

Present situation and necessity regarding reading materials of the visually impaired students studying in Bangladesh

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Abstract

More than a billion people in the world today experience disability. These people generally have poorer health, lower education achievements, fewer economic opportunities, and higher rates of poverty. This is largely due to the barriers they face in their everyday lives, rather than their disability. The authors conducted the study to analyze the current situation and necessity regarding reading materials of the visually impaired students studying at the tertiary level in Bangladesh. A total of 82 visually impaired students studying at tertiary level in different institutions in Bangladesh took part in this survey. This study revealed that, among 82 participants, approximately 67% of respondents were male, and 33% of respondents were female. Male respondents were more than female respondents because considering the social and economic condition of our country most of the students with visual disabilities who pursue tertiary education are male. This survey found only two types of visual disability among its partakers. Most of the participants were visually impaired (84%), and the rest of them were individuals with Low vision (16%). All of the respondents (100%) think accessible audiobooks and text-only materials are the most effective and efficient mode of reading materials that they would love to have to continue their future study. It might be because this type of material is proven for their accessibility and easy to operate and also provide a world-class opportunity for their users. While asked about the convenience and amount of the existing tertiary level study materials,

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all the respondents (100%) unanimously agreed that these are not easily available and those that are rarely available are not enough in quantity. It is because there are no accessible online library facilities available that have accessible study materials designed for persons with disabilities, and also none of the institutional libraries have accessible study materials.

Introduction

Persons with vision impairments and others with print disabilities face discrimination and challenges in obtaining an equitable education in the traditional sense, as reading materials are frequently inaccessible to them. For them, there is a severe lacking of adequate study materials and books both in markets and libraries and also there is no deliberate policy and initiatives of the Government and Non-Government Authorities to ensure accessible study materials for these visually challenged students.

Therefore, they are always lagging behind in their studies. In many cases, the absence of such reading materials is resulting in ignorance and lack of action or sole reliance on the assistance of a third party. As a result, they are failing to keep pace with the accelerated tempo of educational activity. Therefore, the drop-out rate of the visually impaired students from the educational institution is very high in comparison to their normal counterparts. But the UN Convention on the Rights of Persons with Disabilities stated that, "People should have rights to education and equal access to information and knowledge regardless of disability" [3]. That's why YPSA has been making relentless efforts to resolve this problem since its inception. Yet these youths are not getting enough accessible materials. Even though, in sustainable development goals, the rights of persons with disabilities are given significances. Disability is referenced in various parts of the SDGs and specifically in parts related to education, growth and employment, inequality, accessibility of human settlements. SDG Goal 4, 8, 10, 11, and 17 have directly mentioned the rights of persons with disabilities [4]. But very little is happening in our country in the regard. Nevertheless, YPSA thinks, it is economically unacceptable because of the waste of human resources that it entails; it is humanly unacceptable since it prevents a significant portion of the population from taking part in building the

world; it is intellectually unacceptable as it deprives contribution of ideas and knowledge, in a word, of creativity.

YPSA has quiet enough experiences on developing accessible materials for visually impaired person. As YPSA, along with the Access to Information Program (A2I), Prime Minister Office Bangladesh, has produced books in DAISY format for school level students which has proven its accessibility and cost-effectiveness compared to the paper-based books for the students with visual disability, print disability and learning disability. Relying on that experience, YPSA conceptualized a project named, 'Accessible Reading Materials for the Students with Visual Impairment', to develop certain selected in-demand contents for the students studying at tertiary level in different institutions in Bangladesh with the help of the Direct Aid Program of Australian High Commission, Dhaka. As a part of this initiative, YPSA has conducted this survey to analyze the current situation and necessity regarding reading materials of the visually impaired students studying at the tertiary level in Bangladesh. So that it could make proper and useful recommendations in order to select appropriate, in-demand contents concerning the production of accessible reading materials (Books) for the visually impaired students. Thus help them to pursue their dream of higher education.

The core objective of this survey is to analyze the current situation and necessity regarding reading materials of the visually impaired students studying at the tertiary level, which is comprised of several specific objectives that are given below.

- 1 | To examine the current condition and essentials concerning the study materials of the visually impaired students studying at the tertiary level in Bangladesh.
- 1 | To formulate specific recommendations in order to select contents for Accessible Publication.

Review of Literature

As there was no research conducted by any agencies that directly addressed the issue of reading materials of the students with disabilities studying at tertiary level in Bangladesh; therefore, different types of documents from government agencies, researchers,

and non-governmental organizations from national and international platforms related to Persons with Disabilities as a whole were collected and reviewed in relation to this survey. In Bangladesh, the total population is 159.6 million [2] and more than 9.1% of the total population have been suffering from various types of disabilities [5]. Besides, nearly 15% of the population in Bangladesh is Persons with disabilities and approximately four million people are visually impaired in Bangladesh [6]. Visually impaired students are now studying at school level & there is a severe lack of accessible study materials. Furthermore, approximately 48% [5] of people in Bangladesh are illiterate or low literate. These large amounts of the population can also be considered as print disable. Accessible information and reading materials have not been available to this group. Information rights have not been recognized/ adequately met. Further barriers were created for the print disabled and visually impaired. On the other hand, the National Forum of Organizations Working with Disability (NFOWD) and Handicap International (HI) estimated that 5.6 percent of the population suffered from a disability. The 8 million people with disabilities in Bangladesh suffer from a range of disability types and severity [7].

Throughout the world "probably the largest group of diverse learners is students with disabilities" [8]. The scenario of Bangladesh is not different. "Lack of information, combined with discriminatory attitudes towards persons with disabilities at all levels of society, contributes to the continued neglect of their right to education [9]." Not only the society and the other people but also some families of children with disabilities tend to have some superstitious negative attitudes towards those children. This is why the policymakers, teachers, parents, normal learners should be aware of the classifications of disabilities to retain themselves from several prejudices about the children with disabilities that result in the exclusion of those children from the society and basic rights [9].

Nevertheless, the UN Convention on the Rights of Persons with Disabilities has been a landmark for the inclusion and education of Persons with Disabilities particularly Article 24 discussed about education for persons with disabilities. There, it stated that States Parties recognize the right of persons with disabilities to education.

With a view to realizing this right without discrimination and on the basis of equal opportunity, States Parties shall ensure an inclusive education system at all levels and lifelong learning directed to: (a) The full development of human potential and sense of dignity and self-worth, and the strengthening of respect for human rights, fundamental freedoms and human diversity; (b) The development by persons with disabilities of their personality, talents and creativity, as well as their mental and physical abilities, to their fullest potential; (c) Enabling persons with disabilities to participate effectively in a free society. In realizing this right, States Parties shall ensure that: persons with disabilities are not excluded from the general education system on the basis of disability; persons with disabilities receive the support required, within the general education system, to facilitate their effective education; effective individualized support measures are provided in environments that maximize academic and social development, consistent with the goal of full inclusion; ensuring that the education of persons, and in particular children, who are blind, deaf or deafblind, is delivered in the most appropriate languages and modes and means of communication for the individual, and in environments which maximize academic and social development. Furthermore, in order to help ensure the realization of this right, States Parties shall take appropriate measures to employ teachers, including teachers with disabilities, who are qualified in sign language and/or Braille, and to train professionals and staff who work at all levels of education. Such training shall incorporate disability awareness and the use of appropriate augmentative and alternative modes, means and formats of communication, educational techniques, and materials to support persons with disabilities. Lastly, states Parties shall ensure that persons with disabilities are able to access general tertiary education, vocational training, adult education, and lifelong learning without discrimination and on an equal basis with others. To this end, States Parties shall ensure that reasonable accommodation is provided to persons with disabilities [3].

However, the Government of the People's Republic of Bangladesh has formulated different laws, rules, and regulations for the Rights of Persons with Disabilities, particularly 'Rights & Protection of Persons with Disabilities Act 2013'. In Bangladesh, the Protection of the Rights of the Persons with Disabilities Act, 2013 was passed with a

view to ensuring the rights and dignity of persons with disabilities. The Act is meant to guarantee educational, physical, and mental improvement of persons with disabilities and to support their participation in social and state activities by removing all sorts of discrimination [10].

Methodology

This survey was designed as a questionnaire survey for the students with visual impairments studying at tertiary levels in Bangladesh. The main goal of this survey was to examine the current situation and requirement of study materials of the visually impaired students. The questionnaire was developed by a team of professionals of YPSA's IRCD (ICT and Resource Centre on Disabilities) unit, which is included here as appendix 1, and supported by the KM4D (Knowledge Management for Development) of YPSA. As this survey mainly focused on the issue of reading materials of the participants; therefore, it focused specifically on their educational status, overall satisfaction and quality of educational experience, medium of study, expectations regarding study materials, and a few other relevant questions and suggestions. The survey took place at several leading and well-renowned institutions where most of the visually impaired students enroll into. Competent interviewers conducted the interview and a total of 82 visually impaired students participated in this survey and thus, we have collected all the qualitative data. Quantitative data were analyzed by the experts through various types of statistical tools and techniques.

Results and Discussion

Demographic Condition of the Respondents

Demographic condition is often measured by education, income, gender, etc. to conceptualize the social status or class of an individual or group. The present section investigated the demographic factors, such as gender status, educational status, area of study, and medium of study to understand the background and present condition of the respondents (visually impaired students) regarding the availability of study materials.

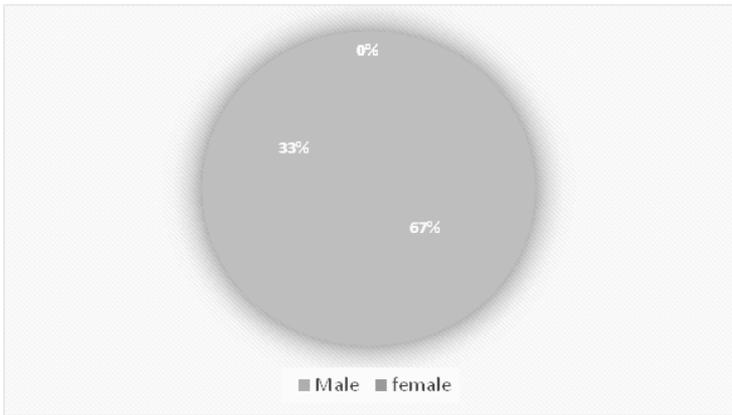


Figure 01: Gender Status of the Respondents

The figure shows the gender percentage of the respondents who participated in the survey. Among 82 participants, approximately 67% of respondents were male, and 33% of respondents were female. Male respondents were more than female respondents because considering the social and economic condition of our country most of the students with visual disabilities who pursue tertiary education are male. Another reason is that male students are more extroverted while most of the females tend to be introvert.

This area of study focused on the educational status of the respondents. Almost all of them study in the subjects under the department of social science and arts. Among them, 31% were master's students, and the rest of them, approximately 69%, studies in different courses at bachelor's level

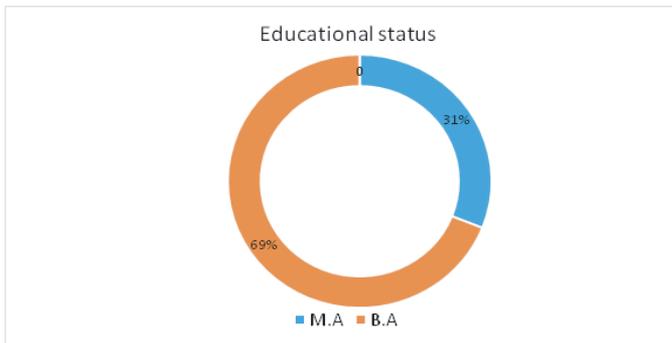


Figure 02: Educational status of the Respondents .

Subject/Department of Study of The Respondent

Table 1 illustrates the subjects/departments where the respondents are currently studying at. As we can see in the table, among the 82 participants, most of them (32%) studies in the sociology department followed by political science (21%), Islamic History (17%), Law (12%), History (10%), and English (8%). Most of them are studying these courses by choice, and facing severe problems during classes and also regarding the exam preparation. Others, however, accepted the harsh reality, which is scarcity of study materials, and choose to attend those courses on which few materials are available.

Table 01: Subject/Department of study of the respondent

Subject/Department of study	Frequency	Percentage
Sociology	26	32%
Political Science	17	21%
Islamic History	14	17%
Law	10	12%
English	7	8%
History	8	10%
Total	82	100

Figure 3 shows the medium of study of the 82 respondents. Although, in Bangladesh almost all the universities and colleges allow their students to choose either English or Bangla as their medium of study. During this survey, we found out that most of the students (79%) with visual disabilities preferred the Bangla medium over English as they hope, it would be a lot easier for them to study in their mother tongue. While the rest of the participants choose English as they think it will be truly beneficial for their future career prospects.

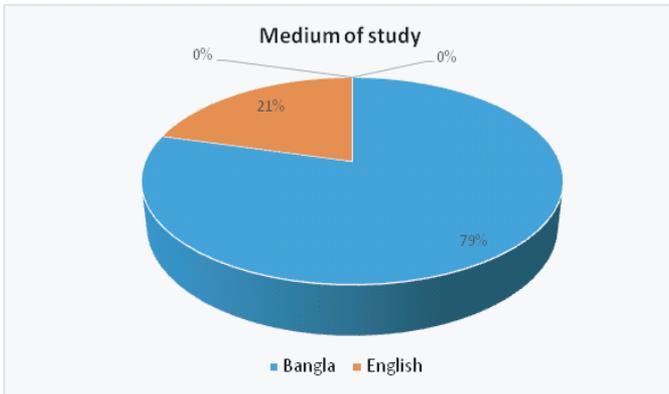


Figure 03: Medium of study

Disability-Related Information

Visual functions can be classified into four categories e.g., Normal Vision, Moderate Visual Impairment, Severe Visual Impairment, and Blindness. There are 248 million people with visual impairments living in the world. Among them, 39 million are blind and 245 have low vision. About 90 percent of visually impaired people are residing in the developing countries; around 65 percent of them are over 50 years old. It has been estimated that around 19 million children under 15 years are visually impaired. According to the findings of WHO [6] and Bangladesh Bureau of Statistics [5], approximately four million people are visually impaired in Bangladesh. This section of the survey focused on the type of visual disabilities of the participant.

The government of Bangladesh adopted the Act 'Rights & Protection of Persons with Disabilities Act 2013'. This Act mentioned that twelve types of disabilities are available among the people in Bangladesh. As this survey focused on the students with visual disabilities and their condition regarding reading materials, therefore, this figure illustrated the type of visual disabilities of its respondents. This survey found only two types of visual disability among its partakers. Most of the participants were visually impaired (84%), and the rest of them were individuals with Low vision (16%).

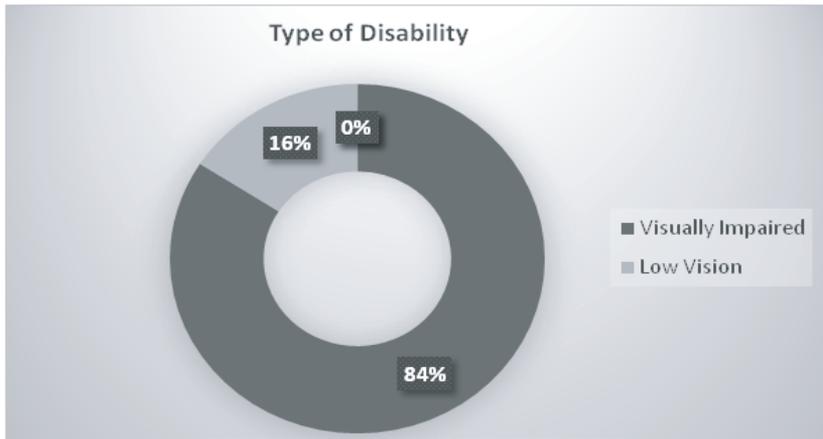


Figure 04: Type of Disability

The period of the last four and half decades, after independence, has witnessed a significant expansion of educational opportunities for persons with disabilities, and especially for the visually impaired citizens of Bangladesh. Plenty of visually impaired students are now studying at schools, colleges, and universities, and this number is going up every year. It is also true that these students are facing a severe lack of accessible study materials. This section of the survey aimed to analyze the current situation and necessity regarding reading materials of the visually impaired students studying at the tertiary level in Bangladesh. By doing so it expects to depict the real scenario so that it can put forward recommendations to help the organization to select in-demand contents regarding the production of accessible reading materials (Books) for the visually impaired students. Thus help them to pursue their dream of higher education.

This section focused on the issue of the overall quality of educational experience of the students with visual disabilities studying at tertiary in Bangladesh. When asked about their general satisfaction level of their journey of pursuing higher education as a visually impaired person, the response that has been depicted in figure 5 is kind of a varied response. Although most of them agreed that it was poor overall (49%), others, however, settled at fair (28%) where 15% of the respondents described their experience as very poor, and 8% of the respondents depicted theirs as good.

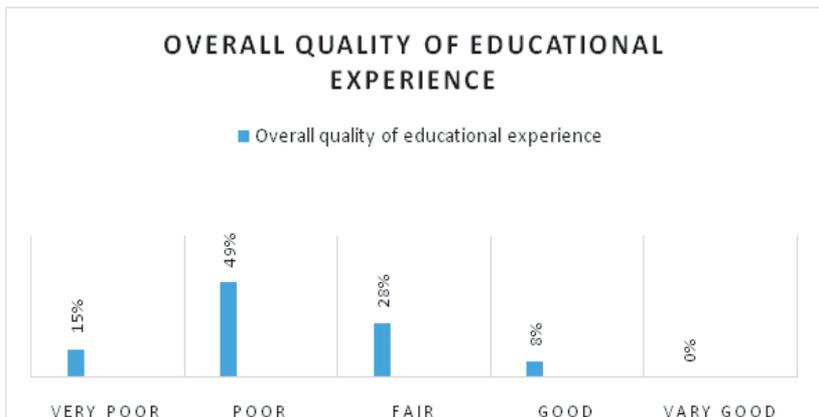


Figure 05: Overall quality of educational experience

Study materials used by the respondents

Table 02: Study materials used by the respondents

Type of Material/Materials	Frequency	Percentage
Braille	-	-
Accessible Audio Books	9	11%
Homemade Audio Contents	42	51%
Text only	-	-
Other	-	-
Braille & Accessible Audio Books	-	-
Braille & Homemade Audio Contents	-	-
Braille & Text only	-	-
Accessible Audio Books & HomemadeAudio Contents	31	38%
Accessible Audio Books & Text only	-	-
Homemade Audio Contents & Text only	-	-
Total	82	100

UN Convention on the Rights of Persons with Disabilities stated that, "People should have rights to education and equal access to information and knowledge regardless of disability" [3]. But in Bangladesh, their right to education at the tertiary level has not been

ensure yet. Although, very little has been done to assist and improve their educational experience, apart from a few scattered initiatives taken by some govt. and non-govt. organizations that are like a drop in the ocean. Therefore, when being asked about the types of study materials they use, most of them replied in the same manner which has been depicted in table 2. The majority of them said they use home-made audio contents (51%), while others said, they use accessible reading materials (11%) which is, however, available in small quantity. However, 38% of the respondent use both home-made audio contents and accessible reading materials. Also, by this survey, it is prominent that there are no other forms of accessible reading materials, such as Braille, text only, etc., available for the students with visual disabilities studying at the tertiary level in Bangladesh.

Study materials and their effectiveness

Table 03: Study materials and their effectiveness

Type of Material/Materials	Frequency	Percentage
Braille	-	
Accessible Audio Books	-	-
Homemade Audio Contents	-	-
Text only	-	-
Other	-	-
Braille & Accessible Audio Books	-	-
Braille & Homemade Audio Contents	-	-
Braille & Text only	-	-
Accessible Audio Books & Homemade Audio Contents	-	-
Accessible Audio Books & Text only	82	100
Homemade Audio Contents & Text only	-	-
Total	82	100

This section of the survey tried to find out the perspective of students with disabilities of tertiary level regarding the effectiveness of accessible reading materials. By looking at table 3, it seems clear that all of the respondents (100%) think accessible audiobooks and text-

only materials are the most effective and efficient mode of reading materials that they would love to have to continue their future study. It might be because this type of material is proven for their accessibility and easy to operate and also provide a world-class opportunity for their users.

Current availability of study materials

Table 04: Current availability of study materials

Response	Frequency	Percentage
Yes <i>(Available & Enough)</i>	-	-
No <i>(Not Available & Enough)</i>	82	100
Total	82	100

Table 4 shows the respondents opinion regarding the availability and quantity of the accessible reading materials needed for continuing their study. While asked about the convenience and amount of the existing tertiary level study materials, all the respondents (100%) unanimously agreed that these are not easily available and those that are rarely available are not enough in quantity. Therefore, they always have to compromise with each other in order to access and use them. It is also true that this sort of compromise often leads to frustration.

Availability of study materials needed for previous study

Table 05: Availability of study materials needed for previous study

Response	Frequency	Percentage
Yes <i>(Available & Enough)</i>	-	-
No <i>(Not Available & Enough)</i>	82	100
Total	82	100

This section focused on the availability of reading materials needed for completing participant's previous studies and tried to depict the larger picture of the issue. All of the respondents (100%) said that the materials needed for their previous study were not available and enough in quantity. Especially, those who are at graduation level told that they had to struggle a lot in order to pass their Higher Secondary Examination, which they have passed recently, because there were no accessible materials available at the higher secondary level apart from a few Braille and home-made contents, which resulted in them getting a low score at the H.S.C examination.

Source of getting study materials

In Bangladesh, several govt. and non-govt. organization work for the welfare of persons with disabilities. While asked about the source of getting necessary study materials, among the 82 respondents, 83% said that they got theirs from different non-govt. organization and others said they got theirs from different govt. organization (17%). It is because there are no accessible online library facilities available that have accessible study materials designed for persons with disabilities, and also none of the institutional libraries have accessible study materials.

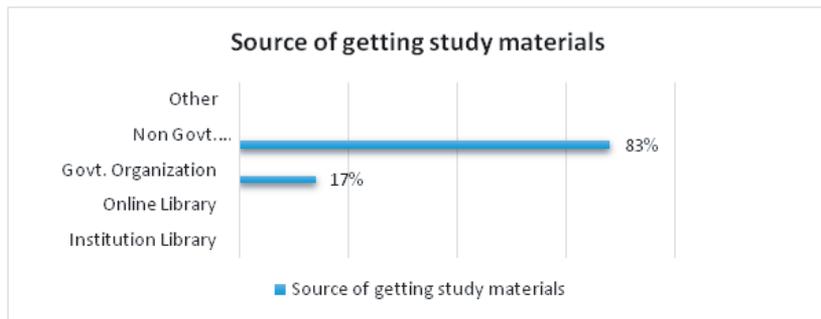


Figure 06: Source of getting study materials

Most popular device used by the students with disabilities

In order to access accessible content visually impaired students in Bangladesh use a range of devices. Figure 7 shows that the most popular device used by students with visual disabilities is smartphone (68%), followed by computers (27%), and MP3 players (5%).

Although, the ability to have a device is depended on their economic condition, and it is true that in Bangladesh, most of the students with visual disabilities live under the poverty line. So they cannot often afford to purchase necessary devices at their convenience due to this device's high cost.

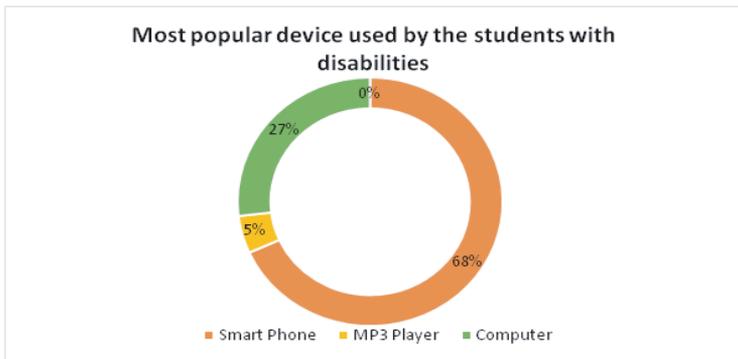


Figure 07: Most popular device used by the students with disabilities

Use of software for study

While using different devices for accessing accessible reading materials, users are required to use different software's which are sometimes available as complementary software along with the device or they needed to be downloaded from the internet. While asked about their use of software in this regard, most of the respondents (54%) said, they use screen reader. Other software used by the students with visual disabilities are DD Reader (23%), Easy Daisy Reader (12%), FS Reader (7%), and Kota (4%).

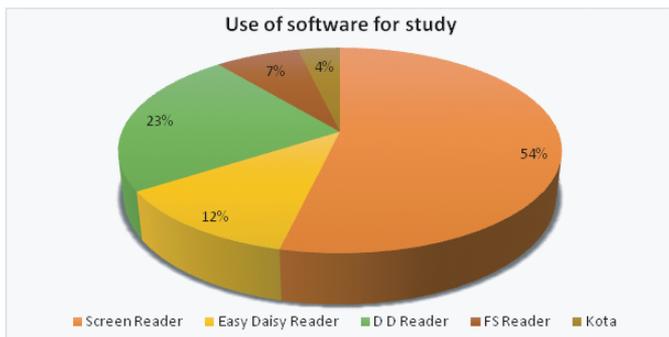


Figure 08: Use of software for study

Departments/Subjects where most visually impaired students enroll into.**Table 06:** Departments/Subjects where most visually impaired students enroll into

Subject/Department of study	Frequency (Out of 82)	Percentage
Sociology	82	100
Political Science	82	100
Islamic History	82	100
English	82	100
History	47	57
Law	35	43

This section of the survey tried to find out the Departments/Subjects where most visually impaired students enroll into. In the questionnaire, participants were asked to name 5 departments where they think most of the visually impaired students enroll into, and it seems that they have almost a unanimous opinion on this issue. Table 6 shows, among the 82 participants, 82 of them (100%) think Sociology, Political Science, Islamic History, and English are the Departments/Subjects where visually impaired students most enroll into, while 57% of them picked History and 43% of them picked Law as their fifth choice.

Conclusions and Recommendations

The period of the last four and half decades, after independence, has witnessed a significant expansion of educational opportunities for persons with disabilities, and especially for the visually impaired citizens of Bangladesh. Plenty of visually impaired students are now studying at schools, colleges, and universities, and this number is going up every year. It is also true that these students are facing a severe lack of accessible study materials. This survey aimed to analyze the current situation and necessity regarding reading materials of the visually impaired students studying at the tertiary level in Bangladesh. By doing so it tried to depict the real scenario so that it can put forward recommendations to help the organization to select in-demand contents regarding the production of accessible reading materials (Books) for the visually impaired students. Thus

help them to pursue their dream of higher education. But in Bangladesh, their right to education at the tertiary level has not been ensured yet. Very little has been done to assist and improve their educational experience, apart from a few scattered initiatives taken by some govt. and non-govt. organizations that are like a drop in the ocean. It is because the concept of an inclusive education system is a shift from the traditional welfare and service-oriented practice of special integrated education that was not appropriate to be a much effective and rights-based system. Inclusive education is a new concept and globally recognized, but implementing this system is completely depended upon the values, attitude, and resources.

A vast task is needed to be done to introduce an effective education mechanism to ensure education equity among all students with disabilities. In Bangladesh, though the disability literacy rate is increasing day by day, the quality of education is falling behind. While their enrollment in primary and secondary education is satisfactory, but after that, the drop-out rate is very high in reality at tertiary due to inaccessible infrastructure, and especially lack of adequate accessible study materials.

In Bangladesh, persons with vision impairments and others with print disabilities studying at the tertiary level face discrimination and challenges in obtaining an equitable education in the traditional sense, as reading materials are frequently inaccessible to them. This study found out that, there is a severe lacking of adequate study materials and books for them both in markets and libraries and also there is no deliberate policy and initiatives of the Government and Non-Government authorities to ensure accessible study materials for visually challenged students. Therefore, they are always lagging behind in their studies and receiving information. In many cases, the absence of such reading materials is resulting in ignorance and lack of action or sole reliance on the assistance of a third party. Therefore, it is necessary to arrange an especial mechanism that will tackle all these lacking and provide persons with disabilities, especially students with disabilities with adequate and appropriate in-demand informative and educational materials so that they become ready to contribute in the 21st-century workforce.

Taking into consideration all the scenarios, this survey is providing

the following recommendations in order to select appropriate, in-demand contents concerning the production of accessible reading materials (Books) for the visually impaired students. Thus help them to pursue their dream of higher education.

- 1 Departments/Subjects where visually impaired students most enroll into are **Sociology, Political Science, Islamic History, English, History, and Law**; therefore, it is necessary to select and produce accessible contents (Books) that will meet the demand of the students studying in these subjects. If it is not possible to convert all the books of these subjects then few focused group discussions (FDG) should be arranged to find out the top priorities.
- 1 As this survey has found out that the most popular and effective format of study materials, according to its participants, are Accessible Audio Books and Text only; therefore, all the contents should be produced in these formats.
- 1 While producing content, it should be considered that they are usable/playable via software like screen reader, DD Reader, Easy Daisy Reader, FS Reader, and Kota.
- 1 This study found out that the materials needed for the participants' previous study were not available and enough in quantity. Especially, those who are at graduation level told that they had to struggle a lot in order to pass their Higher Secondary Examination because of the lack of accessible study materials; therefore, it is necessary to convert all the Higher Secondary textbooks into accessible full text full audio format.
- 1 It is also necessary to establish an online or offline accessible book library so that visually impaired students can get all the study materials from a unified platform.

References

1. World Health Organization (WHO) website, Disability and Health (<https://www.who.int/news-room/fact-sheets/detail/disability->

and-health) (visited on 20 August 2019)

2. BBS Population, Bangladesh Bureau of Statistics (2015), Ministry of Planning, Government of the Peoples; Republic of Bangladesh, Dhaka.
3. Convention on the Rights of Persons with Disabilities (UNCRPD).
4. Sustainable Development Goals. (<https://sustainabledevelopment.un.org/topics/sustainabledevelopmentgoals>) (visited on 22 August 2019)
5. Bangladesh Household and Population Census 2011, Bangladesh Bureau of Statistics, Ministry of Planning, Government of Bangladesh.
6. World Health Organization (WHO), Global data on visual impairment, FACT SHEET, 2010.
7. Ali, Z 2013. Economics of Disability and Children at Risk in Bangladesh, Bangladesh Institute of Development Studies, Dhaka.
8. Richard & Metcalf, Teaching in Today's Inclusive Classrooms: A Universal Design for Learning Approach.
9. UNESCO. (2009). Policy guidelines on inclusion in education. Paris: UNESCO.
10. Rights & Protection of Persons with Disabilities Act, Bangladesh, 2013.