |
| 65+ | 52 | (0.6%) | 85 | (0.9%) |

Source: KKHSOU database

Again, it was found that the University Facebook was so popular that it had motivated viewers not only from Assam or India but also from many other prominent neighbouring countries such as Bangladesh, Saudi Arabia, Vietnam, Thailand, Taiwan, Iran, Malaysia, Bhutan, Nepal, Uganda, Singapore, Nigeria, United Kingdom, Indonesia, Cambodia, Philippines, Myanmar and Sri Lanka. However, the majority of the viewers are from India itself.

KKHSOU's YouTube Programmes:

As part of providing digital support services, the university continues to prepare audio-visual programmes, which mostly serve the purposes of academic, social, cultural upliftment of the learners besides providing entertainment. These programmes are made available in the university's YouTube i.e. www.youtube.com/user/kkhsou. In this regard, the faculty members arrange and prepare various academic programmes under Creative Commons Licence as OERs (through the mode of discussion, activity based programmes, unit wise audio-visual programmes) which bring benefits to the learners to a great extent.

If we look at the trend of viewership of the different programmes in YouTube of KKHSOU from the last one year i.e. March 2020 to April 2021, it has been found that more than 2,82,000 viewers viewed the different programmes in the university YouTube. During this period, it has also been found that most viewers visit this site mostly for skill based and practical based videos. Again, it has also been seen that the educational videos of YouTube of KKHSOU became so popular that the University was able to motivate the listeners from other countries of the world such as United States, Pakistan, Bangladesh, Philippines, Sri Lanka, South Africa, Canada, Nepal etc.

LEARNERS FEEDBACK ON THE DIGITAL SERVICES IN PRE AND DURING LOCKDOWN PERIODS:

As part of this micro study, for collecting the primary data, a questionnaire was used and feedback was received from 480 learners during December 2019 to February 2020. Then, another questionnaire was sent to the learners to know their feedback or perception on the digital services of the university during the Lockdown period in which 410 learners provided their feedback from April –June 2020. The following are some findings of the study:

Feedback in Pre-Covid Period:

| Questions related to different aspects of digital support services | Feedback received from the learners (Pre-Covid 19) |
|--|---|
| Awareness on the availability of ICT based support services available in KKHSOU | 69.9% were aware. |
| Most Effective Support services before Covid 19 Lockdown | 44.1% favoured to mobile app, followed by Learners' portal (43.9%), digital library (9%) and internet radio (3%). During that period, only these four digital services were provided to the learners. |
| The device used by the learners for accessing the services | 81.3% used mobile phone for accessing the services, followed by devices like Laptop (11.1%) and a few respondents only accessed the services with the help of PC. None of the learner was found to use i-Pad. |
| Problem faced while taking online admission | Regarding full online admission procedure, 75.5% revealed that they did not face any problem during online admission, whereas 24.5% faced problems while enrolling in various programmes at the Bachelor's level. |
| Types of problems learners faced while enrolling in Academic programmes | Out of 480 respondents, 36.3% respondents faced problems of internet connection, followed by 25.5% problems in payment, 19.6% problems of understanding the instructions and 18.6% could not fill up the form without assistance from others. |
| Provision for KKHSOU e-SLMs for various programmes available in its learner's portal | 71.5% learners were aware of the provision of e-SLMs, however 28.5% was not aware of e-SLMs made by KKHSOU for providing additional e-learning support to the learners. |

| | |
|---|--|
| Printed SLMs or e-SLMs- Which is more effective? | 61.6% respondents opined that printed SLMs are more effective than e-SLMs before the Pandemic. |
| Reasons behind preferring e-SLMs | Although the majority of the respondents preferred printed SLMs, 38.4% had the experiences of going through the e-SLMs. According to them, e-SLMs are accessible anytime and anywhere, easier to read, more user friendly and it helped to solve the problems of not getting the printed SLMs on time. |
| Whether accessing e-SLMs would help the learners to develop ICT- based skills | Although the majority of the learners were in favour of using printed SLMs however, 63.1% agreed accessing e-SLMs helped them enhance their ICT skills, 27.3% somewhat agreed and 5.7% did not agree. |
| Need of a Learner's portal | 38.7% respondents revealed that learner's portal helped them to get the relevant information, 24.7% agreed to have got the learner support services of the university, 23.2% agreed that LP was a necessity for solving academic problems and 13.5% were in favour of interacting with fellow learners and teachers with the help of a Learner's portal. |
| KKHSOU YouTube Programmes/videos | The majority of the respondents (53.3%) did not access the YouTube services of the university for learning purpose, as they were not aware of such provisions before the crisis by the pandemic. |
| Benefits of participating in the online activities of KKHSOU | 40% revealed that participation in online activities helped them to learn at their own space and time, 10.4% stated they were benefitted because of accessing learning resources other than in the SLMs, 7.8% benefitted because of accessing OER materials from the online platform of KKHSOU and less than 7 percent respondents revealed that by participating online or through digital platform helped them to communicate with the teachers /officers from the university headquarters. But the majority of the respondents did not respond to the question. |

DURING LOCKDOWN FEEDBACK ON DIFFERENT ASPECTS OF DIGITAL SUPPORT SERVICES (APRIL TO JUNE 2020):

After knowing the learners' perception on the digital services of the university before the Lockdown, an attempt was also made to explore how the Lockdown starting from March 2020 in India had changed the perceptions as well as the level of adaptability of the learners particularly in the ODL mode. As ODL learners are more competent and have more exposure to the use of digital technology for their learning purposes, the usability of adaptive technology on the part of the distance learners during Covid 19 as well as in post Covid 19 situation need to be explored and also there is a need to identify the factors affecting the entire learning pedagogy during the crisis situation.

Therefore, this study also sought to know the perceptions of the learners of KKHSOU towards the digital services of the University for providing academic support to the learners during and in post Covid 19 situation.

| Questions related to different aspects of digital support services | Feedback received from the learners (During Lockdown) |
|--|---|
| Awareness on the availability of ICT based support services available in KKHSOU | 79.9% learners were aware of the availability of the digital support services, only 20.3% were not aware of such services provided by the university during the Lockdown led crisis. |
| Most Effective Support services provided during Covid 19 Lockdown | 52.6% favoured the University mobile app, followed by Learner's portal (32.9%), digital library (12%) and internet radio (2.5%). Only these four digital services were available to the learners during the 1 st wave of COVID 19. |
| The device used by the learners for accessing the services | 88.9% learners used android mobile phone for accessing the services, followed by a device like Laptop (9.9%) and less than 0.5% learners accessed the services with the help of PC. None of the learner was found to use i-Pad. |
| Provision for KKHSOU e-SLMs for various programmes available in its Learners' Portal | 75.3% learners were aware of provision of e-SLMs. However, 24.7% were not aware of e-SLMs made available by KKHSOU for providing additional e-learning support to the learners. |
| Printed SLMs or e-SLMs- | 81.3% respondents opined e-SLMs to be more effective rather than printed |

| | |
|--|--|
| Which is more effective? | SLMs during the Pandemic. |
| Reasons behind preferring e-SLMs | While the majority of learners preferred e-SLMs during the pandemic, 60.3% opined that e-SLMs can be accessible anytime and anywhere, 16.4% revealed that e-SLMs helped to solve the problems of not getting the printed SLMs on time, 13.7% stated as more ease of reading, and 9.6% opined e-SLMs as more user friendly. |
| Whether accessing e-SLMs would help the learners to develop ICT- based skills | 76.3% learners agreed that accessing e-SLMs would help the learners to enhance the ICT based skills, 18.4% somewhat agreed and 5.0% did not agree on developing ICT based skills due to the use of e-SLMs. |
| Need of a Learner's portal | The respondents mentioned four important points regarding the need of Learner's portal. Out of 410 respondents, 31.4% revealed that the portal helped them to get the relevant information, 28.6% agreed to have accessed the learner support services of the university through the Portal, 27.1% agreed that the Learners' Portal helped in solving academic programme and 12.9% were in favour of interacting with the fellow learners and teachers with the help of a Learner's portal. |
| Most useful social media and online platform provided by the university during COVID 19 | The majority (49.3%) favoured YouTube as the most effective social media, followed by KKHSOU official Facebook (26.7%). Besides, 24% respondents also revealed that WhatsApp and Email services helped them immensely in terms of getting the opportunity of direct interaction with the faculty members/counsellors for academic purpose during the COVID 19 pandemic when the study centres were shut down. |
| Mostly used Social media to access the educational videos provided by KKHSOU during the Lockdown | The majority of the respondents (76.5%) accessed the educational videos from YouTube of the university and only 23.5% used Facebook for accessing the educational contents during the lock down situation. Besides, it was also found that 95.8% respondents agreed that the use of social networking sites helped them a lot to enhance their knowledge on the course contents. |
| Benefits of participating in online activities of KKHSOU | 52.9% respondents revealed that by participating in online activities, they could learn at their own space and time, 18.6% stated they were benefitted because of accessing OERs from the online platform of KKHSOU, 17.1% were benefitted from accessing the learning resources other than in the SLMs, and 11.4% revealed that their participation in online or digital platforms of the university helped them to communicate with the faculty members/officers from the university headquarters. |
| Basic challenges faced by the learners in accessing the digital/online services provided by the university | As the majority of the learners revealed that due to poor internet connection in their locality, they were unable to access the online classes or live sessions at the right time, which were more interactive than the recorded link. Besides, the non-availability of the digital gadgets on the part of the learners particularly in the rural areas, absence of practical based courses during the Lockdown situation are some of the challenges of ensuring equity in terms of receiving education under a common umbrella. |

Thus, from the above analysis, it is observed that the use of digital or hybrid technology could provide need based learning support services to the learners of the University across the state. Besides, during the Lockdown, with the help of ICTs and hybrid technologies, KKHSOU tried to provide different learning support such as e-mentoring, online counselling, Facebook live classes, educating through an institutional LMS, organising online webinars on various relevant social issues, providing online training for capacity building of the teachers as well as the learners in terms of using online platforms for academic purposes and so on. Single Window Student Grievance Redressal Cell from March 2020 onwards for providing un-interrupted learning, providing care and live support as well as solving various academic problems of the learners in an urgent way were some additional support.

In terms of assessment, the university offered alternative ways for conducting the Open Book Examination (OBE) through online mode that eventually helped the learners in saving time and money. In fact, by using the ICT or other online platforms, KKHSOU was able to greatly reduce the feeling of isolation among the learning community as it was rightly stated by Bozkurt (2019) as "DE and ODL can be defined as any learning activities within formal, informal, and non-formal domains that are facilitated by information and communication technologies to lessen distance, both physically and psychologically, and to increase interactivity and communication among learners, learning sources and facilitators." (p. 267)

IMPORTANT FINDINGS ON THE DIGITAL SERVICES OF KKHSOU IN PRE-LOCKDOWN AND DURING LOCKDOWN PERIOD

- The majority of the learners (ranging from 69.9% to 79.9%) were aware of the different digital services provide by the university in both pre and during COVID 19 situation.
- When asked about online admission in pre-lockdown period, the learners reported that they had faced many problems. 36.3% learners faced problems of internet connection followed by 25.5% problems in payment, 19.6 % problems was related to non-understanding of instructions and 18.6 % could not fill up the form without assistance from others. This proves that apart from the internet connection, the lack of training on the use of digital devices is one of the biggest challenges as the learners could avail the alternative manual admission before 2020. In fact, prior to 2018, offline admission was the only way to take admission and the provision of online admission started from the year 2018 following the UGC recommendations. However, during the pandemic led crisis, it was seen that there was no alternative arrangement for manual admission, as the learners were able to easily cope with the system. Even due to the shutdown of the study centres during and post pandemic situation, the trend of usability and acceptability of ICT based technologies for delivering teaching-learning transactions became a compulsion on the part of the teachers as well as for the learners.
- Although the majority of the learners (more than 70%) were aware of the provisions of E-SLMs, it was found that before the Lockdown, the learners preferred printed SLMs but during the Lockdown, they preferred E-SLMs. As 61.6 % preferred printed SLMs and 38.4% preferred E-SLMs before lockdown. During Lockdown, 81.3% preferred E-SLMs as more effective rather than printed SLMs during pandemic time.
- Regarding the need of the Learners' portal, before the Lockdown, 38.7% respondents believed that relevant information was available, 24.7 % reported that the Portal could be accessed as LSS, 23% stated that all academic problems could be solved and 13.5% reported that it was needed for interacting with the fellow learners and teachers. However, during the Lockdown, the perception and acceptability towards Learner's portal was same as before the pandemic.
- Regarding the University YouTube, 46.7 % learners accessed the videos before the Lock down, but during the Lockdown, the percentage increased up to 76.5 %. Even during the Lockdown, the majority of the learners believed that YouTube is the most beneficial social media compared to Facebook live sessions provided during the crisis. Besides, it was also found that 95.8% respondents agreed that the use of social networking sites helped them a lot to enhance their knowledge on the course contents.
- Besides during the Lockdown period, 76.3% learners agreed that e-SLMs and live classes had helped them to develop their ICT based practices and skills.
- Interestingly, only 23.5% learners were able to access Facebook live classes. However, the Facebook page of the university became more popular during the Lock down period than before.
- The learners during the Lockdown period could communicate directly with the faculty members of the Headquarters through live classes unlike in case of the pre-lockdown period.
- The majority of the respondents before Lockdown were not familiar with the use of ICT based practices in the teaching-learning process, but during the Lockdown as well as in the 1st phase of the post Covid 19 situation, the respondent's percentage was higher than before. As 52.9% revealed that the participation in different online activities helped them to learn at their own space and time, 18.6% stated they were benefitted because of accessing OERs materials from the online platform of KKHSOU, 17.1% were happy because of accessing learning resources other than in the SLMs, and 11.4% revealed that by participating in online or digital platform of the university they could communicate with the faculty members/officers from the university headquarters. Finally, the majority of the learners agreed that participation in various online activities of KKHSOU helped them immensely to avail the learning opportunities at their own pace and time during the Lockdown and 1st cycle of COVID 19 situation.
- The learners also expressed their views that poor internet connection, non-availability of the electricity in the rural and remote areas, illiteracy in terms of using the technology for learning purposes, absence of electronic gadgets at hand, restrictions of offering practical based courses through online during the crisis situation were the major challenges of receiving the online support services provided by the university in the proper time.

Thus, from the Learning Analytics used as part of this micro institutional study, we could identify the strengths and weaknesses of the digital support services provided by KKHSOU so that necessary steps could be taken for fulfilling the requirements of the learners of the University in any future crisis and also for taking a leadership in facilitating digital support facilities to other educational institutions located across the North Eastern Part of India. In fact, the role played by the university in terms of providing the digital services could be a model for other universities and higher educational institutions in the state like Assam as well as other state open universities situated across the nation.

RECOMMENDATIONS FOR MOBILISING DIGITAL LEARNING SERVICES IN FUTURE CRISIS

The Corona virus pandemic has been more than a crisis; it has been a global wake-up call to change our paradigms and the way we perceive the world. Not surprisingly, the pandemic has altered the way we interpret the *normal* as well as the way we live. (Bozkurt & Sarma 2020) However, the problems of digital divide between the rich and the poor, the haves and have-nots are to be seriously addressed because the poorest and the most vulnerable sections of learners are the hardest hit by both the pandemic and the response emanating from the educational institutions. Sadly, therefore, while many countries have been suffering from the disruptions in education, in a country like India as well as an under developed state like Assam, the digital divide can still be perceived as one of the greatest threats to the implementation of successful online/blended mode, as many still suffer from scarce educational opportunities.

For strengthening the digital support services, the following are some of the recommendations based on the findings of the study that will help in mainstreaming the future course of action by the university during similar crisis.

- Against a crisis like the current Pandemic, an institutional LMS (Learning Management System) can offer education at the doorsteps of each learner located in different corners of the world. In fact, by using an LMS both the conventional and ODL institution can share their educational contents among the learners of both the systems. Even they should encourage and provide training to the learners regarding how to use technology for academic purpose.
- Different coordinating agencies are facilitating various MOOCs in the SWAYAM platform. Most specifically, in a pandemic like situation, they can play an even bigger role by offering several need based MOOC, which can not only help the takers in getting the benefits of the credits earned but can also keep them busy in a Lockdown like situation in a more productive way. As we already aware of the different available courses in this platform, Governmental intervention is necessary for each higher educational institution to adopt or offer at least one MOOC for the purpose of credit transfer.
- Awareness programmes on the utility of live classes and tutorials through different meeting apps should be held by the University in regular intervals.
- Digital leadership on the part of the university authority must be the baseline during any crisis like Covid 19. The course contents and delivery mechanism should be developed in such a way that learners can easily access them with the help affordable and low-cost technologies.
- From the learning analytics, it was found that learners faced lot of problems in terms of assessment or final evaluation during the crisis. It was difficult for the learners to attend online examination due to the prevalent digital divides. Therefore, KKHSOU could follow the model of the University of Sri Lanka as it offers a more practical based course in order to avoid the so-called examination system. In that system, a major percentage of assessment is done in regular interval during the practice sessions and there is a little scope for the final or summative assessment. In fact, such model could be the suitable option in avoiding the final examination, which is generally difficult to organise during a crisis.
- Creating OERs repository will be the other alternative ways for the university as it will eventually give recognition to the institution in terms of contributing to the educational world.
- The use of proper techno pedagogy will surely produce effective forms of learning. In fact, for making education accessible to all, there is a need of using non-discriminatory and inclusive pedagogy for transacting the curriculum in the teaching learning processes.

CONCLUSION

The basic idea of a teaching learning in the current times should encourage and ensure capacity building of the learners by developing their communication skill, collaborative skill, creativity and critical thinking skill and also by promoting a kind of collaborative learning. The OERs in blended as well as online format have tremendously influenced the teaching learning transactions in the 21st century following which the traditional classroom has been replaced by increasing use of online platforms and social media. In this new social constructivism, the learners can directly interact with their teachers and the people in their community, share their own ideas and thoughts and collectively undertake the new researches, which can genuinely transform the society. The Learning Analytics used in the paper has shown that the future success of an Open University like KKHSOU will lie in the fact that the University continues to provide personalised forms of learning to all its learners and use its digital services not as deterrents but as enablers.

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