Online Teaching and Learning

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Introduction

For Bhutan's education system, the COVID-19 pandemic has provided a new beginning and greater opportunities for experimentation, autonomous learning, self-direction, and collaboration amongst students, parents, and teachers. This paper looks at the issues and experiences related to online teaching-learning during school closures and lockdowns after the detection of COVID-19 cases in the country.

The use of technology with the online teaching-learning process is playing a crucial role in education, especially so during crises such as the COVID-19 pandemic. There has been a paradigm shift to compensate for lost classes, with distance learning or online learning via Google Classroom, Moodle, Cloud systems, TV and radio, etc.

In Bhutan, online teaching-learning came as a mandate for all schools, asking principals, teachers, parents and students to collaboratively ensure continuous teaching-learning during school closures. The Royal Education Council (REC) framed a curriculum wherein a literacy and numeracy curriculum was offered for key classes PP-VI, and a theme-based adapted curriculum was offered for key classes VII-XII. Schools under Thimphu *thromde* (municipal) initiated the use of Google Classroom, WeChat, Messenger, mobile phones and Facebook, etc., to implement the prioritised curriculum -- also known as Education in Emergencies -- developed by the REC.

Many parents came forward to support the online education initiatives undertaken by schools, by supporting students with personal computers, laptops, smartphones, TV, and access to Internet. The rapid development of Information and Communications Technology (ICT) compelled a major transformation in the education sector, and it is essential that mitigation and adaptation needed are being properly addressed.

Online teaching-learning has the potential to make learning accessible, convenient, flexible, and student-centred, to prepare for any future eventualities, making education productive and resilient. Important factors that invite the immediate attention of policymakers are discussed in this article.

Numerous Problems

Lessons Online

With the ad hoc need for online teaching-learning as schools closed, teachers and students faced immense difficulties with personal ICT gadgets, skills, and training. It exacerbated inequalities for many disadvantaged students who have no access to the Internet. Google Classroom being fragmented and uncoordinated, many children became addicted to social media and digital devices. It was observed that around 25 per cent of students failed to submit their assignments on time, even with teachers reminding students and parents (Dorji, 2021). An estimated 25 per cent could not learn independently. Students felt isolated, confused, stressed and frustrated.

Many parents expressed their woes and frustrations for not having the digital knowledge to support their children in transitioning to online learning, despite owning digital devices.

Limited experience and resources among teachers and students limited virtual teaching and learning. Time slots were framed by the school management, and the complacency of teachers led to overburdening of students with work, some of whom copied assignments directly from the textbooks, peers and the Internet. Students found mathematics, science, geography and economics difficult without face-to-face interaction with teachers. These subjects require rigorous explanation, demonstrations and experiments, and many hands-on activities for students, to fully understand the subject content. Group work, practicals and field visits were not possible through Google Classroom.

A reported 99 per cent of students preferred to submit their assignments by uploading JPEG photographs from their notebooks taken using their smartphones (Dorji, 2021). Teachers complained of excessive Internet expenses while handling these higher definition files.

Assessments of students' works were limited to placing ticks and crosses and awarding marks, so teachers failed to provide assessment criteria and meaningful feedback on students' works. Well-framed assessment criteria are essential in overriding this problem, and will not only be used by students to self-assess their work and continuously improve, but also to define essential areas for learning and improve the overall standard of performance.

Lessons on TV

The social and academic environment of the school is not easily transferred to the home. TV lessons were not user-friendly for students with disabilities, due to the lack of simplified text, sign language, audio narration, etc. The recorded lessons delivered via TV were long, without breaks, and lacked continuity. The irregularly aired time slots led to students losing track of their lessons. The set of competency-based provoking questions or higher-order questions asked at the end of each lesson to assess the students' learning was found to be very difficult.

Although questions were assigned at the end of TV lessons, students had not learnt, even if they had submitted assignments. Students also complained of not having received the TV lesson timetables in advance which led to some students missing lessons. TV lessons had drawbacks, as they cannot be referred to once the airtime is over.

Many Bhutanese parents lack the education to help students. Some parents could not or had no time to monitor children, who just continued watching TV even after the lessons were over.

In Bhutanese society, many students are also first-generation learners from underprivileged families, for whom TV lessons are unfamiliar territory.

There is an absence of suitable follow-up on TV lessons by teachers, to consolidate knowledge gain and skill mastery. It does not permit group discussion and activities. TV only allows for one-way communication.

With these multiple issues, classes could not be replaced by online learning or by TV lessons.

Self-Instructional Material

Self-Instructional Materials (SIMs) were developed for students' self-engagement in learning, based on the TV lessons for students living in places with no access to the Bhutan Broadcasting Service (BBS) and Internet. The learning activities designed in the SIM were intended to promote self-engagement and independent learning. Although SIM was designed for students in remote places, it remained a preferred option amongst a section of urban students, as SIM could be referred to as and when needed, unlike TV programmes. SIM allowed children to be in groups, have discussions and learn with the support of peers and parents.

But learning from the use of SIM posed challenges for students in comprehending concepts and clarifying doubts, and it could not deal with pre-existing incorrect ideas and understanding. As a result, students lost interest and ultimately, lessons' objectives were far from achieved.

Way Forward

Despite all these problems, Google Classroom did help teacher-student engagement and continuity of learning during the closure of schools.

Education is the collective responsibility of students, parents, teachers and school management, and is an interlocking process, involving the curriculum or textbooks, pedagogy, assessment, teacher training colleges, Royal Civil Service Commission and policymakers. Working together realises better decisions, as it requires attention, knowledge, special skills, dialogue, consultation, and consensus.

The Ministry of Education (MoE), as the custodian of education in the country, needs to review its existing education policies, plans, and strategies regularly, to confront crises and leap towards development in line with global changes. It must also carry out consultation and communication with all education actors, including students, teachers and school management, and align all initiatives with national priorities, to mitigate the impact of the crisis and engage relevant stakeholders in enhancing the resilience of the education system.

The MoE, in collaboration with REC, trained one teacher from every school, who further trained other teachers on the use of Google Classroom. However, the cascading model of training teachers did not yield the effective transfer of skills and knowledge, because of the dilution of content and short duration of such training at the school level. To ensure effectiveness, training on the uniform application of technology in education -- such as Google Classroom -- can be disseminated via Zoom, Google Meet or other applications that will provide the necessary instruction skills, tools and resources across the board to expose all Bhutanese teachers to a new education platform, and equip them with quality instruction tools.

Class size plays an important role in the effective implementation of online teaching-learning. While the ideal class size is 24 for primary school and 30 for secondary school, according to iDiscoveri Education & REC (2009), there were 39 students in my own class. Thus, I faced many difficulties in monitoring, following up and designing lesson activities that met the learning needs of individual students. Teachers should get adequate time for quality planning, implementing relevant pedagogy, carrying out authentic assessment, co-curricular activities and administrative responsibilities.

According to iDiscoveri Education and REC (2009, p.77), "resistance and disengagement of stakeholders are the main reasons why many well-intentioned and even well-resourced reforms programmes have failed". The MoE needs to organise regular seminars, conferences and workshops, and facilitate discussions and other such forums to enhance the standard of teachers. Voices of the students, parents, community, and private and international organisations all need to be considered. The outcome needs to be discussed openly without fear and with a clear understanding of possible consequences. At present many principals, teachers, students and parents are unaware of issues and lack ideas. Very few teachers are included in the decision-making process.

Ground realities must be taken into consideration before decisions are made. Changing the behaviour and mindset of teachers is not easy across the globe. There is a long history of teachers' passive resistance to change in Bhutan, stemming from a sense of professional incompetency, ineffective professional development programmes in disseminating reform initiatives that require active teacher participation, and disengagement in policy

initiatives concerning the education system. Top-down command in initiating policies, or involvement of personal agenda without proper dialogue and awareness of ground realities, are prominent in developing countries. As a result, it creates frustration and passive resistance among teachers.

Over the years, a compliance mindset has set in the Bhutanese education system. There is a need for better information flow and dialogue amongst all stakeholders to take part in decision-making. The classroom is a "black box", and what goes on inside is only known by the teachers. Policymakers are not fully aware of classroom practices, and information going into and coming out from classrooms is often limited. Policymakers are also not considered experts in many ways because they are not involved in extensive consultation, interactions, research and publications.

Although there have been efforts made in teacher training colleges, there exists a concern about the quality of outdated teacher education programmes which emphasise theory rather than action. Unless the teacher training colleges evolve in their education beliefs, and practise advanced professional theories, it will be difficult to develop teacher competency once they are full-time teachers. A competent and dedicated faculty is a must at teacher training colleges.

It has become apparent in the past year that technology and education cannot be separated. Teachers and students should have adequate skills, and access to free and open-source technology for teaching-learning. Therefore, the MoE should strengthen ICT facilities and transfer adequate ICT skills to teachers and students, in order to successfully implement online classes.

Currently, schools are inadequately equipped with ICT facilities, and limited resources are being shared amongst teachers and students. While owning personal computers and smartphones has become a challenge for students due to the economic status of families, the additional expenses for Internet packages have put further stress on family incomes.

But technology alone cannot guarantee good teaching-learning outcomes. Teacher training colleges must reform and renew alternate methodologies to teach our students. Besides empowering teachers with ICT skills, teacher training colleges must ensure that teachers have the necessary pedagogical and assessment skills as well.

"Digital Drukyul" is one notable flagship programme to address issues relating to ICT in schools for the 12th Five-Year Plan (2018-2023), with an objective of developing ICT infrastructure in schools, and integrating ICT, STEM, coding, etc. Lately, MoE started implementing the iSherig-2 Education Master Plan (2019-2023). It should be the endeavour of every player to complement the efforts towards its successful implementation. It is vital for the MoE to come up with strategies to close the digital divide, and give equal learning opportunities to all students. The government and its development partners need to work together to break technological barriers, by investing in digital infrastructure and reducing connectivity costs for marginalised students.

The school management plays a vital role in improving the lives of teachers and students. Quality leadership has a positive effect on delivering curriculum and facilitating the relationships among peers and the community. While principals hold high academic expectations, in many cases, they do not teach in school due to administrative burdens. In order to draw inspiration from instructional leadership, it is mandatory for leaders to take an interest in the profession and delegate administrative responsibilities to teaching and non-teaching faculties.

COVID-19 has taught us to pool different sets of students, to ease monitoring during crises. Pedagogy and assessments are to be tailored depending on specific contexts relevant to the individual student. Quality data (i.e., student's family background, academic performance, address, etc.) can help us to monitor the learning environment and minimise the digital divide and learning crisis. Thus, it is essential to have all prerequisite data of students at all levels of the system (i.e., class, school and Ministry) to address necessary guidelines during similar crises in the future.

The introduction of the Individual Work Plan (IWP) by RCSC and Bhutan Professional Standard for Teachers (BPST) by MoE brought a lot of paperwork in addition to teaching practices. I found many teachers can fill up the paperwork without actual classroom practices. As a result, teachers are diverted to compile documentation for IWP and BPST rating, providing less time to prepare lessons. The compilation of paperwork on IWP and BPST needs to be streamlined to let teachers focus on classroom practices.

Currently, teachers pay less attention to Continuous Assessment (CA) for face-to-face and online teaching-learning. For instance, the Bhutan Council for School Examination and Assessment (BCSEA) on the Bhutan Certificate of Secondary Education (BCSE) does not address the real learning outcome of students. The BCSE consists of a weightage of 80 per cent in written examination and a weightage of 20 per cent on school-based CA. The least continuous assessment awarded by the school is 17 or 18 out of 20 marks. The CA in school is normally used for grade promotions and certification instead of for diagnostic purposes or actionable feedback to students. While the pass percentage in BCSE is high, the actual quality of learning is low. Therefore, BCSEA needs to restructure CA to generate evidence-based student learning outcome not just in academic performances only.

It must be noted that the introduction of the New Approach to Primary Education in the 1980s taught us that what works in other countries will not necessarily work in Bhutan due to differences in context, besides other factors, such as teacher qualification and standards, resources, technology, student learning standards, and the overall learning culture in the country.

Conclusion

Based on these observations and experiences, online teaching through Google Classroom, TV, and SIMs is found to be effective only in engaging students during school closures. The ad hoc shift from classroom to online without adequate ICT skills and facilities has led to a dilution of teaching-learning objectives.

To avoid such dilution, various factors are to be considered. This includes teachers and student readiness, degree of student adaptation to learning, teachers' digital literacy skills, infrastructure, adequacy of devices, comfort with applications, expected learning outcomes, Internet connectivity, online teaching-learning costs and post-pandemic learning commitments, even in "normal" education. Pedagogical approaches need to be changed for similar eventualities in the near future.

To mitigate possible negative impacts, the MoE should leverage past knowledge and experiences of advanced technology-based education systems around the world. They need to consider e-pedagogy, e-learning,

digital curricula, digital textbooks, e-books, e-resources, digital citizenship, digital libraries, and other teaching-learning materials as alternative innovative learning in education, making the education system resilient. Virtual learning is inevitable in the 21st century and, therefore, it should become parallel to the conventional education system at various school levels.

Some areas that invite reform for training of teachers could be ePortfolios, ethical use of ICT, ICT integration in education, audio recording, video recording, using digital images, assessment through technology, digital field trips, artificial intelligence, coding and computational thinking, accessing online resources and tools, and social bookmarking (storing, organising, sharing online resources) etc.

Teachers and students are prime factors in the success of online teaching-learning processes, and it is important to be able to use various learning model platforms, such as a hybrid or blended models of education provision, Moodle, Google forms, Zoom, Google Classroom, Jitsi Meet App, WeChat, Messenger and WhatsApp Groups, etc. Specifically, considering available technology and its numerous advantages, it is paramount that teachers are trained to maximise the use of technology in education, which needs to go beyond using Zoom, PowerPoint slide, YouTube video and Google Classroom.

Teachers need to be trained in e-pedagogies, re-skilling them in new ways of lesson planning, delivery and assessment. Teachers and students will have to have easy access to learning platforms and devices, so that their digital knowledge and skills are enhanced while building confidence and getting accustomed to the use of technology in education. It is also important to educate parents on their role in the online teaching-learning process in educating their children.

Quality education is a multidimensional and evolving concept.

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