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This publication of NAEM journal regarding many topics of education is totally different from the previous publications. It reflects on the Education system of Bangladesh with the challenges in education, youth employability, frame work of blended learning, assessment system in Bangladesh, anxieties in mathematics etc. The findings show some areas where the government may invest and take initiatives to strengthen the capacity of our education system.

In addition, it is necessary to have adequate resources to take proper initiatives for the proper implementation of the findings. The suggestions come from the research works will contribute more to take proper initiatives for the government. The recommendation can be the guideline to ensure proper environment for our learners.

To conclude I must acknowledge that these research works lead to an expansion of knowledge.

Prof. Dr. Ummay Asma

Director (Research & Documentation), NAEM

&

Editor, NAEM Journal

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Readiness of Tertiary Level Educational System of Bangladesh to Cope with the Challenges of the Fourth Industrial Revolution

Md. Shafiu Islam ¹
Md Sanwar Jahan Bhuiyan ²
Muhammad Fakhru Islam Anwari ³

Abstract

The global phenomenon is changing rapidly due to the advancement of technology and its usages in every sphere of life. It results radical changes in different sectors, terming it as a new revolution, the fourth industrial revolution. The fourth industrial revolution has brought challenges on the one side and it has also brought opportunities on the other side globally. The developed countries have already undertaken many initiatives to face the challenges and to capitalize the opportunities of the 4iR. But like many other developing countries, Bangladesh will face many challenges, including losing thousands of jobs in different sectors. To cope with the challenges of the 4iR, it is time to be ready with necessary skills. Considering the burning issue, this study intends to assess the readiness of the tertiary level educational system of Bangladesh. Rajshahi University was taken as case for this study. Eight departments under five faculties were purposively selected. Syllabus of these departments were reviewed to assess the readiness in terms of the 4iR. The study reveals that there are many limitations in offering teaching-learning activities at the tertiary level in Bangladesh in the era of modern information and communication technology. Among many others, some are: acute shortage of ICT-enabled infrastructural facilities, low speed internet connection, lack of lab facilities, its kits and modern equipment, lack of enough research grants, scholarships, mind set of faculty members, lack of professional development training of faculty members, lack of motivation of learners to face challenging situation, and so on. The existing campus political culture practised by both teachers and learners is considered another problem at the HEIs in the country. Despite such limitations, most of the faculty members are mentally ready to cope with any challenge caused by the 4iR. However, to cope with the challenges and capitalize the opportunities of the 4iR, the study puts some policy suggestions, including development of ICT-enabled infrastructure, modernization of curriculum incorporating global phenomenon, enhancement of lab and research facilities, establishment of a specialized training

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institute for professional development, introduction of research visit for faculty members and researchers , development of linkage between GO-University, development of academia-industry collaboration, organization of conferences and seminars regularly, keeping HEIs free from politics and ensuring safe and secured campus for students.

Keywords: Fourth Industrial Revolution, Higher Education, Readiness, Rajshahi University, Bangladesh

Introduction

With the invention of modern technologies and their rapidly changing features, the world has experienced various revolutions. From the invention of 'Steam Power' which later led to the invention of 'Electrical Energy' and 'Automation' using computers and electronics, the global village has been moving fast forward tremendously. Thus, digital transformation touches every sphere of life profoundly. Now it is embedded from the planning to production that leads to consumption and feedback. Men to Machinery goes beyond Machinery to Machinery (M2M) and now men get taste only for services. Consequently, the global citizens experienced another revolution in the history of civilization which is branded as the fourth industrial revolution (4iR). The German scientists observed the revolution in 2011 while they were formulating a hi-tech strategy for their Government. Later, Professor Klaus Schwab advocated the issue profoundly at the 46th World Economic Forum Annual Meeting held in 2016. The meeting theme was 'Mastering the Fourth Industrial Revolution' (World Economic Forum, 2016). It has been observed that the 4iR is the current and developing environment in which disruptive technologies and trends such as the Internet of Things (IoT), robotics, virtual reality (VR), and artificial intelligence (AI) are changing the way we live and work. Now the wave of 4iR has encompassed every sector very intensively. As a result, digital evolution embraces all over the world creating opportunities for those who can bag its fruits and pushing in challenges for those who cannot get benefits from it. Therefore, it is very important to get ready to cope with the challenges of the 4iR. Hence, among many other sectors, this study assesses the readiness of the country's higher educational system in line with the 4iR.

Some related literature review

The global village has been moving around the wave of the 4iR. To overcome the challenges of the 4iR, the developed countries have already undertaken necessary initiatives and set up strategies accordingly. So, a bunch of works is found in the international academic world. Some of the literature are stated below.

The World Economic Forum is considered as the pioneer for advocating the 4iR issues all over the world. It predicts its challenges and opportunities in public and private administration, business, environment, health, education, civil society, and so on. Founder and Executive Chairman of the World Economic Forum Professor Klaus Schwab explained that this era to be marked by breakthroughs in emerging technologies in the fields such as robotics, AI, nanotechnology, quantum computing, biotechnology, IoT, industrial internet of things, 5G technologies, additive printing, and fully autonomous vehicles (World Economic Forum, 2018).

The World Bank forecast the possible impact of the 4iR globally on employment. In its World Development Report titled *The Changing Nature of Work* states that:

Some service jobs are also vulnerable to automation. Mobileye of Israel is developing driverless vehicle navigation units. Baidu, the Chinese technology giant, is working with King Long Motor Group, China, to introduce autonomous buses in industrial parks. Financial analysts, who spend much of their time conducting formula-based research, are also experiencing job cuts: Sberbank, the largest bank in the Russian Federation, relies on artificial intelligence to make 35 percent of its loan decisions, and it anticipates raising that rate to 70 percent in less than five years. “Robot lawyers” have already replaced 3,000 human employees in Sberbank’s legal department. The number of back-office employees will shrink to 1,000 by 2021, down from 59,000 in 2011. Ant Financial, a fintech firm in China, uses big data to assess loan agreements instead of hiring thousands of loan officers or lawyers (World Bank, 2019b).

The 4iR would also embrace the education sector globally. Online education and training may be equally affected. Reaves observes that the future of work and the future of education are closely connected and the 4iR would bring changes in the nature of work and careers as well (Reaves, 2019).

A study jointly conducted by the a2i and International Labor Organization (ILO) reveals that as many as 54 lakh jobs of five major areas in the country would be at risk by 2041, which would be 60 percent of jobs in the garments sector alone (The Daily Star, 2018).

The Cabinet Division of the Government of Bangladesh through the Access to Information (a2i) programme identified five major sectors in the country which are supposed to be faced future skills challenges due to automation in these sectors. The major sectors are readymade garment and textile, leather and footwear, agro-food, furniture and tourism and hospitality. The study explored the jobs at risk in these sectors and put policy recommendations to tackle the challenges of automation in the country (GoB, 2019b).

A study conducted by the Bangladesh Computer Council under the ICT division explores the opportunities of the 4iR in the ICT sector in the country. The study finds that about 15 categories of major products have the opportunities to get the advantages of the 4iR. It also reveals that about five thousand professionals are involved in technologies related to the 4iR and it needed more than six thousand professionals having the 4iR technology competency by 2021. The study discloses that the existing academic programmes of Computer Science and Engineering offered by the reputed universities could not meet the requirements needed in the IT industry for leveraging the 4iR. The study states that the educational institutions in the country have a weakness to nurture 4iR related ten major soft skills among students due to lack of proper objectives and pedagogical limitations (GoB, 2019a).

However, the Government of Bangladesh has adopted a National Strategy for Artificial Intelligence in 2020 and identified seven national priority sectors namely—public service

delivery, manufacturing, agriculture, smart mobility and transportation, skill and education, finance and trade, and health. The strategy has also set six strategic pillars to achieve the slogan 'AI for Innovative Bangladesh'. The strategy states:

If we can reskill our population in the right direction, we can join the new era of the fourth industrial revolution successfully. We need to engage higher academic graduates to innovate next-generation capital machinery and change Bangladesh's labor-intensive manufacturing strategy to knowledge-intensive eco-systems (GoB, 2020).

The foregoing discussions make it clear that although there are some works on the 4iR, few studies have been conducted focusing on the readiness of tertiary level education in the country. Therefore, it is believed that this study would contribute to this academic field.

Statement of the problem

The world is progressing fast due to rapid changes in technologies. Global citizens are experiencing changes or modifications in technologies almost every day. Innovative usages of technologies have brought massive impacts on every sphere of life. Consequently, the world observes that 4iR is evolving exponentially and transforming entire systems of production, management, and governance. It creates opportunities on one hand and brings threats to employment on the other hand. The invention of robots and their usages creates immense threats to employment as it would replace the human workforce with machines or robots. According to the World Bank, about 57 percent of jobs in OECD countries, 47 percent in the USA, and 77 percent in China may be at risk due to an increase in automation (World Bank, 2019b). It is forecast that about 75 million jobs would be displaced by 2022 (Hawksworth, 2018). According to a study conducted by the a2i of the Government of Bangladesh, about 55 lakh jobs would be at risk due to the impacts of 4iR by 2040 in the country (GoB, 2020). So, Bangladesh would face challenges with employment issues in the years to come.

Therefore, proper policy decisions must be made to face the challenges of 4iR in the country so that people could bag the benefits of it. Hence, this study is conducted to get guidelines for policy suggestions.

Rationale of the study

The Government of Bangladesh has undertaken multi-dimensional initiatives for leading the country towards an upper middle-income country by 2031 and a developed country by 2041. The healthy scenario of different financial and social indicators has already been inspired and recognized by different international organizations to achieve the targets. In the last decade, the country has witnessed a remarkable advancement and achievement in the information and communication technology (ICT) sectors contributing the nation to transform into digital generation. Various international study reports reveal that usages of ICT tools in different activities have been boomed due to the contribution of 4iR. The World Economic Forum states that the 4iR is profoundly different from the other industrial revolutions. It is featured by a range of new technologies that are combining physical, digital, and biological worlds, bringing

impacts on all disciplines, economies, and industries (World Economic Forum, 2021). On the other hand, the World Bank observes that usage of robots especially facilitated with artificial intelligence is increasing globally. Consequently, it replaces the human workforce, leading to the concern of a jobless economy (World Bank, 2019b). It is a very common observation for all countries throughout the world that the highly educated and high-skilled personnel are always in a better position to adopt new technologies while the low-skilled and less-educated employees become jobless or incur less income. Despite adverse impacts on various sectors, it is also forecast that it would create 133 million new roles as a result of the new division of labor between humans and machines and algorithms for 4iR (World Economic Forum, 2018).

Under these circumstances, many questions are provoked such as is Bangladesh ready to cope with the challenges of 4iR? Is the country's educational system, especially the tertiary level, ready to cope with the challenges of the 4iR? Is this sector ready to capitalize the opportunities created by the 4iR? What types of initiatives have been undertaken for the huge number of graduates to enable them to face the challenges and capitalize the opportunities of the 4iR for their future employment?

Therefore, a proper education system, especially at the tertiary level, can be one of the most important tools to utilize the benefits of the 4iR in Bangladesh. A total of 151 universities both public and private are offering tertiary level education in the country. Among them, 46 are public and the rest are private universities (UGC, 2020). Among the public universities, 17 universities are treated as general universities and provide the lion's share of graduates for the job market every year in the country. According to the UGC's statistics, as many as 4085291 students were studying under public universities and more than 82 percent of the students are studying under the Faculty of Arts and Humanities, Social Science, and Business Studies. Generally, the students of these faculties remain far from ICT and other technical education owing to the nature of the curriculum. Consequently, it is an issue of great concern in the age of 4iR for their future employment. Therefore, it is very imperative to conduct research on this emerging issue for the sake of national interest.

Objectives of the study

As the wave of the 4iR touches every sector, proper curriculum and management of tertiary level education can contribute enormously to get benefits from it. Keeping in mind the reality, the main objective of the study was to evaluate the readiness of the tertiary level educational system to cope with the challenges of the 4iR in the country. However, the specific objectives were as follows:

- ❖ To review the status of the curriculum of the tertiary level education for addressing the issue of 4iR;
- ❖ To explore the readiness of the faculty members and students to face the challenges and capitalize the opportunities of the 4iR;
- ❖ To make policy suggestions to cope with the challenges of the 4iR for the country's education sector, especially higher-level education.

Methodology of the study

A mixed-method approach was followed in this study. Consequently, both qualitative and quantitative data were used to interpret the findings. For a systematic empirical investigation of observable phenomena via statistical, mathematical, or computational techniques (Bhawna and Gobind, 2015), the quantitative method is useful, and while the nature of the investigation is explanatory and exploratory, the qualitative approach is appropriate. This study followed both approaches. Therefore, the mixed-method approach was deemed appropriate to fulfill the objectives of this study and interpret the findings.

Sampling

All the general universities were considered for this study. But it was not possible to bring all universities under this study due to time constraints. Consequently, Rajshahi University being one of the largest general universities was selected purposively for this study as a case. There are 59 departments under 12 faculties, 6 Institutes and two research centres in Rajshahi University. It is believed that Rajshahi University, also the oldest one, would represent all the general universities and the findings can be considered from the perspective of general view for the tertiary level educational system in the country.

Study population and sample size

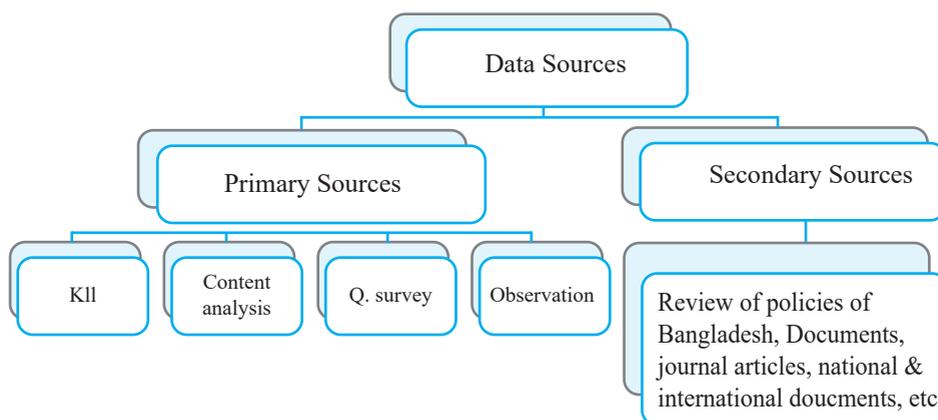
All populations engaged in tertiary level education would be considered as a population for this study. Specifically, populations include teachers, policy makers, ICT experts, personnel engaged in education administration, curriculum experts, and students. So, considering the case-oriented qualitative research, a reasonable number of respondents were selected purposively as a sample size. It is shown in the table-1.

Sources of data and methods of data collection

Data were collected from both primary and secondary sources. For primary data, a questionnaire survey and key informant interview methods were followed. These were conducted using both modes—online (virtual/telephonic) and offline—considering the pandemic COVID-19 situation in the country. Moreover, the curriculum/syllabus of the selected disciplines/subjects were also reviewed for primary data. On the other hand, policy reports of the government, documents, academic reports, books, journal articles, international documents, and so on were reviewed to collect secondary data. Figure 1 shows it at a glance.

Figure 1

Data sources & methods of data collection



Reliability and validation of the study

Maintaining validity and reliability are two key aspects of every research. In the current study, the validity and reliability were maintained in a professional way.

The draft survey questionnaires were presented before the panel of experts at NAEM for obtaining final validation and after complying the opinions of the expert panel, the questionnaire and other data collection tools were finally validated by the experts. As a part of validation, before going to collect data, the research team had a one-to-one meeting with the experts assigned by the NAEM authority at the NAEM premise.

Methods of data analysis and presentation

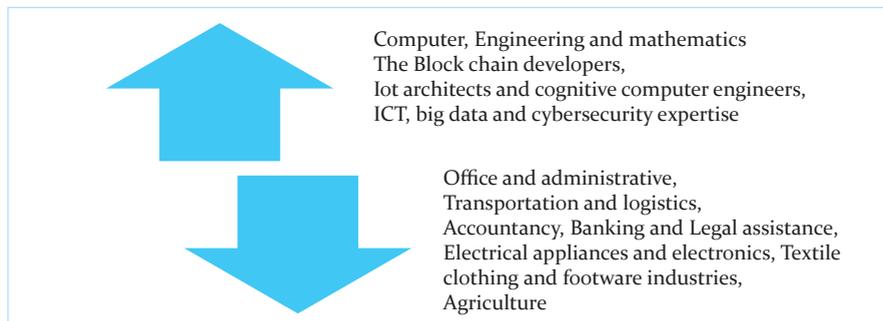
Three types of data were collected and analyzed to obtain the findings empirically for in-depth analysis. First, the secondary data and information were used to make an exhaustive literature review for obtaining validity and reliability of the study as well as set authentic criteria for making a survey on selected higher education institution (HEI). Second, the primary data were obtained through a survey and analyzed using quantitative tools like descriptive statistics. And third, KII, curriculum review, and physical observation were made to get qualitative data and analyzed in the descriptive form. However, the collected data were analyzed using different software like MS Excel and SPSS, and so on. Various forms of pictorial presentation such as a table, bar diagram, pie chart, column, line graphs where applicable were used in presenting results and inferences of the analysis. Finally, the quantitative inferences were compared, validated, complemented, and even quashed after comparing with qualitative findings (Bhuiyan, 2017). The observations and opinions of qualitative data were checked to whether the findings were seen as consistent enough with the research problem and context. Basically, the qualitative data were analyzed in a thematic manner. The major and important opinions were grouped into several thematic areas and then before taking any conclusive findings, the issue of corroboration, cross-examination, and repeated arguments were considered carefully.

Challenges and opportunities of 4iR

The fourth industrial revolution will bring both challenges and opportunities in different areas. Klaus Schwab observes that the 4iR has the potential to raise global income levels and improve the quality of life for people all over the world. He also observes that technology has made possible new products and services that increases the efficiency and pleasure of personal lives. Referring to the economists Erik Brynjolfsson and Andrew McAfee, he points out that the revolution would also bring inequality, particularly the labour markets would face the challenges severely. He further says that talent, more than capita, will represent the critical factor of production in the future. This will multiply the gap between low-skill/low-pay and high-skill/high-pay, increasing in social tensions (Schwab, 2016). Broadly, the 4iR will bring impacts on business, government systems and administration, and population. Balliester and Elshikhi observe that the 4iR will bring impacts on different occupations in different sectors. It will increase occupation opportunities on the one side and it will also decrease job opportunities on the other side in different sectors. The following figure 2 shows the expected increase or decrease in occupations and industries (Balliester, T and Elsheikhi, 2018).

Figure 2

Impacts of the 4iR: expected increase or decrease in occupations and industries



Note: adopted from (Balliester, T and Elsheikhi, 2018)

To face the challenges and capitalize the opportunities of the 4iR, different types of initiatives are needed. Among them, modernization of the higher educational system is very important and one of the most vital factor that would facilitate many other skill development initiatives.

Discussion and major findings

This section is dedicated to data analysis and the presentation there of in different ways. The whole discussion is divided into two sub-sections: the quantitative and qualitative parts. And, in the later part, findings are presented and recommendations are also stated accordingly.

Respondents, method of data collection, sample size and sampling technique

The following table-1 shows the number of respondents, selection method and respondents' categories. It was finalized at the research methodology and tools presentation workshop organized by the NAEM authority on December 7, 2021 where the researchers met one to one with the experts designated by the sponsoring authority. However, all the data collection tools were finalized at the workshop.

Table 1

Respondents' categories, methods of data collection & sampling, sample size

| Data Collection Technique | Respondent Category | Sample size | Sampling Method |
|---------------------------------|---|---------------|-----------------|
| Content Analysis | 5 faculties | 8 departments | Purposive |
| KII-47 | Representatives of policy makers (personnel of education ministry) | 1 | Purposive |
| | ICT Expert (ICT Div/a2i) | 1 | |
| | Education administrator/ UGC personnel | 1 | |
| | Deans | 12 | |
| | Chairmen | 8 | |
| | Curriculum experts (Academic-8, Employer-8, Alumni-8) | 24 | |
| Questionnaire survey (QS)-44 | Professor | 12 | Purposive |
| | Associate Professor | 12 | |
| | Assistant Professor | 12 | |
| | Lecturer | 8* | |
| QS_Students-30 | Current students | 16 | Simple random |
| Total QS-74 | Ex-students | 14 | Simple random |

Note: Based on Primary Data

* No lecturer under four faculties during the study period.

To know the policy issues and its implementation, it is very important to talk to the representatives of the policy makers and the people involved at the implementation stages. This is why, a total numbers of 47 people were interviewed as the key informants (KIs).

Besides, to explore the readiness status of HEIs, a numbers of 44 faculty members from twelve faculties were brought under questionnaire survey. Moreover, a total of 30 students were also brought under questionnaire survey to assess the readiness of the HEIs in terms of the 4iR.

Rajshahi University: Faculty, Student and teacher-student ratio

The following table-2 represents the numbers of faculty members, students and teacher-student ratio. It represents the figures of the last six years. It indicates that the number of faculty members were decreasing every year from 1230 in 2015 to 1097 in 2020. On the other hand, the number of students were increasing every year. Consequently, teacher-student ratio has widened every year accordingly. Further, it is noticed that the number of faculty members of different categories (Associate professor, assistant professor and lecturer) were decreasing over the time. It is observed that it happened due to promotion to upper layers. It is also observed that there was an embargo on teachers recruitment in the Rajshahi University. Consequently, it makes widen the teacher-student ratio. However, the university authority has reduced the number of students in different departments from the current academic session 2021-2022. It is believed that it would contribute to maintain the standard of teacher-student ratio in the university.

Table 2

Rajshahi University: Number of teachers, students and teacher-student ratio

| RU at a glance | | | | | | |
|--|-------|-------|-------|-------|-------|-------|
| Number of teachers & Students (2015-2020) | | | | | | |
| Category of teachers | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
| Total teachers | 1230 | 1230 | 1216 | 1210 | 1150 | 1097 |
| PhD teachers | 571 | 570 | 555 | 764 | | |
| Professor | 455 | 489 | 483 | 568 | 592 | 568 |
| Associate Professor | 317 | 299 | 294 | 270 | 286 | 285 |
| Assistant Professor | 334 | 348 | 345 | 275 | 224 | 188 |
| Lecturer | 124 | 80 | 80 | 92 | 48 | 56 |
| Absent with permission | 142 | 107 | 113 | 100 | 70 | 55 |
| Student | 34165 | 33200 | 36437 | 38230 | 38291 | 38291 |
| Teacher-student ratio | 1:28 | 1:27 | 1:30 | 1:32 | 1:33 | 1:35 |

Source: RU 50 Years Master Plan & UGC Report, 2018, 2019, 2020

Note: Based on Primary Data

Quantitative Part: Survey data presentation and discussion

Data have been categorized into different groups such as survey data, KII's data, and observation data. In the first section, survey data have been presented followed by KII, and observation. The quantitative data were collected using a structured questionnaire survey.

Faculty part: number of respondents

A total of 44 faculty members were brought under questionnaire survey in this study. Among the faculty members, 12 professors were selected from 12 faculties and in the same way, 12 associate professors, 12 assistant professors and the rest 8 lecturers respectively were selected from the twelve faculties. They were selected purposively for the research convenience. According to the Rajshahi University Diary 2022, there was no faculty member as lecturer under the Faculties of Arts, Fine Arts, Fisheries, and Veterinary and Animal Sciences (Rajshahi University, 2022). The faculty members observe that it is happened due to promotion to upper grade from lecturer to assistant professor. Besides, there was an embargo on teacher recruitment in the university. As a result, the number of lectures has been decreased. It is shown in the table-2 above.

Professional development related information

Figure 3

Professional development training

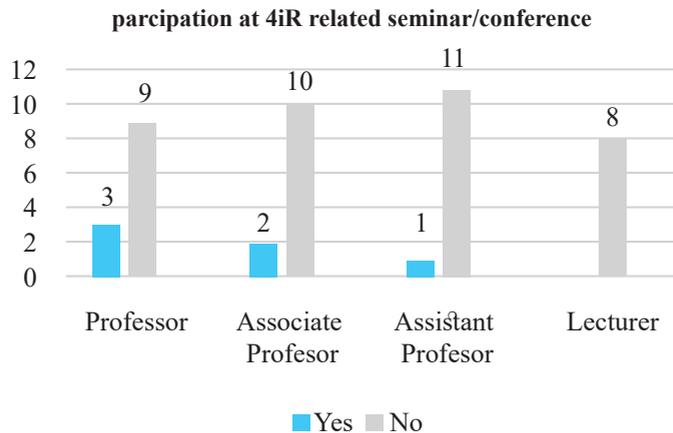


The figure 3 shows information about professional development training of the faculty members about professional development. It shows especially that lecturers do not have any traial about it.

Participation at training/workshop/seminar/symposium/conference related to 4iR

Figure 4

Participation in 4iR related seminar/conference



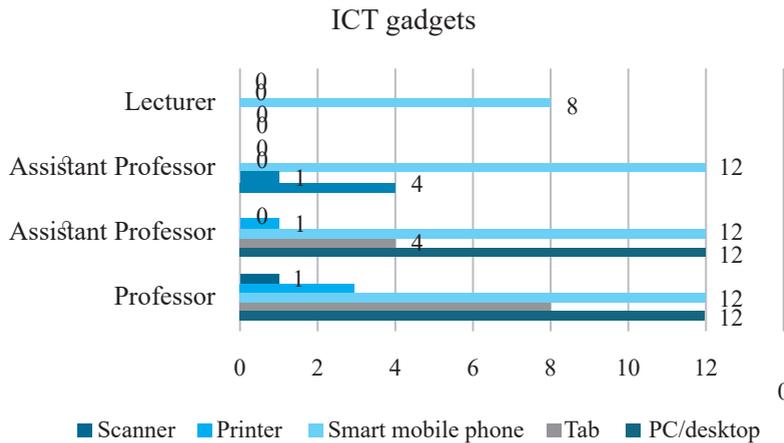
The figure: 4 shows information about participation at the 4iR related seminars / conferences by the faculty members. It also shows that the lecturers have not participated in such events.

Personal ownership of ICT gadgets

In the era of ICT and super communication, ICT gadgets are a must to be updated or to run daily life. Now, there is no work that happens without using ICT tools. There are various types of ICT gadgets in world markets. Everybody uses those as his/her own requirements. In education sector, the use of ICT tools is different from that of business organization. Some limited ICT gadgets are considered enough to continue teaching-learning activities smoothly. Moreover, in the era of 4iR, it is very essential to have own ICT gadgets. However, this study investigates to know about ownership of some ICT gadgets of the faculty members of the university. The figure-5 shows that all the faculty members have smart mobile phone set. Some also have tab and some have all such as desktop, smart mobile phone set, tab, printer and scanner and most of the respondents belong to professor category group. The figure shows that the lecturers have only smart mobile phone set. However, it is revealed the shortage of personal ICT gadgets of the faculty members.

Figure 5

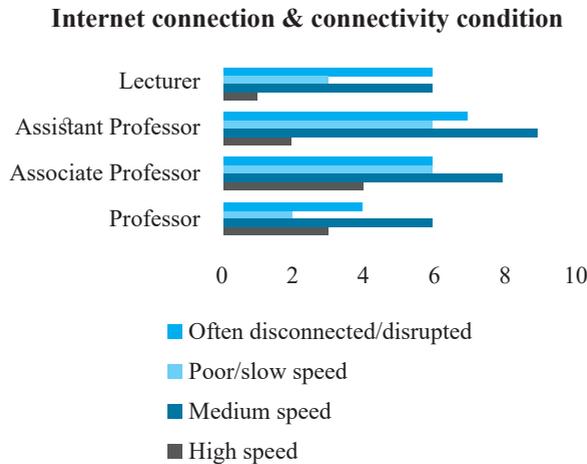
Personal ownership of ICT gadgets of faculty members



Internet connection, speed and satisfaction

Figure 6

Internet connectivity condition



In the era of 4iR, speed of internet is considered very important. This study investigated the issue among the faculty members of the university. The figure-6 shows that almost all the faculty members have the internet connectivity as medium speed. They hardly got high speed of internet connection in doing their works. But they have some bitter experiences such as often they face disconnection of internet during their works and slow connection is very

common phenomenon in the campus. Besides, while talking to the researcher, they describe that they also face 'non-connection' of internet for days after days for different 'unacceptable/without notice' reasons. For this, sometime they miss important meeting and communication, they assert. So, under this situation, most of the faculty members are not satisfied over the speed of internet facilities.

On the other hand, the figure-7 shows the available facilities at the university. It reveals that majority of the respondents are satisfied over the facilities. But it needs to improve the facilities. However, the figure-8 shows that it needs more to do on different aspects including ICT facilities to meet the readings for coping with the 4iR Challenges in the corenty.

Figure 7

Satisfaction over the available facilities at the HEIs

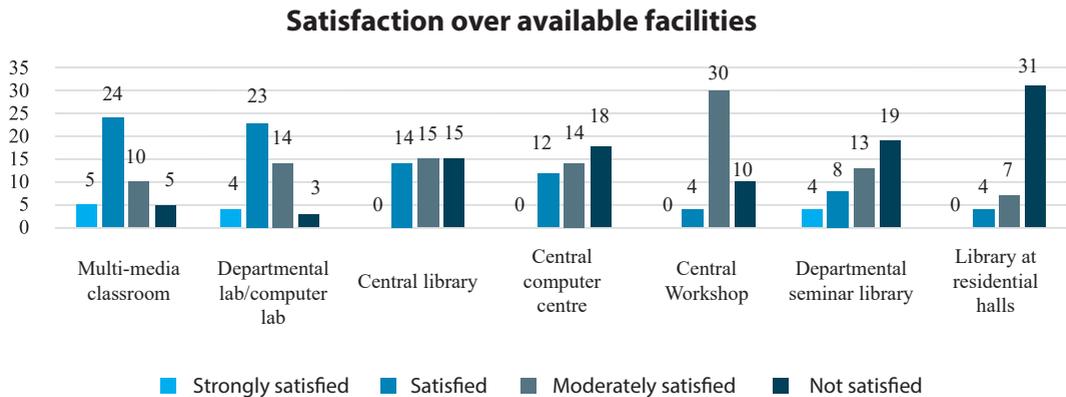
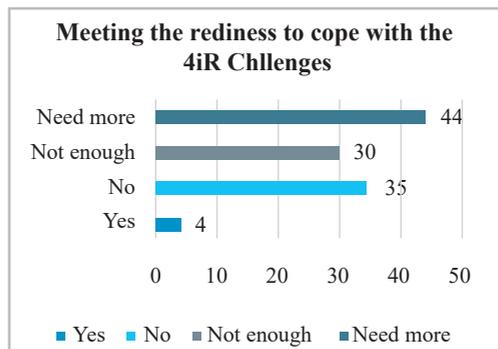


Figure 8

Meeting the readiness to cope with the 4iR challenges (multiple answer)



Student part

Are the students ready to cope with the challenges of the 4iR? This study tried to explore the readiness of the students in this respect. For this, a questionnaire survey tool was finalized with the consultation of the expert designated by the NAEM authority.

Social background of the respondents

Most of the students brought under the survey were from rural background. It is a common phenomenon in the public universities in the country. Because, still the educational expenses in the public universities are less than that of the private universities in the country. The figure-9 shows that 70 percent of the respondents come from rural social background while the rest come from urban areas. The figure-10 also shows the financial hardship of the students faced by them during their academic life.

Figure 9

Social background of the respondents

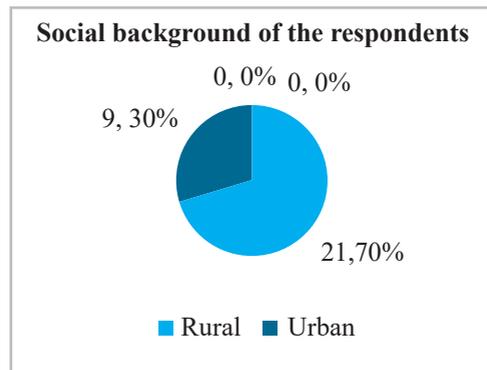
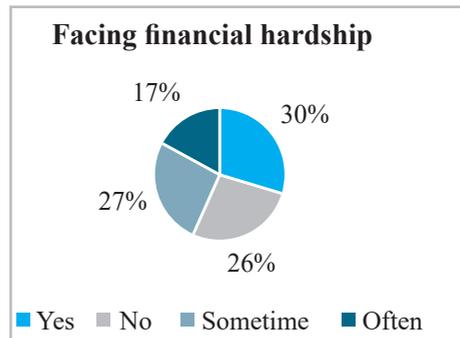


Figure 10

Financial condition of the respondents

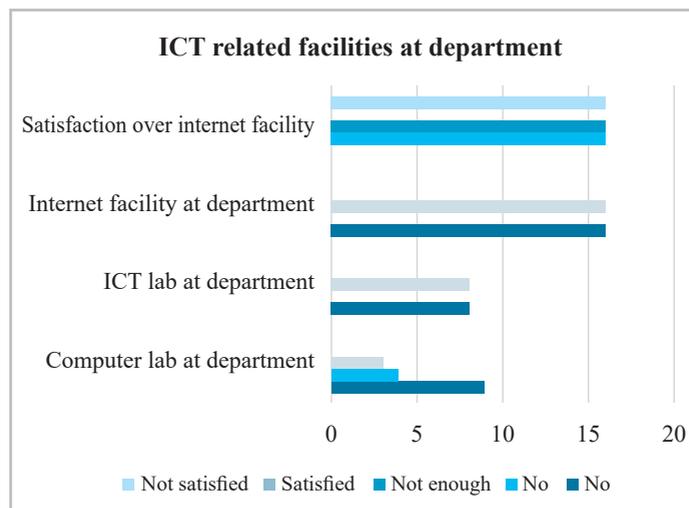


ICT related institutional available facilities

The respondents asked to reveal the ICT related facilities available at their departments in the university. Most of the respondents reveal that they have computer lab, ICT lab, 4iR lab and subject related lab at their departments. All the respondents assert that they have also internet connection at their departments. A few respondents assert that they have lack of such types of facilities especially computer and ICT labs at their departments. Though there are ICT facilities at their departments, they are not satisfied over the facilities they enjoy. The figure-11 shows the level of satisfaction over the ICT related facilities at the departments in the university.

Figure 11

Available ICT related facilities at department and satisfaction over it

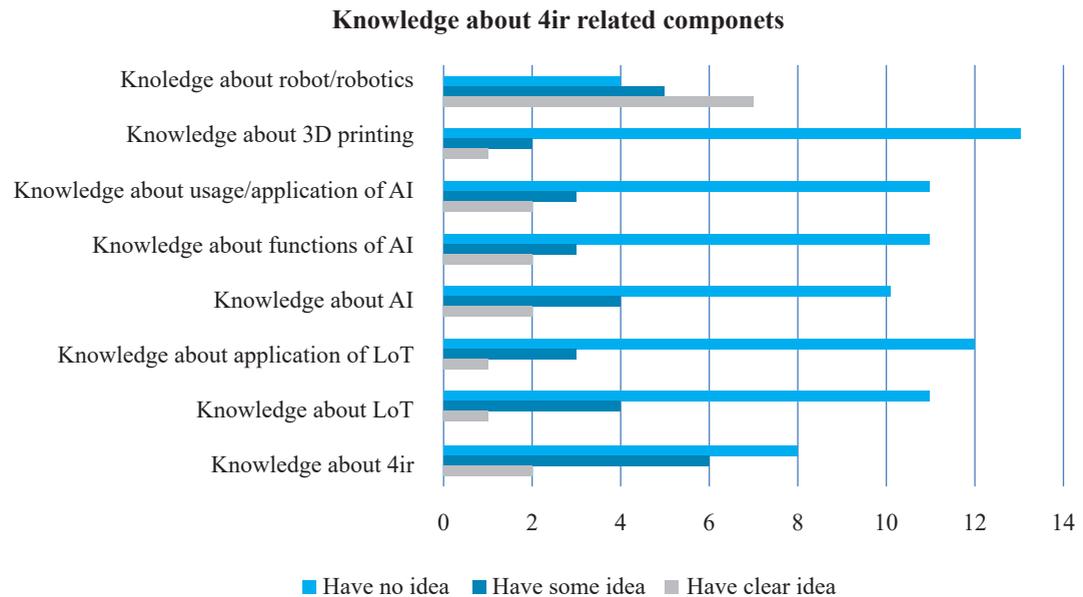


Knowledge about 4iR related major issues

The study tried to explore the perception and knowledge about the 4iR and its related issues among the students in the university. The study reveals that most of the students do not have much idea about the 4iR and its related issues/components. About robotics, the majority of the respondents especially the science background students have idea. It is also popular in the present global phenomenon. But the arts background respondents have some idea and some have said that they have no idea about robotics. They describe it as the matter of science disciplines. On the other hand, about 3D printing, most of the respondents do not have idea about it and its application. The same scenario is appeared regarding AI and IoT. Regarding 4iR knowledge, the study reveals that most of the respondents do not have much idea or knowledge about it. The figure-12 shows it. However, while talking to the students, apart from questionnaire survey, most of the respondents assert that the 4iR issue is comparatively new to them. The science background students are much aware of it than the non-science background students.

Figure 12

4iR related knowledge



Experiences of former students

The former students who were brought under the study shared their almost same experiences during their academic life in the university. What types of difficulties are they facing in the job markets after completion of their academic life? In reply to this query, most of the respondents assert that they were facing a lot challenges in the job markets. Referring to different types of experiences, most of the respondents told that in most cases there was a mismatch between academic study and job markets. They faced various tests or examinations for jobs/employment.

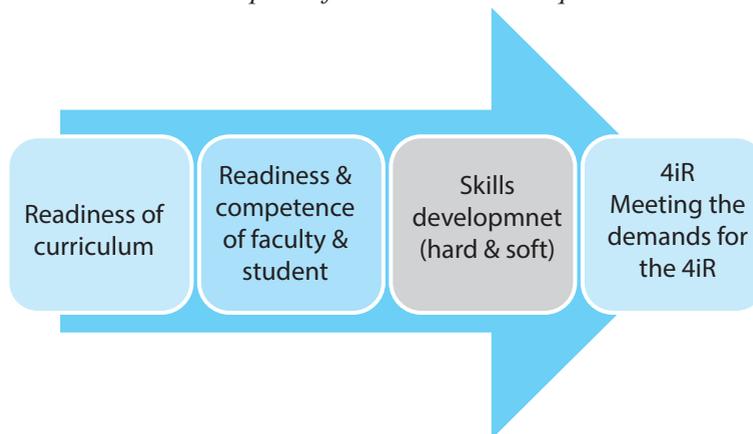
Qualitative Data Presentation

Data from Key Informant Interviews (KII)

The qualitative data were collected through conducting KIIs, in-depth interviews with the monitoring authority representatives, deans, chairmen, curriculum and ICT experts and employers. The key points of the interviews with KIs were checked through direct observations of the selected departments while visiting practically. The qualitative data were categorized into different thematic areas based on the following conceptual framework Figure-13 and discussed it accordingly. The gist of the theme-wise data related to the study is presented below. The figure-14 shows the curriculum approval process in Rajshahi university. Discussion has been presented accordingly.

Figure 13

Conceptual framework: Readiness path of the HEIs to 4iR requirements

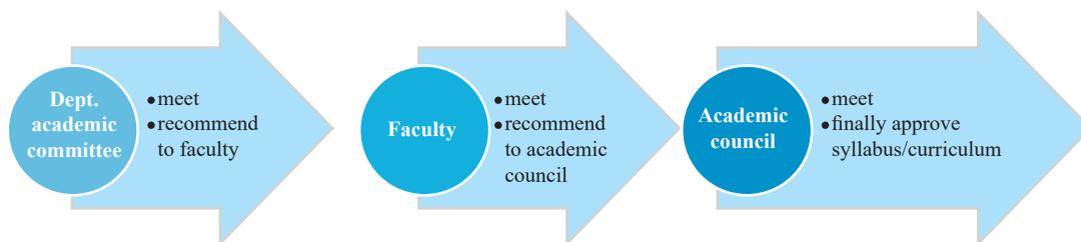


Responsibility of curriculum committee and syllabus approval process

The curriculum committee enjoys the supreme authority to introduce new courses and/or make all kinds of changes in the existing course contents of syllabus at the respective department. But it should be justified why new course (s) or any change is made. The curriculum committee is supposed to meet to finalize the syllabus before the starting of a new academic session. However, the departmental academic committee recommends and sends the 'syllabus' to be offered for undergraduate and post-graduate as well as M.Phil and Ph.D to the Faculty for approval.

Figure 14

Curriculum/syllabus approval process



It may be mentioned here that the Faculty has the right to recommend any change in the proposed syllabus sent by the respective department. But the meeting never does it. The agenda generally are just read out at the meeting. Without knowing the titles of the courses or contents of the courses, all faculty members raise the voice for 'pass' the syllabus as routine

matter and the Faculty Office sends it to higher authority for final approval. Therefore, the proposed syllabus received from the department is sent to the academic council without making any changes. The academic council is the final authority to approve the syllabus (figure-15). It is observed that generally the academic council at its meeting place all the agenda at a time of a respective faculty and requests or calls the respective dean to say 'if there is any special agenda'. Then, the Dean stands up and say 'there is no special agenda and all is routine matters' and if there is special agenda, then say, all is routine agenda but one or two is special which is needed to be discussed at this meeting and also is needed approval of this body. So, syllabus is approved as 'routine matter' at the meeting. This is the supreme body for approval of the syllabus. It has all right to make any recommendations or changes in the syllabus of a department and it can instantly approve it or send back to the department to comply the observations or recommendations made at the academic council meeting. But it is learnt that it has never happened.

Review the readiness of curriculum

In this study, eight departments from five faculties were purposively selected for curriculum (syllabus review) analysis. Curriculum is one of the very import tools for quality education as well as readiness for future requirements. Curriculum analysis (contents of the syllabus) gives us a clear picture about its update and designed for meeting the future needs. A curriculum/syllabus review checklist was developed with the consultation of the expert designated by the NAEM authority. To review the syllabus, faculty members of the respective departments were consulted. After reviewing the curriculum, it was revealed that the curriculum was designed based on their respective subject requirements. It was done very professionally.

However, every discipline has its own some basic areas to be covered for the undergraduate and postgraduate levels. Covering the basic areas of a particular discipline, some special courses are also designed in line with the current global phenomenon. Many of them claim that every year, when they design their curriculum at the beginning of an academic session, they review their course curriculum and if needed, they bring modification, inclusion and exclusion in the existing curriculum and also introduce new course(s) if it is deemed necessary considering the current local and global demand and phenomenon. Moreover, it depends on research/these level. If students are interested and the faculty members are engaged in research in the current issues, then it would be an effective to contribute on specialized areas, they observe. They also describe that the curriculum should always be updated in accordance with the current global phenomenon. They believe that their current curriculum more or less is ready to cope with the challenges of the 4iR in the country. But it is needed competent faculty members and necessary resources such as lab facilities, lab kits, modern equipment, proper environment and so on, they further observe. The major issues of the 4iR are artificial intelligence, robotics, internet of things, machine learning, 3D printing and so on.

On the other hand, in many cases, the tertiary graduates cannot meet the expected level of competency after completion of their graduation degree. It is supported by previous other studies. Some KIs observed that the existing curriculum can meet, in limited cases, the local and regional requirements of the job markets. But it is not enough. The curriculum should be

updated in line with the global phenomenon and it should be offered through proper pedagogical practices. The students must be able to acquire proper knowledge about their specific fields. Learning should be based on theory and practice where applicable, most of the KIs opined.

After presenting above data made by the KIs about curriculum, it is observed that data of the key informants reveal broadly in two dimensions. One is academic and another is business like. The academics see education from the philosophical perspective whereas the employers, another category of KIs, see education as like commodity. Graduates will be treated as competent human resources or like commodity and they will be hired in the job markets. They should be prepared accordingly for the job market, the employers observe.

On the other hand, the academics observe that there is a philosophy of education. All subjects should not be directly job market oriented. So, they observe that education is not a commodity but education through research develops the quality of commodities and brings diversification of commodities. Through research, it brings new invention, discovers new horizon and develops capability for adaptability in the ever changing global phenomenon. Through education, learners will be prepared for an enhanced capacity for complex problem solving, critical thinking, creativity, judgement and decision making, service orientation, negotiation and so on. That means both hard skills and soft skills are transformed into the learners through education, they observe.

Readiness and competence of faculty members

Competent faculty is very important to deliver the course curriculum effectively. Academic background, higher studies, professional development training, engagement in research, participation in conferences, seminars, symposiums, workshops and so on make the faculty competent and up to date with the ever changing global phenomenon. To know about readiness of the faculty members in terms of the 4iR, dean of all the faculties and chairmen of the selected departments were asked about it. The key respondents shared diverse answers. Most of the respondents claimed that except a few, all the faculty members are very competent to cope with the challenges of the 4iR. They need resources such as lab facilities, research environment, modern and sophisticated instruments, more financial grants, collaboration, incentives, recognition, appreciation, professional development training and so on. Some of the deans claimed that there are some very competent faculty members who are renowned in their respective fields in different disciplines. The key respondents observed that if proper resources and environment are provided and ensured, they would perform better.

The key respondents claimed that the faculty members are mentally prepared to face and cope with any challenge appeared due to the 4iR and other reasons. For this, it is needed strategic plans, resources and environment. The government should come forward with the strategic plans with the university authorities. The government should share their plans with the faculty members through various channels. That means a linkage between policy makers (government agencies) and university levels should be established so that the university can contribute to achieving national and international development targets through their research works, the respondents think. It is missing, they observe.

Regarding readiness in terms of the 4iR and quality of teaching-learning activities, the KIs think that quality teaching-learning activities depend on many factors. It needs quality teachers on one side and quality students are also important on the other side. Moreover, the usage of proper pedagogical methods, time-befitting and need-based curriculum, dedication to prepare lesson plans, lab facilities and research environment and its required resources are also very important for quality teaching-learning. These would help to be ready to cope with the challenges of the 4iR.

Readiness and competence of students

Apart from the faculty members, the study also explored the readiness and competence of students in terms of the 4iR phenomenon in the country. For this, the students were assessed from the view of the faculty members. However, almost all the deans, chairmen and faculty members think that despite many limitations, students prepare themselves accordingly as the educational institutions and faculty members want. But at the public universities specially in Bangladesh it is not possible due to various reasons, they observe, adding that most of the students come from rural areas and their socio-economic conditions are not so affluent. Consequently, they face, in many cases, shortage of required educational resources such as laptop, desktop, tab, and other ICT gadgets. The qualitative data are supported by the quantitative data stated above. Apart from socio-economic conditions, one of the deans said that

students should be prepared before entering into the university. Because, many students left a 'particular department' after getting admission due to not having required prior knowledge to continue their study to this discipline and they may fear to fail in the examinations in the university. It might be happened due to 'auto passed' or short syllabus at the HSC level. He further observes that due to lack of competence in the basic subjects, most of the students face difficulty at the university level.

So, it is revealed that there is a lack of competence among the students to be ready to face the challenges of the 4iR.

However, most of the chairmen and faculty members observed that they are at the 'initial stage' in terms of readiness to cope with the challenges of the 4iR. Therefore, it will take time to prepare the country's higher educational system to go for advanced stage to face the challenges of the 4iR and to capitalize the opportunities of the global transformation, most of the respondents observe.

Findings of the study and recommendations

The study reveals several limitations and the strategic gaps in terms of readiness in the era of 4iR in the country. The forthcoming paragraphs are dedicated to present findings obtained from forgoing discussions.

Curriculum development and review

The study reveals that the curriculum has been designed professionally based on respective discipline's requirements. Some of the science and engineering based departments have already covered many issues, covering the 4iR components. But there is still scope to incorporate more issues or contemporary topic or even course (s) at the different departments. The science and engineering based disciplines have more opportunities to do than that of non-science disciplines. However, the non-science disciplines have the opportunity to accommodate the soft skills.

ICT based teaching materials

It is also revealed that there is a huge shortage of ICT gadgets required for teaching-learning activities in the era of the 4iR. The faculty members faced shortage of ICT gadgets in one hand, the students also faced same case on the other hand. It is badly revealed during the Covid-19 at the HEIs in the country.

Resources and facilities

The study explored the educational resources available at the university, departments and residential halls or messes. However, educational resources include: books, journal articles, instructional technology, ICT gadgets, laboratory kits, and so on. On the other hand, facilities include: libraries with e-access, research laboratory, computer lab, internet connection with high speed facility, multimedia classrooms, teachers' accommodation, and so on. The study reveals that books are available at the central library of the university. Except a few departments, most of the departments have available books. But there is a paucity of relevant books at the residential hall libraries. On the other hand, required journal articles are not available at the departmental and hall libraries. But the central library provides virtual opportunities to access soft copies of journal articles to its users. However, there is shortage of resources such as ICT gadgets, laboratory kits and so on.

Although there are multimedia classrooms at the departments, facilities such as laboratories with kits, computer labs, high speed internet connection, teachers' accommodation are not adequate in the university. There is no e-library facility in the university.

Support to students

Support to students refers to providing sound educational environment, availability of educational resources with e-access to library, journals, modern lab facilities, internet with high speed connection, providing ICT gadgets, if possible, safe and secured environment for living with nutritious foods supply. A standard teacher-student ratio is another supporting issue for good mentorship in the university. The study reveals lack of these supports to students in the university.

Quality faculty members

Quality faculty members are very important for quality education and research in the university. It is a universal issue. So, for quality development, training is considered as one of the most important mechanisms. The study reveals there is no provision for professional development training either on pedagogical issues or research in the university. On the other hand, the study also explores that there is some mind set up problems among many faculty members over the teaching-learning practices in the university. The study further reveals the shortcomings in faculty recruitment policies in the university.

Quality students

The study reveals that most of the students studying in public universities in the country have come from rural background. Consequently, they belong mostly to disadvantaged group in terms of readiness to updated world. Therefore, they need grooming to be updated in line with the current changing local and global phenomenon. But the study reveals lack of this grooming practices in the university. Rather, they live under threat in many cases especially the university residential halls.

Policy coherence

It is revealed after literature review that the government has already undertaken some policy strategies in line with the 4iR challenges. In response to the challenges, the government adopted national policy strategies on artificial intelligence, robotis and IoTs (GoB, 2020). Most of the KIs in the university have little information about these national strategies. So, the study reveals that there is a lack of policy coherence between the government agencies and universities in the country.

Recommendations:

After presenting the findings, it can be said that the tertiary level educational system is facing a lot of problems and limitations in the country. With these problems and limitations, it is very difficult to face and cope with the challenges of the 4iR in the country. It is also difficult to capitalize the opportunities benefitted by the 4iR. So, initiatives should be undertaken to solve the problems and overcome the limitations. However, based on the findings, the study puts some policy implications for the betterment in adopting policies and preparing to face and cope with the challenges of the 4iR in the country.

Short-term

Update curriculum

As there is scope to modify course curriculum every year, curriculum should be updated in line with the current global phenomenon. One or two courses or topics related to current demands may be introduced at the departmental level in the university, considering the local and global phenomenon.

Training programme

Professional development training programmes should be organized regularly in the university. Professional development training for the young faculty members should be made compulsory. All faculty members should be brought under the training and information dissemination programmes in phases.

Research cell set up

A central research cell should be set up at the university level where all research works will be archived and displayed in the website. All research works should be coordinated through the research cell. The cell should be entrusted authority to monitor the progress of research works regularly. It would hold events for progress report dissemination regularly with a certain time interval.

Mid-term

Research and lab facilities

ICT facilities, high speed internet connection facilities, lab facilities, research resource facilities, publication facilities, and foreign research lab visit should be planned for the dedicated faculty members in the university. For this, allocation of financial resources should be increased logically.

Conference/seminar organization

Each faculty should be asked to hold international conference every year and the faculty members of the respective faculty should be encouraged to participate with research works/papers. Students should be encouraged to participate in the conferences. Besides, national conference, seminars, symposium, workshops should also be organized regularly under the leadership of each faculty.

Long-term

Training Institute

A national professional development training institute should be set up for the university faculty members and for the personnel engaged in teaching-learning activities in the country as there is no provision for mandatory professional development training for the university faculty members.

Academic-industry collaboration

There is still lack of understanding about academic-industry collaboration in the country. For this, motivational programmes for the industrialists and entrepreneurs should be undertaken to enhance the collaboration. It is observed that the businessmen/industrialists prefer to import goods in many cases rather than producing it locally. They hardly visit the

local universities for exploring their requirements and needs. On the other hand, the university authorities also hardly invite them to visit their research works and share the potentialities of the faculty members and students in the country.

Intervention at the policy level

Develop policy linkage (GO-University)

Strategic policy linkage should be developed between the government agencies and universities in the country. It would facilitate policy information dissemination among the stakeholders in the country. It would also contribute to updating course curriculum in line with the policy strategies and current requirements locally and globally. For example, a 6-member delegates lead by a director (joint secretary) of Bangladesh Hi-Tech Park Authority visited University Innovation Hub of Indian Institute of Technology (IIT) in India and University of Putra, Monash University, Sunway University in Malaysia from 13-17 May 2022. All the expenses in this connection will be borne by Digital Entrepreneurship and Innovation Eco-System Development Project. All the members were bureaucrats involved in ICT division (GoB, 2022). There was no university faculty member in the delegation team. so, it needs Go-university Collaboration and linkage.

Intervention at the institutional level

Safe and secured campus

Campus should be safe and secured for the members of the university (faculty, students, employees). It should be ensured that the campus is safe for the students. The residential halls should be safe and secured for the students. It should be ensured that there will be no feeling of insecurity or threat to life in the halls and on the campus.

Conclusion

The global phenomenon is changing with the advancement of ICT and its usages. It brings both opportunities and challenges. To cope with the challenges of the 4iR, it is high time to take a proper strategic plan, focusing the tertiary level educational system in the country.

Acknowledgement:

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Global Citizenship Education in the secondary school teacher education curriculum of Bangladesh

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Abstract

Global Citizenship Education (GCED) has gained significant attention in the world and in Bangladesh. GCED in the teacher education program and teachers' preparation for GCED are considered essentials for promoting effective GCED in schools. The purpose of this study is to explore how the aspects of GCED are incorporated in the secondary school teacher education curriculum of Bangladesh. A case study approach was used to conduct this study. One year B.Ed. Curriculum of National University was selected as a case to review how the aspects of GCED are reflected in the curriculum. Document analysis was used as a technique of data analysis. Findings indicated that many aspects of Global Citizenship Education (GCED) as well as moral global citizenship have been explored in the secondary school teacher Education (B.Ed.) Curriculum. A cross-curricular approach has been evident, and the curriculum is more dedicated to the aspects of Moral Global Citizenship Education (i.e., human rights, gender equality, non-discrimination, inclusivity). Some of the aspect of curriculum is dedicated to environmental global citizenship, political global citizenship, and neoliberal aspects of GCED. Many right-based and participatory teaching-learning approaches have been incorporated in the curriculum as a general part of it but indication for implication of the pedagogies for GCED has not been provided. Practices of human rights through right-based pedagogies in the B. Ed program as a part of moral GCED was not indicated as well as teachers' preparation for promoting students' voice, participation, and leadership in the schools. Very traditional assessment strategies are also evident in the curriculum which is not aligned with the values of GCED. Based on the findings of this study and in light with the UN's SDGs, National Education Policy of Bangladesh 2010, existing national curriculum, national curriculum framework 2021, existing secondary school teacher education curriculum should be revised. The findings have implications for teacher education and GCED in Bangladesh.

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Keywords: Global citizenship education, secondary school teacher education curriculum of Bangladesh

Introduction, background, and rationale of the study

“Global citizens’ are made, not born” (Chong, 2015, p.239) and Global Citizenship Education (GCED) is widely recognized as critical to people’s learning around the world (An, 2014; United Nations [UN], 2015; UNESCO, 2014; 2015; 2016;2018; UNESCO Institute for Lifelong Learning, 2019; Guo, 2014; Zhao, 2010). Particularly, GCED has come to the forefront as an emerging education agenda while the UN SDGs focus on GC through education (UN, 2015) and UNESCO (2018) itself points out that “UNESCO is leading global efforts on Global Citizenship Education (GCED), which is at the core of Target 4.7 of Sustainable Development Goal 4 on Education” (p.16). Since UNESCO is leading the global implementation of GCED, it offers a plethora of helpful guidance through its various publications. For an example, UNESCO argues that GCED can be promoted through a single subject or a cross curricular approach (UNESCO, 2014; 2016). UNESCO (2016) indicates that GCED should be reflected in the national education policies, curricula, teacher education, and student assessments as a condition of implementation.

Bangladesh is a member of the United Nations and a signatory to several UN conventions and treaties, so the UN and UNESCO’s GCED initiative is relevant to Bangladesh. Though there is no specific policy for GCED in Bangladesh, aspects of GCED (i.e., sense of justice, awareness of human rights, global fraternity) are reflected in the National Education Policy (NEP) (Ministry of Education, 2010), National Curriculum, and textbooks (NCTB, 2012). Even though extensive global literature on GCED, including UNESCO publications, advocates for teacher education to prepare teachers for successful GCED implementation in schools, GCED in the teacher education curriculum appears to be unexplored in Bangladesh. Therefore, the aim of this research is to explore how aspects of GCED have been incorporated in the secondary school teacher education curriculum of Bangladesh.

Extensive global literature and research suggest that teachers’ preparation through teacher education program is essential for implementing GCED through teaching-learning practices in the educational institutions (An, 2014; Appleyard & McLean, 2011; Guo, 2014; Rapoport, 2010). UNESCO (2016) suggests that GCED should be reflected in the teacher education program. In Bangladesh, following the same curriculum of National University of Bangladesh, generally different government and private TTCs provide ‘One Year Bachelor of Education (B.Ed.)’ teacher education program for in-service as well as pre-service teachers. Beside TTCs, different Private Universities and Bangladesh Open University also promote teacher education for secondary school teachers. However, GCED through teacher education is apparently unexplored in Bangladesh. Therefore, it can be argued how aspects of GCED have been incorporated in the secondary school teacher education curriculum of Bangladesh to prepare secondary school teachers to educate their students.

Conceptualisation of GC and GCED

“Global citizenship is a contested concept in scholarly discourse, and there are multiple interpretations of what it means to be a global citizen” (UNESCO, 2014, p.14). UNESCO (2014) also argues that “despite differences in interpretation, there is a common understanding that global citizenship does not imply a legal status. It refers more to a sense of belonging to a broader community and common humanity” (p.14). “Global citizenship can be seen as an ethos or a metaphor rather than a formal membership” (UNESCO, 2016, p.2). Global Citizenship encourage to nurture personal respect and respect for others wherever they live, and it encourages individual to think deeply and critically aiming to an equitable and just society (IDEAS, 2020). Zhao (2007) argues that ensuring a better society and survival of human civilisation requires preparing our students to become global citizens. Zhao (2010) argues that they must understand the nature of global economic integration, realize the interconnectedness and interdependence of peoples, respect and protect cultural diversity, fight for social justice for all, and protect planet earth—home to all human beings.

A ‘global citizen’, according to Heater (2004), is a member of the larger society, and Chong (2015) points out that this membership is significant in that it entails a significant identity and responsibility beyond the nation-state. Oxley and Morris (2013) conceptualise ‘Global Citizenship’ using different terms such as cosmopolitanism, global-mindedness, global consciousness, and world citizenship. Veugelers (2011) divides global citizenship into three categories such as open global citizenship, which acknowledges the interdependence of nation-states in the global era and potential for cultural diversity; global citizenship that is moral, founded on equality, human rights, and a focus on global responsibility; as well as socio-political global citizenship, which aims to change the political power balance in favour of equity and cultural diversity.

According to Veugelers, teachers usually follow the moral paradigm of global citizenship because it is more relaxed, and it does not conflict with notions of national citizenship. Veugelers’ claim is supported by the UNESCO (2018) as it stated that GCED builds on peace and human rights education. This category has also relevancy in Bangladesh context since different aspects of human rights education (i.e. United Nations Universal Declaration of Human Rights; Convention on the Rights of the Child; different issues of human rights) are reported in the national curriculum of Bangladesh (NCTB, 2012) and National Curriculum framework 2021 of Bangladesh (NCTB, 2021)

Like ‘Global Citizenship’, there is multiple interpretation of GCED and there is no single and widely accepted definition of GCED. Different scholars and theorists interpret GCED in different ways focusing on different aspects and perspectives. However, since UNESCO is leading the promotion of GCED globally, it tries to provide definition and scope of GCED considering various scholarly literature. According to UNESCO (2014) GCED is a framing paradigm that encapsulates how education can improve the knowledge, skills, values, and attitudes that learners need to secure a world that is more just, peaceful, compassionate, inclusive, secure, and sustainable. Similarly, UNESCO (2018) states that GCED aspires to inspire students to participate in and take active roles locally, nationally, and internationally,

to confront and address global challenges, and to become constructive contributors to a more just, peaceful, compassionate, equitable, stable, and sustainable society. Creating learning environment for the students to enable them to feel a sense of belonging to the global community and make informed decisions is also emphasised as an important aspect of GCED.

Considering the contested concept of GCED, UNESCO (2015) also provides the following framework of ‘core conceptual dimensions of global citizenship education’:

Cognitive: To gain awareness, comprehension, and critical thinking skills about global, international, national, and local issues, as well as the interconnectedness and interdependence of various countries and populations.

Socio-emotional: To feel a sense of belonging to a shared humanity, to share ideals and obligations, to empathize, to stand together, and to accept differences and diversity.

Behavioural: Acting actively and respectfully for a more prosperous and sustainable environment at the local, national, and global level.

Following the GC and GCED conceptual frameworks, this study looked at how GC and GCED were discussed in the teacher education curriculum for the preparation of secondary schools’ teachers.

Teacher education for Global Citizenship Education

Scholarly global literature and research of GCED clearly mention the necessity of teacher preparation and teacher education for successful implementation of GCED and show evidence in favour of impacts of teacher education and teachers’ preparation (An, 2014; Appleyard & McLean, 2011; Blanks, 2013; Guo, 2014; McLean & Crowe, 2008; Rapoport, 2010; Zhao, 2010). According to Zhao (2010), teachers must have a global perspective, model cultural awareness, model global citizenship, and involve students in educational activities aimed at achieving global citizenship. Teachers should also be able to demonstrate to students how the globe is interconnected and interdependent, as well as why caring for others is beneficial to ourselves and what we can do to ensure a peaceful and healthy world for all human beings (Zhao, 2010). Overall, Zhao (2010) recommends teachers to become globally competent and global citizens to become an effective teacher of GCED, and of course, teacher education programs are essential in this regard, even teacher education programs should expand their scope to prepare new generation of teachers for this globalised world. Many other scholars (i.e. Estelles & Romero, 2019; Logan, 2011; Pryor & Pryor, 2005) make very similar argument in favour of teachers’ preparation for GCED through teacher education programs. For an example, Logan (2011) argues that teacher education program should pay attention to prepare teachers aiming to help their students to grow as global citizens. As UNESCO is leading the implementation of GCED, it also provides guidelines and recommendation for teachers’ preparation and teacher education (UNESCO, 2016).

Following the discussion above, it can be concluded that if we want to create global citizens with desired skills, expertise, attitudes, and perspectives through GCED, we need teachers who have a sense of global citizenship and qualities. A new dimension of teacher

education is needed to train this new generation of teachers. This study looked at how different aspects of GCED have been addressed in the teacher education curriculum to create globally competent teachers.

Methodology

This research was conducted using a qualitative case study approach as a way of investigating and interpreting the significance individuals or groups ascribe to a social or human issue (Creswell, 2009). According to Patton (2002), qualitative research is a naturalistic investigation that entails studying real-world conditions as they unfold naturally. We chose to develop a case study because the nature of this research is to focus on a deep analysis of a particular teacher education program at a particular time (Stake, 1995). As Thomas (2011) suggests, this case study research focused on one subject (GCED through teacher education) and we looked at it in depth rather than attempting to generalize from it. One year B.Ed. Curriculum of National University was selected as a case to review how aspects of GCED are reflected in the curriculum. The curriculum of in-service teacher education program developed by National University (2017) was the main source of data what is purposefully selected.

Findings and discussions

Many aspects of moral global citizenship have been incorporated in the curriculum

Based on the analysis of the objectives of curriculum as well objectives of different courses, learning outcomes, and content of different courses, findings indicated that different aspects of moral global citizenship have been paid space in the B.Ed. curriculum. Finding suggests that the B.Ed. curriculum has encouraged in-service teachers to develop a respectful attitude towards student diversity as a special purpose. The curriculum also includes a goal to develop a positive, tolerant, and professional attitude not only towards the students but also towards the school colleagues. Furthermore, it aims to raise awareness of a conducive learning environment for all, regardless of gender, race, religion, and caste, physical or mental ability, which is related to the moral global ideology of global citizenship education.

Some other aspects of teachers' professional learning mentioned in the B.Ed. curriculum are related to moral global citizenship education. For example, trainee teachers are encouraged to practice ethics professionally and to build a cooperative relationship with their peers through mutual understanding. In addition, the skills needed to enable trainee teachers to develop a caring and sincere environment in schools are also related to moral global citizenship education. Some aspects of GCED are directly explored in the curriculum and some aspects are explored indirectly, for example, textbook of 'Bangladesh and Global Studies' is indicated as source of content for the course 'Teaching Bangladesh and Global Studies'. Therefore, Bangladesh and Global Studies textbooks for grade VI to IX-X were qualitatively reviewed as a part of the B.Ed. curriculum. A summary of major aspects of moral global citizenship explored in the curriculum are:

- Inclusive learning environment
- Professional learning, ethics and values

- Challenges in secondary education
- Gender equity and equality
- Mass poor people in rural and urban area of Bangladesh
- Special Need Children
- Street Children
- Ethnic minorities
- Stopping drop-out
- Strategies for ensuring gender inclusion
- Ethics in safe ICT use
- Inclusive Education (Human Rights as a foundation)
 - concept and situation of inclusive education at national and global level
 - National and International laws of inclusive Education (i.e. Universal Declaration of human Rights, 1948, Convention on the rights of the person with disabilities)
 - Inclusive teaching-learning activities
 - Initiatives in Bangladesh for implementing inclusive education
 - Secondary education: Students and gender (i.e. Gender equality and equity, gender sensitivity)
 - School management and gender
 - Sex and reproductive health rights
 - Women empowerment
 - Research and ethics
 - Teaching Civics and Citizenship
 - Characteristics of ideal citizens
 - Rights and responsibilities of citizens
 - Teaching Bangladesh and Global Studies
 - Concept of child rights, child rights according to the United Nations Convention on the Rights of the Child, situation of child rights in Bangladesh
 - Rights and responsibilities of citizen
 - Concept of women rights, status of women in Bangladeshi society
 - Women rights in Bangladesh and its importance,
 - Concepts of the rights of elder people,
 - Issues of human rights violations concept of dowry causes and effects; concepts of early marriage: causes and effects, law to prevent early marriage; concepts of eve-teasing: causes and effects, ways to keep oneself safe from eve-teasing.
 - United Nations, role and function of UN, Role of UN to establish peace in the world, role of Bangladesh to UN mission for peacekeeping.

Some issues related to social problems and human rights violations: concepts of delinquency, causes, effects, and prevention; drug addiction, causes, effects and prevention

-Role of UN to remove discrimination against women in Bangladesh, role of Bangladesh to UN mission for peacekeeping.

- Religious and Moral Education

Different aspects of different religious for moral development

It is important to point out that though many aspects of moral global citizenship have been incorporated in the teacher education curriculum, how these aspects have connection with GCED has not been explored or explained anywhere. Even, GCED is not mentioned in the curriculum and a lack of connection between aspects and the values of GCED is evident. While a new national curriculum framework indicates creating globally competent citizens (NCTB, 2021), an explanation of how teacher education program can contribute to create globally competent teachers should have been paid attention to shape a global perspective of this curriculum.

Aspects of other versions of GCED

Though aspects of moral global citizenship have been focused, aspects of other global citizenship have been reported in the curriculum. Major approaches are pointed out here.

Environmental Global Citizenship

The course entitled “Teaching Geography and Environment” has placed emphasis on acquiring in-depth knowledge and acquiring teaching-learning skills on the content of the curriculum on geography and environmental education at the secondary level. The content knowledge of the geography is much more related to foster the environmental awareness among the trainees. The mentioned knowledge, skills and practices in Geography course reflects the environmental aspect of Global Citizenship Education.

Political Global Citizenship

The political aspect of global citizenship education is also reflected in creating interest among the trainee teachers to know and understand the social, political, cultural and economic problems of the country through reading and teaching history and enabling them to solve these problems in the national context.

Neoliberal perspective of Global Citizenship Education

The neoliberal approach focuses on the competencies that are needed to enable a person to compete in the global marketplace (Shultz, 2007). The scholars of this approach resonate the importance of the adaptability with the current world (Pais & Costa, 2017). One of the general purposes of the B.Ed. curriculum is to educate the teachers so that they may be able to formulate teaching and learning strategies using information technology and can promote life skill-based education. For example, the course named Information and Communication

Technology in Education (Course # 812207) provides trainees with the facilities to develop the basic skills required to become a 21st century teacher. Emphasis has been placed on developing as a global citizen through acquiring media literacy and social media skills which are competencies needed to acquire for adapting with the global pace and participating in global marketplace. The curriculum also includes the development of communication skills among trainee teachers and enabling them to help the students apply civic knowledge and techniques in earning-oriented, self-employment and practical life which will facilitate them to compete in the global workplace.

Many participatory pedagogies but little connection has been established

Including UNESCO itself, different scholars and researchers mostly stress on action-oriented right-based pedagogical practices for successful implementation of GCED in schools and ensuring students' holistic development (An, 2014; Appleyard & McLean, 2011; Blanks, 2013; Guo, 2014; Rapoport, 2010; Zhao, 2010; UNESCO, 2014; 2016; 2018). GCED pedagogies focus on 21st century learning skills (Trilling & Fadel, 2009), right-based, action oriented and participatory teaching learning approaches in the classrooms and in the schools (Osler & Starkey, 2005; United Nations Human Rights Council, 2011). According to United Nations Human Rights Council (2011) right-based pedagogies have potentials for promoting and developing human rights values which includes learning and teaching in a way that respects the rights of both educators and learners (p.4). It also emphasises empowering persons to enjoy and exercise their rights and to respect and uphold the rights of others (p.4). Findings of the analysis show that many participatory approaches have been commonly reported in the curriculum. Major approaches are group work, school visiting and observations, group discussion, brain storming, mind mapping, group project, peer teaching, workshop, seminar, demonstration, reflective diary, role playing, debate, Working wall, action research etc. (National University, 2017, p.9). However, it is important to note that no indication for the teachers was found how these approaches themselves can promote values of human rights as ways of creating moral global citizens. The only indication is that teachers should use ICT when they use these approaches.

A very little attention for the preparation of teachers to ensure students' voice participation and leadership as a way of empowerment

As discussed in the literature review chapter, the United Nations Declaration on Human Rights Education and Training and other HRE education organisations pay attention to students' voice, participation, and leadership on the way to their empowerment (United Nations Human Rights Council, 2011; Amnesty International, 2012). Gollob, Krapf, Olafsdottir and Weidinger (2010) argue that "young citizens need to learn how to participate in their communities and how to exercise their human rights" (p.10). They also add that students should have given opportunities to "cultivate the habits and values of democracy and human rights in their everyday lives and activities" (p.10). Osler and Starkey (2010) argue that "the degree of exercising rights by children and young people in the wider society significantly depends on the ways they experience schooling, and on the ways, they experience human rights and

democracy in schools” (p. 101). Students’ voice. Participation and leadership can be traced through the idea of student representative bodies in schools as provided by UNICEF (2007) and Holdsworth and Jones (2006). Holdsworth and Jones (2006) go on to say that by forming student representative bodies, students may go beyond the classroom to participate in actual decision-making and action on topics that are important to them and the rest of the community. Furthermore, according to Holdsworth (2013), student representative bodies are most effective when students are involved in authentic and serious issues of interest to the school and larger community, such as investigating concerns, reporting results, and taking action to create improvements. According to UNICEF (2007), student representative bodies in schools can be a strong tool for increasing student participation and improving education, school, and community life. Learning about rights and responsibilities, improving problem-solving skills, fostering a sense of gender equality, and having the ability to foster a sense of team spirit are all proposed learning opportunities with this tool. This approach is considered very relevant in this study since recently the Government of Bangladesh and more particularly the Ministry of Education initiated ‘Student Cabinet’ in the secondary schools in Bangladesh (DSHE, 2015). We investigated how students’ voice, participation, and leadership as well as the activities of ‘student cabinet’ are incorporated in B.Ed. curriculum for teachers’ preparation. Findings indicted that the curriculum offers teachers’ preparation for ensuring non-discrimination and inclusion in the classrooms but how teachers can create scope for the students exercising their rights and protecting rights of others is not indicated or explained. Teachers’ preparation for promoting Students’ voice, participation, and leadership in the school community through student representative body like Student Cabinet is apparently unaddressed in the curriculum.

Literature also suggests that role of education institutional head for examples, principal, vice-principal, and head teacher has critical importance for implementing any new ideas in education like students’ voice, participation, and leadership through student representative bodies (Department of Education and Science, UK, 2002; Osler & Starkey, 2010). “The role of the school Principal is of essential importance in the development and administration of a Student Council,” according to the Department of Education and Science in the United Kingdom (2002). The principal can foster a school culture that encourages students to participate in extracurricular activities and to be recognized for them. We reviewed the curriculum to see how the role of leadership is acknowledged Findings suggest that role of leadership for implanting new ideas of education like ‘Student Cabinet’ has not been paid any attention.

Traditional assessment is more focused rather than diversified assessment strategies

Assessment and evaluation are primarily used to help determine learners’ strengths and areas for progress, adapt curriculum and instructional techniques to learners’ requirements, and analyze the overall success of programmatic and classroom practices (UNESCO, 2015). UNESCO (2015) also argues that it is important to ensure assessing learners’ abilities, values, and attitudes in addition to their knowledge of facts. Considering the alignment of formative and summative assignment with learning objectives and teaching learning practices several assessment strategies are recommended in the global and scholarly literature. Some

recommended strategies are: Assignments; demonstrations, observations, projects, performance task, and tests; assessment of learning; assessment for learning; assessment as learning; self-assessment and peer assessment. Findings of the analysis indicate that traditional assessment procedures have been more focused than diversified assessment strategies. The teacher education curriculum indicates that the assessment includes of two class test, attendance, final exam, and assignment. Comprehensive viva and written exam are also parts of assessment.

Conclusion

In conclusion, it can be argued that though many aspects of Global Citizenship Education (GCED) have been explored in the secondary school teacher education (B.Ed.) curriculum, some important aspects have not been addressed. A cross-curricular approach has been evident, and the curriculum is more dedicated to the aspects of Moral Global Citizenship Education (i.e., human rights, gender equality, non-discrimination, inclusivity). However, issues of human rights (i.e., violation of human right as well as child rights, violence against women, child abuse, and early marriage) are not paid significant attention as well as many aspects of moral global citizenship education have not been paid space. Some of space of curriculum is dedicated to environmental global citizenship, political global citizenship, and neoliberal aspects of GCED. Many right-based and participatory teaching-learning approaches have been incorporated in the curriculum as general parts of it but indication for implication of the pedagogies for GCED has not been provided. Very traditional assessment strategies are also evident in the curriculum which is not aligned with the values of GCED. While our national curriculum framework 2021 paid significant attention on GCED for creating globally competent citizens through education, teachers' preparation is essential in this area. Therefore, a timely teacher education curriculum is strongly recommended where aspects of GCED should be reflected for teachers' preparation.

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Entrepreneurial and Enterprising Aspirations of Students in Higher Education in Bangladesh

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Abstract

In academic studies on entrepreneurship, the question of what motivates an individual entrepreneur to launch a business persists. According to recent research, the institutional framework has a significant impact on individual behavior as well as the enabling of an entrepreneurial atmosphere for new companies. Researchers have identified entrepreneurial orientation as a fundamental course in establishing new enterprises and effective business performance, yet individual-level research on the construct is still lacking. Hence, the objective of this study is to investigate the progression of entrepreneurial and enterprising ambitions among tertiary students in Bangladesh. The study encompassed acquiring data from a sample size of 1150 students currently enrolled in higher education institutions. The results indicate a notable level of enthusiasm for entrepreneurship among students, with a majority believing that entrepreneurship is a skill that can be acquired and enhanced through learning and development. Incorporating entrepreneurship education into the academic curriculum, with a specific emphasis on the identified critical skills and knowledge domains, as well as promoting university resources for entrepreneurship, are fundamental measures in fostering an entrepreneurial mindset among students. Educational and cultural policies are required to propel this new order forward. Policies promoting and raising awareness about the advantages of an entrepreneurial career will bring the necessary socio-cultural and normative transformation. This value-based criterion is crucial to educating young's entrepreneurial mindset and attitude.

keywords: Entrepreneurial motivation in higher education; entrepreneurship education; entrepreneurial orientation; student entrepreneurial aspirations; aspiring entrepreneurs; Bangladesh.

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1. Introduction

Bangladesh apportions a portion equivalent to 2% of its Gross Domestic Product (GDP) towards funding education within its yearly fiscal plan. The cost of higher education funding is increasing at various levels of education. The proliferation of higher education institutions is experiencing a consistent upward trend, accompanied by increasing demand from students seeking higher education. However, the current unemployment rate in Bangladesh stands at over 4% of the total population. One contributing factor to the issue of unemployment is the disparity between the number of individuals seeking employment and the available job opportunities (Syam et al., 2018). Another barrier to resolving the unemployment crisis is the state's higher education institutions' lack of alignment with labor market demands. The importance of higher education institutions in developing professional human capital that meets labor market demands cannot be overstated. Higher education institutions play a crucial role in facilitating the growth of human capital by providing graduates with timely and relevant degrees and training programs that are specifically designed to meet the current demands of the workforce (Tomlinson & Jackson, 2021; Abelha et al., 2020; Tomlinson, 2017). Higher education institutions also play a crucial role in fostering innovation (Shi et al., 2020) and ingenuity through scientific exploration, thereby contributing to developing emerging industries and cultivating entrepreneurs (Etzkowitz & Leydesdorff, 2000). One potential approach to mitigating the nation's unemployment predicament involves cultivating skilled human resources via Technical and Vocational Education and Training (TVET), alongside efforts to entice individuals to pursue training in relevant industries and expand the availability of employment opportunities.

As a significant stakeholder in tertiary education, the state should emphasize the importance of higher education institutions prioritizing nurturing entrepreneurial skills among their students (Bischoff et al., 2018). Additionally, they must encourage graduates to consider self-employment a viable long-term career option. In order to enhance operational efficacy, promote economic efficiency, standardization, and improvements in the quality of life, universities must actively contribute to the progress of government, culture, and industry. This approach addresses national development goals, mitigates graduate unemployment, and reduces frustration among fresh graduates. Universities have been given the added responsibility of actively engaging with the local community, thus expanding their traditional roles of conducting research and providing instruction (Baark, 2016), which promotes the expansion of universities' scope in economic development and a more robust dedication to meeting the needs of their respective communities.

However, there is speculation that entrepreneurship education offered by universities may not effectively transform the mindset of college graduates from seeking careers to becoming creators of employment opportunities (Syam et al., 2018). The pursuit of entrepreneurship is inherently appealing and intellectually stimulating, as individuals are driven by their unique motivations to embark on this path. Similar to other employment and career opportunities, the entrepreneurial aspirations of graduate students are subject to various influencing factors (Subhan et al., 2021). One of the primary obstacles encountered in fostering entrepreneurial and enterprising ambitions among the youth in Bangladesh through tertiary education pertains

to the prevailing inclination among the majority of young individuals to pursue university education to secure positions as government officials or civilian government officers rather than aspire to become entrepreneurs.

1.1. Statement of the Problem

Many contemporary university students actively seek a secure professional trajectory upon completing their academic pursuits, intending to attain a respectable and philanthropic standing (Syam et al., 2018). Many students, including high-achievers and recent graduates, appear to lack entrepreneurial ambitions (Ozaralli & Rivenburgh, 2016). In order to safeguard their future, individuals aspire to collaborate with large corporations or governmental entities. Moreover, the progressive erosion of traditional cultural values pertaining to diligence, the ethical conduct of work, and achievement appear to be constraining the aspirations of graduates in the realm of entrepreneurial pursuits (Mitonga-Monga et al., 2016). Consequently, it is necessary to provide guidance and encouragement to graduates, particularly alumni, not solely in their pursuit of employment but also their potential as entrepreneurs. The present market conditions require an innovative individual capable of effectively adapting to these advancements to navigate the corporate landscape's intricacies. The field of entrepreneurship equips students with the necessary knowledge and skills to thrive in the dynamic and rapidly evolving contemporary society. There are multiple avenues through which students can acquire knowledge and skills in the field of entrepreneurship. Entrepreneurship education encompasses multiple channels, including government, enterprises, schools, and society, to strengthen entrepreneurial awareness and ability (Zhao et al., 2022). The process of education serves as a means through which students are equipped with the necessary skills and knowledge to navigate the complexities, paradoxes, and opportunities that lie ahead in their future lives. This involves advancing students' competencies in using educational applications and digital resources (Falloon, 2020).

The emergence of entrepreneurship is playing a significant role in fostering a culture of innovation, ingenuity, and rivalry within emerging economies such as Bangladesh. Currently, it has emerged as a substantial catalyst for the generation of employment opportunities and the alleviation of poverty (Bruton et al., 2008). Moderate growth in start-up businesses is gradually getting attention among recent business and ICT graduates. However, it is worth noting that entrepreneurship in developed nations continues to be one of the most minor, extensively researched, and significant social and economic phenomena globally (Javalgi et al., 2018). Nevertheless, in light of the prevailing economic challenges faced by the nation, it becomes imperative to foster a labor force that can generate novel employment prospects rather than relying solely on pre-existing ones. Students are integral members of social collectives and possess the requisite skills to meet their fundamental necessities. Entrepreneurship is a multifaceted field that not only contributes to economic development but also plays a crucial role in societal growth and the well-being of families. It encompasses various dimensions such as corporate, societal, and family entrepreneurship, each with unique contributions to personal and societal advancement (Kellermanns & Eddleston, 2006). It provides individuals with valuable knowledge and resources that facilitate their personal and societal growth, as

well as their ability to make meaningful contributions to their families. This research endeavor employed a constructivist approach to investigate the objective assessment of students' perspectives regarding the extent to which they cultivate entrepreneurial and enterprising aspirations during their educational journey.

1.2. Rationale of the Study

The substantial impact of aspiring entrepreneurs on economic development in both developed and emerging nations has resulted in extensive research on strategies to foster youth entrepreneurship. Entrepreneurs acquire financial resources by establishing new enterprises, providing goods and services, and alleviating poverty within their local communities and the broader nation (Aidis & Mickiewicz, 2006; Ogunsade, 2017; Jabeen et al., 2017) have identified entrepreneurial participation, preparation, and schooling as viable strategies for integrating the youth workforce into the labor force to foster economic growth. The nurturing of human qualities essential to entrepreneurship, including but not limited to managerial abilities, creativity, marketing expertise, negotiation skills, leadership, organizational proficiency, self-drive, financial acumen, and a range of interpersonal aptitudes, should be prioritized within the objectives of education (Ncanywa & Dyantyi, 2022).

Bangladesh has implemented measures aimed at fostering entrepreneurial endeavors among graduates. However, an investigation into the factors that hinder the growth of ventures and opportunity-driven start-ups among university graduates in Bangladesh is still lacking. Numerous inquiries have been conducted to examine the correlation and interconnection between organizational and individual entrepreneurial endeavors in establishing new ventures, particularly among young individuals. Consequently, significant gaps exist in the available knowledge about youth entrepreneurship, particularly regarding the mechanisms, rationales, and specific institutional frameworks that influence entrepreneurial activities. Hence, this research aims to address a gap in existing knowledge and expand upon prior studies by investigating the perspectives of individuals in choosing entrepreneurship as a career path and the subsequent development of their enterprises. This study focuses explicitly on university graduates in Bangladesh.

1.3. Scope and Limitations of the Study

The recent expansion and development of entrepreneurship and new business construction curricula and programs have demonstrated notable progress. According to Kuratko (2005), there has been a notable rise in the number of higher education institutions offering entrepreneurship courses. Academic programs with a specific emphasis on entrepreneurship provide students with valuable insights and skills that can assist them in effectively navigating an uncertain and dynamic future. The abilities encompassed in this set include problem-solving, collaboration, empathy, and the capacity to acknowledge failure as a valuable learning opportunity. In the context of Bangladesh, there is a lack of widespread awareness and recognition regarding enterprise and entrepreneurship education. However, a significant potential exists to offer such educational opportunities alongside the expansion of certificate modules and programs spanning from undergraduate to doctoral levels. It is imperative to comprehend the significance

of higher educational institutions in Bangladesh in cultivating entrepreneurial ambition among students. The research is subject to certain constraints due to the quantitative nature of the data; the analysis will not account for the underlying meaning of social phenomena.

2. Methodology

2.1. Sampling

The researchers aimed to investigate students' perspectives regarding cultivating entrepreneurial and enterprising aspirations within the context of tertiary education in Bangladesh. Therefore, they found the sample appropriate to include university students from Bangladesh.

The population of this study includes all the university students enrolled in a program at different universities in Bangladesh. Using a general formula of sample size calculation ($n = Z^2 pq / d^2$), the sample size was 384, and by adding 20% non-respondent error and 2% design effect, the total number of respondents was 920. After collecting the responses, 1,150 were used for this study.

Table 2.1.1

Sample distribution according to universities

| Name of the University | Types | No of Respondents |
|--|---------|-------------------|
| University of Dhaka | Public | 117 |
| University of Chittagong | Public | 201 |
| Jahangirnagar University | Public | 200 |
| Rajshahi University | Public | 194 |
| Noakhali Science and Technology University | Public | 98 |
| Begum Rokeya University | Public | 97 |
| National University | Public | 15 |
| Private Universities (Dhaka) | Private | 79 |
| Private Universities (Chittagong) | Private | 149 |
| Total | | 1150 |

2.2. Methods of Data Collection

The study employed quantitative data collection methods to survey a diverse student population regarding their perceptions of their entrepreneurial orientation. Following the acquisition of primary data, the researchers analyzed various documents, such as the curriculum and reports, to understand better the institutional endeavor to foster entrepreneurial ambition among their students.

2.3. Instruments

A semi-structured questionnaire was conducted to collect primary data from the respondents. A paper-based version of the questionnaire was available for respondents to respond to. The questionnaire was adopted from the previous studies conducted by Jung & Lee (2019), Loboda et al. (2019), and Ogunsade (2017). The first section of the questionnaire (Section A) comprised demographic questions. The second section (Section B) comprised questions regarding experiences and carrier planning. The respondents' perception of entrepreneurship was measured in the third section (Section C) of the questionnaire. The respondents expressed their levels of agreement and disagreement concerning statements, utilizing a symmetrical scale of agreement to disagreement. The fourth section (Section D) includes questions regarding educational experiences, perceptions about including entrepreneurial education in the curriculum, and the respondents' mindset about entrepreneurship.

Table 2.3.1.

Data Collection Tools and Techniques

| Research Objectives | Types of Data | Tools Section (Items) |
|---|---------------|---|
| To explore the existence of entrepreneurial experience among university students; | Quantitative | Students Survey Questionnaire (Section-B) |
| To investigate the perception of university students regarding entrepreneurs; | Quantitative | Students Survey Questionnaire (Section-C) |

2.4. Methods of Data Analysis and Presentation

The objectives of the study were met through various stages of data analysis. The quantitative data were coded, and a statistical program was used to analyze the data. The data were then entered into the statistical program, and SPSS v.25 was used for data analysis.

2.5. Ethical Considerations

In accordance with the ethical standards outlined in the Helsinki Declaration (World Medical Association, 2001) and its subsequent modifications, this research was conducted with rigorous adherence to ethical principles. To ensure participant safety and privacy, the study was designed to obtain informed consent from all participants prior to data collection. Before data collection, field investigators requested that potential respondents complete a consent form to gather information regarding participants' privacy, anonymity, and confidentiality. Those who did not provide their consent were excluded from the study. Furthermore, the field researchers underwent training to ensure they displayed proper decorum towards the participants, demonstrating respect for their opinions, emotions, and narratives, as well as acquiring skills in establishing rapport with them. This approach not only upholds ethical standards but also contributes to the overall quality of the research.

3. Results

The following sections summarize the findings of the numerical data for the investigation. The section presents the results of descriptive statistics to give evidence of the perspective of the respondents' entrepreneurial orientation among Bangladeshi university students.

3.1. Participants

The data collection process involved utilizing the hard copy format of the questionnaire. A total of 1,150 students provided authentic and comprehensive responses. The study commences by clearly stating its objective and delineating the potential applications of the data. The present study exclusively analyzed data from participants who had given informed consent. Table 3.1.1 presents the gender distribution of participants' majors, academic achievements, and educational experiences. Among the 1150 respondents, a significant proportion (87.5%) were above 21 years old. The average age of the respondents was calculated to be 22.42 years, with a standard deviation of 1.78. The study consisted of 1150 participants, with males accounting for 51.5% of the sample and females comprising 48.3%. The majors of the participants encompassed a variety of fields, with the highest representation being in SMTE (28.9%), followed by arts and humanities (30.4%), social science (21.3%), business (11.3%), education (5.0%), and engineering (3.1%).

Table 3.1.1.

Sample Characteristics

| Socio-cultural values | | Percentage |
|-------------------------|--|--------------|
| Age group | ≤20 | 12.5% |
| | ≥21 | 87.5% |
| | Mean Age (SD) | 22.42 (1.78) |
| Gender | Male | 51.5% |
| | Female | 48.3% |
| | Transgender | 0.2% |
| Ownership of University | Government | 78.6% |
| | Private | 21.4% |
| Types of University | General | 87.8% |
| | Science and Technology/ Engineering | 10% |
| | Medical | .3% |
| | Agriculture | .5% |
| | Open | 0% |
| | National | 1.3% |

| Socio-cultural values | | Percentage |
|--|-----------------------------------|-------------------|
| Level of Education | 1 st Year | 9.7% |
| | 2 nd Year | 27.9% |
| | 3 rd Year | 30.3% |
| | 4 th Year | 22.3% |
| | Postgraduation | 9.8% |
| Major | SMTE | 28.9% |
| | Arts and Humanities | 30.4% |
| | Social Science | 21.3% |
| | Business | 11.3% |
| | Education | 5.0% |
| | Engineering | 3.1% |
| Father's profession | Business | 28.6% |
| | Service | 30.9% |
| | Professionals | 12.6% |
| | Retired | 13.5% |
| | Others | 14.4% |
| Mother's Profession | Business | 2.1% |
| | Service | 16.2% |
| | Professionals | 4.6% |
| | Homemaker | 75.5% |
| | Others | 1.6% |
| Existence of entrepreneurial tradition in the family | Yes | 39.5% |
| | No | 60.5% |
| Expenditure bearer | Family | 57.0% |
| | Both family and respondent | 30.0% |
| | Respondent | 13.0% |
| Academic performance (GPA in last academic year) | ≤3.00 | 15.1% |
| | ≤3.50 | 50.1% |
| | >3.51 | 34.8% |
| Internship experience | Yes | 11.8% |
| | No | 88.2% |
| Experiences/Skills | Selling | 24.8% |
| | In charge of other people at work | 17.5% |
| | Keeping business portfolio | 6.9% |
| | Running organization | 23.5% |
| | Trading goods and service | 13.2% |
| | Running a small business of own | 14.2% |

Respondents were asked about their career planning (see Table 3.1.2), and 27.2% reported no clear vision of their future careers. At the same time, they were admitted to their university, while 19.0% are unsure about their career path yet.

Table 3.1.2.

Status of career planning of the respondents

| Status of carrier plan | Percentage |
|--|------------|
| I came to this university without a sound vision of what I wanted to do with my life. | 27.2% |
| I had already decided on a potential career path when I was admitted to this university. | 18.5% |
| This is the university where I choose my future profession. | 16.6% |
| During my studies at this university, I changed my heart regarding my future employment. | 18.6% |
| I haven't decided on a potential career path yet. | 19.0% |
| | |

Table 3.1.3, shows the respondents' responses regarding their probable career path, and according to their responses, 55.1% did not decide on their potential career path. In comparison, 73.4% did not want to setup their own business.

Table 3.1.3

Possible Carrier path of the respondents

| Plan | Response | Percentage |
|--|----------|------------|
| Decided a potential career path | Yes | 44.9% |
| | No | 55.1% |
| Mindset on the kind of organization I would like to work with right after accomplishing my degree at this university | Yes | 21.0% |
| | No | 79.0% |
| Like to set up own business | Yes | 26.6% |
| | No | 73.4% |

3.2. Perception regarding entrepreneurs

Table 3.2.1, reveals that on a scale from 1 (*strongly agree*) to 5 (*strongly disagree*), the majority of students moderately disagreed with the statement “*entrepreneurs are born, not made.*” The statistical mean of their perception of the preceding phrase ($M = 3.44$) showed that this was to be anticipated. However, they believed that entrepreneurs would expect their staff to work harder than employees in other companies. In addition, they thought that entrepreneurs could not have a specific paying position. On the other hand, entrepreneurs were regarded as able to enjoy their work and be in charge of their lives. Entrepreneurs were typically viewed

as deserving “every cent” they earned regarding their incomes. The data reveals that most respondents believe that “entrepreneurs are not born but developed.” They believed a small amount of instruction was insufficient to become an entrepreneur. Respondents generally had a more favorable opinion of entrepreneurs than students and professors. Moreover, respondents reject the notion that entrepreneurs are irresponsible gamblers. The statistical mean of their perception of the preceding statement ($M = 4.0$) showed that this was to be anticipated.

Table 3.2.1.

Perception of Entrepreneurs

| Statements | M ^a | SD ^b | Sk ^c | Ku ^d |
|---|----------------|-----------------|-----------------|-----------------|
| Without training, anyone can be an entrepreneur | 2.92 | 1.265 | .048 | -1.10 |
| Entrepreneurs aren't created; they're born | 3.44 | 1.341 | -.397 | -1.070 |
| Entrepreneurs want workers to perform more than big corporations or government agencies workers | 2.62 | 1.082 | .185 | -.723 |
| Entrepreneurs are unable to work in a traditional salaried role | 2.59 | 1.126 | .425 | -.594 |
| Entrepreneurs really enjoy their work. | 2.06 | 1.021 | 1.009 | .691 |
| Entrepreneurs are deserving of any penny they earn. | 2.32 | 1.031 | .552 | -.328 |
| Entrepreneurs are in charge of their own lives | 2.14 | 1.058 | .892 | .217 |
| Entrepreneurs make a lot of cash. | 3.06 | .990 | -.155 | -.181 |
| Entrepreneurs are just irresponsible gamblers. | 4.00 | 1.179 | -1.125 | .377 |

Note. ^aMean; ^bStandard Deviation; ^cSkewness; and ^dKurtosis.

3.3. Perceptions of teaching entrepreneurship at a university

Students were asked whether they think entrepreneurship/enterprise development education should be a required (or optional) part of their education. More than 97% of the students agreed that entrepreneurship education should be included in their academic programs “see Table-3.3.1”.

Table 3.3.1.

Including entrepreneurial / enterprise development education in the curriculum

| Inclusion pattern | Percent |
|-----------------------------------|---------|
| It should be made compulsory | 34.1% |
| It should be included as optional | 62.8% |
| Should not be included | 3.0% |

After that, students were asked to indicate the skills and knowledge areas they thought should be included in an entrepreneurial education curriculum. In order of priority, the following skills and areas were identified:

Students were asked to rank the significance of the skills and knowledge areas that should be covered in an entrepreneurial education curriculum. The information and talents are displayed in a ranked order.

1. Creativity tools and innovation
2. Developing a business plan
3. Risk assessment and Prospect identification
4. Soft skills (leadership) and individual development
5. Human Resource Management
6. Financial models and venture capital
7. Selling an idea and finding customers
8. Regulatory requirements for starting a new business
9. Intellectual property management
10. Accounting

3.4. Institutional support system for promoting entrepreneurship aspiration

The study also aimed to determine the extent to which entrepreneurially-minded students know about the university’s present networking resources and programs. The responses to the question “Does your university do enough to promote entrepreneurship as a viable career option?” revealed a reasonable level of knowledge (70.3%) of such activities and supports. 60.3% of students must complete an internship as part of their academic requirements (see Table-3.4.1).19.2% had at least one entrepreneurial education experience (e.g., formal classes, co-curricular activities, and competitions out of university).

Table 3.4.1.

Academic Experience for Entrepreneurs

| Statements | Response | Percent |
|---|----------|---------|
| University work to make students aware of business ventures as a potential alternative career | Yes | 29.3% |
| | No | 70.7% |
| An internship is mandatory in the curriculum | Yes | 60.3% |
| | No | 39.7% |
| Educational experience in entrepreneurship | Yes | 19.2% |
| | No | 80.8% |

3.5. Inner inspiration to be an entrepreneur

The desire to succeed and realize one’s potential is the most important or second most important motivation for all pupils polled (50.6%). At the same time, as shown in Table 3.5.1, working hours flexibility is near the bottom of the students’ incentive hierarchy.

Table 3.5.1.*Students' Intrinsic Motivation for Entrepreneurship*

| Variables | Percentage |
|---|------------|
| Be my own boss | 28.5% |
| Independence from employer | 18.2% |
| To obtain wealth | 20.8% |
| Desire to achieve success and realize oneself | 50.6% |
| Passion with own idea and willingness to implement it | 28.3% |
| Identification of a new business opportunity | 19.0% |
| Desire to innovate technologically | 20.8% |
| To contribute to job creation | 29.8% |
| Flexibility of working hours | 18.0% |

4. Discussions

Entrepreneurship and enterprise's role in stimulating economic growth and innovation has gained more attention in recent years. Acknowledging this phenomenon has resulted in an increasing focus on cultivating entrepreneurial and enterprising aspirations among students enrolled in higher education institutions. The roles of entrepreneurship and enterprise in economic development are crucial as they contribute to creating employment opportunities, facilitating innovation, and enhancing economic resilience. In the specific context of Bangladesh, a nation in the development process characterized by a rapidly growing youth demographic, cultivating entrepreneurial and enterprising mindsets assumes heightened significance. By fostering a culture of entrepreneurship among students, we can equip them with the necessary skills and mindset to establish and manage their own enterprises, thereby enabling them to generate employment opportunities and make significant contributions to the nation's overall economic development (Doran et al., 2018; Douglass, 2010). This necessitates a holistic approach encompassing career exposure, cultivating an entrepreneurial mindset, and establishing a supportive environment for entrepreneurial endeavors (Ndou et al., 2018).

The study's results indicate that many students in higher education institutions in Bangladesh do not have a well-defined career plan. The survey revealed that 27.2% of respondents did not have a career plan, and 19.0% were undecided about their career path. These findings suggest that the lack of clarity regarding career goals may stem from various factors, including the range of academic programs available, limited exposure to career options, and indecision. This result aligns with previous research (Ahmed et al., 2011; Siddiky & Akter, 2021). These findings emphasize the need for career counseling and coaching in schools to help students investigate and align their professional goals. Previous studies also emphasize the need for career counseling and coaching to help students investigate and align their professional goals. This resonates with students' need to cultivate entrepreneurial and

enterprising aspirations (Douglass, 2010; Hasan et al., 2017). The findings show that most students moderately disagreed that “entrepreneurs are born, not made.” This is supported by the observation that most college students have entrepreneurial intentions, with many expressing a preference for starting their own businesses after gaining work experience (Geng et al., 2021).

The study also reveals a significant proportion of students (97%) advocating for the inclusion of entrepreneurial education in their academic programs. This result is consistent with previous research (Hasan et al., 2017). This underscores a keen enthusiasm for acquiring knowledge about entrepreneurship and its real-world relevance in today’s dynamic professional landscape. Importantly, even students who do not consider themselves entrepreneurial acknowledge the importance of entrepreneurial education in fostering an entrepreneurial mindset. The eagerness of students to learn about entrepreneurship and the value of entrepreneurship education aligns with the findings that investment in secondary and postsecondary education significantly impacts general economic growth (Douglass, 2010). Most of the respondents of this study feel that education, training, and experience may create entrepreneurial talents and attributes. This shows a growth mentality and a willingness to study entrepreneurship. Research has shown that entrepreneurship education positively influences students’ attitudes and perceptions of entrepreneurship, contributing to the increased desirability of entrepreneurship among students (Yordanova & Jose, 2018). Hasan et al. (2017) also found that students prefer entrepreneurship education abilities and expertise, which aligns with the need for higher education to prioritize incorporating project-based learning, critical thinking, and exploring real-world challenges. These principles can help institutions create student-focused entrepreneurship programs. Financial management, marketing, and business planning should combine soft skills like communication, leadership, and problem-solving. The findings indicate that a significant percentage (70.3%) of students know about the university’s networking resources and programs to foster entrepreneurship as a feasible career choice. This implies that universities have proactively fostered awareness and facilitated support for entrepreneurship within their student population. Nevertheless, there remains potential for enhancing awareness, as approximately 30% of students may possess incomplete knowledge regarding these opportunities.

Pursuing entrepreneurship requires business acumen and an entrepreneurial mindset, encompassing innovation, adaptability, risk-taking, and problem-solving attributes. Given the increasing demands on higher education to prepare students for a rapidly changing global landscape, institutions of higher learning must prioritize integrating project-based learning, critical thinking, and real-world challenge exploration into their curricula. This approach will better equip students to address complex, interdisciplinary problems and develop the skills to succeed in an evolving job market. Cultivating an entrepreneurial mindset among students can be facilitated by promoting independent thinking, a willingness to take calculated risks, and the ability to derive valuable lessons from instances of failure (Hikmah et al., 2020; Jing et al., 2016). While cultivating entrepreneurial and enterprising aspirations is essential, numerous impediments hinder their realization, including cultural, financial, and infrastructure factors (Liñán et al., 2011). The emphasis on collaboration among policymakers, academia, and industry stakeholders to promote an environment conducive to entrepreneurial endeavors aligns

with the discussion of the relationship between higher education and technological innovation (Douglass, 2010). Promoting social entrepreneurship (Yang & Li, 2019), gender engagement, and entrepreneurship awareness (Du et al., 2020) is imperative.

5. Limitations and suggestions for future studies

Future research in the field of Business Studies may benefit from directing attention toward two key areas, as inferred from the findings and limitations of the present study. To begin with, a longitudinal research design would facilitate an investigation into the impact of the institutional environment on the entrepreneurial orientation and business establishment endeavors of young individuals in Bangladesh. Furthermore, examining the education policy about entrepreneurship in higher education institutions would assess the efficacy of the curriculum, instructional methods, and collaborations with industry in equipping students with the necessary skills to navigate forthcoming workplace obstacles and foster the growth of entrepreneurial ventures. Comprehending these factors is of utmost importance in tackling unemployment and fostering an entrepreneurial culture among the youth in Bangladesh.

6. Recommendations

The government and higher educational institutions should invest in effective strategies to improve entrepreneurial capacity and involvement among Bangladeshi university students. One approach to address this issue involves prioritizing identifying and mitigating institutional factors that hinder the entrepreneurial endeavors of educated young individuals. Through cultivating entrepreneurial competencies, formal education, and mentorship programs, it is possible to establish individual entrepreneurship as a recognized and accepted vocation. The researcher posits that utilizing student entrepreneurship and creativity can contribute to wealth creation and development by implementing interventions suitable for the given context. Furthermore, adopting policy interventions incorporates a combination of strategies to address institutional barriers that impede the entrepreneurial engagement of students in higher education institutions. Integrating entrepreneurial education within the national curriculum and cocurricular activities at universities and colleges of higher education in Bangladesh is imperative. Regular monitoring of this plan is of utmost importance, explicitly focusing on implementing entrepreneurial education and support systems. It is imperative to diligently monitor and evaluate these systems to foster the adoption of optimal practices.

7. Conclusion

The study outcomes demonstrated differences in enterprise culture and individual entrepreneurial attitudes among university students in Bangladesh. This study contributes to the significant issue of unemployment among university students in Bangladesh. Furthermore, a comprehensive analysis of this issue has resulted in the study's finding that the inclination toward initiating new business ventures is not an isolated phenomenon. However, it is somewhat shaped by social institutions and interactions that play a pivotal role in facilitating entrepreneurial activities and the growth of ventures. When considered alongside the identified institutional dynamics, this study's results present numerous avenues for future research in individual entrepreneurial orientation.

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9. Conflict of interest

The authors declare no conflict of interest.

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Technical and Vocational Education and Training and its Relevance in Bangladesh for Youth Employability and Sustainable Career Planning

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Abstract

There is a massive lack of jobs in Bangladesh's employment market, but there is a more considerable lack of trained employees. Technical and vocational education and training (TVET) was expected to be the pioneer in generating capable human resources. However, it is seen that TVET institutions could not achieve the expected outcomes. To address the issues related to TVET in Bangladesh; this research explores the impediments to the youth and sustained employment of Bangladeshi TVET graduates. Data in this study were gathered using a mixed-methods strategy via survey and interviews. Data were primarily collected from the Dhaka and Rajshahi divisions, to fully grasp the situation and the enrollment rate of TVET students in various regions of the country. From the findings, it can be seen that, due to a mismatch between expected skills and actual abilities, as well as limited support for the sector from the government, TVET institutions in Bangladesh have been unable to meet the expectations of students. Moreover, it is demonstrated that the inadequate implementation of regulatory frameworks is one of the primary causes for the dearth of qualified trainers in TVET. The majority of TVETs have a lower level of practical lessons, according to triangulated data. The findings also indicate that most students lack confidence in their abilities to pursue a sustainable career. The study concludes by providing insights for improving the effectiveness of vocational and technical education in Bangladesh.

Keywords: TVET, skills development, youth employability, Bangladesh.

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Introduction

Technical and Vocational Education and Training (TVET) is essential and crucially relevant for the socioeconomic development of Bangladesh in order to boost production integrated to the economy. There are many opportunities in the working sectors; however, skilled hands must be needed to join there with proper guidance. TVET acts to produce trained human power from unemployed and socio-economically dependent citizens (Nugraha et al., 2020). Since Bangladesh enjoys a rapidly growing economy in the South Asia region, hence it will require a professional and robust labor force to ensure this growth. Bangladesh is possessa massive population of more than 160 million people, primarily consisting of youth and proactive, which can be benefical for the economy. It is visible that the country has a vast potential to produce a substantial and skilled workforce (Ismail & Mohammed, 2015). As the job market is highly competitive and many young citizens cannot obtain traditional university education due to poverty and other socio-economic issues, TVET can be a perfect choice for those students. Bangladesh is moving towards massive industrialization (Alam et al., 2022a). Many foreign companies choose this country as their future destination for production and manufacturing node and hub, where TVET graduates can play a vital role (Ullah et al., 2018). Through TVET, this country can turn its massive population into its most valuable human resource. Bangladesh can adequately utilize this considerable number of human resources through technical and vocational training; no wonder this country will soon become a leading economy in Asia (Roy, 2020). During the pandemic, the industry kept the economy alive and prevented the economy's collapse (Shammi et al., 2020). Industries are significant for a developing nation like Bangladesh. The country needs to expand its industries, which need skilled workers (Paryono, 2017; Alam et al., 2022b). Vocational education can supply this labor force. Remittance is also an essential part of the economy. Bangladesh can produce skilled workers, who can immigrate else where, and contribute to remittance return (Alam, 2008). There is a high supply of university graduates, and their job fields are saturated and not expanding. However, Bangladesh is working to develop industries more, so vocational institutes should work on training their students in skill-based learning to join the workforce in these industries and contribute to the country's overall development (Nuri, 2012).

Hence, this study focuses on the relevance of TVET in Bangladesh for youth employability and sustainable career planning by conducting an in-depth study on skilled human resources building, socio-economic impact, and sustainable development.

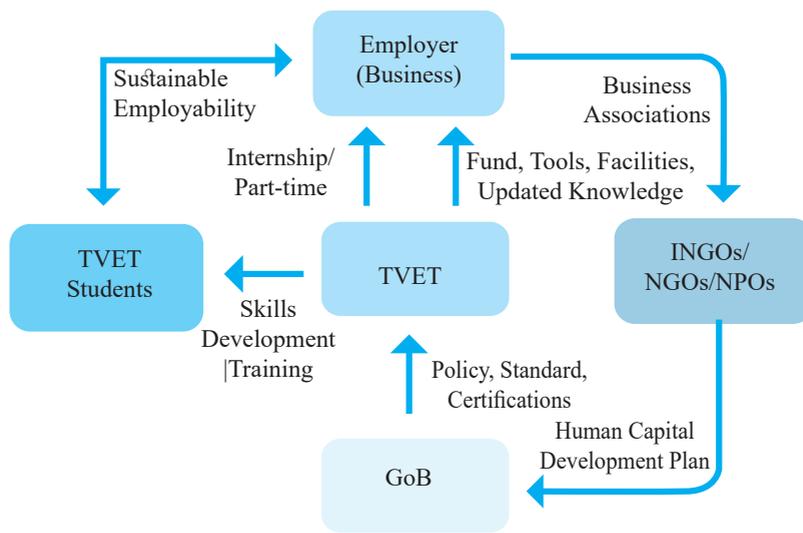
Background of the Research

In Bangladesh, skill development is not a very well-coordinated and lacks a planned process. The academics who develop curricula for TVET institutions have little or no awareness of industry requirements or local needs. Implementing market-responsive TVET is still a work in progress in Bangladesh and a fresh experience in developing economies or those transitioning away from a centralized, controlled, command and dominated past. In most developing nations, academics and industry function in separate worlds and seldom interact. Technical schools should have good relations with the world of work to elicit industry assistance to improve practical training via equipment and equipment grants, internships or

part-time, and the placement of teachers and students on professional experience attachment. The National Skills Development Policy (NSDP) 2011 was formed to coordinate efforts and resources. A Sector-Wide Approach (SWAp) was required to combine operations and investments in Bangladesh’s skills and TVET sectors. The Government of Bangladesh (GoB), the European Union (EU), the International Labour Organization (ILO) sponsored it in 2018. The Technical and Madrasah Education Division (TMED) Secretary established TVET SWAp, which was finally sanctioned by the ILO and headed by the EU (Khan, 2019). TVET SWAp hasn’t made enough progress despite Asian Development Bank (ADB) and World Bank (WB) investments in the sector.

Figure 1

Different Stakeholders’ Collaboration in TVET



Note. The abbreviation of the acronyms in the graph are as followed: NGOs stands for Non-Governmental Organizations; INGOs stands for International Non-Governmental Organizations; and NPOs stands for Non-profit Organizations

In Bangladesh, the official TVET education framework, options for creating structural credentials, and instructional strategy are pretty well. Due to several industry efforts in Bangladesh, several TVET programs effectively foster skill development. Figure 1 depicts the coordination between numerous stakeholders and the TVET education system in Bangladesh. Over a million individuals, usually youth, join the labor market, with barely half a million receiving training. According to World Bank (2021) development report, many working-aged people remain jobless, underemployed, or working in the informal economy. Labor market-oriented training has the potential to transform these individuals into human capital and fulfill industry needs, as well as achieve Sustainable Development Goals (SDGs). Economic structure has shifted significantly from traditional agronomy and export-oriented business and service industries. This shift has resulted in a demand for qualified personnel, especially in export-oriented industrial businesses. Around 63% of the country’s entire population is aged

between 15 and 49, while 37% of the labor force is aged between 15 and 29 (Islam, 2014). This youthful population is sometimes called the country's 'demographic dividend.' Bangladesh must capitalize on its youth force via skills development before this demographic dividend vanishes in a decade (Islam, 2019). GoBhas implemented a strategy of foreign job promotion in response to the country's massive unemployment and underemployment. Furthermore, 14% migrant workers are just low-skilled and about 52% are semi-skilled (Hoque, 2016). New fields must be created to contribute while also benefiting from extracting the most advantage from these people. TVET may have been one of the mediums, but it still needs time to develop in Bangladesh due to the many issues surrounding this sector.

Rationale of the Research

This study aimed to identify the factors for TVET failing to reduce the youth unemployment rate in the country. There are few trained workers in the labor market due to public misunderstanding about the industry and budgetary constraints on TVET's ability to expand its activities. Several career opportunities are accessible in TVET, but adequately qualified individuals are in short supply. This research illuminated how the TVET sector might address the issues to contribute to accomplishing the SDGs by assuring the sustainability of youth employment; which would eventually complement the SDG 1, 5, 8, and 9. Additionally, this research contributed to the current body of knowledge regarding the TVET sector, particularly with public perceptions of technical and vocational institutes. The research offered insight into existing trends and difficulties hindering the growth of the TVET sector and how policymakers could address them. As the research area required a larger-scale study, this study was conducted with the response of students, teachers, policymakers, and stakeholders of different categories related to TVET and Technical Training Centers (TTCs) of Bangladesh. Hence, this study was limited to the government TVET institutions only due to budgetary and time constraints.

Objectives of the Research

The study was conducted with the specific objective:

1. To analyze the TVET system to identify why it is unable to develop qualified human resources.

Research Questions

To address the mentioned research objective, the following research question was generated considering the examined literature and research gaps:

1. What are the causes behind the failure of TVET to address the skill gaps and future employability?

Limitations of the Study

The study has been conducted in a very short period of time and faced time constraint. This was due to every short timeline allowed for the completion of the study. In the interim,

the COVID-19 pandemic scenario hampered ordinary operations in the nation and caused significant difficulties in data collection. Consequently, the pandemic condition emerged as one of the most significant impediments to study, as data collection during the COVID-19 pandemic was very difficult.

Methodology

To obtain a better insight, this study employed a mixed-method approach to acquire a clear perception and comprehensive insight of the TVET skills development program's importance, experience, and needs of TVET graduates for future employment. The ultimate purpose of this strategy was to add significance to existing knowledge by expanding and strengthening the study's findings by integrating qualitative and quantitative research elements. This study followed the triangulation design of a mixed-method approach. The qualitative data as well as the quantitative data in this methodology is obtained and evaluated within the same phenomenon independently. During interpretation, the divergent findings are then brought into alignment; it is done by comparing and contrasting the various outcomes. 'snowball sampling' was the method of contact utilized for this study. In this method, existing responders attract additional volunteers through their respective networks (Fraser et al., 2019).

Sampling

This exploratory study used inductive reasoning to weave new information into ideas. The sample size consisted of a deliberate random sample selected to comprehend demand and supply-side issues. Regarding TVET student enrollment, the researchers considered Dhaka the most significant and Rajshahi division the country's average. Considering the field research, the researchers selected ten of the country's seventy TTCs.

This study followed a mixed-method, and the total sample size was 223. The sampling framework outlined as follows:

- a. Qualitative sample size was 23;
- b. Quantitative sample size was 200.

This study examined primary as well as secondary data sources to better comprehend TVET within Bangladesh for employment prospects. This study used the survey research technique as well as interviews, which includes key informant interview (KII) and focus group discussion (FGD), with semi-structured and structured questionnaires to collect primary qualitative data from participants. This assisted in better understanding the stakeholders's perspectives and objectives of TVET institutions. SPSS and NVivo were used to analyze the data obtained from these surveys.

Additionally, the demand-side intervention was critical for understanding the future employment gap for SDGs. The research data was obtained from two locations, Dhaka and Rajshahi. Dhaka had the highest proportion of TVET students; while Rajshahi had an average number of students enrolled in TVET institutions.

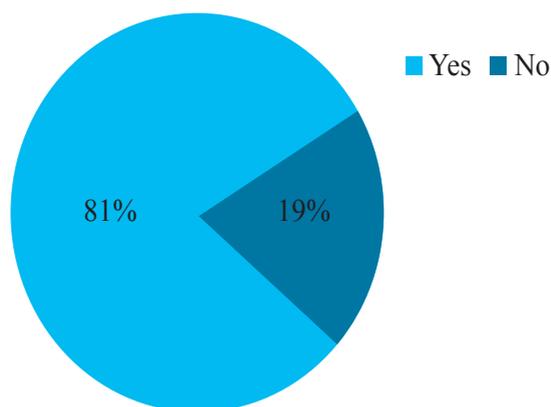
Findings

Mismatch Between Expected and Actual Skill Levels

The degree of skills that TVET colleges provide and supply and the stakeholders' expectations do not align. The data analysis results from questionnaires, interviews, and KIIs indicated a significant mismatch between the expectations of employers and the skill sets of TVET graduates. A respondent showed concern by mentioning, *'the skills taught in TVET can quickly be gained by working in any factory for one or two weeks. So, what is the point of getting admitted into an institution, for example, learning how to do welding?'* The respondent added, *'so TVET is not up-to-date when introducing new skills. They should focus more on the new trends and develop new courses. That is how both the supply and demand sides are sure of getting a mutual benefit'* (KII 4).

Figure 2

Stakeholders' response to the Mismatch between Current and Required Skills



Over eighty percent of respondents, as depicted in Figure 2, believe the skills acquired by graduates of TVET institutions were inconsistent with said prevailing industry skill demands for sustainability in the work spaces. Respondent from the demand side strongly expressed, *'the companies want more competent and confident workers from TVET graduates. Our company hired more confident graduates with hard skills and various soft skills that complement their working style and add value to the company'* (KII 3). Many policymakers and educators concur that there are significant skill gaps at the intermediate profession level. Another respondent mentioned, *'we have always known that our labor market has a gap between the skills people need and people's skills. Many jobs usually require very high skill levels, but we do not have enough people who can do simple and intermediate things'* (KII 2). These perspectives need to be changed by upgrading the skills of the employees who seek jobs as technicians or other relevant jobs connected to TVET.

Effect of COVID on the Teaching-Learning Process

It was asked the respondents if COVID harmed their study and their future concern. From Table 1, it is seen that 75% of the respondents answered that COVID indeed had a devastating effect on their education, whereas 18% think that the pandemic affected somewhat on their study. Only 7% of the participants answered that the pandemic had not affected their study. Looking at the results and the situation back in the pandemic, it can be seen that the outbreak and lockdown of COVID-19 impacted several students.

Table 1

Effect of COVID on Respondents' Study

| Criteria | Frequency | Percentage |
|-------------------|-----------|------------|
| Affected a lot | 150 | 75.0 |
| Somewhat affected | 14 | 7.0 |
| Did not affect | 36 | 18.0 |
| Total | 200 | 100.0 |

One of the participants shared his experience during the lockdown, *'the main target of getting into TVET for me was to support my family as early as possible. Nevertheless, this pandemic has taken away about two years of my life. Though it was said that online classes would be initiated, it did not see much success as most of my friends do not even have the device or internet facilities to attend the class.'* The participant continued, *'the most difficult issue was learning the practical skills. How can we learn about the machines' functions if we do not get to see one in front of us?'* (P022). For these issues, the period of pandemics could be counted as a total loss for the TVET students.

Students' Perspective on the Absence of Appropriate Employability Skills

The case processing summary of the survey was done in response to the questions 'is the present level of skills sufficient for the employment of students?' and 'what are the likelihoods of employability with the existing skill sets?' From Table 2, it can be seen that, 13.5% of respondents say it is unlikely they will find employment with their abilities. 24% are also somewhat unfavorable of their skill sets. The most significant proportion of respondents, 38.5%, believe they have little interest in obtaining employment based on their qualifications. Based on their soft, hard, and technological skills, 9.5% of respondents, the lowest percentage, believe they have strong employability possibilities. While evaluating their degree of hard skills, 60.5% of respondents believe they need to be more advanced in hard skills, while just 9.5% believe they possess abilities that would guarantee employment. Regarding soft skills, 61 percent of respondents believe they need further improvement to obtain a job, while 25.5% believe they possess sufficient soft skills. 61% of respondents need to enhance their technical abilities to qualify for the job market, while 20% believe they possess sufficient technical skills to get employed.

Table 2*Case Processing Summary of Evaluation of Personal Skills*

| Question | Response | N | Marginal Percentage |
|---|---------------------------------------|------------|----------------------------|
| Employability Chances Based on Your Existing Skills: [Chances of Employability] | Highly Unlikely | 27 | 13.5% |
| | Unlikely | 48 | 24.0% |
| | Neutral | 77 | 38.5% |
| | Likely | 29 | 14.5% |
| | Highly Likely | 19 | 9.5% |
| Evaluate Your Current Technical Skills for Future Employability | Enough for Employment | 17 | 8.5% |
| | Needs More Development for Employment | 120 | 60.0% |
| | Not Enough for Employment | 63 | 31.5% |
| Evaluate Your Current Hard Skills for Future Employability | Enough for Employment | 51 | 25.5% |
| | Needs More Development for Employment | 122 | 61.0% |
| | Not Enough for Employment | 27 | 13.5% |
| Evaluate Your Current Soft Skills for Future Employability | Enough for Employment | 40 | 20.0% |
| | Needs More Development for Employment | 122 | 61.0% |
| | Not Enough for Employment | 38 | 19.0% |
| <i>Total</i> | | <i>200</i> | |

While responding to these questions, several participants responded that their perspective is predominantly negative or moderate. Following are some samples of their reflections:

P01: *'I believe our work opportunities are limited compared to other university grads. Because we lack sufficient resources to develop our English proficiency, practical and other relevant abilities are crucial to my comprehension.'*

P02: *'We are not receiving enough current technological information. In addition, if I wanted to enhance my abilities on my own, it would be impossible because my family cannot afford to buy me a computer.'*

P03: *'University students have the opportunity to acquire soft skills, such as teamwork and effective communication. However, our university solely provides us with course-related*

instruction. I believe this to be a significant shortcoming of technical institutes.'

The findings represent the state that the students are in regarding their future.

Inadequate Policy Implementation

One responder stated that according to Bangladesh's constitution, '*the government is accountable for developing the nation's human capital regardless of gender and assisting with employment based on the talents of each citizen*' (P06). TVET industry, as per the NSDP, is diversified, with varying quality requirements. It advocates the establishment of the NTVQF, which abbreviates to National Technical and Vocational Qualifications Framework, to regulate credential levels. In addition, it encourages certifications to be based on competency profiles developed in conjunction with the industry. It also suggests a method for ensuring the quality of competencies in the nation. Following the approval of the NSDP, a comprehensive action plan is to put the vision into action that has been agreed upon. In connecting TVET graduates and institutes to industries within Bangladesh, the research has been able to identify 2 different policy criteria.

Initially, several joint efforts on both sides will need to establish a collaborative partnership between industries and TVET organizations. Categorizing industry skill demands, developing education systems and training courses to respond to market demands, emphasizing professional internships, arranging seminars and workshops, and conducting research in this field, production processes, and instructional materials.

Secondly, a supporting public policy that promotes industrial collaboration with curriculum and training keeps educators and learners updated on market demands and technological developments. Consequently, it carries out the public-private-partnerships (PPP) together with the National Skills Database (NSD), and the NSDP. It also helps develop a dual structure with a stronger emphasis on professional learning or OJT.

The Gender Gap in the TVET Sector

Bangladesh's Sixth Five Year Perspective Plan outlines its seven categories of attainable goals, one of which is the gender equality and empowerment. Within Bangladesh, 49.4 percent of the population is female, and only 27.6 percent of vocational students are female, according to a study published by the UNESCO-UNEVOC International Centre in 2021. This is a low proportion of female involvement in a country with a female majority. The sector of TVET lacks contemporary information on the proportion of women who select TVET as a career route. In addition, few institutions offer women disciplines that they would find fascinating since gender-based stereotypes remain a social reality in Bangladesh, particularly in rural regions. Therefore, practical skills like sewing, tailoring, housekeeping, computer training, and electrical repairs attract more women to vocational training institutions, especially those provided by government agencies. On the other hand, males dominate more valuable market skills such as auto repair, welding, and equipment operation.

Table 3*Male-Female Participation Percentage in Survey*

| Frequency | Percent | Valid Percent | Cumulative Percent |
|--------------|------------|---------------|--------------------|
| Female | 30 | 15.0 | 15 |
| Male | 170 | 85.0 | 85 |
| Total | 200 | 100.0 | 100 |

Table 3 depicts the male and female participant percentage in the survey. It shows the gender disparity among TVET graduates and also indicated that the courses offered in TVET are not women-friendly. Only a few courses have women involvement such as cooking and culinary. Even though the private stakeholders provide vocational training for the female population, the scopes and facilities are scarce. Also, families and the society of Bangladesh frown upon females getting vocational education. As a result, the females stay illiterate instead of learning different skills and being a human capital for the country. Also, unequal pay is another issue for women to be disinterested in TVET.

Discussion

Ineffective Curriculum

As the study by Hemstock et al. (2017) opined, even though the stakeholders are trying their best to provide quality education in TVET, the curriculum is still not meeting the international standard. As a result, not many students feel interested in vocational education. According to the Bangladesh Economic Review of 2021, the enrolment rate in technical education was 17.14% in 2020. TVET has a large field to offer and cover, and it is assumed that courses will not have a restricted textbook. Rather than that, the curriculum should be developed following international standards, one of the most critical measures regarding TVET. Additionally, the survey demonstrates that the students' satisfaction level is lower than they would anticipate for employment and sustainable growth, and institutional or curricular improvement alone will not ensure high-quality education or long-term career growth (Khirotdin et al., 2019). Establishing institutional ties between programs and graduates' future application and employability is critical in creating a sustainable career development plan Parvin and Alam, 2016.

Improving Skills Development Program

From the data obtained from the survey, it can be seen that the students expressed their dissatisfaction and uncertainty about their skill attributes, which includes both soft and hard skills as well as technical skills, for landing a sustainable career. The issue should be addressed by implementing new and realistic initiatives for skill development. As the institution primarily responsible for generating skilled human resources, TVET should take the initiative in this regard. Alhasan and Tyabo (2013) have argued that introducing fresh and timely talents is as important as anything else for a country's growth. To stay up with the rest of the world, the government should also implement new initiatives for skill development.

Insufficient Quality Assessment and Training of Trainers

The NTVQF framework did not wholly accomplish the task and could not generate the desired output. Additionally, the National Skills Quality Assurance System (NSQAS) does not appear to function as designed to evaluate programs (National Skills Development Council Secretariat et al., 2015). There is a dearth of recommendations for applying the NTVQF framework in the country, which might significantly improve the effectiveness of the TVET sector. So, it is essential to implement these quality frameworks to ensure the proper development and flourishing of technical and vocational institutions (Hossain & Tisdell, 2005). In contrast, training of trainers (ToT) is an additional policy that can dramatically boost the outcomes of TVET graduates and relevant sectors' productivity. Similar findings are suggested by Karim (2017) as the study suggested that the skills development by ToT should provide continued professional development to the trainees to help, cultivate, and maintain their best degree of confidence while serving (Alhasan & Tyabo, 2013).

Addressing the Gender Gap

This study indicates fewer female trainees in the TVET industry than male trainees. Bangladesh has achieved tremendous progress in boosting education and training accessibility, equity, retention, quality, graduation rates, and gender parity during the past decade (Asadullah et al., 2020). However, Najoli's (2020) studies indicate that women's enrollment in STEM-based TVET courses remains persistently low. According to Keevy et al. (2021), the same barriers prohibit women in developed and developing nations from enrolling in TVET-related programs. These categories include social, cultural, institutional, and curriculum-related aspects. Various societal and cultural norms may influence young women's decisions about their participation in STEM fields (Ong et al., 2018). These factors have significantly led to the lack of women participation in the STEM areas. The report advises that the government should make efforts to ensure the involvement of female students.

Conclusion

Given the significance of skills development and human capital development, TVET interventions may be more substantial and successful, advancing Bangladesh's national economic growth to its full potential. To ensure that Bangladeshi TVET graduates have marketable capabilities and other numerous elements; more importance must be given to TVET and proper initiatives must be taken. The Ministry of Education should collaborate with relevant stakeholders to improve elementary and post-secondary education. Policies and reforms should emphasize the quality and relevance of education from the elementary to tertiary levels by enhancing the learning and teaching facilities and resources. Bangladesh's regulatory authorities should collaborate with technical education institutes to organize and deliver bridging courses that fulfill the requisite quality requirements and general themes. Institutions must have access to high-quality educational resources. The curriculum should be frequently revised, and industry internships should be enhanced. Ensure that female student are actively involved. Above all, technical schools should design and implement career guidance, counseling, and research to upgrade and grow technical students' appropriate skills and knowledge.

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In search of a Blended Learning Framework for Secondary Education in Bangladesh

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Abstract

This article explores the possibilities of implementing blended learning in secondary classrooms and proposes a framework for secondary education in Bangladesh. A mixed-method approach to data collection was considered. Teachers and students at the secondary schools were the main participants. A questionnaire survey, document review, online class observation, focus group discussion, and in-depth interview sessions were administered. The study found that while the National Education Policy and ICT policy emphasise ICT ensuring quality education, ICT integration in an emergency context was not found. A specific focus on blended learning was also missing. The study identified that the secondary schools conducted online classes and assignments during the covid-19 period; however, students' participation was low. The study also revealed that most schools had a minimum set of ICT resources; however, these were not enough to run a blended education. The teachers and students showed a positive attitude towards blended learning. This article proposes the Preparation-Engagement-Settlement (PES) framework. The secondary schools and the local education office are recommended to ensure the components of Preparation and Engagement; however, the ministry of education is suggested to take care of the Settlement components.

Keywords: Blended education, Blended learning framework, Learning approach, Secondary education, Bangladesh

Introduction

Integration of Information and Communication Technology (ICT) in education is not a new phenomenon; however, the form of integration has rapidly been changing with times and situations. For instance, continuing teaching-learning activities in schools and universities during an emergency such as the COVID-19 pandemic by using various online platforms is a new episode in the educational history of Bangladesh. Though the higher education institutions

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(HEIs) of Bangladesh, particularly the private universities of Bangladesh, have been using several ICT tools and infrastructure (Chowdhury, 2019; Roy et al., 2021) and one of the best ways to implement this is through blended learning. However, the implementation of blended learning program at Higher Education Institutions (HEIs), such practice is comparatively limited in secondary education.

While the Government of Bangladesh (GoB) has been trying to introduce ICT in secondary schools, the National ICT policy of Bangladesh that was framed in 2018 focused on integrating ICT into the curriculum, pedagogy, and teachers' training processes. Several studies proved that computer-assisted learning positively impacts teaching-learning activities and improves the students' performance, particularly in secondary education (Sharmin & Roy, 2011). Therefore, the GoB has provided different kinds of ICT tools such as laptops, projectors, and other internet connectivity equipment in secondary schools since 2010 (Babu & Nath, 2017), and almost all secondary schools have a minimum ICT infrastructure.

Having ICT in secondary schools and effective use of these are two separate issues. Studies show that though secondary schools have been using the ICT infrastructure, the schools faced various challenges in running educational activities during the COVID-19 pandemic. Providing online teaching and learning was a new experience for Bangladeshi schools, and therefore, several challenges were observed (Adnan & Anwar, 2020; Roy et al., 2021). The main intention of such teaching-learning was to bring the teachers and students into educational activities. However, this is still an issue of debate whether the secondary schools of Bangladesh could provide effective online education. Both the teachers and students lack the required resources. In addition, teachers lack proper pedagogical and technical knowledge about online education (Adnan & Anwar, 2020). The encouraging thing that COVID-19 brings is that most educational stakeholders realise the necessity of online education, which will last beyond the pandemic. Evidence from other studies shows that there is enormous scope to integrate ICT into traditional and online teaching-learning activities even in the regular time. Besides, Bangladesh is a disaster-prone country where both human-made disasters and natural disasters are common; thus, mixing both approaches, blended in nature, can be a potential solution for Bangladeshi educational institutions.

Concept of blended learning

Mixing face-to-face instruction and online learning are considered blended learning (BL) (Arabasz et al., 2003; Bliuc et al., 2007). This definition is still controversial. While BL is defined as the mixing of technology with the self-study context that could meet the needs of individuals (Gray, 2006), this term is also often used from the perspective of the teaching process (Oliver and Trigwell, 2005). In many cases, BL is considered a combination of different learning styles incorporating the ICT environment. In these concepts, BL was characterised as a flexible learning environment and student-oriented (Concannon et al., 2005). Institutional preparedness is also a matter of concern in understanding the implementation process of BL. Even though many secondary or higher secondary education institutions are aware of the differences between face-to-face instructions and online modality learning, the implementation process for BL is still questionable as they might not reduce face-to-face

instruction time. Considering these debates, many focused on the learning context while defining the term BL. The educational institutes are not equally equipped, and the learning policies and curricula differ at different levels. Therefore, it is suggested to consider the study environment, the capacity of the teacher and students, and the availability of resources while designing and assessing the components of BL.

Challenges of blended learning

Critical barriers to technology adoption in education may be internal or external (Mumtaz, 2000). Straub (2009) reported that for sustainable educational technology, personal factors (e.g., skills and knowledge), innovation characteristics (e.g., personal experimentation), and impacts of the individual's context should never be neglected as part of the planning process. It is also identified that technical infrastructures such as a lack of computers, internet access, and LMS instability could prevent a successful BL journey (Alvarez, 2020). Some difficulties of ICT integration were also highlighted, including a lack of ICT facilities, inadequate maintenance of accessible or existing ICT resources, and a lack of ICT budget. Research revealed that not all faculty members are interested in BL. It is also discovered that designing and developing lecture or teaching materials on a web-based platform takes longer than face-to-face engagement (Alvarez, 2020). Some argue that using a hybrid method is more rigorous regarding teaching and learning preparations. A study suggests that teachers in a BL setting should have at least the necessary knowledge and skills to properly blend the teaching and learning processes (Alvarez, 2020) which are not found in many settings. As a result, the use of technology tools should best meet the needs of the learners while also ensuring the appropriateness of the course's BL nature (Wolfgang et al., 2017). Faculty members' lack of technical capabilities (Maarop & Embi, 2016) impacts students' learning discovery, and, as a result, some academics have a negative view of blended-based approaches (Alvarez, 2020). Some challenges include lack of faculty training and support, language obstacles, and weak promotion incentives for BL initiation.

Blended learning models and frameworks

The BL models and frameworks are made considering the specific situation and contexts. Driscoll (2002) mentioned about four items: 1) combination of various web-based technologies, 2) combination of different pedagogical approaches, 3) combination of instructional strategies and technologies, and 4) combination of instructional technology with job tasks in improving learning transfer. These four items should be considered for starting a BL approach as these altogether could provide holistic implementation guidance for effective BL. On the other hand, from a broader and didactical perspective, Valiathan (2002) identified three BL groups for readiness: skill-driven, attitude-driven, and competency-driven. The preparedness for BL could be different based on the context of the educational institutes. The 3C-model of the didactical component discussed three types of specific readiness for BL (Kerres & Witt, 2003). The first one is content that should be available to the learners. The next one focused on the communication process that emphasises the interaction between students and teachers and among the students. The third readiness is constructive, focusing on guided individual and cooperative learning procedures to meet the learning complexities.

Khan (2010) proposed eight specific areas that should be incorporated into a BL design. In this framework, both pedagogical and technical aspects were considered, and some other additional support from the educational institutions got equal importance to ensure an effective BL system. All eight areas have specific sub-areas that could be used to understand the preparedness of the educational institutions regarding their journey towards BL. Wang et al. (2015) focused on six interrelated sub-systems: institution, teacher, content, technology, learning support and learner, in their Complex Adaptive Blended Learning System model.

The study context

During COVID-19, many secondary schools extended their scope and capacities in using ICT infrastructures; however, it is not yet discovered whether these activities align with the features of BL. The use of ICT is rapidly increasing in Bangladesh, and both teachers and students are using different kinds of ICT equipment in their schools and at home. However, it is a matter of investigation if ICT is being used effectively for teaching-learning activities. During the COVID-19 pandemic, the Ministry of Education of Bangladesh identified the potential of using a blended approach in Bangladesh's educational settings. The University Grants Commission, Bangladesh, has already provided a BL guideline to the universities yet to be implemented. Similar discussions were observed for secondary education too. Chowdhury (2021) discussed the five key elements and three enabling factors for a BL framework in which teaching-learning practices, content and resources, assessment, teachers' capacity development and inclusive infrastructures were discussed as the principal elements for a BL framework. The study team searched for relevant literature to understand the situation of BL in secondary schools but did not find such evidence-based literature. This provides a gap in literature if the secondary schools were prepared for BL. Therefore, this study aims to explore the possibilities of implementing blended learning in secondary classrooms and proposes a model/framework for secondary education in Bangladesh.

Methodology of the study

A mixed-method approach to data collection were considered. Quantitative data were collected to understand the situation regarding various aspects of blended and online education. Qualitative data were collected to understand the reasons behind such situations and explore the various phenomena.

Participants

For the survey, 30 secondary schools, ensuring rural-urban representation, that run online teaching-learning activities during the COVID-19 pandemic were purposively selected. This sample size has the adequate power to distinguish normal distribution from other distributions (Greenwood & Sandomire, 1950). For the qualitative part, 20 teachers, 10 from grades 9-10 and 10 from grades 6-8, were selected purposively from the same schools sampled for the quantitative part. A similar strategy was followed in choosing the students; however, additional 8 focus group discussion (FGD) sessions were administered to them. Besides, 20 online class observations were made, both synchronous and asynchronous.

Data collection

Headteachers, subject teachers and students at the secondary schools were the main participants, and five data collection procedures were administered.

Questionnaire survey: To identify the resources of the schools regarding implementing blended education and to understand the teachers' capacity and preparedness, a survey questionnaire was developed. The entire questionnaire was pre-coded, and the survey questionnaire was pre-tested to ensure both validity and reliability. Before data collection, the research team piloted the survey questionnaires in two schools and then made it final.

Online class observation: The study team observed the online class activities of the secondary school teachers. A customised Online Teaching Evaluation for State Virtual School questionnaire was followed to observe the online class (SREB, 2006). Based on the SREB guidelines, the research team thoroughly reviewed the observation checklist and made necessary changes according to the teaching-learning practices in the secondary schools of Bangladesh.

Focus group discussion: A total of 8 FGDs were conducted with students from four schools, and the range of the participants in each FGD session was from 6-10 persons. The FGD sessions were guided by a written guideline covering indicators of the study. In each FGD session, representation from both boy and girl students was ensured.

In-depth interview: 20 teachers and 20 students who continued their teaching-learning activities during the COVID-19 pandemic were selected purposively for the interview sessions. The participant-specific semi-structured questionnaire was followed during interview sessions.

Document analysis: Two policies were reviewed to understand if there are specific policies related to BL in Bangladesh. The National Education Policy (NEP) 2010 and the National Information and Communication Technology Policy (NICTP) 2018 were reviewed, particularly the chapter related to ICT and education.

This study followed the ethical considerations in all stages of the research, particularly in the data collection process (Braun and Clarke, 2006). The study objectives and data collection procedure were explained to them, and after getting their consent, the data collection procedure started. Confidentiality, as well as anonymity of the participants, was ensured. The entire research protocol was made, validated and then finalised after approval from the National Academy for Educational Management (NAEM), Ministry of Education, Bangladesh.

Data analysis

For quantitative data, descriptive statistics were used, while a data-driven thematic analysis procedure was followed for the qualitative part (Braun and Clarke, 2006). The primary data were categorised, developed the new theme, and constructed the thematic map (Cohen, Mannion and Morrison, 2011). All the researchers were involved in reading the initial data and then making the codes separately. After a careful discussion, only the common codes were considered for analysis. While Denzin (1978) proposed two types of methodological triangulation, within and between or across methods, many researchers proposed adding three

more triangulation processes to ensure validity and reliability. Therefore, all the variables selected for the study were triangulated based on the features of all four triangulation, such as data, investor, theoretical, and methodological triangulation.

Results

Review of existing policies

The NEP of Bangladesh emphasises integrating ICT into education components. In Chapter 1 related to aims and objectives of education, it is mentioned, “12. to attach substantial importance to information and communication technology (ICT) along with maths, science and English in order to build up a digital Bangladesh based on knowledge-orientation and cultivation of ICT” (MoE, 2010, p. 2) and “21. to extend the use of information and communication technology (ICT) instrumental in educational process at every level” (Ministry of Education [MoE], 2010, p. 2). The use of ICT is also focused on the vocational and technical education (VTE) section of the policy. ICT integration within the VTE curriculum received the highest importance in the policy as VTE could help the country produce a skilled workforce.

The NICTP 2018 clearly emphasises ICT issues, particularly in education. Under the action plan, this policy provides a comprehensive strategy to cover all the areas related to ICT (Ministry of Post, Telecommunication and Information Technology [MoPTIT], 2018). The NICTP emphasises integrating ICT education from the primary level and in all streams. This also focuses on ensuring quality education by using ICT in education. For that, the policy suggested setting up computer labs with high-speed internet connections in all educational institutions. Besides, this policy suggested some strategies aligned with the BL environment. This policy also focuses on providing necessary training to all teachers of the level of education (MoPTIT, 2018). It can be said that the NICTP gives enough emphasis on using ICT in education. This policy identified almost all key areas of development concerning ICT and educational development. The policy also focuses on e-learning and digital education, a base for blended education. All of these can help establish a BL environment.

While both the NEP and the NICTP emphasise ICT and ensuring quality education using ICT resources, integration of ICT and education in an emergency context is not found. Moreover, a specific focus on blended education and online and offline use is missing.

Views of teachers and students

Most of the teachers showed a positive attitude toward BL and discussed how it would help the students. On the contrary, some teachers did not find the necessities for BL at the school level. According to them, the students will not attend online classes if school remains open. A teacher from Rajshahi said, “I don’t have a clear concept of blended learning, but online and offline both combinations can be better. If offline classes run at full speed, we do not need to go online.” However, some of the teachers viewed it as an opportunity for learning. They opined that the students were already used to online classes, and thus, continuing both online and offline classes will not be difficult for the teachers. Some teachers viewed BL as an initiative that could save time and money. They consider it better than solely face-to-face

classes or online classes. The teachers thought it would help the students to learn better. A teacher's view from Chapai Nawabganj is:

It will be better if we continue this learning. It will be better for the emergency period as well as for the regular period. It will save time and money. And will be more effective than only offline classes. I think our students will learn better. So, it will bring a better outcome. We should be sincere in doing it. And I believe it'll help.

Some teachers also showed negative attitudes towards BL because of networks and other issues. Due to the poor network, there remains a communication gap in online classes as there is a lack of real-time communication.

The students' findings show that most were interested in participating in both online and offline learning. However, like the teachers, they showed concern about students who could not afford any smart device to participate in online learning. Some thought that traditional offline classes are better if the device cannot be ensured for everyone. Because if BL was implemented there, many students who did not have smart devices would not be able to participate in the classes.

Available resources to implement blended learning

The teachers opined that the schools had not enough ICT resources. For instance, the schools had, on average, less than one television and less than one tab; however, the schools, on average, had around ten computers for teaching-learning purposes. The schools in urban areas mainly had sufficient computers, according to the teachers. It is also found that six schools did not have any desktop, 17 schools had 1-5 desktop computers, three schools had 6-10, and five schools had 11-15 desktop computers. The average ratio of desktop and student was 1:90. All the classrooms were not equipped with computers and projectors, which is necessary for a BL environment. While all secondary schools had active internet connections, only 15.6% of classrooms were covered under Internet connection. Findings suggest that the schools have some resources, but teachers thought these were insufficient to run a blended education. Schools in the rural areas were lacking behind in resources and required skills. The existing resources were not up-to-date, and teachers mentioned that most of the computers had low configurations and slow work, which could make it hard to run blended education. No school used any learning management system (LMS) necessary for a BL.

Results also show that around 69 percent of teachers of all categories of schools had ICT-related training. The teachers confessed that they had basic ICT training but did not help run a blended education. The findings show that the school has no plan to enhance its resources as increasing resources depends on the school's budget. However, all the school authorities felt they needed more proper, updated, and helpful resources to run the blended education. They also opined that government support was essential for building basic ICT infrastructure, equipment and internet facilities to introduce blended education at the school level.

It was asked if it was possible to start BL using the existing resources. Most of the teachers informed that it might not be possible to start BL activities using the existing resources. A

teacher from Rajshahi explained, “Our school is not capable of taking classes both online and offline completely but partially. We need Lab classrooms, laptops for teachers, multimedia classrooms, Wi-Fi facilities, etc. Considering that our school is not able to take classes both online and offline.”

Proposed blended learning framework

The authors propose a BL framework for secondary education in Bangladesh based on the information mentioned above. The proposed three-stage framework is named as Preparation-Engagement-Settlement (PES) framework.

Preparation: In this first step, there are five specific groups or areas that need to be prepared for BL, such as school, teacher, students, parents and technological system (Table 1).

Table 1.

Component and factors of the preparation stage

| Components | Factors |
|-----------------------|---|
| School infrastructure | 1) Installation of ICT equipment (based on school’s demand), 2) Electricity connection, 3) School environment, 4) LMS, 5) Teaching aids and materials |
| Teacher | 1) Teachers’ training on integration of ICT and pedagogy, 2) Training on software use, 3) Motivation |
| Student | 1) Training on software and LMS use, 2) Attitude on building shared knowledge |
| Parents | 1) Creating learning environment at home, 2) Understanding the student’s needs |
| Technological system | 1) Power sources, 2) Devices, 3) Internet connection |

For school infrastructure, this framework proposed to have five specific resources in every secondary school (Table 1). Besides, teachers should be prepared to implement a successful BL program. Notably, teachers’ training is necessary for both ICT and pedagogical issues so that effective use of ICT resources is possible. Using specific software is important, and motivation toward BL is another important issue. Like teachers, students should also be trained particularly for using specific software. Establishing a mechanism for a shared learning environment is important, and engaging students in such a system is one of the important components. Parents also need to be prepared to support their children. It is necessary to ensure a reliable internet connection for all students. Similarly, uninterrupted power sources and smart devices should be available to teachers and students. Such a supporting and advanced technological system must be established in schools and students’ homes.

Engagement: This second step illustrates the seven dimensions and their relationships: the learner, the teacher, the technology, the content, the learning support, society and the institution (Table 2). At the institutional level, it must be demonstrated that BL is compatible with the institution’s values and capable of improving the institutional goal. The institutional dimension concerns organisational, administrative, academic, and student services issues.

Personnel planning a learning program may inquire about the school's readiness, the accessibility of content and infrastructure, and the learners' demands. The institution's inclusion as a framework sub-system elevates BL from the course to the institutional level. Institutional support mechanisms such as strategy, guidelines, assistance and service should be given to enable BL. These mechanisms are linked and influenced by the learner, the teacher, technology, content and learning assistance. In turn, the institution becomes a major driving force in developing the sub-systems surrounding it.

Table 2

Component and factors of the engagement stage

| Components | Factors |
|----------------------------------|---|
| Institutional perspective | 1) Institution's values and capability, 2) Organisational structures, 3) Inclusiveness, 4) Support service |
| Instructional design perspective | 1) Content and learning objectives, 2) Learning materials, 3) Pedagogical orientation |
| Technological perspective | 1) Specified delivery process, 2) LMS, 3) Learning environment |
| Teacher role | 1) Teachers' capacity and motivation, 2) Facilitation process, 3) Communication and connection |
| Learner perspective | 1) Learners' engagement, 2) Shared knowledge |
| Assessment perspective | 1) Monitoring, 2) Individual and collective feedback, 3) Continuous evaluation, 4) Online and offline exams, 5) Flexible assessment |
| Social perspective | 1) Collaboration, 2) Sharing and interaction, 3) Networking |

Settlement: The final step of this framework is the settlement, in which performance, support system, monitoring and feedback are the four components (Table 3). The first two steps need to be implemented at the school level; for this one, the central education authority will also be a part.

Table 3.

Component and factors of the settlement stage

| Components | Factors |
|----------------|---|
| Performance | 1) Administration, 2) School, 3) Teacher, 4) Student |
| Support system | 1) Technological, 2) Psychological |
| Monitoring | 1) Ministry/directorate, 2) Local education authority |
| Feedback | 1) Teachers, 2) Students |

Administration refers to the local education authority responsible for demand assessment, planning and policymaking, workforce recruitment, and arranging training for the administrative body. The task of the authority will be to ensure quality training for school administration, such as SMC members, head teachers and other teachers. Teachers will need to get and use the device when necessary. On the other hand, some psychological issues need to be addressed to ensure proper BL. Ensuring social participation and communication could play an imperative role and the school authority needs to motivate the teachers and students. These three groups, family, school and society, need to work jointly. The Ministry of Education or respective directorates, local education offices, and the school authority will play key roles in monitoring activities. Regular feedback from teachers and students should be taken so that if something goes wrong or a new problem arises, it needs to be resolved as soon as possible.

Discussion and recommendations

While the NEP and the National Information and Communication Technology Policy provided several specific recommendations and strategies to implement ICT components in education; however, there are scopes to integrate ICT and education in different ways. For instance, there are no recommendations and strategies on how education and teaching-learning activities can be continued during an emergency. Bangladesh faces natural and human-made disasters each year, so a provision of alternate education is necessary. BL can be a solution to continue teaching-learning activities during an emergency. However, it is important to note that the secondary schools in Bangladesh have some ICT resources, and many teachers have already received ICT training (Sharmin& Roy, 2011). To implement BL in secondary education, teachers must be trained on specific issues such as integrating ICT and pedagogy, using software, using computers and the internet in the classroom, online assessment systems, etc. (Mumtaz, 2000). The analysis shows that if all the recommendations and strategies of both the policies can be implemented, it will establish a strong base in both school and home to build the capacity of the people, including the teachers and students, and it will help implement the features of BL easily.

It is also important that most secondary school teachers showed a positive attitude toward implementing BL in their schools. In general, it may take a reasonable amount of time to change the mind of a group of people to a new idea or new approach. In this lens, the teachers at the secondary schools were already motivated as they thought the BL approach could be fruitful for the students. Students also hold a similar view. Most students considered online and blended education fruitful for them; however, many of them argued that many of their peers could not utilise this system because of the limited resource.

To implement BL in secondary schools, it is necessary to have adequate resources. Without enough ICT resources, it will not be possible to run all the features of blended education. The study identified that while the secondary schools had some resources, the allocation needs to be increased considering the number of teachers and students. To ensure a suitable environment for BL, all secondary schools should have adequate desktop computers, laptop computers, high-speed internet connections and an uninterrupted power supply. One of the important findings is that the schools had no specific plan to increase their resources. Instead, they depended on the local authority and the government as they expected to get resources from them.

This study proposed a BL framework. While there are many models and frameworks worldwide (Driscoll, 2002; Khan, 2010; Valiathan, 2002; Wang et al., 2015), this specific framework is made particularly for the secondary schools of Bangladesh. One of the differences between this framework and others is that while most frameworks provide one-step activities, this framework offers three-step activities. In the first steps, the schools, teachers, students and parents should be prepared for blended education. Besides, school infrastructure and technological systems are two essential components for preparing schools for blended education. This is mainly the school-level preparation; however, necessary support from the local and central authorities is also important as some practices might not be possible without their extended support. In the second step, all the stakeholders related to the secondary schools need to be engaged. After ensuring all the preparations, all the stakeholders need to be involved with the blended education using this step's seven dimensions and perspectives. To ensure an effective blended education, these interrelated perspectives discussed in the result section are important as the entire system needs to be considered holistic. The final one is the settlement, as both the school and the local and central education authorities have to do some settlement-related work so that the best output from the BL activities can be possible. Both local and central monitoring and feedback from the field are expected in this step. The last two stages are interrelated as the second stage's success depends on the third stage's good implementation.

This study has some limitations. While the study report presents the existing BL situation regarding policy, resources, capacity, views, and perception, the components cannot be generalised as the sample was too small to provide representative findings. The proposed framework might be less appropriate for secondary schools with very few or no resources.

Recommendations

The research team proposes four recommendations to ensure a BL environment and implement the features of BL in the secondary schools of Bangladesh. Firstly, a specific guideline on BL should be made and provided to the secondary schools of Bangladesh. In addition, specific policies or procedures on education in emergencies should also be made so that teaching-learning activities can be continued through blended education without any learning gap. Secondly, both the teachers and students should be prepared for BL. Teachers and students should get specific training on using specific software for blended education. Thirdly, resources should be available to both teachers and students. All the teachers and students must have a smart device with high-speed internet. The Ministry of Education can make arrangements with the banks and device companies so that the teachers and students can buy the smart device with a low-cost option or using soft loan facilities. On the other hand, the ministry should also work with broadband internet companies and mobile phone companies so that all the teachers and students can get high-speed internet properly. And finally, this proposed framework is based on perceptions of the teachers and students; however, this needs to be examined. It is recommended to do piloting in some specific secondary schools to understand how this framework works. On the other hand, an experimental study should also be conducted that will consider both the control and experimental group to determine if the framework could provide a specific difference in terms of the components and factors of the framework.

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Investigating the degree of social climate embedded in the educational environment of Bangladeshi Secondary schools

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Abstract

This research examines the extent of different domains (namely, peer sensitivity, disruptiveness, teacher-student interactions, achievement orientation, support for different economic backgrounds, and safety problems) of the social climate embedded in the schools belonging to urban, rural and hilly regions in Bangladesh. It is significant in the sense that the social climate of a school primarily refers to the physical as well as social-emotional safety of the learners and it impacts teaching-learning practices that reflect academic, social, emotional, ethical, and civic learning. The required data were collected using a questionnaire survey, semi-structured interviews, and focus group discussions. Both the secondary school teachers and students were the respondents. The findings of this study seem to suggest that the degree of peer sensitivity, one of the key domains of the social climate of a school, is high in urban and hilly regions compared to rural schools. Another domain, teacher-student interaction, as well as the teacher-student relationship, depends on the societal condition and the societal practices in which the school is situated. As the data indicates, in the hilly region as well as in the rural context, teachers appear to be sympathetic and concerned for students' mental well-being; however, the teachers are not equally supportive of education, especially outside the classroom. Articulations of students belonging to urban schools shed light on the fact that their school environment lacks sufficient support for students coming from different economic backgrounds. The findings of the study implicate that the teacher student relationship in urban schools needs to be redirected towards more students' wellbeing rather than only structured teaching-learning. Students belonging to rural and hilly region schools need to address this in a way that their academic orientations become stronger. And above all, safety issues need to be addressed across the nation.

Keywords: Bangladeshi secondary schools, educational environment, peer sensitivity, social climate, students' wellbeing, teacher-student interactions.

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Introduction

Social climate primarily refers to the physical as well as social-emotional safety of the learners (Cohen et al., 2009) and is one of the key components of the educational environment of any school. The social climate of a school impacts teaching-learning practices which are subsequently realised in the academic, social, emotional, ethical, and civic learning of the learners belonging to that school (Thapa et al., 2013). Literature suggests that quality, quantity and directions of social climate can be correlated with academic performance and self-development of the learners (e.g., Haahr et al., 2005), and a high-quality social climate can influence to minimize the negative impact of the socioeconomic context on academic success (Astor, Benbenisty, & Estrada, 2009). Most notably, an excellent social climate in any school can enhance learners' school connectedness with that school (Cohen et al., 2009). However, it is interesting to note that the prevalence of the high-quality social climate doesn't necessarily ensure its positive influence on the learners' personal development unless the embeddedness of all the features of the social climate will be fathomed and realized by the teachers and learners. In this regard, Allodi (2010) maintained that within an identical social climate, the environment of educational settings may vary due to differences in perceptions and practices of social climate by the teachers and learners.

As far as the Bangladeshi education scenario is concerned, the current educational practices here in Bangladesh don't look conducive to students' well-being and their emotional connectedness with the school. A large body of papers (e.g., Khan, Ahmed, & Burton, 2020; Sakib et al., 2020; Ahmed, 2008) underline the lack of a healthy social climate in Bangladeshi schools and its adverse effect on the student life experience. Ahmed (2008) explains how the absence of peer sensitivity plagues the school connectedness of students in Bangladesh. Similarly, Khan, Ahmed, & Burton (2020) discusses how 'feeling unsafe' at school leads to depressive symptoms in secondary school goers. Sakib et al. (2020) identified some crucial factors (such as unsupportive teachers and an unfriendly educational atmosphere) that lead to depressive symptoms among the students of Dhaka city. Conversely, Khan, McGeown, & Bell (2020) discuss the potentiality of having a good outdoor learning environment for the academic achievement of the learners in Bangladeshi primary schools. Hossain, O'Neill, & Strnadová (2019) in their study illustrates the correlation between some domains of social climate (e.g., teacher-student interaction, academic support) and learners' emotional connectedness with the school (in form of school satisfaction) in Bangladeshi secondary education contexts. Considering the significance of the social climate of the educational setting, as discussed in empirical literature across the globe, the quality improvement process of the school essentially intends to ensure the students' well-being and their emotional connectedness with the school. Whereas evidence from research demonstrates that quality improvement of schools in Bangladesh predominantly refers to addressing structural or organizational issues of schools (e.g., Hoque, Alam, & Abdullah, 2011; Behrman, Deolalikar, & Soon, 2002). Illustratively, addressing the quality improvement process of Bangladeshi schools from the directions of students' wellbeing, selfdevelopment, and their emotional connectedness with the schools is evidently missing; which can be explored by researching varied domains and subdomains (e.g., peer sensitivity, safety problems, teacher-student relationship, etc; as discussed in Brand

et al., 2008) of the social climate of schools. It is to be noted that research (Khan, Ahmed, & Burton, 2020; Sakib et al., 2020; Ahmed, 2008) conducted in the Bangladeshi context clearly indicates the necessity of addressing students' social and emotional issues about their personal development as well as academic achievement. Likewise, researching the social climate deep-rooted in Bangladeshi secondary schools, which is the focus of this present study, potentially may address those issues. A better understanding of social climate is well desired as it helps the quality improvement process of a school (Thapa et al., 2013; Zulling et al., 2010). Considering the current scenario of Bangladeshi educational practices, it would be interesting to explore the social climate of schools across the nation-state. Understanding the features of the social climate by the relevant educational settings can potentially help develop students' connectedness with the schools, which eventually can facilitate the quality improvement process in Bangladeshi schools.

The available research of the Bangladeshi education context features at best one or two single issues of social climate to portray the current educational atmosphere, and those researchers posit those issues as problems or challenges without acknowledging those as components of the social climate of the school. For example, Ahmed (2008) talks about the disruptive behaviour of fellow students; or, Khan, Ahmed, & Burton (2020) explore students' feelings of insecurity at school and its impact on depressive symptoms among the students. Unlike those mentioned research, this present study applied a holistic approach to all the domains and subdomains of social climate and based on that subsequently investigated the social climate embedded in Bangladeshi secondary schools. In doing so, this study fills one significant research gap as no study has been done to date in Bangladesh that offered a holistic analysis of the social climate of secondary schools.

Review of Literature

The theoretical constructs of social climate

Research (e.g., Thapa et al., 2013; Zulling et al., 2010, Allodi, 2010; Brand et al., 2008) on the social climate of a school largely focuses on the definition and theoretical construct of different domains of the social climate. The definition of social climate ranges from psychological to contextual perspectives and is viewed from both emic and etic angles. Zulling et al. (2010) reviewed 30 years of research on school climate and came up with five domains of school climate, of which three domains (order, safety and discipline; social relationships; and school connectedness) refer to the social climate of a school. Order, safety and discipline address learners' perceived safety, respect for peers and authority, and fairness in rules. Social relationships concern teacher-learner, and learner-learner interactions along with the supportive mentality of the staff. In another domain, school connectedness refers to 'feeling enthusiastic and engaged' about school. Thapa et al. (2013) discuss five dimensions of which three safety, relationships and teaching-learning confer directly on the social climate. It is interesting to note that while Thapa et al. (2013) and Zulling et al. (2010) hold a psychological perspective in defining social climate; Brand et al. (2008) uphold both psychological and contextual perspectives in their definition of the social climate. Brand et

al. (2008) discuss specific dimensions of social climate and those are relationships, personal growth, and maintenance and change dimensions. While relationships and personal growth are self-explanatory, maintenance and change dimensions call for a required change in the educational setting. For example, in a multicultural society ‘support for diversity or pluralism’ emerged as one key domain of the social climate of a school. Unlike the aforesaid researchers, based on Moos’ (1979) psych-social environment framework Allodi (2010) puts forward his idea of a social climate model comprised of ten aspects (namely, creativity, stimulation, achievement, self-efficacy, safety, control, helpfulness, participation, responsibility, and influence). These ten aspects will determine students’ experience to differing extents in the educational context. Understanding the educational environment of Bangladeshi secondary schools (from the literature) six domains namely peer sensitivity, disruptiveness, teacher-student interactions, achievement orientation, support for different economic backgrounds, and safety problems are examined in this study project to fathom the degree of the social climate of the Bangladeshi schools.

The theoretical construct of the social climate measurement tool

Most of the studies (e.g., Zullig et al., 2015; Cemalcilar, 2010) that developed school climate (and social climate) measurement tools are based on psychometric theory, and those tools record only students’ perspectives to measure different variables of school climate. Again, Allodi (2010) and Brand et al. (2008) specifically developed social climate measurement tools based on social learning theory. However, the exclusivity of Brand et al.’s (2008) tool lies in the fact that unlike other tools it extracts teachers’ perspectives on six domains namely peer sensitivity, disruptiveness, teacher-student interactions, achievement orientation, support for cultural pluralism, and safety problems to measure the social climate of a particular educational setting. Research to measure social climate essentially requires a large sample size of data (Allodi, 2007). It can be argued that for the Bangladeshi context, it would be better to rely on teachers’ perspectives than on students to investigate the social climate of secondary schools. Bangladeshi students generally lack the experience to take part in research or be expressive to articulate their own views, therefore only students’ views may not reveal the actual scenario of the social climate of secondary schools. Thus, taking into account the practical reason, an adapted version of Brand et al.’s (2008) tool was used for this present study to record students’ views. However, this research also assesses the degree of different domains and subdomains of social climate embedded in the secondary educational atmosphere. And to do that, students’ and teachers’ actual experiences within the educational settings need to be realised. In doing so, in this research, both the teachers’ and students’ narratives were the source of data as well. To determine the degree of social climate as experienced by the secondary students of Bangladesh, a framework based on the facet theory (Guttman, 1954; cited in Allodi, 2010: 226) has been used in this study.

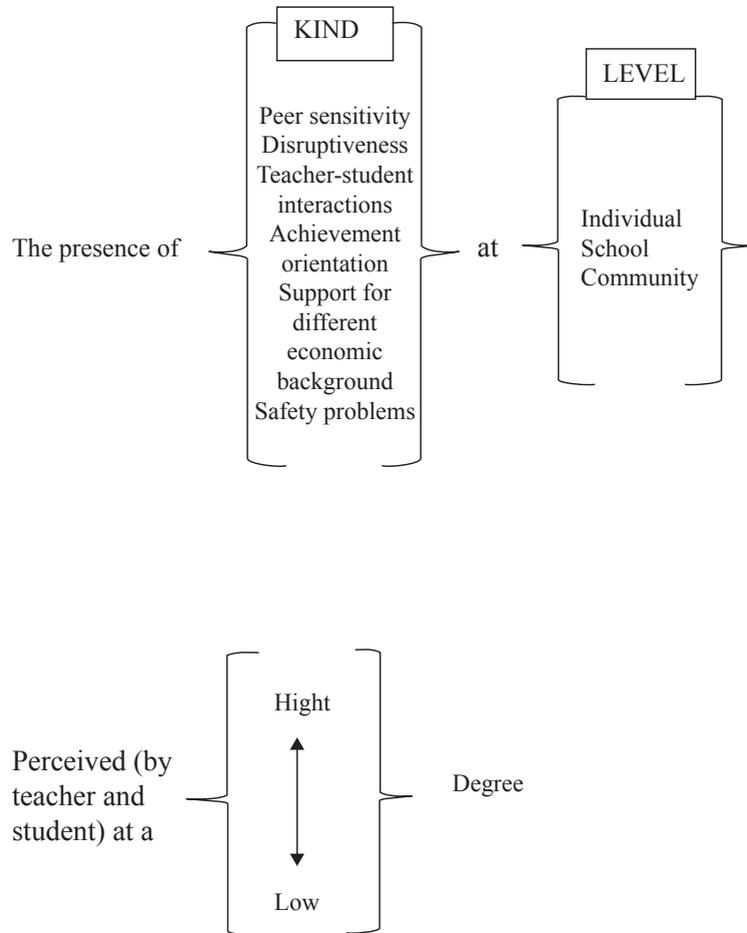
Determination of the degree of the social climate

The conceptual understanding and framework of the study are presented in this subsection. Through the theoretical framework discussed here, an explanation was made to demonstrate

how the degree of various domains and subdomains of social climate embedded in educational settings will be determined. Figure 1 illustrates the framework, based on the facet theory of Guttman (1954), cited in Allodi (2010: 226).

Figure 1:

Conceptual framework for determining the degree of social climate embedded in educational settings



As the framework shows, the degree of all the domains and subdomains of social climate will be determined by the narratives of students as well as of teachers. For example, when teachers and students will be asked about safety problems or teacher-student interactions, they will share views on whether they feel secure (or not) at a personal level, as a group in the school, or outside the school at the community level. Or, for example, again in determining the degree of teacher-student interactions whether the teachers' offering of support transmits beyond classroom issues, and whether teachers are supportive enough for the students'

emotional issues. When data demonstrate the existence of any particular domain/sub-domains of the social climate at the personal, school and community level then the degree of the social climate would be high. Likewise, if a domain exists only in two or one level among the three levels then the degree would be moderate or low. This determination of the degree of social climate would probably differ in different educational settings.

Research Methodology

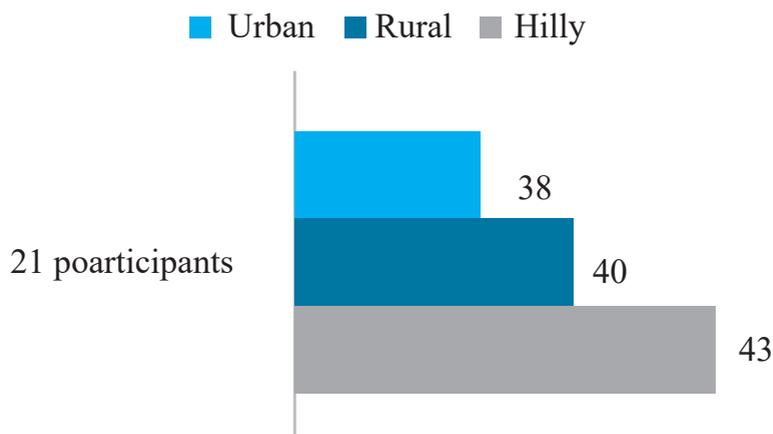
This research is predominantly qualitative in nature. However, some quantitative data set (from the questionnaire survey) in the form of central tendencies was used too. A survey was done on the students to document the frequency distribution of the stated six domains in different educational contexts of Bangladesh. These findings of the survey were triangulated later with the analysed data of interviews and FGD to interpret the extent of the prevalence of different domains of the social climate in secondary schools belonging to urban, rural, and hilly regions of Bangladesh.

Sampling

The data set of the questionnaire survey were collected purposively. A minimum of 50 respondents each from urban, rural and hilly region schools were targeted purposively for this research. Subsequently, altogether 151 students took part in the questionnaire survey (50 from urban schools, 51 from rural schools, and 50 from hill-tracks region schools). However, during the process of data cleansing and analysis, some incomplete survey forms were found and a good amount of data was lost. Finally, 121 respondents' data was used for this research. Below, we see the participants from different educational contexts.

Figure 2:

Participants from different educational settings



A total of 3 FGDs were conducted with students from 3 schools, one FGD each from an urban, rural and hilly region school. The participants in each FGD session ranged from 5

to 7 persons and were students of classes viii to x. The researchers arranged the sessions in a venue convenient to the participants. Two researchers conducted each FGD session. The FGD sessions were guided by a written guideline covering indicators of the study. At the same time, the researchers allowed variation of response on contextual aspects regarding their statement. For the interview, 7 secondary school teachers, belonging to urban, rural, and hilly region schools, were selected purposively on a random basis in order to understand the educational environment of those schools where they teach as well as to get an in-detail explanation of the responses of the students provided in the questionnaire survey and FGD. Participant teachers have teaching experience of a minimum period of 5 years, and they primarily are the class teachers of classes ix and x. Discussions in the interviews primarily centred around the issues related to their experiences and views on the six domains (peer sensitivity, disruptiveness, teacher-student interactions, achievement orientation, support for different economic backgrounds, and safety problems) of the social climate of their schools. All the sessions of FGDs and interviews were audio-recorded and were transcribed later for the purpose of analysis. To maintain the ethical issues of the participants, oral consent was taken from the parents as well as the students, and from the teachers prior to taking part in the interviews. No actual names and gender identities of the participants were disclosed in this study.

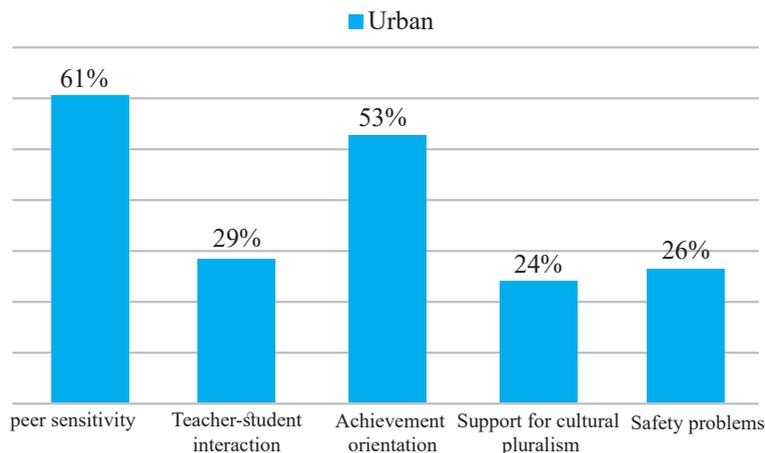
Findings from the survey

Frequency distribution of the domains of the social climate in different educational setting

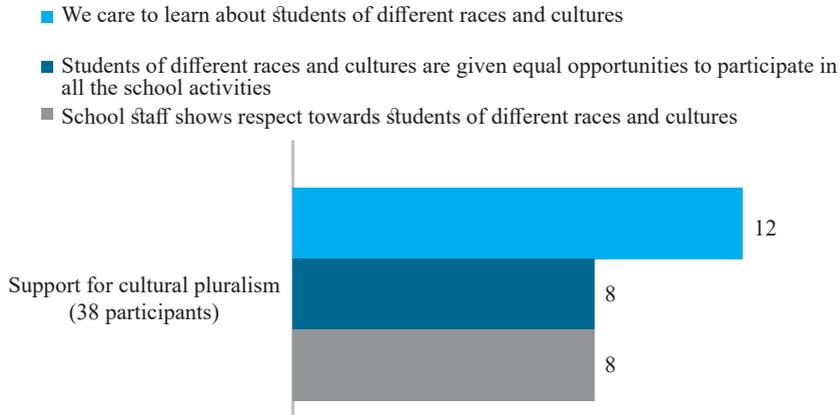
As the data demonstrates, peer sensitivity and academic achievement orientations are the major strengths in terms of their prevalence in urban schools. On the other hand, the social climate of urban schools suffer because of the lack of teacher-student interactions and support for different economic backgrounds.

Figure 3:

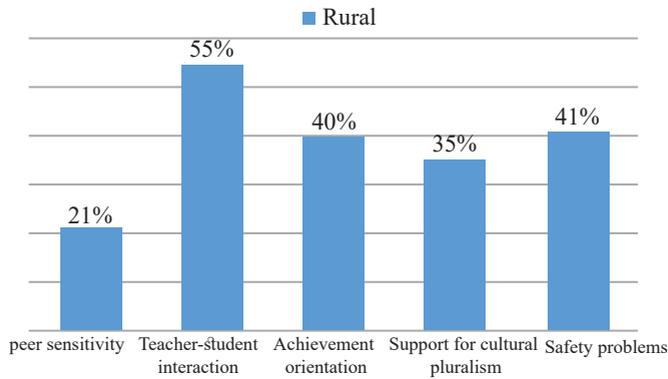
Frequency distribution of the domain



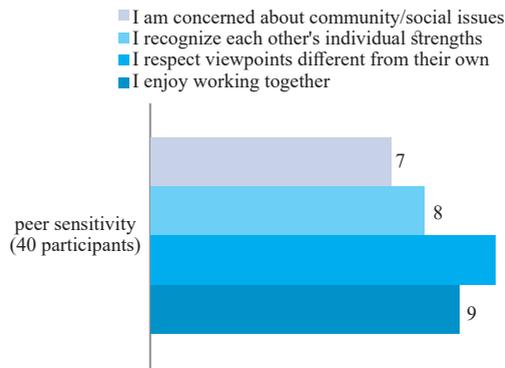
For example, if we see given below graph on the detailed analysis of support for different economic backgrounds, it is clearly evident that students of urban schools did not hesitate to disagree with the statement such as “students of different races and cultures are given equal opportunities to participate in all the school activities” and “school staffs show respect towards students of different races and cultures” As the graph projects (given below), teacher-student interactions are major strength in rural schools whereas safety issues are to be resolved for sure.



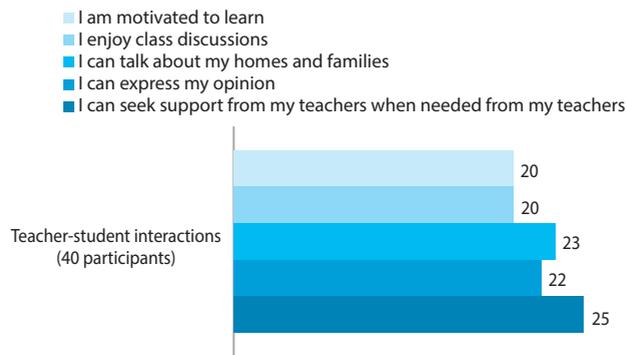
In rural educational settings, we see a balance of the existence of all the domains of the social climate, though they lack peer sensitivity to a great extent (21%).



If it is illustrated further, it is apparent that students there in the rural contexts lack responding and maintaining peer sensitivity in terms of “recognising each other’s strengths” and “concerning about social issues”.

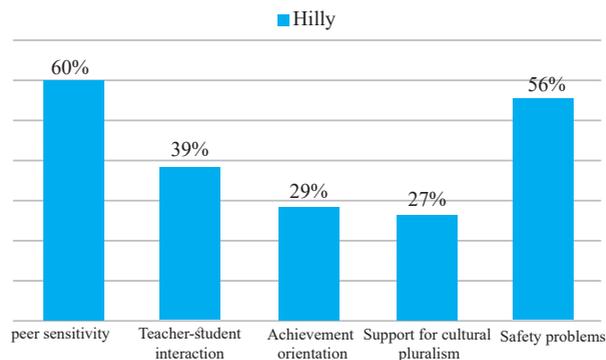


Contrary to this there exists a strong presence of teacher-student interactions

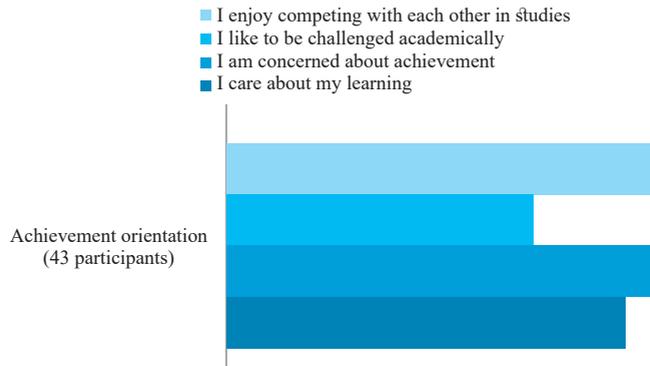


when they are asked to respond in favour of whether they “can seek support from teachers when needed” or “I can talk about my homes and families” with my teachers.

The below bar charts reveal the prevalence of the social climate in the hilly region schools.



As the data suggests the schools have safety issues and students lack achievement orientations. For example,



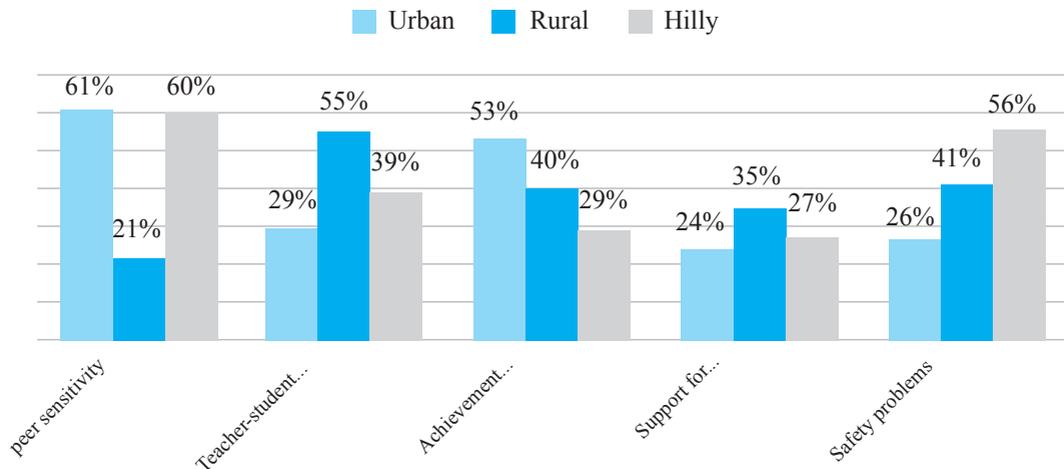
they seem to disagree (10 students agree with the statement out of 43) with statements like “I like to be challenged academically” or “I care about my learning”.

Comparison of the frequency distribution of the domains of the social climate in different educational contexts

The analysed data of the questionnaire survey demonstrates some interesting distribution of the different domains of the social climate of the urban, rural and hilly region educational contexts.

Figure 3:

Comparison of prevalence of domains in different educational settings



The chart displays that there is no consistency in any domain among the urban, rural and hilly schools. As discussed earlier, the whole concept of social climate is context-specific

therefore to determine the degree of the social climate in each stratum (as in an urban, rural or hilly region school) all the domains need to be examined independently.

As shown in figure 3, the prevalence of peer sensitivity, one of the key domains of the social climate in any educational context, appears to be high in urban and hilly region schools compared to rural schools.

And meaningful teacher-student interactions exist in rural schools (55%) against the urban and hilly regions. Students of urban and rural areas are more concerned about academic achievements than the schools of the hilly region (29%). Diversity or support for different economic backgrounds happens to be a significant indicator of the condition of the social climate of a particular educational context. As the data suggests, Bangladeshi schools lack support for different economic backgrounds to a larger extent and urban schools suffer more in this domain. As far as safety issues are concerned students of the hilly region schools are really in a threatening situation.

Key findings from the semi-structured interviews and FGD

As the data displays, the qualitative data findings reflect the key ideas of the questionnaire survey. During the interviews and FGD, both the teachers and students were asked questions to validate the findings of the survey, and most importantly the discussion tried to extract and understand whether the existence of any domains of the social climate hovers at the individual, school, and community levels. Below are some relevant summarized findings-Peer sensitivity among the students is more visible in the hilly region and urban

- Peer sensitivity among the students is more visible in the hilly region and urban schools compared to rural schools.
- Teachers in urban schools are more supportive of academic advancement than of the mental well-being of the students.
- Teachers in the hilly region and rural schools are concerned about the students' well-being.
- Teasing and bullying are evident in all educational settings, and outside school, teasing is the key issue to address.
- Students across all educational settings are concerned about their academic achievements.
- The teacher-student relationship depends on the societal condition and societal practices in which the school is situated.

Discussion

Determination of the degree of social climate

Below in the following subsections, each domain will be examined in terms of its presence at the individual, school, and community levels to portray a qualitative interpretation of their degree in the different educational settings.

The degree of peer sensitivity

Based on the qualitative and quantitative data it can be said that the degree of peer sensitivity appears to be high in urban and hilly region schools when compared with rural educational contexts. As the survey shows overall 21% of students respond in favour of peer sensitivity in comparison to urban (40%) and hilly regions (60%) and it is also evident in FGD.

For example, in FGD 1, in response to “how students usually tackle teasing in public places in the remote hilly region” one of the respondents mentioned –

“We usually go together, as we are aware that some places are not safe for us” and that reflects their peer sensitivity hovers beyond school to reach the community level.

In another, FGD 2, in response to their account for fellow feelings, one participant stated from an urban school–

“The majority of us feel that in our school we need a sanitary napkin dispensary. We decided to install one. But not sure though how we should do that”. This statement is significant in the sense that it indicates the student’s views on the core issues he felt for his fellow students.

The degree of teacher-student interaction

The degree of teacher-student interaction appears to be different in different educational contexts. The data set seems to highlight that the teacher-student relationship depends on the societal condition and societal practices in which the school is situated. For example, in the hilly region as well as in the rural context, teachers appear to be sympathetic and concerned for students’ mental well-being. Analysed data of the questionnaire survey indicates the same. In FGD3 one student of the rural school mentioned that “*Sometimes when I am bullied/teased by other students I don’t share that with my parents as they may scold me. Rather I share that with my teacher. He helped me once*” or, one statement is significant to see the teacher-student relationship in the rural educational context: “*once one teacher helped me to buy some books, as I do not have money to buy books*” (in FGD3). Similarly, one teacher from a rural school put it nicely by saying “*In my school, most of the students are from illiterate families, so I always encourage them in studies or they will be dropped out anytime*”. Or as he says, “*I try to help them ... by buying books, khata. Sometimes, ask their elder brothers/ fathers to talk to me about them*”.

The degree of support for different economic backgrounds

From the survey data, we find that the students of the urban schools consider their school environment to lack support for those who are coming from marginalised economic backgrounds. The identical responses are evident in the FGD when one of the participants of the urban school opened up nicely when she illustrated how she experienced biases in teachers–

“*We see a clear division between the students coming from well-off families and the students coming from comparatively poor economic backgrounds*”. Another student put it like that- “*Even teachers are not concerned about them (i.e., students belonging to poor economic*

backgrounds, and inattentive/slow learners)”. Hence, it will not be wrong to assume that the degree of the domain, support for different economic backgrounds, is low in urban educational settings. The data set about the social climate of the urban educational context can be correlated with the study findings of Sakib et al. (2020).

Again, as far as the hilly region schools are concerned, the degree of support for cultural pluralism and different economic backgrounds appears to be moderate. For instance, in response to the issue of “whether they feel comfortable to study and socialise with students belonging to different economic and social backgrounds?” one student of the hilly region school said that –

“as most of us are Chakmas so most of the time we usually socialise together; however, we don’t think or see differently to the students coming from other social, cultural backgrounds... for example Bengali students”

The degree of the safety problem

As mentioned earlier, eve-teasing is a big issue across the nation-state. The triangulated data is suggestive that the degree of the safety problem is different, rather, in the hilly region schools it is high, in the rural school it is low and in the urban schools, it is moderate. Therefore, students seem to feel a lack of motivation due to these safety issues. As argued in Hossain, O’Neill, & Strnadová (2019: 671), ‘low level of school satisfaction has been related to an increased risk of school failure, substance abuse, and externalizing and internalizing behaviour problems, and assurance of quality social climate leads to many positive school-related outcomes and psychological wellbeing of the learners.’

The students of the hilly region schools are experiencing teasing frequently and nonetheless, the degree of safety problems appears to be addressed at the community level in the hilly region, therefore it is high. In response to addressing “how to mitigate the safety-related issue that emerges in school” one teacher said that –

“if something happens we inform our headteacher. He engages and consults local community leaders. In Bandarban, it is wise to engage local renowned people to solve such issues”

Interestingly, according to the data, the degree of safety problems appears to be addressed at the individual level in rural schools. (e.g., by an individual teacher). Therefore, it is considered low.

In response to addressing “how to mitigate the safety-related issue that emerges in school” one teacher said that –

“if something occurs and it is (e.g., teasing, vandalism, etc) done by our students we can take action by ourselves. We can punish them or warn them, and inform their parents. If they are outsiders, we inform our headteacher”

The degree of safety problems appears to be addressed at the school level in urban schools, therefore it is moderate. In response to addressing “how to mitigate the safety-related issue that emerges in school” one teacher stated that –

“Our school is well guarded and surrounded by high fences. when it happens, we have a committee to look after those issues, it is headed by our headteacher. Besides, our students are cable enough to handle issues like eve-teasing”

The degree of the academic orientation

The extent of the academic orientations is related to the socio-economic conditions of the contexts in which the schools are situated. That is why the reason, the students of the urban schools seem motivated and more aware of their academic achievements and academic orientations whereas the students belonging to the rural and hilly regions lack that motivation.

Edagogical Implications

As argued, a high to moderate degree of the social climate of any educational context is conducive to better academic achievements of the students along the side with creating a school connectedness among the students. The findings of the study implicate that the teacher-student relationship in urban schools needs to be redirected towards more students’ well-being rather than only structured teaching-learning. Students belonging to rural and hilly region schools need to address this in a way that their academic orientations become stronger. And above all, safety issues need to be addressed across the nation.

Future Directions

A significant number of research is required for further exploration of the social climate of the schools. For example, research can only be done to understand the issues related to the academic orientations of the rural and hilly region schools. A co-relational study will pave the way to see the impact of the students’ academic achievements in a healthy social climate of the schools.

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