Provision or limitation? Digital technology experiences of students with disabilities at the University of Dhaka

Md Shahrier Haider[1]

Abstract

As digital technology is becoming an integral part of education systems, there are substantial risks of a digital divide among the students reaching beyond the divide influenced by different socio-economic backgrounds. Despite there being constitutionally endorsed equality for all Bangladeshis, students with disability often face difficulties in accessing their fundamental human rights, including education. Notwithstanding the nationwide aim for inclusive education throughout, very few students with disability can achieve even limited success, which prompts questions about the system, the process and the provisions. With the qualitative methodology at the core to capture and analyse detailed data in depth and with sufficient trustworthiness, this paper investigated the institutional provisions of technology available for students with disabilities at the University of Dhaka. It particularly focuses on the provisions of digital technology support services of the university and the perceived impact of those provisions on the living and learning of students with disabilities. This study used a multiple case study approach for generating data using semi-structured interviews and FGD. A deductive thematic analysis approach was used for data analysis. The findings systematically indicate that, in most cases, the underdeveloped provision of services is not a result of resource scarcity but mainly a consequence of the perceived unimportance or 'negligence' of the needs of students with disability. And these are the results of collective normalised norms and ideals that, by design, exclude such students. The findings also depicted how technology uses helped students with disability to empower themselves and to become primarily self-dependent. However, at the same time, some service provisions and attitudes of relevant personnel led them to opt out of availing equal opportunities to learn and to thrive.

Corresponding email: shahrier.haider@du.ac.bd

Background

Bangladesh is a signatory to almost all international declarations promoting a discrimination-free and equal opportunity-based education system for disabled students. The country has introduced numerous initiatives to promote inclusive education from the early stages of schooling, with provision for forms of special education and inclusion in mainstream education

[1] Institute of Education and Research, University of Dhaka

for the disabled. The main impetus grows from the right described in the Bangladeshi constitution for all citizens to access educational institutes. As stated in Article 28(3) of the Constitution:

> No citizen shall, on grounds only of religion, race, caste, sex or place of birth be subjected to any disability, liability, restriction, or condition with regard to access to any place of public entertainment or resort, or admission to any educational institution (Ministry of Law, Justice and Parliament Affairs, 2000, p. 8).

Additionally, within the spirit of the Salamanca Declaration (1994), the government of Bangladesh formulated the country's first comprehensive *National Policy on Persons with Disability* in 1995, which established the right of disabled children to equal participation in education.

Based on this policy, the government also enacted the *Bangladesh Persons with Disabilities Welfare Act 2001*. Still, this Act postulated only a few developmental areas, including education, health, employment, accessibility and transportation. Notwithstanding this general endorsement, the Act of 2001 offered few tangible arrangements towards ensuring the legislative rights of education for disabled children. As such, critics have accused the Act of 2001 of being rooted in a medical model which emphasises a person's impairment rather than the societal and environmental impediments that lead to this impairment (Disability Right Watch Group, 2009). In addition, activists and academics argued that the legislative measures represented a 'welfare attitude' to the disability issue. Eventually, after years of continuous advocacy and consultation, a new *Rights and Protection of Persons with Disabilities Act* was passed in 2013. This Act is considered more rights-based, accommodating several rights for disabled people. For example, participation in all spheres of education upon the availability of appropriate facilities is stated to be a legitimate right for disabled students. Moreover, Article 33 restricts the authority of educational institutions to reject the enrolment of any student based on their disability if the student qualifies in all other requirements (Ministry of Social Welfare, 2013).

In addition to these acts, students with disabilities in Bangladesh are also covered by the *National Education Policy 2010*. In this policy, both inclusive and special education were promoted to create opportunities to fulfil the individual educational needs of this particular group of students. However, no significant clause for disability issues in higher education was narrated through these legislations and policies.

Few public universities have formulated their own regulations for enrolling disabled students. As such, Hossain (2012) reports that visually impaired students (the major group of disabled students in Bangladeshi HEIs) are enrolled in only 4 out of 34 public universities and in 32 out of 2153 colleges under the National University (NU). In the University of Dhaka, reservation regulations for admission and yearly stipends are available for visually impaired students despite the presence of more significant number of students with other disabilities. These

trends suggest that although appropriate legislation on disability rights might be in place, the Bangladeshi higher education system has a long way to go to reach the ideal scenario.

Purpose of the study

Students with disabilities and their use of technology are of particular interest to academics worldwide. Of course, universities pay attention to the needs of 'disabled' university students including their technological needs (Seale, 2013). One reason is that technology is seen as a tool for attracting higher education students with disabilities (Ball, 2009, cited in Seale, 2013). However, Seale goes on to state that universities have an interest in 'disabled' students because they are told they should and because they can make money from selling themselves to them and their needs (Foley, 2003). Therefore, Seale (2013) argues that "there is little acknowledgement that universities might be genuinely interested in the technology skills and experiences of their disabled students" (p. 257).

One factor which arises from research in this area is that disabled students are often viewed as "oppressed victims of their universities, who are deprived of equitable access to important learning resources as a result of institutional noncompliance with legal requirements or technical standards" (Steyaert, 2005, as cited in Seale, 2013, p. 257).

The relationship between 'disabled' students and universities is primarily negative, Seale continues. This relationship is characterized by,

> poor location of publicly available computing facilities and lack of special-
> ised software (Fuller, Bradley & Healey 2004); frustrations with the bureau-
> cracy and speed of the funding and assessment procedures for obtaining
> assistive technologies (ATs) (Goode 2007); and lack of support or training to
> enable disabled learners to become 'fluent users' of ATs" (Shevlin, Kenny,
> and Mcneela, 2004) (all cited in Seale, 2013, p 257).

Concerning issues in the provision of resources for disabled students, Hadjikakou and Hartas (2008) named many, including variability in the provision across institutions, a lack of trained tutors, and limited awareness of issues related to assessment and identification

This paper concerns with the provision of technological access and support to disabled students at University of Dhaka. It deals explicitly with answering how are disabled students' experiences of digital technology use shaped by the 'institutional' provision of technology resourcing by university authorities. This paper fits within the motto of the Special Issue of the Teacher's World, funded by the Centennial Grants by the University of Dhaka. In particular, this paper focuses not only on the Higher Education sector but also on the experiences of students with disabilities' regarding access to technology-related services at the University of

Dhaka. Therefore, the findings of this research inform the evidenced-based practices of the University of Dhaka and could be helpful to bring necessary changes to improve the students with disabilities' learning facilities and education.

Methodology:

The data and findings reported in this study are based on an empirical investigation that used a qualitative multiple-case study method. In multiple case studies, researchers use the same or similar research questions and activities with all participants. Since this paper intends to explore the perceptions of disabled students regarding the university's available digital technology support provisions, multiple case studies seem to be the most appropriate design for providing the researcher with the opportunity to learn from various perspectives.

Ten disabled students were selected purposefully from the University of Dhaka, Bangladesh, based on their various representing characteristics such as gender, age, the academic year and subject of study, disability type, and the nature of technology use. The following ten cases were chosen according to the researcher's own judgements regarding selecting a variety of persons who were willing to be involved and who indicated their use of technology.

Table 1
Selected Research Participants and Their Characteristics

Sl	Pseud-onym of cases	Gender	Age	Academic year	Disability type	Subject
1	Ahmed	Male	21	First	Vision	Education
2	Iftikar	Male	27	Masters	Vision	History
3	Shahdat	Male	22	Third	Vision	International Relations
4	Humayun	Male	20	Third	Vision	Education
5	Nazat	Female	20	Second	Vision	International Relations
6	Tamanna	Female	21	Second	Vision	Education
7	Selim	Male	20	Second	Physical	Psychology
8	Utpal	Male	23	Fourth	Physical	Management
9	Sagir	Male	23	Third	Physical	Management Information System
10	Sujata	Female	20	First	Speech	Banking and Insurance

The data collection procedures for the Case Study research included semi-structured interviews with the ten students with disabilities and one Focus Group Discussion with six of the students

who were interviewed. Additional to the case study participants' experience of the university provision regarding technology, the researcher generated data from interviews with four key informants (not case study participants). These key informants were the Disability Officer of the university, two Assistant Librarians (all of these three staff members were persons with visual impairment), and a faculty member. These staff provided information regarding university provisions for students with disabilities. The faculty member (a teacher) who was interviewed taught ICT courses in one of the institutes in the University, and he was happy to provide his experience of working with students with disabilities in his class.

'Thematic analysis' was used to identify common themes and to sort and report data in ways that permitted the researcher to give voice to the participants' thoughts and feelings as well as their accounts of their contexts, as supported by various researchers around the world (e.g., Boyatzis, 1998; Braun & Clark, 2006). To protect the participants' identities, the data were presented using pseudonyms.

The 'institutional' provisions for technology resourcing:

This section considers the experiences of students with disabilities regarding the technological service provisions they were receiving from the University, alongside their concerns about these supports. Along with this, the interview data from university support staff and faculty are also unpacked to explore the lived experience, including the positive perceptions and the frustration of students with disabilities regarding University technology support. Data gathered from the participants has been interpreted and described using two major themes, including (i) positive experiences of the University provisions and (ii) frustrating and negligent provisions. The first theme will explore the issues where the participants perceived the university provisions as positive, and the latter theme will describe some tensions and dissatisfactions of the participants regarding the University's technology provisions.

Positive experiences of the University provisions

According to the staff who were interviewed, the University had initiated several forms of technology provision, all over the University, for all students. As the Disability Officer described:

> *The University is providing a variety of technological facilities for every student. For example, it has a Visually Impaired Resource Center, which is equipped with the necessary aids and devices for a student who has vision impairment. Most of the departments and institutes have individual computer laboratories for ICT courses that the disabled students can access. In addition, there is a 'Cyber Center' in the Teacher-Student Center (TSC) and in the main library where all students can browse*

> *the internet. Some areas of the University are covered by free Wi-Fi services. These Wi-Fi services are also available in residential halls, with limited coverage around the hall office.*

The University's role in initiating particular technological support services was acknowledged by most of the participants. Despite significant criticism about the Resource Center and the staff working there, some participants admitted that, at least, they had a place in the whole University where they could get the minimum support they needed regarding technology. Humayun positively pointed to the role of this Resource Center for students who might be just beginning to use computers and/or a student who did not have his/her own device and internet at home. He argued if a student lacked devices and software, s/he could visit the center to minimize the need temporarily. The interviewees again argued whatever the Resource Center had and what service it could provide, it enabled students with disabilities to demonstrate their skills in digital technology, which they considered as a means to be treated 'normal' (in their terms) among peers.

Iftikhar, a mature student with late blindness, reported one positive impact of the Resource Center for enabling students with visual impairment to demonstrate skills in digital technology, which he considered a significant way to be seen as 'normal' to peers. Iftikhar assumed that his exposure to digital technology in the Resource Center had changed the perception of his sighted friends about his ability. He explained

> *The Resource Center gives us a status, particularly to our peers without disabilities around the University who only have sympathy for our disabled condition. But, when they saw I work on computers or browse the internet in the center despite my blindness, they started to think differently about my abilities. I would say, for good or worse, whatever this center could provide us - it also helps us to gain dignity from other people.*

Iftikhar's perception corresponds with other interviewees perceiving their skills in technology as an essential mediator to express themselves as 'normal' human beings. This also indicated their understanding of a change in their relationship with peers, which they did not notice prior to their exposure to technology. It is significant to observe that some participants perceived normalization of interaction (see also Davis, 1961, cited in Low, 1996) had commenced between them and their sighted peers due to their progression with digital technology skills.

The above analysis has shown that there were few positive comments about the provision of resources by the university, and this is tallied with research done elsewhere. Student dissatisfaction with the provision of resources is not uncommon. Concerning issues in the provision of resources for disabled students, Hadjikakou and Hartas (2008) named many such issues, including variability in the provision across institutions; a lack of trained tutors; and limited awareness of issues related to assessment and identification. However, in terms, this

study was not able to substantiate any user experience of institutionally provided software and assistive technologies as most of the disabled students used pirated software they accessed through other students and friends. The assistive technology provided was deemed both outdated and inaccessible.

Frustrating and negligent provision

The University of Dhaka had provisions for providing access to various technologies. However, the students interviewed felt that these facilities were primarily suitable for non-disabled students but not for them. There were, however, other concerns.

There were other examples of students feeling 'badly done by' – that their needs were not being understood or cared for by university staff. All students reported their dissatisfaction with the university initiatives. Some even commented that there had never even been any noteworthy support. The issues they had included a lack of the promised provision of internet access in the university accommodation facilities for women, while male students were provided with such access; a lack of resource centre staff skill or helpfulness; a lack of space for students to use their own computers (laptops); a lack of appropriate support services; and a general lack of resources within the university, including software.

The students were dissatisfied that they were not consulted about their technology needs by University authorities before such support being provided. Ahmed said the University authority did not inquire about the needs of a student with a disability in any phase of their studentship. Nazat commented that despite completing almost half of her four-year bachelor's degree she had never been asked by the University about her specific technological requirements. Some of the other participants reported instances that highlighted the consequence of providing unnecessary equipment without asking about the students' concerns. For example, Humayun was unhappy about the expensive Braille printing machine at the Resource Center procured by the authority from a third-party organization. He argued that most students did not depend on the Braille system anymore due to its complex nature and had become drawn to digital technologies like smart phones, screen reader software and other technologies. In such circumstances, if the authority asked them about their needs, the students might suggest the procurement of more computers for the Resource Center or the provision of training programs on digital technologies

Similar sentiments were expressed by Sagar, a student with paralysis in his leg. Due to financial insolvency, he could not buy sufficient internet data for his mobile phone. He reported that when he ran out of data, he had to go near to his residential hall office to use the free internet since the range was limited around the office. For this, he needed to go down the stairs from his room and walk a long way to the office. With the problem in his leg, it was quite difficult. He acknowledged that it was a regular mobility hazard for him to move around the campus with his paralysed leg, and this issue was something that had been related to every single issue

in his life. However, he argued that the University could provide at least internet access to all students, regardless of space, distance and time, since he believed no student should walk far or climb stairs to access the internet in this era of technology explosion. He also highlighted his struggle to access free internet at his residential hall:

> *Sometimes it feels like I am 'doubly deprived'. All the residents at this hall experience disadvantages in accessing the Wi-Fi network from their rooms, and so do I. But they can move nearer to the range with their devices to overcome this disadvantaged situation. It is really difficult for me to do this. This makes me feel 'doubly deprived'.*

Other factors that came out of the findings included claims of marginalization through a lack of provision of university resources and the students being reluctant to come forward with their needs, especially when they perceived that they were ignored by the administration when they did report their needs or complaints. For example, Shahdat found the staff in the Resource Centre for the Visually Impaired at the central library were uncooperative when students sought their support:

> *At the beginning [of my study at this University], I had become frustrated for the reason that all the references provided by the teachers were hard copy books. At that time, I did not have a scanner for scanning the books. Firstly, I took a book in there just to get that scanned. So, they returned my book after I had waited for one and a half months, but the work still needed to be done. Just then, I bought a scanner on the same day. They had an excuse. I was told that the scanning could not be done, as there was no anti-virus installed on the computer. I understand that the anti-virus issue should arise when I am about to get the scanned copy delivered on a Pendrive. That cannot be an excuse when it comes to scanning the book using the scanner. It means that, because of laziness, they did not do it. They have been recruited there to do these kinds of favours. They are not responsible towards their assigned tasks.*

Dissatisfaction about staff members' support at the Resource Center was also mentioned by other participants who believed the staff were unwilling to learn anything because, if any of them learned something, that particular staff member would incur the responsibility to teach the students. They might not be interested in taking this responsibility either. Some students argued that these staff members did not seem to be accountable to the University authority for supporting the students. The participants emphasized the inadequate resources, particularly the apathetic conduct of staff in the Center, which hindered the students' opportunity to maximize control over their disabling condition.

Overall, the students interviewed indicated inadequate provision of resources for 'disabled' students at the University of Dhaka and that issues that need to be addressed

include not only the provision of physical resources but also the attitudes and education of responsible staff/teachers (even peers), and institutional change. For example, Tamanna, a third-year student, reported in her first interview in 2016 that her University residential hall authority refused to permit an internet connection in her room, asking "*what will a blind girl do with the internet*?". Although she had other sighted roommates in her shared room, the hall authority was reluctant to give Tamanna specific permission for internet connection as the named applicant for the permission. Tamanna expressed her feeling at that time, reflecting the importance of faculty respect for students' perceptions of status:

> *It was disgraceful to me as a person, not only as a 'blind'. I was shocked to experience such a disrespectful comment from a person who holds an academic position at the University.*

Another participant with visual impairment, Iftikhar reported that some of his classmates had complained about the noise of his screen readers. In contrast, noises from other students' loud conversations were ignored. He perceived this as intolerance of the special needs of fellow students. Considering Iftikhar and Tamanna's experiences, there seemed to be a lack of a learning system designed for all students in the University to feel 'connected', despite all sorts of individual differences and needs. This finding has similarity to Tinklin and Hall (1999), cited in Hadjikakou and Hartas, (2008),which claimed that the quality of provision for students with disabilities in higher education depends on attitudes, experience and awareness about disability among staff and students and that a focus on these factors is often lacking.

Discussion:

This article has identified a range of tensions between the needs of students with disabilities and the existing provision for digital technology support from the University. It is evident that the University authority had not provided equal opportunities for students with disabilities. Although the Disability Officer reported on the initiatives undertaken to provide appropriate technical facilities and support to students with disabilities, it is evident that these were inadequate. As has been noted in other studies, the role of the educational institution and other relevant stakeholders is crucial to create a technology-enabling environment for disabled students to grow to their full potential (Burgstahler, 2003). For example, Cranmer (2018) has emphasised the support from school authorities for disabled young students' technology uses in northwest England.

In contrast, this article has found case study participants asserting that all the support service systems for students with disabilities were shaped based on the needs of students without disabilities studying at the University of Dhaka. The participants also argued that the University authority did not properly consider whether the facilities, such as, for example,

free Wi-Fi, a computer laboratory, and a cyber centre, could support positive outcomes for students with disabilities. To support this claim, the case study participants provided examples of ICT course examinations that had been conducted at the computer laboratory, in this University, without the required facilities such as special software for the students with visual impairments, ergonomic keyboards and adjustable seating arrangements for students with physical disabilities. Some students with visual impairments stated that they had installed their required software on the laboratory computers. However, measures had yet to be taken by the computer laboratory staff to preserve this specific software. Interviews had revealed that, on the examination days, the students needed help finding the software they had installed earlier. These findings indicate that the University had not been successful in creating equal access to technology among students with and without disabilities, even though it should be legally ensured as the constitution of the country endorses equitable access and service provisions for all. In similar cases, Tinklin, Riddell and Wilson (2004) studied the provision of higher education for disabled students in Scotland, and noted that it was in 1993 that Scotland began to provide funding to improve provision for disabled students. They also argued that most British Colleges and Universities were inaccessible to disabled students as recently as 2003 (ten years later) and – as appears to be the case at the University of Dhaka – that the situation is only improving slowly.

Tinklin, Riddell and Wilson (2004) also pointed to the need for an improved model of provision, and legislative changes. They conclude that models of provision may focus too much on providing disabled students with individual support rather than on more fundamental institutional change. The research participants would agree with most of this but still stress that they do need individual support, as well as 'institutional change'. Supporting that, where Hadjikakou and Hartas (2008) completed their research, provision was not embedded in institutional and legislative frameworks, and there was a need to rethink and refine policy and practice regarding disability at an institutional level. This involved clarifying entrance requirements; identifying barriers to access; informing students/applicants of facilities, resources and services; engaging in teaching modifications, raising staff awareness, and promoting relevant staff training and professional development.

Although the University staff confirmed attempts at providing equal opportunities for the students, a number of students with visual impairments considered some provisions, for example, the establishment of a separate Resource Centre, as 'excluding opportunity'. They argued that opportunities to use technology should not be confined to a separate place but be located in commonly used spaces. As a result of this preferred environment, their non-disabled peers, along with all the other persons at the University, would realize that students with a disability were also capable of using mainstream technology. They argued that it could bring two types of benefits for them. Firstly, the prevailing social perception that people with a disability could not acquire technological skills due to their disability would be challenged

and gradually changed. Secondly, the students believed that, in a shared working environment, students with and without disabilities could compare their similarities and differences when using digital technology. A new possibility may even arise where a student without disabilities could attain competence in using the particular software or computer functions used by students with disability. As a result, the student could help his/ her peer with a disability when they experience a technological problem.

It is evident from the interviews with the university staff that they focused mainly on material and physical aspects while offering provisions for technology. However, the students were in fact, thoughtful regarding the actual use of those resources. As such, there was a disagreement between the university's tendency to provide material support only and the reality of students' technological needs/practices. A considerable number of participants stated that they did not require device-related support from the university, as almost all of them had collected devices or software on their own or from other people and organizations. They were much more desirous of knowing about the various possible uses of these materials/devices/programs according to their needs rather than having a collection of 'unusable' tools. It seems the university authority had never considered this point.

Conclusion:

This article has looked in detail at the institutional provision of technology resources for students with disabilities. It has explained what the university provides and looked at both positive and negative aspects of these provisions. From the findings, it is recommended that the accountability provisions should be endorsed and enforced by the university administration, so the already available resources can be utilized to the fullest extent. The accountability policy will create provisions for action by relevant entities and personnel in real time. This also creates provisions for making support services available in the classes, libraries, residence halls and other informal academic/social environments. In addition, this study also recommends employing and therefore, utilizing the social resources already functioning, but with systematic approaches.

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