**The EdTech Effect in Bangladesh:**

**Evolution of Bangladesh’s Educational Approaches into an Emulsion of Technology and Tradition**

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Abstract

This thesis is an examination of the EdTech Effect—the emulsion of technology and Bangladesh’s schooling that amalgamated into a wave of digital-induced education since the pandemic in 2020 and a stronger edtech industry’s emergence in light of immense funding, cutting-edge software, and innovative curriculum-centric platforms, all for interactive, accessible education. Edtech businesses have been a tremendous complement to helping education move away from endless memorization to make it meaningful in the meantime. The purpose of my research was to examine public opinion in the education industry in light of such abrupt changes and to understand how the transition has been for students and instructors. This will provide some insights into the how’s, what’s, and whys of sustainability, accessibility, and long-term goals in relation to the rapid change we have been seeing. Qualitative research was conducted on a structured dichotomous, multiple-choice online questionnaire, based on adaptability, feasibility, harmony of technology and human behavior, and durability of the aforementioned changes in the country's education sector. According to the indicators, individuals had a tough time adjusting to the transformational yet abrupt move from traditional to online education, with the majority experiencing issues adapting to the newfound curriculum, instructions, conducting examinations, etc. It is safe to say that we still have a ways to go because the majority of the nation can't use them owing to a lack of knowledge, resources, and training at all levels. While resources have been strengthened, the integration of digital resources into the educational system will take some time for Bangladesh.

*Keywords:* education, technology, Bangladesh, digital, virtual, edtech, curriculum, resources, sustainability, accessibility

**Introduction**
Since the pandemic, Bangladesh's entire student body has been dependent on MOOCs (Massively Open Online Courses) provided by the key players in the industry, namely The Khan Academy or The 10 Minutes School. Since then, the industry has seen a massive uptick in foreign investments, with newer, more technologically immersive companies introducing cutting-edge software and platforms, all in the name of teaching the youth of the country. This thesis is an analysis of the EdTech Effect: how Bangladesh’s education approaches evolved into an emulsion of technology and tradition. This study and research answers some of the deep-ended questions one can have towards this rapid digitization of Bangladesh’s education curriculum and can assess its plans for sustainability. As a student and teacher myself, I have experienced the transformative side of our education sector, with the rise of online platforms like Google Classrooms being the industry standard for sending out homework, and Moodle being my university’s portal. Hence, this study will answer some of the how’s, what's, and whys behind the sustainability, accessibility, and future plans regarding this hasty evolution we have been witnessing. The academic body of Bangladesh has been passing through this transition with all their effort, learning and adapting to newer software, arranging adequate devices, and abandoning the brick and mortar forms of learning that had proven effective for the majority of their lives. While one might interpret this as a sign of the times, there is much to investigate about the thoughts of said consensus in terms of its adaptability and sustainability in each echelon. Thus, this research will look into the real reasons for this technological immersion, as supported by authoritarian bodies and newfound edtech companies, and how, or if, these methods have a chance of lasting in our pedagogical norms.

**Literature Review**

According to the research done by Zubairi, Kreimeia, Kaye, and Ashlee (2021), technology introduced by these companies during the pandemic has been used to train teachers to create educational content and digitized textbooks through the Multimedia Classrooms/Teacher-led Content Development initiative, powered by a2i, the digital transformation wing of the Bangladesh government. The initiative showed that more than 90% of its participants went on to create e-books of more than 300 readily available textbooks in the education system. This resulted in greater instructor knowledge, abilities, and creativity, as well as increased student interest and attendance and improved test scores (Zubairi et al., 2021).

It has been proven by an independent investigation conducted by the Daily Star, a leading news agency, and Hasan (2022), which states that smartphone and internet penetration have exceeded the projected expectations and have reached almost 50% since the COVID-19 closure. Since then, students from all income backgrounds have turned to trusted EdTech startups like The 10 Minutes School, Shikho, Sohopathi, and many more to complete their syllabi for their end-of-year, matriculation, and entrance exam preparations. Thus, the companies rose to the opportunity to create entertaining and rigorous courses for students at a fraction of the cost of a traditional private teacher. Thus, this has shattered the boundaries of education only being accessible to those who could afford it and stretched its reach to all corners and socio-economical levels of the country.

Diving into the subject of technological integration, awareness and advancement in the public school system, a qualitative research done by Shahrina Mou, titled "*Possibilities and Challenges of ICT Integration in the Bangladesh Education System*", along with forming a2i, the Bangladesh government also integrated ‘QuickWin’, an initiative of the Ministry of Education to introduce the Multimedia Classroom (MMC) to all charter and public educational institutions. This is done in an effort to provide an enjoyable, stimulating learning environment, widely abandoning the memorization techniques of the past. According to Mou, 800 lead trainers were equipped to train more than the 20,000-member education staff of the country (2016). And, we have been seeing results reflecting this initiation all around Bangladesh, with students from the hilly regions, especially Teknaf, tuning into classes, seminars, or programmers conducted in regions far and wide, from their multimedia boards. The government is investing in a rigorous ICT division, which aims to digitize the country by 2025 and aims to integrate this technology-backed pedagogy in a meaningful way (Mou, 2016).

Along with an impressive lineup of hardware upgrades in all echelons of higher education institutions (HEIs), we are noticing a widespread adaptation of appropriate software, like Google Workspace, which includes Google Classroom, and Moodle. A thorough analytic research paper presented by Faieza Chowdhury, titled "Virtual Classroom: To Create A Digital Education System in Bangladesh," presents to us the features, usage, public opinion, and retention of this software, based on a research audience of 120 undergraduate students. Chowdhury came to the conclusion that "most of the features of the virtual classroom were positively received by the students, who particularly mentioned easy access to the course teacher and online lecture features as the key advantages of a virtual classroom." (Chowdhury, 2020, p. 8). We will look closely at Chowdhury's quantitative data, which she gathered while conducting her extensive research.

Moreover, with greater fluidity amongst their lessons and class timings, students are increasingly enrolling in online courses with greater retention rates, viewing the e-learning process as a greener choice, with learning and evaluation taking place with fewer interruptions and with less time commitment because travelling is not required. Furthermore, online platforms offer a very flexible and all-encompassing possibility, with additional advice and tutoring help from instructors (Majed et al., 2020).

Through the research and thesis, we explore the aforementioned areas and their elaborate effects on the aspects of education, in terms of retention, student satisfaction, adaptation, and the permanence of its existence in Bangladesh.

**Methodology**

For the proposed research, I chose quantitative research based on a structured dichotomous, multiple-choice, and close-ended questionnaire. I want to consider public perceptions of technology, including its accessibility, adaption, simplicity of use, and satisfaction, as well as which edtech businesses were critical throughout this transformative moment in technology and education. My intended audience is primarily students and educators involved in academia, who have first-hand witnessed the blend of traditional and virtual learning during the pandemic. This survey asks questions that reflect on the adaptability, feasibility, and harmony of technology and human behavior, which will show us how easy or difficult it was for the students, teachers, and parents involved in the processes to adapt to the abrupt change in norms and whether this is something that can gain permanence in Bangladesh, considering its rapid digitization. Additionally, this survey will act as a foundation for future mathematical analysis and conclusions about how the general audience perceives this new facet of education and their thoughts on the edtech startups of the country. I believe that a qualitative analysis will obtain concrete results that can be analyzed based on metrics rather than a qualitative analysis, which highly depends on one’s perceptions and observations.

The survey is staged to begin with generic questions, such as their age, computer usage, understanding of educational software, and so on. This is done to construct a control on which the findings will be based. The questionnaire then progresses to psychometric Likert questions based on experiences, attitudes, and issues, which are subsequently answered on a descending scale of strong agreement to disagreement.

**Findings and Discussion**

In Table 1, we analyzed the responses of participants based on fifteen multiple-choice, close-ended questions created on a 5-point Likert scale to assess public opinion on virtual learning and the contribution of ed-tech companies in Bangladesh. A total of 9 responses were received from anonymous participants who were directly involved in education during the adverse periods of COVID-19. In the first statement, the consensus was divided, with 33.3% being neutral and 66.7 divided equally between agreement and disagreement. In statement two, the majority of participants, i.e., 66.70% of the participants, agree that Bangladesh has adopted MOOCs for education and skill-building, whereas we find 33.3% disagree. In statements three and four, respectively, we find nearly 89% of the participants at the lower end of the scale disagree with Bangladesh's smooth transition, and 88.9% agree that it has been a difficult phase of shifting from traditional to online learning. Most participants were quick to agree, with 88.9% agreeing, and 11.1% strongly disagreeing, that it has been difficult overall. In statement five, 100% of the participants disagreed when it was insinuated that the student and teacher bodies were prepared to transition abruptly. The group had mixed reactions, with 56% agreement and 44.4% neutral and disagreement, that appearing for exams and classes was easy online. We see this same trend in statements six and seven. Statement 8 had a huge disagreement, with 77.8%, and only 22.2% agreement and neutrality. We again get to see the strong disagreement in statement 9, with nearly 78%, when it is insinuated that students were able to do their work with proper resources during the pandemic. Statement 10 has a fresh change, with the consensus being divided into clusters of 22.2-33.3% from agreement to strong disagreement. In statement 11, we see a huge agreement and neutrality rate, with 11.1% strongly agreeing, 66.7% agreeing, and 22.2% neutral. Statement 12 faces major disagreement, with 66.7% distributed between disagreement and strong disagreement, with 22.2% agreeing. Participants hold hope in statements 13 and 14, with 66.7 and 88.9% agreeing respectively, and 33.3% and 11.1% disagreeing respectively. Lastly, statement 15 rallies major disagreement with 77.8% disagreeing, 11.1% neutral, and 11.1% strongly agreeing.

***Table 1: Analysis of Close-Response Statistics***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *Statements* | *Strongly Agree* | *Agree* | *Neutral* | *Disagree* | *Strongly Disagree* |
| *Res* | *%* | *Res* | *%* | *Res* | *%* | *Res* | *%* | *Res* | *%* |
| Bangladesh has been successful in including technological elements in its classrooms | 1 | 11.1 | 2 | 22.2 | 3 | 33.3 | 2 | 22.2 | 1 | 11.1 |
| Since the beginning of the pandemic, Bangladesh's education system has harmoniously adopted Massively Open Online Courses (MOOCs) for educational or skill-building requirements. | 3 | 33.3 | 3 | 33.3 | 2 | 22.2 | 1 | 11.1 | 0 | 0.0 |
| Students had a smooth transition from offline curriculum to online coursework from 2020 to early 2022 | 0 | 0.0 | 1 | 11.1 | 3 | 33.3 | 3 | 33.3 | 2 | 22.2 |
| It was difficult moving from traditional teaching methods to online teaching methods | 4 | 44.4 | 4 | 44.4 | 0 | 0.0 | 0 | 0.0 | 1 | 11.1 |
| All students, teachers, and parents were prepared technologically to shift from offline to online learning during the COVID-19 pandemic. | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 5 | 55.6 | 4 | 44.4 |
| I believe it was very easy to appear for online classes and submit assignments and exams. | 3 | 33.3 | 2 | 22.2 | 1 | 11.1 | 0 | 0.0 | 3 | 33.3 |
| The virtual classroom environment was very easy to access for all students, teachers and parents. | 3 | 33.3 | 3 | 33.3 | 0 | 0.0 | 1 | 11.1 | 2 | 22.2 |
| Teachers could cope with the sudden change without any problem, they had enough training and experience already. | 0 | 0.0 | 1 | 11.1 | 1 | 11.1 | 2 | 22.2 | 5 | 55.6 |
| The students were able to do their classes perfectly and had all the resources available to them. | 1 | 11.1 | 1 | 11.1 | 0 | 0.0 | 4 | 44.4 | 3 | 33.3 |
| EdTech companies in Bangladesh were a major part in assisting students during these online learning sessions | 0 | 0.0 | 3 | 33.3 | 2 | 22.2 | 2 | 22.2 | 2 | 22.2 |
| I believe students got a lot of help from open courses from companies like the 10 Minutes School, Shikho, Sohopathi and the like. | 1 | 11.1 | 6 | 66.7 | 2 | 22.2 | 0 | 0.0 | 0 | 0.0 |
| I believe the cost of education decreased during the pandemic due to all these online educational companies. | 0 | 0.0 | 2 | 22.2 | 1 | 11.1 | 5 | 55.6 | 1 | 11.1 |
| I believe all these technological improvements will create a wonderful platform for interactive learning for students of all incomes and households. | 3 | 33.3 | 3 | 33.3 | 1 | 11.1 | 2 | 22.2 | 0 | 0.0 |
| With the government investing in a greater education ICT department, I believe all students of Bangladesh will have the best mixture of technology and education going forward. | 6 | 66.7 | 2 | 22.2 | 0 | 0.0 | 1 | 11.1 | 0 | 0.0 |
| There was no difference in resource availability, training and acceptance of a virtual classroom in both public and private education sectors | 1 | 11.1 | 0 | 0.0 | 1 | 11.1 | 2 | 22.2 | 5 | 55.6 |

From the following table, we can draw some distinct conclusions in terms of public opinion and the adaptation of technology. The data shows us that people had an extremely hard time coping with the transformative yet abrupt shift from brick-and-mortar schooling to online education, with most of the consensus having difficulties adapting to the newfound curriculum, instructions, appearing for exams and the like. Resources were scarce since there was no preparation, and everything was in disarray. This works as a reflection of the adoption of technology in Bangladesh’s education. Bangladesh is still years away from having 100% technological knowledge and penetration among its citizens, and our participants' choices reflect this: 66–88% agree that the transition was the hardest. When asked about the contribution of EdTech and their opinions, the consensus was divided between neutrality and agreement, with instances of strong disagreement. While 88.9% believed that more investments in Bangladesh’s education ICT would ensure the best teaching resources for both public and private education groups, 88.9% also mentioned that there was a huge disparity in access to resources, adequate training, and acceptance of virtual environments between these two education groups. With that being said, our consensus highly agrees with the fact that our edtech startups had a huge contribution in educating the youth during this period, but these companies couldn’t work to ensure a lower cost of education compared to third-party coaching centres and private tutors, as 66.7% mention the expenses hadn’t decreased a bit.

The participants were given a checklist where they had to select Bangladeshi edtech startups that they thought were most efficient in disrupting the education sector and bringing in the most impact on the student body.

***Table 2: Participant data visualization of edtech startups they believe were most effective in disrupting the education sector and having the greatest impact on the student body.***

This is a graphical representation of their responses in Table 2:

The participants were asked an open-ended question where they could express their opinions of the entire subject. The following are their verbatim responses:

*“Bangladesh is on a wonderful journey of technological integration at all levels, and companies like the 10 minutes school will help in this process massively. I believe the teachers needed more training and experience before conducting classes, but it is understandable since the pandemic and online classes were so sudden.”*

*“I believe that with the course of time, our educational systems will be more digitized with the assistance of edtech startups...”*

*“Digitalization of education in Bangladesh has just begun its journey due to the COVID 19 and it was in somewhat forceful adoption with any prior preparation. However, this forceful adoption created a technology pull in the education system of Bangladesh. Prior pandemic, only higher educational institutes used digital equipment e.g. multimedia projector, for delivering lectures. We need to use more interactive digital tools in every sphere of our educational system.”*

While the data range is short, the responses were deemed significant. The following were the three main conclusions of the quantitative study:

[1] The majority of respondents believe that the transition from traditional to online education was extremely difficult given there was a high lack of teacher training, resource availability, and understanding.

[2] While resources have been reinforced, Bangladesh has a long way to go if it wants to incorporate digital resources into the education sector.

[3] The Edtech companies have been a great addition to making education steer away from constant memorization to make it worthwhile, but they have a long way to go as well, as most of the country isn’t able to utilize them due to the aforementioned lack of information, resources, and training on all levels.

**Conclusion**

According to Hasan (2022), the penetration of internet access reaching more than 50% greatly helped in the mass adaptation, but with major loopholes and areas requiring further improvement and concern This study and research provided some comprehensive answers to open-ended questions about Bangladesh's education system's rapid digitization and evaluated its sustainability goals. Edtech businesses have been a tremendous complement to helping education move away from endless memorization to make it meaningful. However, they still have a ways to go because the majority of the nation can't use them owing to the aforementioned lack of information, resources, and training at all levels. In the conducted quantitative survey, majority of respondents agree that there was a severe lack of teacher preparation, resource availability, and understanding, making the switch from traditional to online education very challenging. Despite its size, our pool of academics with extensive industry experience sheds light on the real issues driving these rapid advancements. It was found out that, while there was an introduction of said technology in both public and private sectors, there was a major disparity in resource distribution across all the socioeconomic levels. As a member of academia, I believe education is a civic duty and responsibility to be practiced and enabled for all children in a country. Hence, it is astonishing to witness such differentiation amongst public and private-funded institutions. Also stated by 88.9% of the participants was the stark difference between these two educational groups in terms of access to resources, preparation, and acceptance of virtual settings. Hence, this research can be a welcome extension into an opportunity to conduct extensive studies in terms of quality education, student retention, and technological methods of modern pedagogy, involving both qualitative and quantitative methods. Bangladesh still has a long way to go before fully integrating digital resources into the education sector, despite the fact that resources have been strengthened. But one thing is certain: the pandemic has shifted the winds of change from traditional pedagogy to a new era of virtual education, where students in Bangladesh can receive revolutionary education, forming the best leaders of tomorrow with enough awareness, resources, and adaptation.

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