Teachers' Perceived Usefulness and Perceived Ease of Use of Technology in Primary School Classrooms in Bangladesh

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ABSTRACT

The study aimed to investigate primary school teachers' knowledge, attitudes, and practices (KAP) regarding technology use in the classroom in five selected districts of Bangladesh. Data was collected through in-depth interviews and focus group discussions with primary school teachers, local education officers, and PTI and URC instructors. Incorporating the theoretical lens of the Technology Acceptance Model (TAM), the study examined the perceived usefulness (PU) and perceived ease-of-use (PEOU) of ICT among teachers. Findings indicated that while teachers recognize the high usefulness of ICT in educational settings, they report lower ease-of-use, often attributable to factors like inadequate training, infrastructure and limited resources. Technology-based teaching and learning activities could enhance the quality of education and promote equity and inclusiveness in primary schools. The COVID-19 pandemic significantly influenced ICT practice in government primary schools, leading to the adoption of mobile-based teaching-learning practices. The study recommends targeted interventions emphasizing comprehensive teacher training, infrastructural enhancements, and motivational strategies are crucial to bridge the policy-practice gap regarding ICT.

Keywords: Teachers' knowledge, attitude, practice, ICT, inclusive teaching-learning, primary school

Introduction

Information and Communication Technologies (ICT) in education can be defined as a synthesis of information, communication, and technology (Kaware & Sain, 2015), where various digital forms of devices, tools, content, resources, forums, and services are utilised *to transmit, process, store, create, display, share or exchange information by electronic means* (Meleisea et al., 2007). ICT in education means using many different things like computers, software, the internet, and other devices to help students learn and help with teaching and managing

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information in schools. These include hardware like computers and printers, software like apps, and online content. Additionally, teachers and students can communicate online in particular forums. These technologies influence the improvement of teaching and learning, increase access to resources, build capacity, and manage educational systems. Authors (Fernández Batanero & Colmenero Ruíz, 2016; Mooij, 2004) identified ICT as a powerful tool to favour effective education for all in a classroom (Fernandez-Batanero & Colmenero-Ruiz, 2016).

Moreover, the ongoing COVID situation emphasised the apparent use of ICT as a supportive tool in education. Many countries have introduced ICT into different levels of schooling via various courses of action. OECD also underlines the use of ICT as a necessity for improving the quality of teaching and learning (Gulbahar & Guven, 2008). ICT has not only changed "the nature of resources, communication, and information but also correspondingly transformed contemporary society by changing the way of life, work, and education" (McGrail, 2005). The Government of Bangladesh is encouraged to integrate technology into education, which is prevalent in its' 'Vision 2021', which mandates technology usage in every sphere of life and development (*Making Vision 2041 a Reality Perspective Plan of Bangladesh 2021-2041*, 2020). Led by Bangladesh's Vision 2021, the Ministry of Education produced a Master Plan for Information and Communication Technology in Education (2012-2021) to modernise and revolutionise Bangladesh's education system through ICT, promoting technology-based teaching and learning as a strategic lever. Some initiatives and development works have been undergone under the ICT master plan. Vision 2021 aims to support and boost the development of the domestic sector and increase the export of ICT products and services to ensure the quality of the education system and to create an improved teaching and learning environment (*Making Vision 2041 a Reality Perspective Plan of Bangladesh 2021-2041*, 2020). SDG 4 aims to ensure equitable quality primary education that achieves relevant and effective learning outcomes in inclusive and effective learning environments by 2030 (United Nations, 2015). Education as a prime sector and primary education, particularly as the fundamental level of education, need to be enriched by ICT usage for purposeful usage. One of the visions of the Government of Bangladesh is to integrate ICT into our education system to make Digital Bangladesh. The integration of technology in primary school classrooms in Bangladesh can contribute to achieving Sustainable Development Goal 4 (SDG4) by providing inclusive, equitable, and quality education for all (Naik et al., 2020). By incorporating digital learning platforms, teachers can create interactive and engaging lessons that can be accessed by students from all socioeconomic backgrounds, aligning with the principles of Industry 4.0 that emphasise the importance of digital skills and technological literacy in the modern workforce (Moraes et al., 2022). Additionally, integrating technology can help bridge the digital divide and provide access to quality education for all students. Though the Government is working to increase and expand ICT usage, the current study found disparities between policy intention and classroom practice. The reasons behind this is explained using the Technology Acceptance model (Davis, 1989) that describes the teachers' perceived usefulness and perceived ease of use of technology integration in the classroom.

Purpose of the study

The study explored primary school teachers' knowledge, attitude and pattern of using technology in the classroom. Teaching-learning practices of primary education in the COVID-19 emergency are also identified. The study highlighted the understanding of policymakers, trainers, teachers, and other stakeholders to conceptualise the concurrent strength and weaknesses of technology and ICT usage. The findings are expected to contribute to achieving SDG4 by ensuring quality teachers for equitable and inclusive technology-supported classrooms in Bangladesh. The specific research questions of the study were:

1. How do the primary school teachers used technology in their classrooms?
2. What is the role of technology in teaching-learning activities in the classrooms at primary schools?
3. What are the concerning issues of using technology in the classrooms at Bangladeshi primary schools?
4. How did the primary school teachers use technology to provide distance education during the COVID-19 pandemic?

Theoretical framework

Technology Acceptance Model (TAM), developed by Davis (1989), is a key theoretical model in the field of information systems which focuses on how users accept and use a technology. There are two primary constructs of TAM: perceived usefulness and perceived ease of use, which are crucial in assessing users' acceptance and use of technology. In applying TAM to the context of this study, which investigates the use of technology in primary education in Bangladesh, these two constructs provide a comprehensive lens. Perceived usefulness (PU) means the degree to which a person believes that using a particular system would enhance his or her job performance, whereas Perceived ease-of-use (PEOU) defined as the degree to which a person believes that using a particular system would be free from effort (Davis, 1989). The perceived usefulness construct is helpful in examining how primary school teachers perceive the utility of technology in enhancing teaching and learning processes as it addresses questions related to the role of technology in primary education. This aspect of TAM helps in understanding whether teachers believe that using technology will enhance their teaching effectiveness and the overall learning experience of their students.

On the other hand, the perceived ease of use construct in TAM focuses on the teachers' perceptions regarding the complexity or user-friendliness of the technology. This includes considerations of the challenges teachers face in terms of technical proficiency, resource availability, and the adequacy of the training and infrastructure required to support technology use in classrooms. During the COVID-19 pandemic, this aspect of TAM become even more critical in understanding the shift to distance education and the adoption of various technological tools under constrained conditions.
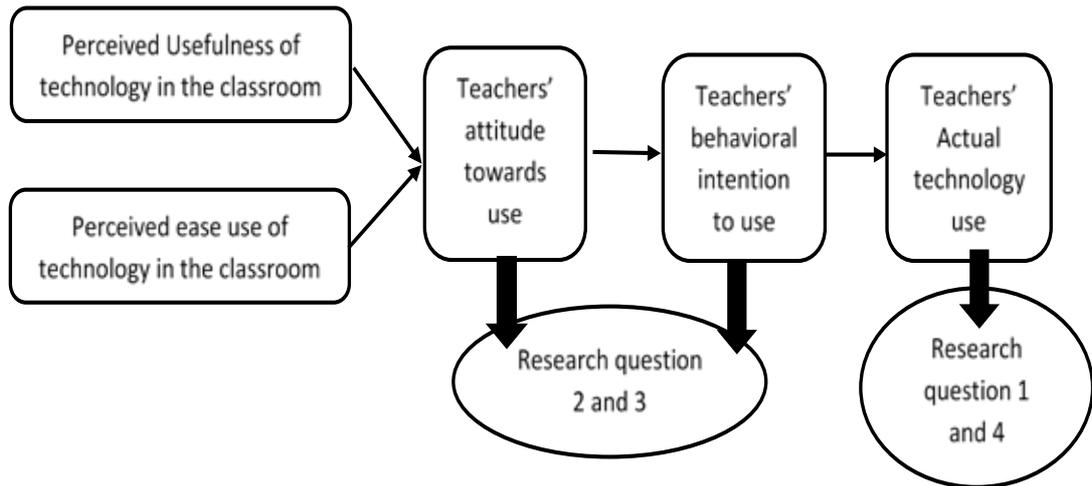
Figure 1: Theoretical framework of the study

Methodology

Research design

The study is an exploratory qualitative study, because qualitative studies attempt to comprehend and interpret phenomena in the natural settings in terms of the meanings people attributed to them (Denzin & Lincoln, 2008). In line of this understanding, in-depth interview and focus group discussion techniques were used in this study as data collection methods, and thematic analysis technique (Clarke & Braun, 2017) was used to synthesize the data. Primary school teachers and Local-level education officers and instructors (referred as EOs) were the primary data sources. A findings-sharing seminar was arranged to present the findings to education and ICT experts. Feedback given in that seminar was also included while preparing the paper.

Data source and participants

Bangladesh comprises eight administrative divisions, and among these eight divisions, five (Dhaka, Chittagong, Rajshahi, Sylhet, Barisal, and Rangpur) were selected conveniently as sampling areas. Five (5) districts from five (5) divisions and again, two schools from each of the five districts were selected purposively from those five selected districts based on their locality, ICT facilities and presence of ICT-trained teachers. Teachers (10) of those schools, education officers (5) and PTI and URC instructors (10) of those districts were the respondents. The officers and instructors related to ICT and technology training and monitoring were selected purposively as respondents.

Instruments and data collection process

In-depth one-to-one Interviews and FGD techniques were used for data collection to gain a deeper insight into technology-based classroom practice in primary education in Bangladesh. Two types of interview protocol were prepared for the education officers (EOs) and teacher. Additionally, an FGD guideline was applied to collect data from primary school teachers.

To develop the tools, we followed a five-step development process. We commenced by reviewing various related literatures and identifying relevant items to construct an item pool. Utilizing this item pool, we formulated draft interview protocols and FGD guideline. In the second phase, expert opinions were sought through a 3-point rating scale. Two university faculties who have research publications and experience in primary education and ICT were selected as education experts. They evaluated the instruments in terms of the language, clarity, and validity of the items. Experts' feedback was accommodated, and the tools were sent to field test in the third step. The instruments were piloted in two government primary schools which were not included in main study. Two FGD sessions were conducted with the teachers and EOs including UEOs, URC Instructors and PTI instructors were also interviewed. The piloting aimed to test the items' appropriateness, chronology, and validity. Some language-related suggestions were found, and some questions were merged and rewritten to finalise the data collection instruments.
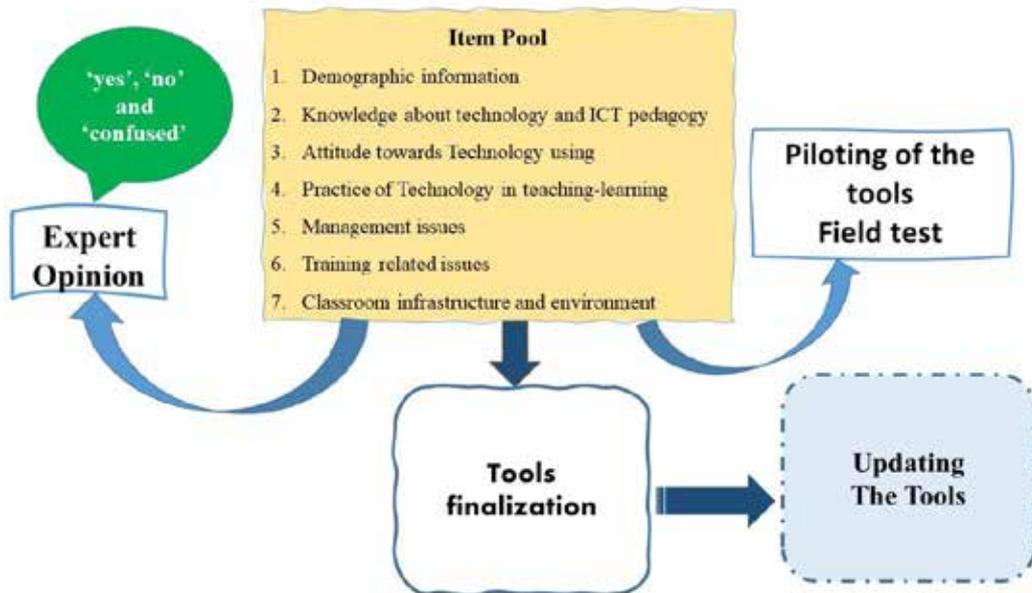

Figure 2: Development process of data collection tools

Data analysis

Alphanumeric code is used to code the collected data. Alphabets represent respondent groups, and the numeric value represents individual respondents where FGD1 for Focus Group Discussion (FGD) with teacher one; EO1 for Education Officer one, PTI1 for PTI Instructors one, and URC1 for URC Instructor one. Data from the FGD and interviews were directly recorded in Bangla. All of the transcripts were examined to find the themes for this study. The initial analysis was done to pinpoint the main topics. Following the conceptual translation procedure, the Bangla analysis was translated into English once themes had been determined. Themes were developed using the six-step analysis process explained by Braun and Clarke (Braun & Clarke, 2006). All the raw data were repeatedly read for familiarization, initial codes identified with the research questions in mind, and these initial codes were compared to generate primary themes. All themes were reviewed to eliminate repetition, duplication, and similarity. The themes were then compared with existing literature to define and name them, ultimately aiding in determining the themes included in the report.
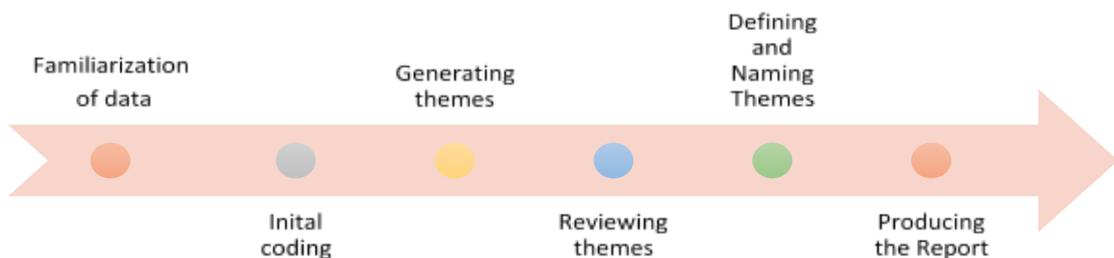

Figure 3: Data analysis technique

Ethical considerations

The process of the study followed all the necessary ethical checking, and there was nothing that might be harmful to respondents regarding legal or medical grounds. The research objectives were clearly explained to the respondents before data collection and verbal consent were collected. Respondents were ensured that data would be kept confidential and used only for the research.

Findings of the Study

Utilization of Technologies by Primary School Teachers in Bangladesh

Policy vs Practices

Bangladesh is committed to expanding ICT usage in education as a teaching-learning tool by producing and ratifying several policies, acts and declarations (Master Plan for ICT in

Education 2012-2021, National Education Policy-2010, Eighth Five-year Plan 2021-2025, Sustainable Development Goals 2030, ICT competency Framework, UNESCO 2018). Policies that stressed ICT usage are sufficient in Bangladesh; however, the study found these policies are yet to be translated in to classroom practice.

Due to work-related stress and lack of motivation, primary school teachers exhibit a reluctance to incorporate ICT in the classrooms. The teachers are required to work 40 hours per week, involving tasks such as developing lesson plans, preparing for teaching sessions, creating teaching aids, and staying current with updated knowledge, in addition to their official duties. Accounting for these issues, teachers rarely use ICT in classroom teaching-learning. The education officers (EO means PTI Instructor, URC Instructor, and Education Officers) are responsible for providing necessary assistance, mentoring-monitoring, and guidance. Despite their effort in providing essential support, mentoring, monitoring, and guidance, the study reveals a prevailing lack of motivation and encouragement among teachers. In the voice of one of the respondents,

> Our teachers are not motivated to use ICT. Better performance can be found if all the teachers use the existing facilities. (EO 5)

One of the teacher participants in FGD1 shared that she does not want to invest her time in using ICT because there is no financial benefit or recognition. Teacher respondents emphasized the need for effective supervision to bring about a change, and education officials agreed that there should be an expansion of monitoring services.

Conceptual dilemma

A critical finding is the limited scope of ICT understanding among primary school teachers. Most respondents equate the use of ICT with the application of PowerPoint in classrooms. This limited perception manifests in a "robotic" style of PowerPoint presentations, as one respondent noted, "using less creativity." There was a general lack of specific answers on how technology could be innovatively employed in teaching-learning processes, indicating a need for broader and deeper ICT education for teachers.

Almost all the respondent teachers agreed they are not competent in using technology and are unsure about the skilled application. At this point, training-related issues arose. All types of participants informed that the Bangladesh government provides a 12-day long ICT training though only a few teachers (1 teacher per school) received that training. One of the teachers who participated in FGD8 informed:

> Generally, I don't use technology because I don't have ICT training. (FGD8)

EOs expressed resentment by saying that teachers use smartphones frequently; however, they ask for training when using technology in the classroom.

The Role of Technology in Teaching-Learning Activities in Primary Education in Bangladesh

Attitude vs Skills

The study highlights a generally positive attitude among teachers towards the integration of Information and Communication Technology (ICT) in educational settings. Teachers believe that using technology in the classroom not only makes learning more accessible and engaging but also aligns it closely with real-life scenarios. This positive perception is pivotal for the acceptance and effective implementation of ICT in teaching-learning activities.

> When I use ICT in my classroom, the students are more concerned and attentive than on other days. (FGD6)

> Presenting a lesson through ICT is much easier than the traditional teaching method. Students also find it interesting. (FGD1)

Keeping and restoring official data is another facilitated area by ICT as digital data keeping allows teachers to save information for a more extended period and expand opportunities for authentic data sharing with parents and other stakeholders. Though the teachers believe ICT has a positive impact, concerns were expressed in two broad categories. The main concern was that teachers are not confident about using technology; most of them think using technology in the classroom is the responsibility of the teacher who got ICT training. Another concern was the content, duration, frequency and mode of the ICT training. Respondents found the training inappropriate and inadequate as it includes higher order skills, for instance, video editing, animation, coding-decoding, software usage etc. In contrast, teachers are struggling with basic computer handling. Suggestions came along to improve the situation by extending the volume and number of ICT training, stressing basic computing, strengthening regular monitoring and increasing technological support at the school level.

Perceived Role of ICT in Enhancing Learning

Teachers identify multiple roles that ICT plays in enhancing the educational experience. Teachers and and local education officers acknowledge that ICT makes learning more effective, sustainable, engaging, and life-oriented. Teachers unanimously agreed that ICT in classrooms is beneficial, as it "helps to improve students' understanding and increase attention," and some noted that "technology helps to ensure specific, concrete, and smart presentations." Teachers in FGDs remarked:

> When I use ICT in my classroom, the students are more concerned and attentive than on other days. (FGD6)

> Children from recent times understand and accept ICT materials very easily. (FGD7)

Additionally, teachers informed whenever they tried 'out of the box' strategies, for example, using technology, they found students more attentive, engaging, cheerful and eager to learn. They continued the rate of achieving learning outcomes increased by technology usage while the learning loss was reduced. The study also found that ICT helps teachers to manage time, follow lesson plans, and maintain control over the class.

> ICT benefits both parties; students find it enjoyable, engaging and helpful for getting concrete ideas. Teachers can use the same material many times. (FGD4)

> Presenting a lesson through ICT is much easier than the traditional teaching method. Students also find it interesting. (FGD1)

> I use the sound box to prepare my students to learn English pronunciation, and I use visual representation via multimedia projector while taking science classes. (FGD1)

Concerning issues for using Technology in classrooms

Opportunities Vs Threat

The lack of resources and adequate training for teachers are identified as significant challenges in the integration of ICT in classrooms. Teachers face difficulties due to work-related stress and a lack of motivation, which are worsen by the additional requirement to integrate ICT into their teaching practices (FGD 1, 3, 6). They often find themselves working late hours or on weekends to prepare digital content due to time constraints imposed by their regular duties. Still, it is believed by most of the respondents that though the work pressure seemed to be increased at the start, it reduced teachers' work pressure in the future.

There is a range of digital content and learning materials on the government website named 'Shikkhok Batayan', 'Muktapath' and other websites. Teachers can avail of these varieties of online materials from these sites. No recognition or financial benefits for using ICT is also a matter of discouragement. Not having personal devices and other equipment is another issue (FGD 1, 2, 3, 4, 6, 9, 10).

Additionally, teachers face many challenges while using ICT in teaching-learning activities. Because of having only one laptop and one multimedia projector room in the school, teachers need to move all the students to that particular room; otherwise, they need to set the equipment in the classrooms. Both practices consume a lot of time. Again, electricity and network issues often create disruption. Sometimes the equipment gets damaged/malfunctioned, but there is no available technical or financial support system for repairing the equipment.

Mitigate the challenges

The study reveals suggestions for enhancing the effectiveness of ICT implementation to mitigate these challenges. Education officers (EOs) and teachers emphasized the importance of more extensive and high-quality training. For instance, two EO noted,

> Government should provide more pre-service and in-service training. A provision should be introduced to train the freshers who will get ICT training as a part of pre-service training and regular ICT training. (EO 3)

> Increasing the number and length of training is very important. Also, the quality of the training must be enhanced. As technology keeps changing, we should update the manuals regularly. (PTI 8)

Additionally, there were calls for improving the training content to be more relevant to the teachers' needs, with a focus on basic computing skills rather than advanced technological competencies. The teachers and concerned authorities provided suggestions to redesign the government provided ICT training.

Future Needs for ICT Integration

Regarding future needs, the study highlights the necessity for more ICT devices and improved infrastructure in schools (URC instructor 2, 3, 5, PTI instructor 1, 3, 6, 7, 8, and EO 1, 4). Participants suggested that each primary school should have at least two sets of ICT devices to facilitate effective teaching and learning. The current situation, where schools often have only one laptop and projector, leads to logistical challenges and limits the potential for ICT usage. Most respondent remarked on the importance of having Electricity, high-speed internet, at least two laptops, and multimedia settings" in every school to enable smoother integration of ICT. Some of them added CC cameras as one of the basic needs for creating a protective environment.

Respondents believe that teachers are not interested in investing their time and effort in using ICT in the classroom because they are not getting any incentives. Some EOs believe teachers should be given incentives and recognition for better performance. One of the respondents quoted,

> Providing incentives will ensure motivation and competition among the teachers. (EO 3)

Some of the respondents (URC instructors 2, 3, PTI instructor 1, Education Officer 2) suggested that the Government should have taken a plan to recruit young teachers in the field of primary education as young teachers are familiar with the latest ICT facilities.

Use of Technologies by Primary School Teachers for Distance Education During the COVID-19 Pandemic

Shift to Mobile-Based Teaching-Learning Practices

During the COVID-19 pandemic, with the closure of educational institutions, primary school teachers in Bangladesh adapted to a mobile-based teaching-learning approach. Teachers infirmed that the District Education office provided an interim lesson plan for conducting classes in the continuing COVID-19 emergency. This interim approach was structured in phases, beginning

with teachers contacting each student's guardians to explain the teaching process and content. A teacher from a FGD mentioned,

> We have used ICT devices and online platforms to communicate easily with students. During the COVID-19 pandemic, all the teachers have shared with the parents and guided them so that our students can easily continue education safely from home. FGD (2)

The second phase involved distributing worksheets as homework, which students were to complete and resubmit within a week. Teachers either collected these worksheets from students or guardians delivered them. The subsequent evaluation and grading process was a crucial part of this approach, ensuring continuity in students' learning and assessment. The teachers evaluated students' performance, maintained the register, and provided grades (4 types of Grades: Excellent, Very Good, Good, and Need to improve) based on their performance. According to respondents, this mobile-based teaching-learning approach was more successful than distance education via Google Meet, zoom, etc. (PTI 2, 5, URC 2).
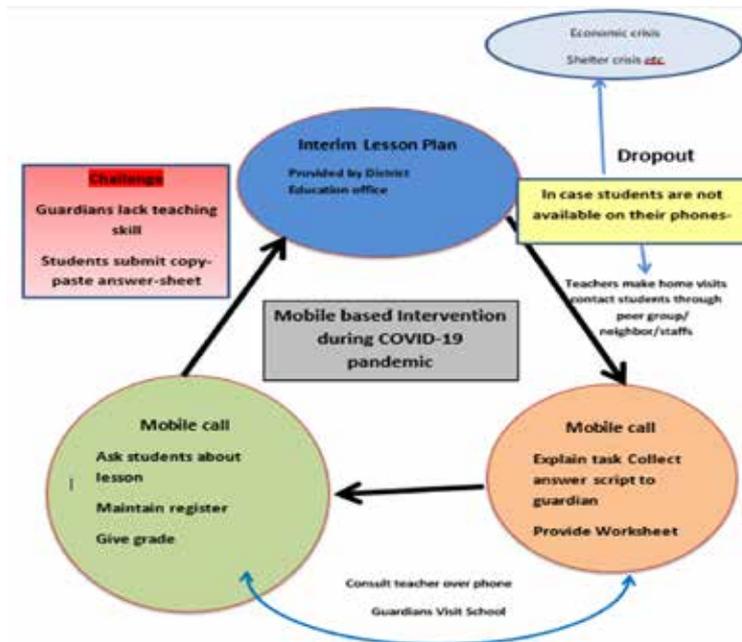

Figure 4: Mobile based intervention during COVID 19

Challenges and Effectiveness of Virtual Platform-Based Teaching

While some teachers attempted to use virtual platforms like Google Meet and Zoom for distance education, this method faced several hurdles. Primary students often lacked personal devices

and the ability to use these platforms independently. Additionally, guardians' unfamiliarity with such technology, combined with issues like poor network connectivity and load-shedding, made virtual platform-based classes less effective. Teachers in added (FGD 2, 3, 4, 9, 10), poor network, load-shedding, not being habituated to ICT and other technical issues" were significant barriers.

Government Initiatives and Their Efficacy

The Government of Bangladesh introduced 'Amar ghore amar school', broadcasting recorded lessons through 'The Sangshad TV' channel. However, this initiative faced challenges due to the lack of reciprocal interaction and questioned the quality of lessons. Despite these efforts, the study found that the mobile-based approach was more suitable given the existing resources and situation.

Discussion

With increasingly powerful capacities and declining costs associated with ICT, it has significant potential, particularly in low-income countries (UNESCO, 2018). The potential role of ICT in enhancing education and fostering skills development has been underscored by Hawkridge (1990), who views it as a tool for liberation and transformation. Kessy (2006) advocated the significant role of ICT in improving the educational system and in advancing student performance (Kessy et al., 2006). One of the major findings of this study is the positive mindset of the Government of Bangladesh about technology integration in the education sector that is reflected in the policy documents. However, technology integration in the Bangladesh primary education is a complex issue like other Asian countries, with policy initiatives often conflicting with traditional teaching practices (Richards, 2004). If we look into the issue why the policies are yet to be translated in to classroom practice findings of this study can explain the key reasons, that are teachers limited understanding, lack of motivation, skill and recognition, inadequate teacher training, available resources and infrastructural issues.

Despite comprehensive policy frameworks, there is a significant disconnection between these policies and their actual implementation in classrooms. The respondent officials of this study reported teachers lack of motivation and encouragement is one of the key reasons of not using technology in classroom. The reason can be explained by the theoretical lens (Technology Acceptance Model, TAM) of the study that is the perceived usefulness (PU) of ICT among the teachers is high, whereas perceived ease-of-use (PEPO) is lower. Most respondent teachers demonstrated a positive attitude towards using ICT in the classroom. While acknowledging the potential benefits of ICT in making learning more engaging and aligned with real-life scenarios, teachers express a lack of confidence and competence in using technology. Singhavi and Basargekar (2019) discussed, teachers have the decisive role in the effective implementation of ICT in the classroom. Their level of acceptance to new pedagogy using ICT, enthusiasm, and

engagement is a key to successful implementation. However, they found the lack of willingness of the teachers to use ICT in the primary classroom of India (Singhavi & Basargekar, 2019). The discrepancy between teachers' PU and PEOU guiding teachers' actual technology use in classroom by forming their attitude and behavioral intention to incorporate ICT usage. Teachers face challenges such as work-related stress and a lack of motivation, further compounded by a limited understanding of ICT's potential uses beyond basic tools like PowerPoint.

The ministry of education in Bangladesh took several policy initiatives including the ICT master plan that emphasize on implementing SDGs goals, the national education policy and the country's vision for 2040 to encourage technology integration. One laptop-one multimedia in each school, arrangement of monthly data supply and providing ICT training for teachers are among the major initiatives. Though one laptop and multimedia were installed in all model government primary schools, it lacks other associated instruments (Obaydullah & Rahim, 2019; Parvin & Salam, 2015). Respondents also expressed concerns about classroom infrastructure and setting. Some other studies reported similar findings involving lack of infrastructure, equipment, and web-based resources (Kristiawan & Muhaimin, 2019; Obaydullah & Rahim, 2019). Muslem et al. (2018) reported limited class time, tools, poor internet connection, and lack of training as the major barriers in incorporating ICT in Indonesia. Sharma (2003) identified insufficient funds, level of teacher knowledge, policies, and the gap between the various sections as the most notable barriers in Asian countries.

As a consequence of teachers' limited understanding and skill regarding ICT usage and the infrastructural issues, teachers found as non-frequent ICT users. The factors related to teachers are supported by previous studies that also reported that teachers found to be confused about ICT usage because of not having advanced educational background and proficiency in using ICT (Ghavifekr et al., 2016; Kristiawan & Muhaimin, 2019; Obaydullah & Rahim, 2019; Parvin & Salam, 2015; Sharma, 2003; Starkey, 2020). The present study found redesigned ICT training can change the situation. Hossain et al. (2016); Khan (2014); Parvin and Salam (2015) also recommended the need for improved teacher training and professional development in this area. There are considerable challenges exist in integrating ICT in Bangladeshi primary schools. To bridge the gap between policy and practice, targeted interventions emphasizing comprehensive teacher training, infrastructural enhancements, and motivational strategies are crucial to bridge the policy-practice gap.

The experience during the COVID-19 pandemic further highlights the need for flexible and adaptive educational strategies. Teachers became one of the largest groups of digital technology users during the pandemic (Vargo et al., 2021). Sun et al. (2020) mentioned that teachers have to adapt to the pace of online teaching and put more effort into preparing for online classes (Sun et al., 2020). In Bangladesh, government primary schools started a three-tiered mobile-based teaching-learning practice that included the google meet platform later on. The emergency forced teachers and students to become familiar with synchronised online classes, hopefully

serving as a foundation for future ICT integration in the classroom. Additionally, adapting to future crises like the COVID-19 pandemic requires a proactive approach in integrating technology in education, ensuring that both teachers and students are equipped with the necessary skills and resources.

Conclusion

The study explored the status of technology integration in primary schools in Bangladesh by examining teachers' knowledge, attitude, and practices in using technology. Teachers generally exhibit a high perceived usefulness (PU) of ICT but face lower perceived ease-of-use (PEOU), often due to insufficient confidence in using technology effectively, compounded by a lack of adequate training and appropriate equipment in schools. Simply providing laptops or tablets is not enough for effective technology use in education. Rather schools need the right infrastructure and comprehensive teacher training, alongside motivational strategies, to integrate technology truly. The COVID-19 pandemic further highlighted the importance of being prepared to use technology in primary education to respond to unforeseen challenges.

Acknowledgement

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