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A Study on Blended Teaching-Learning Approach at Secondary Level during Pandemic Situation

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Abstract

Since 17 March 2020, schools were closed in Bangladesh due to pandemic. There are around 1 million teachers in primary, secondary, madrasah and vocational education institutions in Bangladesh.With the technical support of a2i the government of Bangladesh had introduced alternative distance education immediately using different channels e.g offline and online version, TV channels so that the students of the country could continue learning while staying at home. The teachers of secondary level were the population of this study. The study was endeavored to explore the access to the digital technology, know the teachers' current capacity level to use EdTech and the challenges & possibilities regarding blended learning for future scale-up.The study integrated both qualitative and quantitative approaches to explore the study concern areas based on all data and analysis. The tools of data e,g. were Survey Questionnaire for secondary level teachers who are active and not active in online teaching learning, Semi-Structured Interview for Head Teacher, FGD with secondary school teachers and students, KII in policy makers and secondary documents review. Special emphasis had given to the participatory approaches in all aspects of the study. The research findings revealed that the access to TV was 82%, Feature Phone 75%, Smart Phone 100%, Tab 13%, Laptop 57%, Desktop 38%, Mobile data 100%, Wi Fi (self) 24%. Most of the respondents (88%) used ICT devices for conducting the classes during the pandemic. 81% respondents self-trained on conducting the class using ICT devices and 19% didn't use of ICT devices. 50% respondents opinioned that their class quality was good. Almost half portion's opinioned was average. 25% respondents opined that the problem was willingness and training. More than half portion of the respondent (55%) opined that the device and connectivity they used for educational purpose. One third opined that it was used in professional work. Rest of the respondents (12%) opined that it was used in entertainment during the pandemic. Half of the respondents (9) had average knowledge about TPACK. On the other hand, 3 respondents responded that they have high understanding about TPACK. Other 3 respondents never knew about TPACK model.

Keywords: Blending Learning, Online Education, TPACK, devices, connectivity, platforms, information-technology, access, distance

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Background and Rationale of the Study

The education system in the world is now-a-days experiencing unprecedented shock of discontinuing regular face-to-face schooling to contain the spread of COVID-19 pandemic. With the advancement of technology in education, numerous teaching techniques had been implemented throughout the world. Many countries have made technology a vital part of their classrooms and others had worked hard to integrate it in a variety of ways. This research analyzed the obstacles and prospects of blended learning in rural and remote schools using a literature review. This study investigated how blended learning assisted school districts in rural and distant places in balancing teacher demand and supply difficulties. The current study found that blended learning was significantly more beneficial than face-to-face solely, home-schooling and pure online education and provided various advantages for learners such as no teacher retention concerns and schools in their neighborhood. Since 17 March 2020, schools were closed in Bangladesh, impacting an estimated 38 million children and adolescents, which was predicted to last up to March 2021 or beyond. In addition, due to the school closure, teacher education and training programs were initially halted for a considerable period, with gradual resumption of online modality of teacher training, though to a limited scale. As countries were reopening schools, many were going for phased reopening combined with blended options to be able to maintain safety protocols and social distancing. To some extend remote and blended options of teaching-learning had to be continued. Government had decided to institutionalize the distance learning modalities as part of longer-term strategies under COVID-19 response and one that further supports the robust education system the government is interested in building, specifically around increasing quality and access for all. While the remote learning options were emerging as a strong complementary approach to face-to-face instructions in schools and teacher training sessions, there were still issues of universal access, quality of instruction and monitoring progress using distance modalities. Both logistical and attitudinal preparations of important stakeholders did not seem to be adequate at this stage of operations to have a system-wide transition from low/no tech to moderately tech-enabled modalities. To facilitate remote learning effectively, it is important to figure out the capacity and readiness of secondary level teachers by addressing necessary knowledge, skills and attitudes to facilitate blended modality of teaching-learning. It is also important to explore what their current capacities of using educational technologies were including access to devices and connectivity, technology knowledge and ability for technology-pedagogy integration to actively participate in the remote learning platforms. Only face to face education is not capable to ensure the current education system in the pandemic situation. Blending learning was vital issue to continue the quality education in pandemic situation. The research explored on this ground. As Bangladesh is a large populated country, our classroom size is also large. The teachers of secondary level education were facing various types of challenges regarding classroom management during the teaching learning process. When we went through online or blended way of teaching and learning it was more thought-provoking to us. Without any preparation or even the authority guidelines teachers were started their teaching learning activities in online through different type of tools. Considering the online or remote learning principles teachers need to take preparations. According to World Economic Forum (WEF) “Despite the positive prospects

of technology in enhancing teaching and learning by changingthe way learners experience studies, the nature of teaching and learning, particularly in secondary education (SE), has not been effectively transformed through digital technologies." Thus, this study was mainly focus to investigate the teacher's preparation,readiness, tools, technology, access, connectivity and devices also. This research was also endeavor to identify the physical and mental situations, emotional wellbeing, learner's integration during teaching learning, online behavior etc.

Objectives of the Study

The general objective of this study was to explore the scenario of teachers-stakeholders regarding strength, weakness and effectiveness of remote or blended teaching learning and recommend the roadmap of blended education in Bangladesh. The specific objectives of this study were to:

- assess their access to digital technology in terms of connectivity and device
- know the teachers' current capacity level to use EdTech including their knowledge, skills, attitude
- identify the demand and supply-side factors including adoption with the change in teaching-learning modality
- inquire into the challenges and possibilities regarding blended learning for future scale-up

Methodology of the Study

The study demanded both a quantitative and qualitative research approach. It integrated both qualitative and quantitative approaches to explore the study concern areas based on all data and analysis. Special emphasishad given to the participatory approaches in all aspects of the study.The study covered 8 Schools from 8 Upazilas of 8 districts of 4 divisions. School of Urban and rural area also considered in this study.

Table-1

Division	District	Name of the School	Upazilla
Dhaka	Kishoregonj	Shaheed Alauddin High School	Pakundia
	Narsingdi	Nurul Majid Humayun High School	Monohardi
Mymensingh	Mymensingh	Latu Mondal High School	Sadar
	Netrokona	Noapara High School	Kendua
Chottogram	Chottogram	Jamal Khan Kusum Kumari City Cor. Girls School	Sadar
	Cumilla	Homna Adarsha High School	Homna
Khulna	Khulna	Salahuddin Yousuf Govt. High School	Labonchora
	Jessore	Deyapara Secondary School	Mathavanga

*Teachers (A)	*Teachers (B)	Head Teachers	Educator (Policy Level)	Schools
Survey Questionnaire	Survey Questionnaire	Interview (Semi-Structured)	KII	FGD Secondary School Teachers
8×1 = 8 Teachers	8×1 = 8 Teachers	8	18	4×2×1=8 Schools
2 teachers from district wise each selected school	2 teachers from each district wise selected school	1 Head teachers from each district	2 DSHE 8 DEO 8 USEO	2 schools (1 urban, 1 rural) of selected 2 districts in each 4 division
Purposive	Convenient	Convenient	Purposive	Purposive

* Teachers (A) = Secondary level teachers who were active in online teaching learning
* Teachers (B) = Secondary level teachers who were not active in online teaching learning

Data Findings and Discussion

This study incorporated the findings through Survey Questionnaire, Semi Structured Interview Schedule, KII and FGD in the study. The findings were presented on the basis of the digital technology access in terms of connectivity of device and understanding the teachers' current capacity level to use EdTech, including their knowledge, skills and attitude. The study also explored to identify demand and supply-side factors, including adoption with the change in teaching-learning modality investigate the challenges and opportunities for blended learning on a larger scale in the future. Though this study tried to balance the gender equity in collecting the data from field level. But majority of respondent was male (62%) and rest of the portions of respondent was female (38%) of the study. On the basis of the object there

were type of respondent (teachers) was selected from each school. A was who (50%) were active in online teaching learning during pandemic 50% and B was who (50%) were not active in online teaching learning during pandemic in this study. There were three type of educational qualified people participated in this study. Three fourth of selected respondents had B.Ed (Bachelor of Education) degree (75%) and almost one fourth of respondents had M.Ed (Masters of Education) degree (20%). Few respondents achieved others degree but they realized the necessity of professional degree for quality teaching. Not only had that teacher's professional development also aligned with their professional qualification that also brought to light by this study.

Access to Digital Technology

The study presented the findings concerning participants' access to technological devices. The study was explored both rural and urban respondents by asking about television, feature phone, smart phone, tab, laptop, desktop and internet. In the matter of Blended Education, ICT based device is very important element to run the blending teaching-learning education system modality smoothly. There were 16 respondents in the study.

Table-2

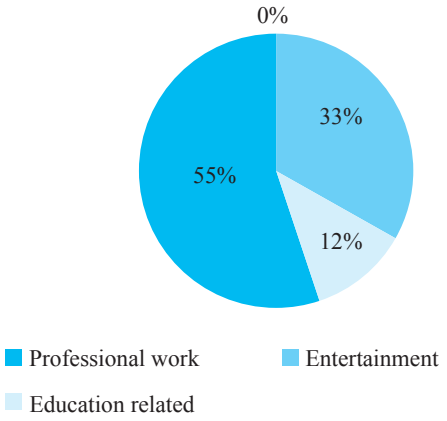
Respondent	1	2	3	4	5	6	7	8
	Television	Feature Phone	Smart Phone	Tab	Laptop	Desktop	Internet/ Wi-Fi	Mobile Data
R-1	√	√	√		√	√		√
R-2	√		√		√	√	√ w	√
R-3	√	√	√	√	√	√		√
R-4	√		√		√	√		√
R-5	√	√	√	√				√
R-6	√	√	√					√
R-7	√	√	√		√		√ w	√
R-8	√	√	√					√
R-9	√	√	√			√		√
R-10	√	√	√		√		√ w	√
R-11		√	√		√			√
R-12	√		√					√
R-13		√	√				√ w	√
R-14	√	√	√			√		√
R-15		√	√		√			√
R-16	√		√		√			√

There were 8 ICT devices e.g. television, feature and smart phone, Tab, Laptop, Desktop Internet (Wi-Fi) and Mobile Data. The table 4 showed the access of devices. 100% had accessed

to Smart Phone with Mobile Data. But only one fourth portion occupied with Internet (Wi-Fi) facilities to connect to net world. Most of them have television/phone. There was two areas e.g urban and rural in the study. Laptop and desktop were not available in all respondent. Most of the urban respondent (87%) had access in laptop or desktop computers. On the other hand, few respondents (13%) had access in laptop or desktop computers. The data disclosed the findings with percent at a glance

figure : 1

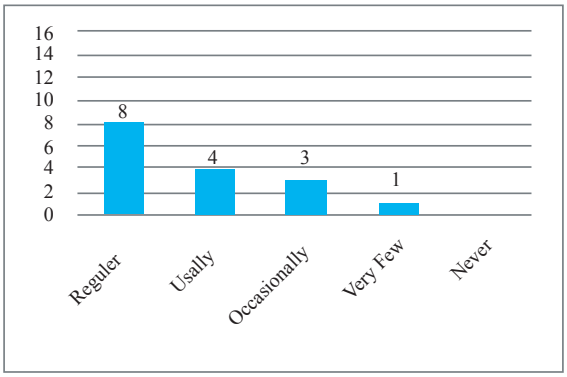
Using the Device and Connectivity



Blended Education required minimum device to ensure of connectivity for ensuring education through online modality. More than half portion of the respondent (55%) opined that the device and connectivity they used for educational purpose. One third opined that it was used in professional work. Professional work means educational work and official work. Rest of the respondent (12%) opined that it was used in entertainment during the pandemic.

figure : 2

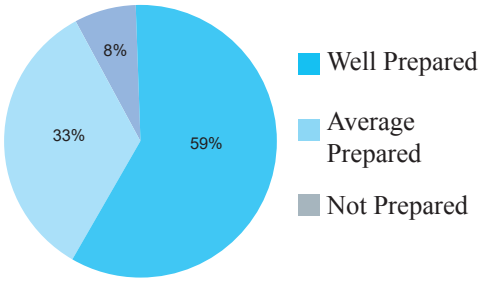
Use of ICT Device inside Classroom or Outside the Classroom



As presented in figure-2, it is evident that half of the respondents in this study used ICT device regularly in classroom and outside the classroom to conduct the classes. Covid-19 forced them to use that type of device to conduct the classes and home schooling also. In terms of use of ICT device or experience, the respondent had variations but access to the device is 100% percent.

Figure : 3

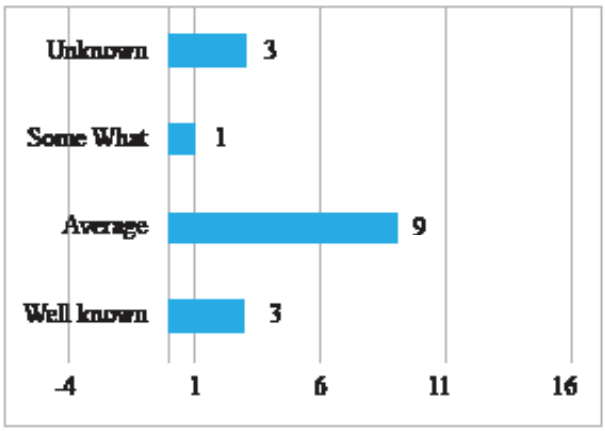
Preparation to continue Education during Pandemic



A sudden change happened in the time of pandemic. After the directions of government, the respondent engaged themselves in blended teaching-learning during pandemic.

Figure : 4

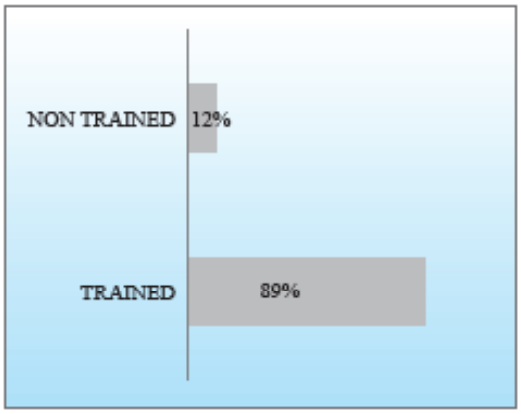
Teacher's knowledge on TPACK



The data showed that more than half of the respondents (9) had average knowledge about TPACK. They also shared that they used the ideology of TPACK in their professional life also. Not only that they believed that to become a quality professional this need to be known for every teacher. On the other hand, 3 respondents responded that they have high understanding about TPACK. Other 3 respondent never knew about TPACK model.

Figure : 5

Training on ICT in Education

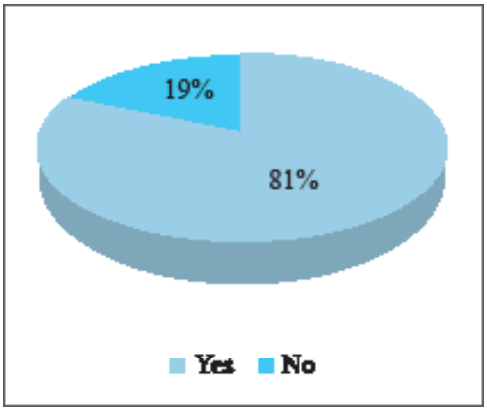


Majority respondents (89%) opined they had received ICT in Education training. Few (12%) respondents believed they had not been trained. Through several types of initiatives, the government has made ICT in Education training available to secondary level teachers. It was not possible to train all secondary school teachers due to time, cost and visit (TCV). One of the participants opined:

> *If we want get the benefit from the trained teacher, first we need to train all the teacher. The government should have the policy on training so that all teachers can receive the training in raised concept.*

Figure : 6

Using ICT devices for Teaching-Learning during Pandemic

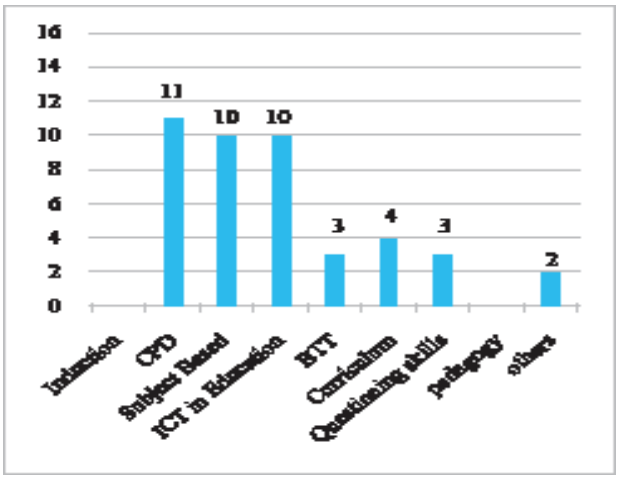


To enable the teachers with ICT skills the government has taken different initiatives in last 10 years. Before Pandemic 3.5 lakh teachers had trained on ICT skills out of 1 million teachers. But during the years of Pandemic most of the teachers (81%) self-trained on conducting the

class using ICT devices and rest of the respondent (19%) didn't use of ICT device during pandemic. The figure-6 disclosed the scenario of teachers' habituations.

Figure : 7

Professional Training of the Respondent



From the figure it is evident that participants in this study engaged in different kinds of professional training. Among the participants most of the respondent (***11***) participated in CPD (Continuous Professional Training) training according to their career purpose. More than half respondent ***(10)*** participated in Subject Based and ICT in Education Training. Half of respondent participated in multiple training. On the other hand, few respondents did not get the equal opportunity in training. Pedagogically trained respondent was not found in this study. One of the respondents explain that this limited pedagogical knowledge resulting from this lack related training had constrained their ability to engage learners in the teaching learning activities:

> *Due to COVID learners mind set has changed. Both in online or offline, they were not interested theoretical discussion in the classroom, they wanted to solve the problem or participate in teaching-learning activity. Sometimes we failed to engage the learners to the teaching-learning due to insufficient knowledge of Blended Pedagogy. So, we needed special training on Blended Pedagogy*

A significant number (25%) of institution heads in this study agreed with this claim. They think that lack of training is constraining teacher's ability to teach online using technologies. One of the head teachers explained:

Of course we need training, but need to reshape the training system. Some teachers received the training several times. On the other hand, someone didn't get the opportunity in the whole working life. Moreover, projects have limited scope, they didn't include the all

teachers in training. So, there is a training divide in our education system. We need alternative solutions like blended training, so that include all the teachers in training

They had started taking class recording. Our beloved teacher overcome all the barrier and participate to the recording. We have to utilize and continue last two years' experience. Face to face and online class can be continued simultaneously in the future.

> *During the Pandemic our teachers done a lot. They didn't demand any refreshment or remuneration. They enjoyed their work by DSHE leadership. We have to motivate and recognize them.*

Conclusion

In the palm of pandemic, new improvements and innovations occur at a rapid speed in the public realm. Updates or more recent types of these innovations are never far behind and have massive followings which are proving to have a significant impact on human existence. Education no longer has accessing barriers worldwide. These advancements and innovations due to the inclusion of ICT devices are expected to have an impact on how people acquire data and learn to improve their technical knowledge. Students have always been exposed to educator-driven practices in both conventional classrooms and home environment. They are more opinionated when understanding which teaching method suits them better. When the teacher employs a single educational technique for the whole class and depends on the same textbook year after year, students tend to lose focus and interest in the curriculum. However, in this study we have seen a sizable portion of the student body is in favor of personalized care and customized lesson plans. They prefer to have self-directed learning approaches instead of traditional teaching methods. Majority of the respondents were eager and well-motivated to continue their duties or services regardless of the crisis. However, on the other hand it has given us tech-savvy teachers and technically sound students in the age of 4th Industrial Revolution.While blended learning is still a relatively new idea at many educational institutions; nevertheless, recent research appears to imply that if the concept is applied correctly, blended learning may significantly improve the students' experiences and motivate teachers further in building their careers around educational development. The current study sought to investigate the impact of blended learning on teaching and learning. As a result, the current evaluation of the literature has aided in demonstrating the impacts of blended learning on English language teaching and learning. So, we need to plan the use and implementation of blended learning in post-pandemic times across secondary level education.

Recommendations

- To continue face to face and online class simultaneously across all educational institutions as majority of participants have complied upon.
- Encourage the existing practices of online teaching-learning with interactive activities which will in return benefit the learners to think creatively and objectively.

- To blend the face-to-face class by using Zoom, Meet, Teams etc. and prepare long-term alternative solutions for respondents with limited financial abilities or access to devices.
- To prepare the blended education guidelines for teachers to follow accordingly for future crisis aversion.
- To incorporate the use of modular design in a blended course would be easier to navigate through for teachers with limited access to devices as they learn to make improvements.
- To reshape the teacher training policy in blended education, especially by providing a pedagogical support system to engage in reflective practice.

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