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Challenges and Opportunities for Teacher Development in Blended Learning at Higher Secondary Level in Bangladesh

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ABSTRACT

This study examines the challenges and prospects of teacher training for blended learning (BL) at the higher secondary level in Bangladesh. Using a cross-sectional research design, both quantitative and qualitative methods were employed to collect and analyze data from 40 purposively selected teachers in Khulna with prior BL experience. A structured questionnaire with closed-ended questions captured quantitative data, while structured interviews provided qualitative insights. The findings reveal significant challenges, including insufficient technological competence, inadequate facilities, and limited professional development opportunities. However, teachers acknowledged some positive aspects, such as the availability of online resources and opportunities for collaboration with peers. Descriptive and inferential statistical analyses highlighted the urgent need to enhance teachers' technical skills and foster faculty cooperation. The study emphasizes the necessity of tailored teacher training programs addressing these challenges while leveraging available resources to optimize professional growth. Policymakers are encouraged to enhance infrastructure and material conditions for blended learning implementation. This research contributes to understanding the prospects of teacher development in BL, urging teacher education programs to align with educators' needs and advocate for institutional support. Such measures can significantly improve the quality of teacher preparation and blended learning practices in Bangladesh's higher secondary education context.

INTRODUCTION

Blended learning, which is an integration of traditional classroom instructions with technology enhanced learning activities, has drawn more attention in the recent past. There are also advantages of adopting this method in improving educational experiences depending on the different modes of teaching and learning with the hopes of optimizing on both the face to face and online methods of learning (Graham, 2013). When it comes to higher secondary education in Bangladesh, the extent of adoption of blended learning opens up specific possibilities and problems for teachers' professional learning. The above factors are of importance to reach a blended learning solution so that the learning endeavors can be put to practice in the country.

A major problem related to teachers in Bangladesh is the poor pre-service and in-service training and professional development which do not address the context of blended learning. The study conducted by Rahman, Panda, and Das (2020) also found out that many of the teachers in Bangladesh lack adequate training and understanding of how to use the technologies into teaching and learning environment. This skills deficit can act as a barrier in the proper implementation of the blended learning courses and the possibility of getting the most out of it for all the students. Apart from training issues other constraints include infrastructural which is the most limiting factor in the application of blended learning in Bangladesh. In discussing issues of online learning in the country, Ahmed and Farooqui (2019) pointed out there are severe challenges to the ability of many educational institutions across the country to provide adequate access to reliable internet connection and devices. Such architectural constraints may limit the coordination of traditional and web-based components of a mix-and-match learning approach, thereby compromising the quality of a blended learning environments.

Nevertheless, there are also several potentialities for teacher professional development within blended learning environment. The emerging nature of a range of online professional development courses and related materials gives a teacher an opportunity to familiarize him/her with digital technologies and improve the skills of effective instructions at his/her own pace (Kundu and Bej, 2021). In addition, a combination of efforts from local and international non-governmental organizations, and other educational institutions can help to support such forms of learning that will promote the value of meaningful blending of learning (Islam, 2018). Despite having some constraint at the higher secondary level of education in Bangladesh, it is clear that the shift towards blended learning have capacity to develop the teachers of this country part way. Thus the educational structures and trainers in Bangladesh have an opportunity to learn more about the limitations and possibilities of using the tools existing at their disposal, and to bring together efforts in order to help educators prepare to deal with the aspects of the blended learning scenario.

Statement of the Problem

Introduction of face-to-face and digital media into teaching learning environment which is commonly known as blended learning is now becoming popular around the world including in Bangladesh. But the blended learning at higher secondary level in Bangladesh has some problems and prospects with regard to teacher education. Awareness of these dynamics is important in light of the use of blended learning approaches that can be used to promote effectiveness in learning.

Issues of Teacher Education

Teachers in Bangladesh face multiple challenges in adapting to blended learning environments:

a) Technological Infrastructure and Access: A significant number of schools and colleges in Bangladesh do not have the appropriate machinery to encourage flexibility in learning environment. This includes; limited access to computers, internet and other information communication technologies (ICTs) (Kabir, 2021). Thirdly, inequalities in the technological connection between the urban and the rural region widen the digital gap (Islam, 2020).

b) Professional Development and Training: Many teachers don't teach what they are not trained to teach, and teaching with technology is one area where many teachers have not received adequate preparation. As a result, the continuous professional development programs should address the deficit of digital competence and effective instructional practices (Rahman et al., 2019).

c) Resistance to Change: Another challenge is lack of adoption of new technological and teaching practices. This resistance may be because of low self-esteem, fear of change or type of learning (Khan et al., 2019).

The Professional Teachers and their Professional Growth

Despite these challenges, several opportunities exist for enhancing teacher development in blended learning environments:

a) Improved Student Engagement: Blended learning can provide more effective forms of learning since the systems can combine the elements of face-to-face communication along with the elements of facilitated online communication. In the case where teachers implement the use of technology in their teaching, comes with more effective methods to help improve teaching techniques (Alam & Parvin, 2021).

b) Access to Global Resources: Blended learning fostered the use of resources and learning materials from different parts of the world thus expanding the curriculum prompting diverse views and learning materials (Sarker et al., 2021).

c) Professional Growth and Collaboration: Professional development support from online teaching training, webinars, connecting with peers within their own or other schools within or outside their country enables the teachers to be up to date with the modern trends in education (Haque & Chowdhury, 2020).

As with any meaningful educational reform, there are challenges in implementing blended learning at the higher secondary level in Bangladesh. However, there are also a wealth of opportunities for teacher development. These shortcomings can be overcome utilizing Professional Development Programs, infrastructure enhancement and focusing on creating a culture of innovation to help the teachers steer blended learning to its potential.

Significance of this Study

Lack of prior research on the challenges and prospects of teacher development in blended learning at the higher secondary level in Bangladesh is the following reasons make the study important: Knowledge of these dynamics allows one to create efficient professional development programs to increase teachers' professional competence and the efficacy of instruction. The study thus gives the policymakers insight on what technological and Infrastructure is lacking to expand the knowledge, to close the digital divide between the developed and the developing world and to fully fund the necessary resources. The research findings also have implications to the formulation of sound national education policies that allows the integration of blended learning to the sustain learning. Furthermore, the role of the permanent professional development of the staff of educational institution, creating the climate of the effective lifelong learning is revealed in the framework of the presented study. By calling for teachers to explore other ways of using the technology in class, the study is a positive move encouraging teachers and hence students to work harder in order to produce better results. Besides, dissemination of the scenarios in Bangladesh provides the benefit of enhancing the educational practices around the world, as well as helping to promote the development as blend learning internationally.

Objective of this Study

The objective of this study is to investigate the challenges and opportunities for teacher development in the implementation of blended learning at the higher secondary level in Bangladesh.

Literature Review

As Ahmed and Farooqui (2019) duly point out, it remains immensely difficult for educational institutions in Bangladesh to address their technological

requirements for e-learning. They stressed the need for dealing with these threats in order to enhance blended learning at the higher secondary school. In one of the recent studies by Rahman et al. (2020), carried out among teachers in Bangladesh, the authors also found out teachers' lack of readiness for implementation of blended learning and the need for future and on-going professional development. They emphasize the need for developing specific training interventions to increase the teachers' digital and teaching competencies. The author Khan et al. (2019) contemplate with the reasons for technology and pedagogy implementation rejection by teachers. They stress about how to address this resistance and cultivate change in pedagogy, which is imperative for the delivery of blended learning.

In Sarker et al. (2021) the authors have considered benefits of blended learning on the basis of access to various educational resources from around the globe. Their study makes the point out of how blended learning can help enhance the curriculum and bring variety of information to students and teachers. Alam and Parvin (2021) discuss the Effects of Blended Learning Instructional Model on Student Motivation. Based on their research, they claim that blended learning supports more fun and effective learning process, which is crucial for enhancement of educational results at the higher secondary level. Islam (2018) has explained various kinds of partnership for educational advancement plan in Bangladesh. In this study the focus is made on the government role in promoting the blended learning and the provision of resources to teachers for the successful implementation of the model. Haque and Chowdhury (2020) conduct research to find out how blended learning has contributed to teaching innovations. They real as a boon the possibilities it provides for teachers to try out different practically new methodologies and strategies of teaching that brings about an exciting enhancement in the modalities of teaching learning process.

Hailed as one of the pioneers on blended learning, Graham (2013) gives new practices and research on blended learning across the world. Consequently, the study is useful and enlightening to provide important lessons and examples that may guide future efforts to plan blended learning at the higher secondary level in Bangladesh. Kabir (2021) overviews the availability of technology between the urban and rural regions in Bangladesh. The paper emphasizes the need to close this gap in order to provide all students with equal chances for receiving blended learning opportunities. Kundu and Bej (2021) systematically reviewed on teachers' professional development in the digital learning environment. Their findings post that many teachers need to keep learning and updating their practices in an effort to meet the change in blended learning environment.

Kabir and Ahmed (2022) examine how blended learning affects critical thinking skills for higher secondary students in Bangladesh. Based on the practices of their students, they uncover that incorporating both online and offline teaching and learning models promote critical thinking through exploiting a variety of learning resources and contributing to group discussions. The study suggest policy level intervention to sustain such practices as a long-term strategy. Socio-

cultural factors on the use of blended learning approaches at the rural context in Bangladesh are analyzed by Miah et al. 2020. Some of the challenges they found for children include; parents disbelief, insufficient training of teachers, and low consciousness regarding the digital education. They have suggested that one should organize community engagement programs and specific awareness crusades to fight such problems.

An analysis of gender inequalities in accessing blended learning is conducted by Nahar (2021). Her study shows that societal expectation including women unequal access to technology affect female students. The study calls for policy changes to support girl child education and make technological amenities available to support learning. Rahim and Jahan (2019) justify where mobile learning fits in as part of blended learning for secondary schools. From their work, they realized that enhanced utilize of; mobile learning can improve the student's performance and increase their desire to learn. But they also stress the importance of sufficient and properly equipped facilities and material needed in the given environment. In terms of effects on cost-bearing institutions, Khan and Sultana (2020) provide a quantitative cost analysis of blended learning. Schools and colleges agree that though in the beginning, costs related to construction of the required infrastructure and staff training are relatively high, the payoff in terms of better learners' performance and assessed truancy rates justify the expenses.

From the literature review outlined in this paper, the following research gaps can be identified concerning Challenges and Opportunities for Teacher Development in Blended Learning at the Higher Secondary Level in Bangladesh. Firstly, unlike Ahmed and Farooqui (2019) who discussed the problems of educational institutions particularly with regard to the technological facilities for e-learning, the study quite literally lacks survey specifically addressing the level of such problems at the higher secondary level in Bangladesh. This paper attempts to establish the extent to which the identified higher secondary institutions have grasped the technological concerns and constraints in implementing infrastructure on blended learning so as to form strategies to modify the above. Second, Rahman et al. (2020) stress the absence of clearly stated policies for professional development which has to be synonymous with effective teachers' CPD in the context of increasing application of ICT in BD schools but the effectiveness of the existing facilities of professional development in BD needs further empirical study. Thirdly, despite Khan et al. (2019) presenting the concerns educators have about implementing new technologies in teaching, studies on implementing effective solutions to overcome such resistance in regard to incorporating blended learning at the higher secondary level, in particular, in Bangladesh are scarce. Fourthly, although, as stated by Islam (2018), governmental policies and strategies should help introduce and facilitate blended learning, there are no studies on what policies have to be adopted to address the development of teachers for this approach. Similarly, writing recently, Kabir (2021) discusses unequal distribution of technologies in the urban and rural context of Bangladesh; however, there is a lack of focus on how this

digital divide can be closed in the context of blended learning. Filled in these research gaps is pertinent to advocating for inclusive and effective blended learning practices in higher secondary education in Bangladesh.

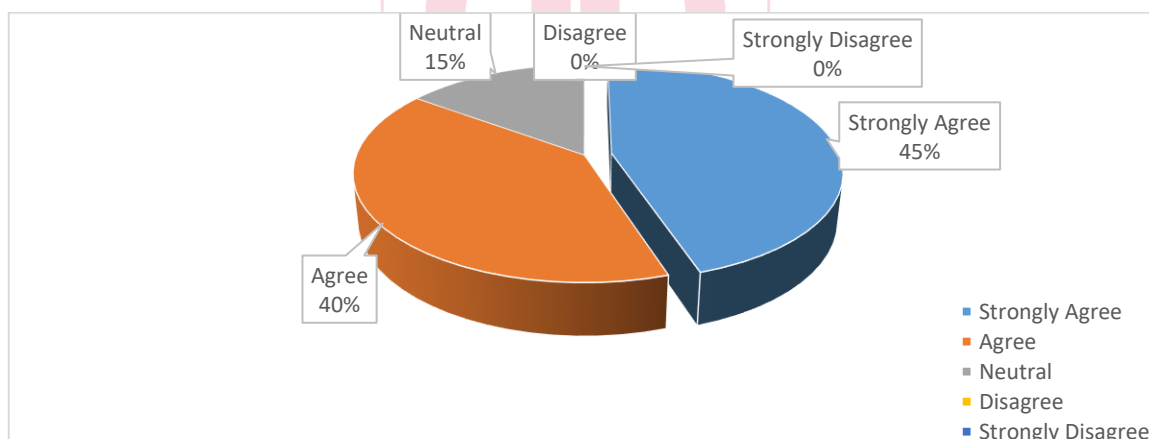
METHODOLOGY

The present research was a multiple case study to analyze the issues and prospects for the professional development of teachers in implementing blended learning process for higher secondary education in Bangladesh. To study the present scenario of teachers in the context of Khulna, and since this study was focused only in the blended learning experience of teachers, a purposive sample of 40 teachers was selected. It was possible to collect information from respondents by using the closed-ended questions of the questionnaire and a series of semi-structured interviews. On the one hand, the questionnaire offered quantitative data, while, on the other hand, interviews were used to gain more qualitative insights from teachers' point of view. Collection data was analyzed using both descriptive and inferential statistical analysis techniques. The collected data was analyzed using Descriptive statistics and inferential statistics.

Findings from Survey Questionnaire

This section presents the findings of this study.

Figure 1: I feel adequately equipped with the technical skills required for blended learning.



In the figure 1, we were confident about technical proficiency for blending learning to the extent of 85% agreement was affirmative. This indicates good ground in handling Information Communication Technology facilities. However it is also realized that there are no negatives which may lead to criticism or different opinions altogether. This is contingent upon the degree of implementation headed by highly technical and qualified blending learning instructors possessing both improvement and flexible teaching knowledge.

Figure 2: The current technological infrastructure in our institution adequately supports blended learning.

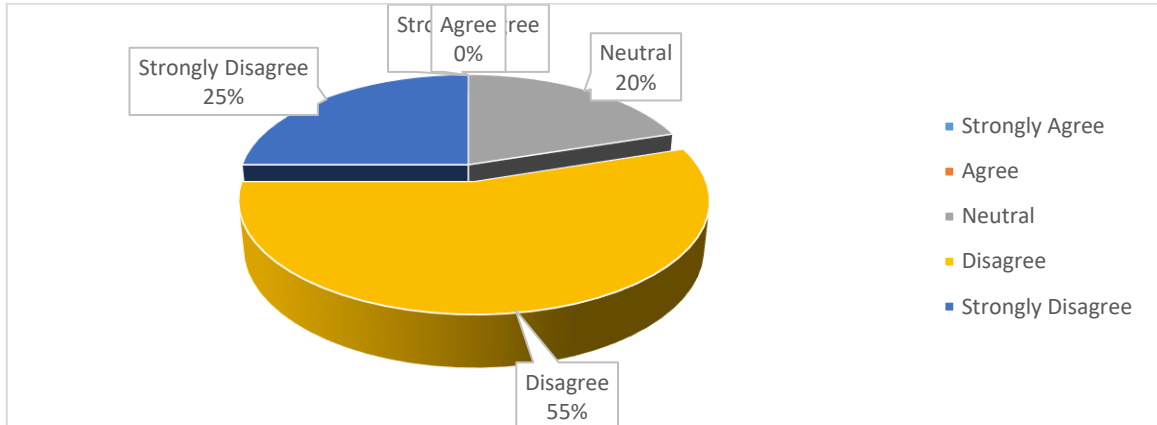


Figure 2 shows that 80% of the respondents either disagree or strongly disagree with the statement that the current technological infrastructure provides sufficient support for blending in their institution. Blended learning presents an ideal concept; however, the execution is wanting because this connotes a vast difference between a qualitatively adequate base and the advancements required to solidify this composite strategy. It is important to close this gap in the effort to improve the educational experiences as well as to offer the best opportunities to blended learning paradigms.

Figure 3: How much time do you feel is allocated for training on blended learning methods?

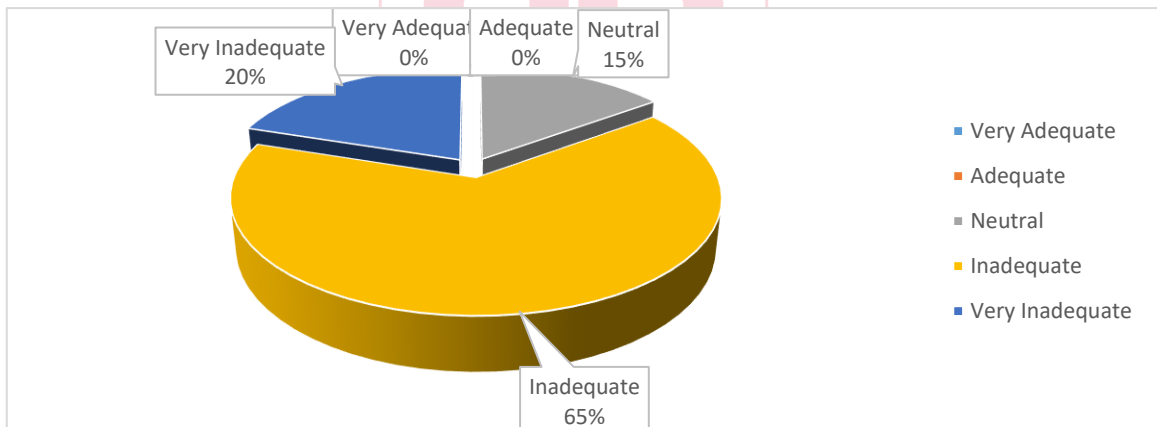
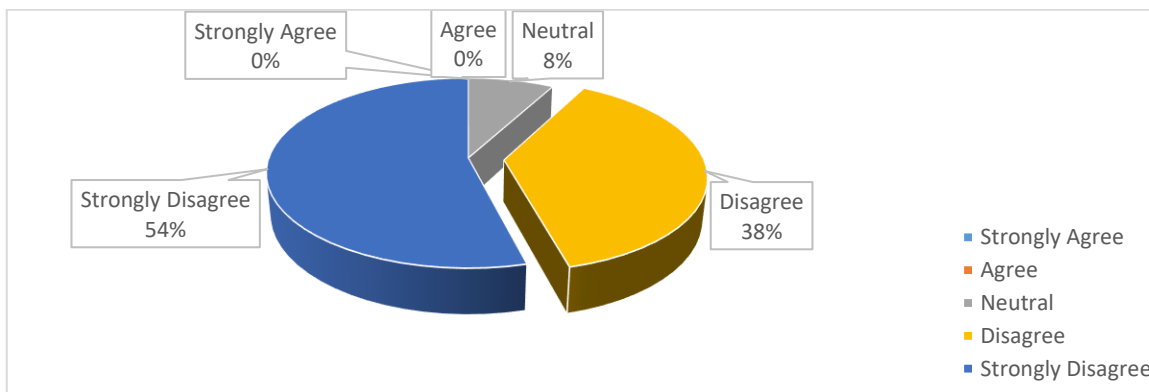


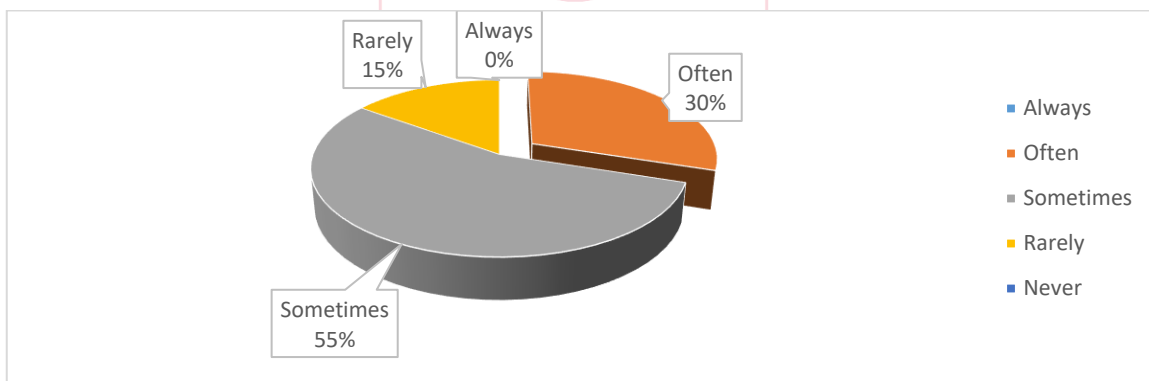
Figure 3 shows that a majority of the respondents (85%) said that the amount of time taken on training on blended learning methods is inadequately or very inadequately provided. This implies that there is need for institution to avail more resources in training educators on how to incorporate blended learning techniques. Lack of training would have educators incorporating technology in their teaching without effectively being able to incorporate the desired shift for blended learning to work for both instructors and students.

Figure 4: I have access to sufficient online resources to enhance my teaching in blended learning environments.



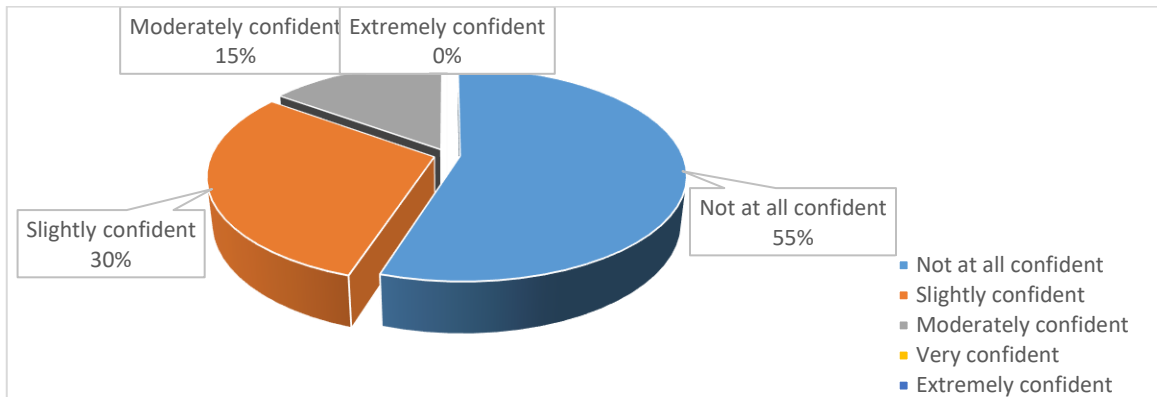
As indicated in the Fig 4 92% of the respondent strongly disagreed that they are able to access enough information on the internet to support their teaching in blended learning environment. Such a scarcity can further limit the ways in which educators are able to employ technology for richer learning-teaching processes. To eliminate this problem helping educators through blending learning is another significant aspect that needs to be solved to empower the educators to do more of the blended learning teaching.

Figure 5: To what extent do you collaborate with other teachers to share best practices and experiences in blended learning?



The findings presented by figure 5 show that the collaboration among teachers as relate to sharing of best practices and experiences in blended learning is slightly differently. About half of respondents (50%) say they provided feedback frequently, while 85% say they do so sometimes or often, rendering the level of engagement is high. Nonetheless, a significant number (15%) reveal low frequency of collaboration in such activities. More participation and promotion of the teacher cooperation can strengthen the information exchange and contribute to the better adoption of the blended learning strategies on the scale of the entire university.

Figure 6: How confident do you feel in implementing blended learning strategies in your teaching practice?



As indicated in figure 6, respondents displayed a weak confidence when asked about their use of blended learning in their teaching practice. The majority of those individuals, (85%) state they have low to moderate confidence levels are parliament with more than (55%) not at all confident. This goes a long way to show that educators were ill prepared to meet the challenges that come with implementation of the blended learning modes. Blended learning should be supported by institutions in that institutions should ensure that educators undertake their training comprehensively so that educators gain confidence and competence in the implementation of blended learning.

Figure 7: I receive adequate support and guidance from the institution to integrate blended learning into my teaching.

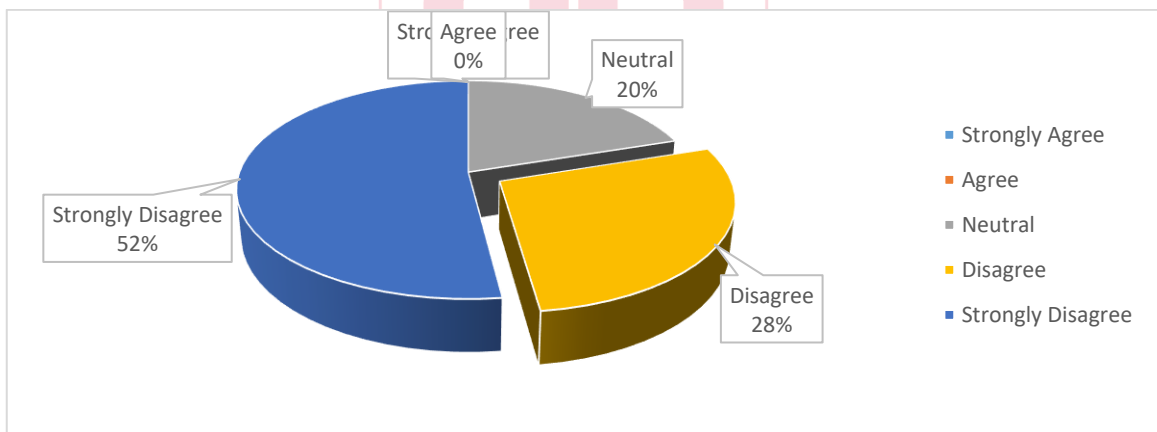
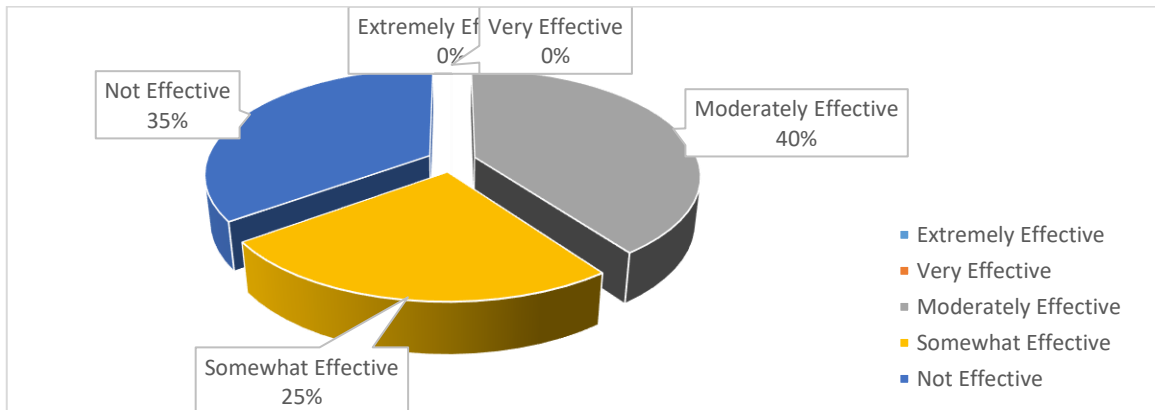


Figure 7 emphasizes an absence of institutional direction and encouragement with regards to application of both blended learning (BL) within curriculum. A vast majority (80% of the respondents) strongly dissent or dissent with the statement that they are supported adequately. This deficit can impair the capacity of educators to optimally innovate on blended learning strategies showing that institutions need to enhance support, training and provision of necessary tools for the integration of blended learning approaches.

Figure 8: How effective do you find the professional development programs offered to enhance your skills in blended learning?



Though the blended learning programs appears effective as seen in figure 8, there is a fairly balanced view of the impact of professional development programs designed to promote skills in blended learning. For while, as many as 40% of respondents claim that such programs are rather effective, as many as 60% of the respondents believe that the above programs are somewhat effective or not at all. This indicates a potential for growth in the enhancing the quality of professional development programs and the methods used to support educators’ professional growth particularly in the delivery of Blended Learning.

Figure 9: I believe blended learning can improve student engagement and learning outcomes.

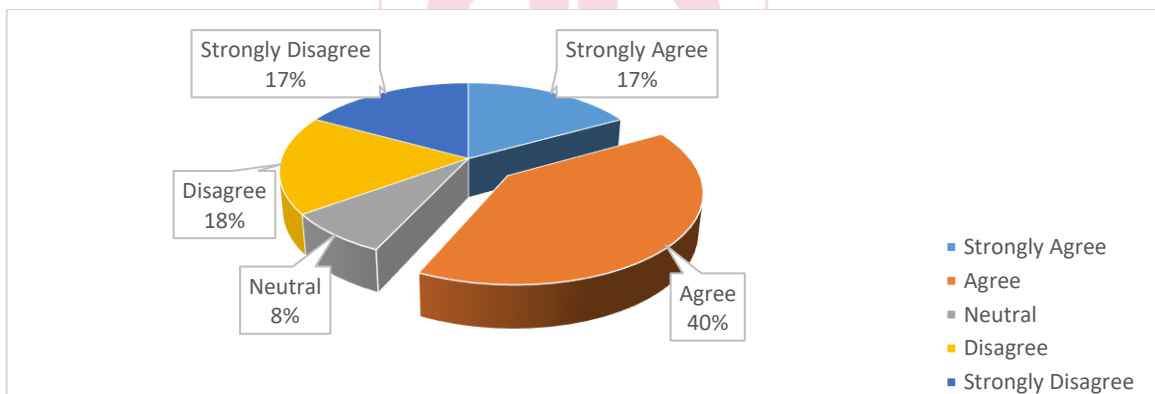
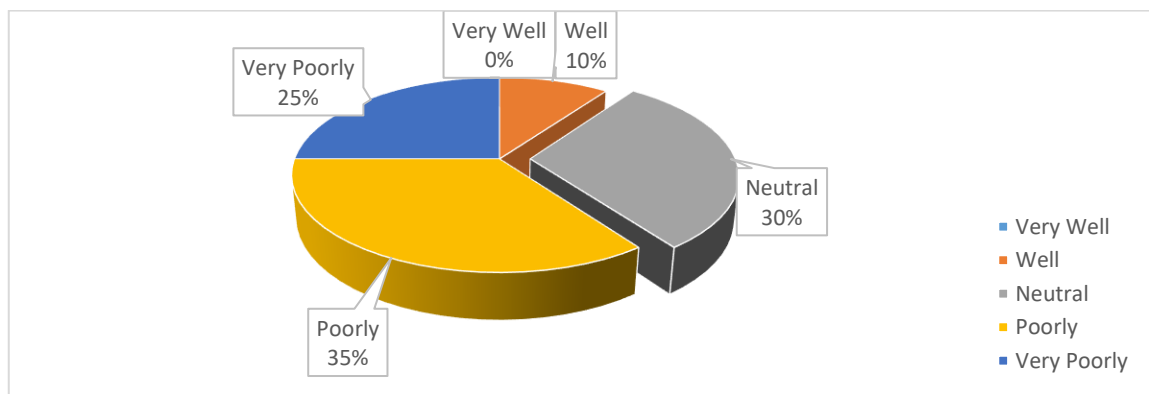


Figure 9 clearly reveals a relatively positive attitude towards the feasibility of the use of blended learning for effective interaction with students and achieving better learning outcomes among students. On balance, 57% of participants strongly agreed or agreed with this statement. However, there is a sizable minority and that includes an equivalent who either disagrees or strongly disagrees 35% who oppose the statement hinting a certain level of skepticism towards the factor that blended learning increases students’ participation or student learning outcomes. It may also be helpful to work to allay concerns and to demonstrate where applications of the models have worked well, in an attempt to build more positive outlook and appreciation towards the blended learning strategies.

Figure 10: How well do you think the institution addresses the challenges faced by teachers in implementing blended learning?



The blended learning support for teachers is considered in figure 10. The meaning of 'Very Well' includes overall help, proficient at solving problem. All of the components of the Purdue OWL suggest that the site provides "well" support with only a couple of deficiencies. Its antonym "Neutraledge" simply means that there was sufficient help, but not more than that. To 'do poorly' means not to be supported and to be hampered in one's progress. This implies very poor levels of implementation where activities are significantly hampered by critical deficiencies. Reaching for "Well" or higher make sure that educators get the necessary support and instruction to successfully implement blended learning.

Findings from Interview

The interview with three teachers provides factors of survey questionnaire that address issues affecting the implementation of blended learning. Teacher 1 has high technical self-efficacy rating but low ratings on perceived ease due to limitation of technology resources, more time should be given for training and the accessibility to the internet and other online resources. Inter Educational Cooperation is regarded as central to the endeavor hence increased institutional commitment is recommended. Concerns related to the matter reflect teacher 2's low self efficacy when it comes to the implementation of blended learning practices; dissatisfaction with professional development programs is expressed as an indication of the need for social support and professional development. Teacher 3 believes that there is a possibility of implementing the blended learning, however institutions' support remains an issue of a debate and where comprehensive support is a requisite for the implementation and to address the challenges that are fundamental to the achievement of the blended learning. Combined, all the discussion therefore underlies the fact that there is agreement by the teachers as to the importance of adequate support and resources as well as institutional commitment to fully harness the gains of blended learning.

Discussion on the Findings

Hence, the present study can identify some critical implications of blended learning from the survey and interviews. First of all, 85 per cent of respondents stated that they have rather high technical literacy, which means that people possess rather powerful digital tools. But, only 20% think that their institution has enough technology resources required for a successful DL implementation, which shows rather big gap. Equally, 85% claim that the time they get to undertake training is inadequate, while 92% claim to be lacking in online materials as well which are necessary in making teaching effective. Of the teachers, 85% state that they frequently share ideas on the best practices while 15% demonstrate the opposite meaning that there is more room for improvement. The confidence in blending learning instruction is very low, 85% of the respondents being low to moderately confident whereas 55% are not confident at all; this Shows need for improvement of support and training. As for the institutional support, 80% stated they are not supported enough, and 60% of respondents mentioned that the professional development programs are not very effective. While 57% think that the concept of using blended learning may help to attract students' attention as well as enhance the results, 35% cannot agree with the statement. Interviews with three teachers echo these findings: one underlines problem causes by insufficient functions and training, the second one speaks about the necessity of increased support and proper training, the third one demands overall institutional support. In total, the conclusions point out the need to remove infrastructural limitations, improve personnel's training, and encourage interdisciplinary cooperation to leverage the use of the hybrid learning model. Another way of dealing with skepticism is also including information on successful cases to the market place.

CONCLUSIONS AND RECOMMENDATIONS

The introduced blended learning at the higher secondary level in Bangladesh has brought a number of issues and concerns to the teacher development process. It is established that teachers have confidence in their technical competence but they are constrained by poor technology base, less preparation time, and lack of technology resources. Further, there are the problems of scarce institutional backing and the rather variable utility of professional development initiatives. Despite these challenges, there is a general understanding that blended learning is positive and opens doors for improvement of students' learning process and motivation. Therefore, distance educators and their students have to receive interventions that close gaps of infrastructure and support and create a culture of professional development among educators.

Recommendations

- Recipients [educational institutions] must focus on acquiring reliable internet connection and enough digital devices to support this form of learning.
- There is a need for institutions to set up teams that will help teachers using blended learning to get through the difficulties they face.

- Adequate funding and time for the teacher to do other things which include training and professional development should be provided.
- It is advisable and thus recommended that most of the government bodies come up with policies that intend to enhance the delivery of this system of blended learning.



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