ICT Facilities and Literacy in Rural Non-Government Secondary School Libraries of Bangladesh

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The study explored the ICT facilities and services at rural Non-Government Secondary (NGS) school libraries in Bangladesh. It identified the ICT literacy of NGS school library professionals known as assistant librarians. An exploratory method was used to ensure the best possible outcomes. Based on the interview and literature review in the qualitative phase, a questionnaire was developed for the quantitative phase and collected 86 responses using an online survey. Findings showed, most of the rural NGS school libraries do not have the ICT facilities and of those that do, they are insufficient in number to provide efficient services to library users. There was a lack of ICT skills among assistant librarians and most agreed that ICT literacy would increase the efficiency of their work and regarded it as an essential tool for school libraries. The study provides an analysis of the prevailing situation that helps in planning for policy makers and further in-depth research.

Introduction

The Government of Bangladesh (GOB) has a state goal 'Digital Bangladesh', which is projected to be achieved by 2021. To accomplish this state goal, Information and Communication Technology (ICT) has become an integral part of all aspects of the government's plans. ICT integration in education was further emphasized in the National Education Policy 2010 (NEP, 2010; Mezbah-ul-Islam, 2015) with necessary reforms in secondary school curriculum, pedagogy and teacher capacity building (Asian Development Bank (ADB) report, 2018). In Bangladesh, secondary education (Grades 6 to 10) is managed and administered by the Directorate of Secondary and Higher Education (DSHE) under the Ministry of Education. According to Bangladesh Bureau of Educational Information and Statistics (BANBEIS), the DSHE oversees 19,848 approved secondary schools that serve nearly 10.5 million students with 243,880 teachers (BANBEIS database, 2017) and more than 96% of secondary schools are privately managed (Rahman, 2017) known as Non-Government Secondary Schools

(NGSSs). The GOB provides subsidies to approved NGSSs under the Monthly Pay Order (MPO) system that covers teacher salaries and some assistance in development expenditures. Notably, there are only 368 publicly managed secondary schools with 318,513 students in Bangladesh (BANBEIS database, 2017).

As part of the ICT integration in secondary education, the GOB aims to equip ICT facilities e.g. ICT lab, multimedia classrooms, digital content library in every school. BANBEIS database (2017) reported that by 2017, 88.94% of secondary schools have computer facilities; 76.65% have internet connection, 76.01% have multimedia facilities, 72.98% use computer for official and academic purposes, and 36.43% secondary schools have their own websites. As a way forward, ADB (2018) reported that, the GOB lunched e-learning modules for Bangla, English, Mathematics, Science, and other relevant subjects are developed and used in at least 10,000 schools, and further aims to implement into at least 40% schools and 10% madrasahs (religious school or college for the study of the Islamic religion, though this may not be the only subject studied) by 2021. The government also launched a platform containing e-learning resources for Grade 9 to 10 students and an e-manual for teachers with a view to making learning and teaching easier and interactive.

To encourage girls to become interested in ICT, according to Imon (2017) since 2012, the government made the ICT subject compulsory for all students from grades six to twelve. In addition, to strengthen ICT in schools and to build-up a sustainable workforce at the secondary level, the GOB recruited 3,189 assistant teachers (ICT/Computer) (a total of 13,414 in 2017) (BANBEIS database, 2017); and trained 6,400 teachers and 640 head-teachers respectively on ICT for pedagogy and management (ADB, 2018). The GOB also plans to train all female teachers in e-learning by 2023 (ADB, 2018) to develop a sustainable ICT skilled workforce for a more digital Bangladesh.

However, in reality, the practice of using ICT in all school activities is still limited. Even though the Ministry of Education has made the ICT subject compulsory, student access to ICT is still limited (ADB, 2018). Similarly, Imon (2017) and Irani (2017) reported that most schools have an ICT lab equipped with computers; in many cases, the implementation process for learning and teaching is yet to take place. Research carried out by Babu and Nath (2017); Imon (2017) and Irani (2017) revealed that the principal task for learners in multimedia classrooms is watching and listening, not actively participating in asking questions or contributing in collaborative learning tasks. This contradicts the 6 C's (collaboration, critical thinking, creativity, communication, citizenship, and character) as outlined by the New Pedagogies for Deep Learning (2019), an organization which focuses on equipping youth with the necessary 21st century skills to be ready for future workforce.

Status of ICT in NGS School Libraries of Bangladesh

Libraries in Bangladesh began to use computers in the early 1980's but little progress was observed in the application of computers to library services before 1995 (Islam & Islam, 2007). The International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) Library and Agricultural Information Centre (AIC) are pioneers in creating bibliographic databases on specialized fields using microcomputers (Khan, M.S.I., 1989). After 1996, the tremendous growth of ICT has opened the door for Bangladeshi libraries to make use of technological facilities for the betterment of user services (Shuva, 2010). Islam and Islam (2007) claimed that there has been considerable progress in the application of ICT to library services since 1996 mostly in the private university libraries.

The GOB placed great importance on ICT equipped libraries in NEP 2010, mentioning that students would get access to global knowledge through the classroom and school library with the existing ICT facilities, and library systems would be digitized gradually. According to a report by

UNESCO (2012), in support to Digital Bangladesh agenda, the GOB has prepared the Digital Bangladesh Strategies paper and in the process of a master plan for ICT in Education and libraries of all types is included in this plan. To develop an ICT skilled workforce in secondary education, during 2009–2018, the GOB established 640 ICT learning centers in secondary schools (MoE, 2018). BANBEIS and Upazila (sub-district) ICT Training and Resource Centre for Education (UITRCE) organized and conducted "Basic ICT Training" for secondary school teachers and librarians (BANBEIS, 2017). According to an ADB (2018) reported, ICT in school libraries further included in the government's Secondary Education Sector Investment Program aims to build digital learning contents and equip ICT facilities in all secondary school libraries by 2023. Finally, the training of librarians, libraries and digital libraries were included in the new Developing Reading Skills Program, a program dedicated to enhancing the reading skills and competencies among secondary students.

Unfortunately, even today the government and non-government, rural and urban governments in Bangladesh are unable to establish a full-fledged division of ICT. Administrators, policy makers, and government executives have yet to recognize a suitable plan for ICT usage in libraries. Moreover, library administrators have failed to make its importance clear (Islam & Islam, 2007). Hossain (2018) stated that school librarians' lack of ICT skills is creating a significant barrier to the installation or development of ICT facilities in school libraries. For this reason, according to Shuva (2015) users are not fully satisfied as they need more up-to-date and instant information that can be obtained by using ICT components. Imon (2017) noted that students have almost no access to digital libraries in schools. Shuva and Akter (2011) study pointed out that ICT status in school and college libraries in Bangladesh is insufficient. Hossain (2019) claimed that due to the insufficient ICT facilities secondary school libraries are yet to computerize hence provide only traditional services. The challenges in the provision of the ICT equipped digital school library or the provision of ICT in rural NGS school libraries are yet to be investigated. According to this backdrop, this study aims to investigate the status of ICT facilities and services in rural NGS school libraries and the ICT literacy of school library professionals in Bangladesh. Based on the study findings and from the authors experience several recommendations are proposed for improving the school library sector through building ICT facilities and competencies in secondary school library sector in Bangladesh.

Review of the Literature

ICT is viewed as a significant part of improving individual and organizational productivity in quality and quantity. UNESCO (2010) describes ICT as a tool in education that is used to transmit, process, store, create, display, share or exchange information by electronic means. PricewaterhouseCoopers (2010) found that most technologies for education initiatives focused on providing ICT as a subject at secondary school level. Ansari (2013) stated that ICT has produced a significant change in the landscape of libraries and librarianship. In the 21st century, according to Hansson et al. (2010), private and public institutions are using computers in their daily routines and most major information centers and libraries were computerized.

This phenomenon did not only take place in public and academic libraries, but also in school libraries (Ismail, Ahmad & Affandy, 2013). Tiat et al. (2019) pointed out that the purpose of today's school libraries is not only to maintain the traditional roles of promoting reading, developing information literacy and providing access to a collection of books and other resources. The natural expansion of a school library's function is to provide ICT technology. This includes resources like a high-speed Internet connection, satellite TV, collections of CDs and DVDs, plus a limited amount of paper for printing, and removable computer storage such as disks and flash cards. Dipetso and Moahi (2019) expressed that school libraries aimed at fostering information and digital literacy skills

among students through school library visits, reading lessons and library orientation. The Chartered Institute of Library and Information Professionals (CILIP) UK (2001) identified project work, individual study, group research, reading and the teaching of ICT, amongst other things, can all take place within the school library. Ismail et al. (2013) demonstrated that the advances in ICT, coupled with the merging of computers, telecommunications, and broadcasting technologies, have brought a new dimension in the roles of school libraries and librarians as they would become 'knowledge hubs' for the school, which according to Yushiana and Shahar (2003) link the school community to knowledge networks. Mikis (2004) added that if library skills are included as part of the ICT lessons it improves students' problem-solving skills (information literacy) in everyday life.

This means that school libraries can be utilized as a channel to deliver or promote the usage of ICT, as it is where students go to fulfill informational needs. Stewart (2018) pointed out that students use school libraries for relaxation, reading, computer technology and connecting to the Internet. Studies also show that with the rapid development of ICT and digital technologies, besides printed books, people increasingly want to read e-books and documents online (Verma & Malviya, 2014). Since school libraries have an important role in providing access to information and knowledge, Dev and Rao (2009) claimed that it can be successfully implement and incorporate ICT. Because of this acknowledged position, school librarians are often familiar with a variety of digital resources that serve the needs of teachers, students, and other stakeholders (Luetkemeyer, 2017). Therefore, introducing and improving e-libraries and digital zones in school libraries is critical to creating an inviting space for 21st-century learners.

The widespread adoption of ICT has not only changed the role of libraries, but also librarians as facilitators of learning resources. First Lady of the United States, Laura Bush (2002) posited that books, information technology and school librarians who are part of the schools' professional team are basic ingredients for student achievement. Hossain (2015) further implied that with the utilization of ICT, school librarians currently are not only actively taking part in acquiring quality reading materials, but also with lesson planning and providing students with necessary information and digital literacy skills. In a similar fashion, Johnson (2019) stated that there is a pressing need for librarians to help teachers learn to use technology to reach today's students. IFLA's School Library Manifesto (1999) demonstrated that, when librarians and teachers work together, students achieve higher levels of literacy including ICT skills. In their joint statement on school libraries and ICT, the Australian Library and Information Association (ALIA) and Australian School Library Association (ASLA) mentioned that current and emerging ICT is essential for effective information delivery in 21st-century school communities. School librarians embed information and digital literacy skills into the curriculum and offer a range of ICT learning and teaching opportunities within their school community (ALIA & ASLA, 2016). Finally, according to IFLA/UNESCO school library guidelines (2002), the school library must have adequate and sustained funding for technologies and the costs of using ICT equipment, software and licensing costs, if these are not included in a general ICT budget for the school.

If the school library operates a system allowing student access on a needs basis, and by providing the quality and variety of resources, including ICT provision, these can be significant factors in student learning (Williams et al., 2002). The use of ICT in schools can help the students to reduce the knowledge gap with developed countries and make them confident to compete with the knowledge society (Imon, 2017). Loertscher and Woolls (2002) contend that the four cornerstones of a school library program - reading literacy, collaboration, information technology, and information literacy - need to be present to build a strong library program that supports all teachers and learners within a school. Florida's Technology Integration Matrix (TIM) (Welsh, Harmes & Winkelman, 2011),

is an example of information technology tool that can be combined with existing library lessons where technology skills are integrated. As shown in Figure 1, Florida's TIM provides a framework for describing and targeting the use of technology to enhance learning. The Florida's TIM was developed to help guide the complex task of evaluating technology integration that incorporates five interdependent characteristics of meaningful learning environments: active, collaborative, constructive, authentic, and goal-directed.

Figure 1: The Florida's Technology Integration Matrix (Welsh, Harmes & Windelman, 2011)

LEVELS OF TECHNOLOGY INTEGRATION → / CHARACTERISTICS OF THE LEARNING ENVIRONMENT ↓	ENTRY LEVEL The teacher begins to use technology tools to deliver curriculum content to students.	ADOPTION LEVEL The teacher directs students in the conventional and procedural use of technology tools.	ADAPTATION LEVEL The teacher facilitates students in exploring and independently using technology tools.	INFUSION LEVEL The teacher provides the learning context and the students choose the technology tools to achieve the outcome.	TRANSFORMATION LEVEL The teacher encourages the innovative use of technology tools. Technology tools are used to facilitate higher order learning activities that may not have been possible without the use of technology.
ACTIVE LEARNING Students are actively engaged in using technology as a tool rather than passively receiving information from the technology.	Information passively received	Conventional, procedural use of tools	Conventional independent use of tools; some student choice and exploration	Choice of tools and regular, self-directed use	Extensive and unconventional use of tools
COLLABORATIVE LEARNING Students use technology tools to collaborate with others rather than working individually at all times.	Individual student use of tools	Collaborative use of tools in conventional ways	Collaborative use of tools; some student choice and exploration	Choice of tools and regular use for collaboration	Collaboration with peers and outside resources in ways not possible without technology
CONSTRUCTIVE LEARNING Students use technology tools to connect new information to their prior knowledge rather than to passively receive information.	Information delivered to students	Guided, conventional use for building knowledge	Independent use for building knowledge; some student choice and exploration	Choice and regular use for building knowledge	Extensive and unconventional use of technology tools to build knowledge
AUTHENTIC LEARNING Students use technology tools to link learning activities to the world beyond the instructional setting rather than working on decontextualized assignments.	Use unrelated to the world outside of the instructional setting	Guided use in activities with some meaningful context	Independent use in activities connected to students' lives; some student choice and exploration	Choice of tools and regular use in meaningful activities	Innovative use for higher order learning activities in a local or global context
GOAL-DIRECTED LEARNING Students use technology tools to set goals, plan activities, monitor progress, and evaluate results rather than simply completing assignments without reflection.	Directions given; step-by-step task monitoring	Conventional and procedural use of tools to plan or monitor	Purposeful use of tools to plan and monitor; some student choice and exploration	Flexible and seamless use of tools to plan and monitor	Extensive and higher order use of tools to plan and monitor

However, there is a lack of understanding of what librarians can do for a school community and a belief that children do not need help with learning how to use technology (Tait et al. 2019). This is not an exception in developing countries such as Bangladesh where libraries and librarians have to face many hurdles due to lack of support from the parent organization, government and policymakers (Islam & Islam, 2007) and this is even more vulnerable in school library sector. From the available literature, it was revealed that no significant study was conducted on ICT facilities and literacy in rural NGS school libraries in Bangladesh. Ismail et al. stated (2018), it is the responsibility of school libraries to provide ICT facilities to students, and this is to ensure that no student is left behind in technological advancements, which would help to reduce the digital divide. This could further be analysed and addressed by understanding where technology environments stand in the Florida's TIM, in order to address the digital divide.

Research Objective and Questions

The objective of this study is to investigate ICT facilities and services in rural NGS school libraries in Bangladesh along with the ICT literacy of NGSSs assistant librarians. The following research questions guided the study to achieve the study objectives.

- What ICT facilities and services are available in the NGS school libraries?
- What ICT literacy do NGSSs assistant librarians have?

Methodology

The data reported here was derived from an earlier survey conducted in 2017-18 called, "Status of Secondary School Libraries and Librarians in Bangladesh: Opportunities and Challenges." An exploratory method approach was followed in this study. Initially, in the qualitative phase, five members of the School Library Association of Bangladesh (SLABD) including the President and Secretary General were interviewed face-to-face and online (via voice and text messaging). The data gathered from this phase was collected on an MS Excel spreadsheet under five broad categories: Professional Status; Professional Challenges; Library Collection and Services; ICT Facilities, Services and Usage; and Professional Development (PD) Opportunity.

In the quantitative phase of the study, an online survey was developed based on the outcomes of the qualitative phase based on the literature review and interviews with professional school librarians. The questionnaire consisted of five short sections. The first part of the survey aimed to explore the professional status of school librarians e.g. academic or non-academic staff. It then explored the workplace challenges and professional development opportunities of the respondents. Section three examined library collection, services and general facilities and section four covered ICT facilities, services and usage - including ICT literacy of school librarians. Finally, the survey gathered demographic information including the educational and professional experience of the respondents in section five. The survey was then shared with the target population, NGSSs assistant librarians in English and Bengali, on the School Library Association of Bangladesh (SLABD) Facebook group. The total membership of the SLABD Facebook group members was 1281 [March 2018], but many of them were inactive and not every member of the group are school library professionals. The survey link also was shared with the Library Professionals of Bangladesh listserv. There were a few follow-up posts and email sent to encourage survey participation and the intention was that as many relevant professionals would complete the survey as possible, to collect data from the profession as a whole, and not just from those regularly use social media.

The responses were automatically recorded and tabulated on Google Forms and further analyzed using MS Excel. Most of the applied data received was from the 'ICT in the Library: ICT Facilities, Services and Usage' sections of the questionnaire. Some respondents omitted answers to questions that are reflected in the varying sample size (n) values.

Summary of Findings

A library is a service institution. Its basic objective is to provide information in any form to its users. The quality of the services and ICT facilities provided by the library to its users will also determine the effectiveness of the library. Quality of services and ICT facilities can be measured in two ways either by evaluating the services in comparison to the best available in the world or measuring the satisfaction levels of the users on these services and facilities (Mezbah-ul-Islam, 2003). This study takes into account the following variables of the NGSS libraries.

Demographic profile of the respondents

Demographic data helps to provide a useful context for our findings particularly on participants' working location such as urban or rural. From the online survey 86 (n=86) responses were received from 33 provinces out of 64 in Bangladesh. Most of the respondents were male (88.4%), with only 11.6% female. More than half of the respondents had a master's degree in various disciplines.

Regarding professional qualifications, (e.g., Library and Information Sciences - LIS), most assistant librarians had an LIS Diploma (74.6%) as indicated in Table 1. An LIS diploma (1-2-year course) with a bachelor's degree (3-4 years) from a recognized university in any discipline are the minimum requirements to be a school librarian in Bangladesh. We considered education level in this study to investigate whether holding a graduate or postgraduate degree equips someone with more ICT skills or not. Surprisingly, the results from our collected data showed that there was no distinguishable ICT skills difference among the participant school librarians with a bachelor's degree or higher.

Table 1. Frequency Distribution by Educational Qualifications (n=85)

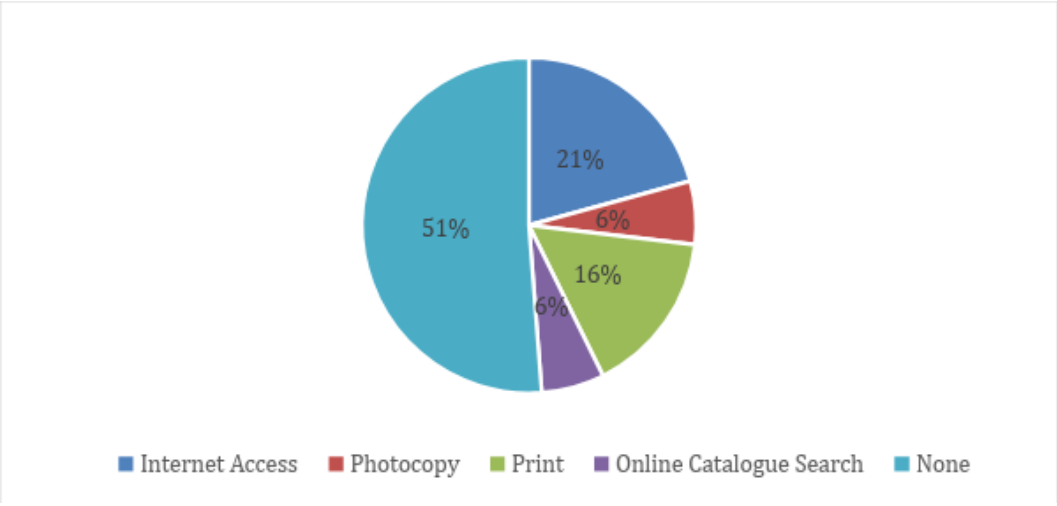
Educational Qualifications		LIS Degrees				Total
		Bachelor's degree	Certificate	Diploma	Master's Degree	
General Degrees	Bachelor's Degree	5	0	28	0	33
	Diploma	0	0	3	0	3
	Master's Degree	0	1	33	15	49
Total		5	1	64	15	85

**Bachelor's degree- 3 years undergraduate taught program, Diploma- 1-year non-degree course and master's degree -1- or 2-year postgraduate program.*

Research Question 1: What ICT facilities and services are available in rural NGS school libraries?

In answering the question of, 'What ICT facilities and services are available in respondents' rural NGS school libraries?', it is found that more than half of the respondent school libraries do not have any ICT facilities such as computers for catalogue search or a photocopier or printer. Only 21% of respondent school libraries have Internet access and 6% have computerized catalogue search facilities among others illustrated in Figure 2.

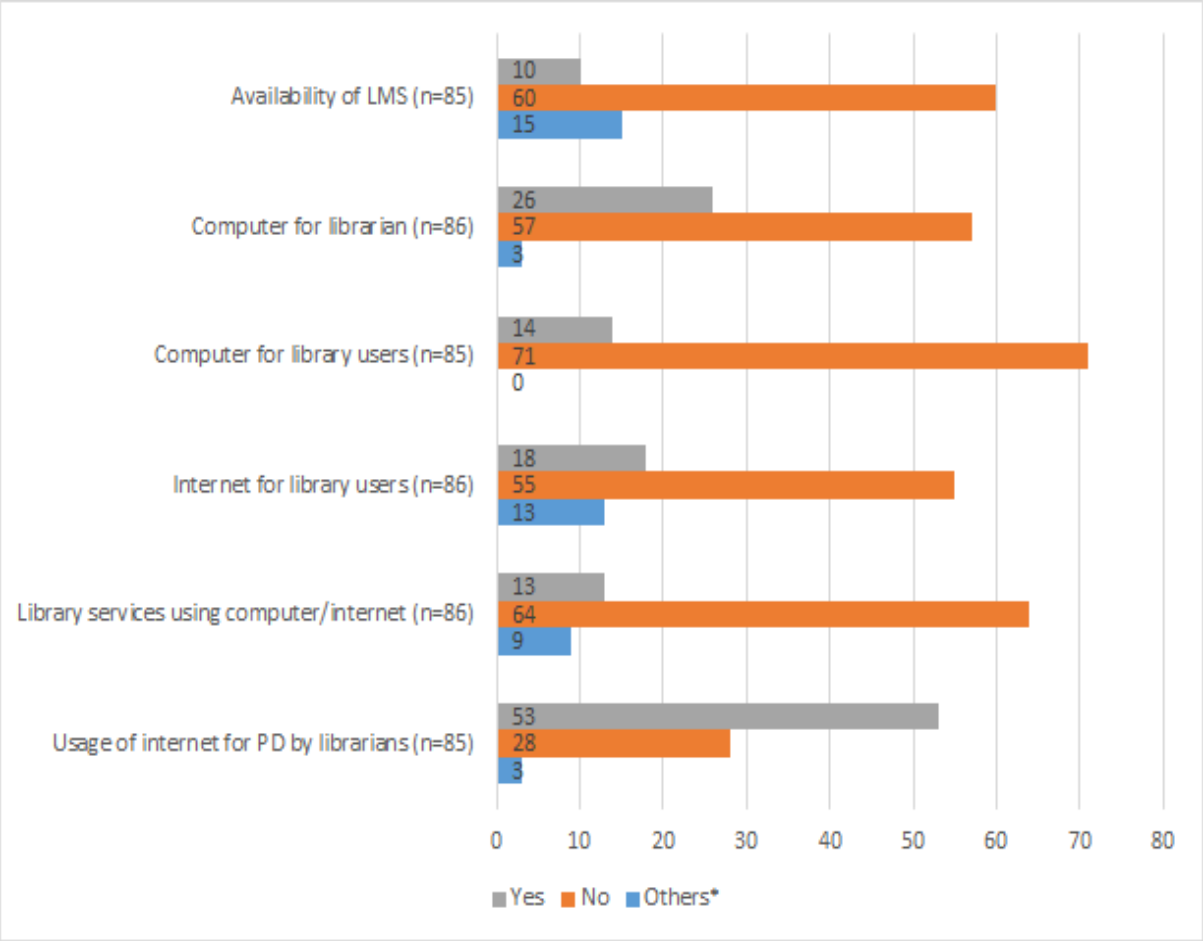
Figure 2: ICT Facilities in NGS School Libraries (n=82)



It should be noted that the answer to the survey question, 'Does your library provide computer or internet access to users?', showed that the vast majority of assistant librarians (83.3%,

n=79) conveyed their school libraries do not have such facilities for users. From the survey it is also revealed that to perform school library related tasks, most of the school librarians (66.3%, n=86) do not have a computing device in their workplace. Only 30.3% and 21% assistant librarians have computing and Internet access respectively in the workplace. Some of the survey participants use their personal computer and data packages to access the Internet. Regarding the Library Management System (LMS) or library database usage in school libraries, a majority of the respondents replied 'No' and a good number of them acknowledged that they are not familiar with LMS. Figure 3 illustrates these issues in detail.

Figure 3. Frequency Distribution by Computer and Internet Facilities and Usage

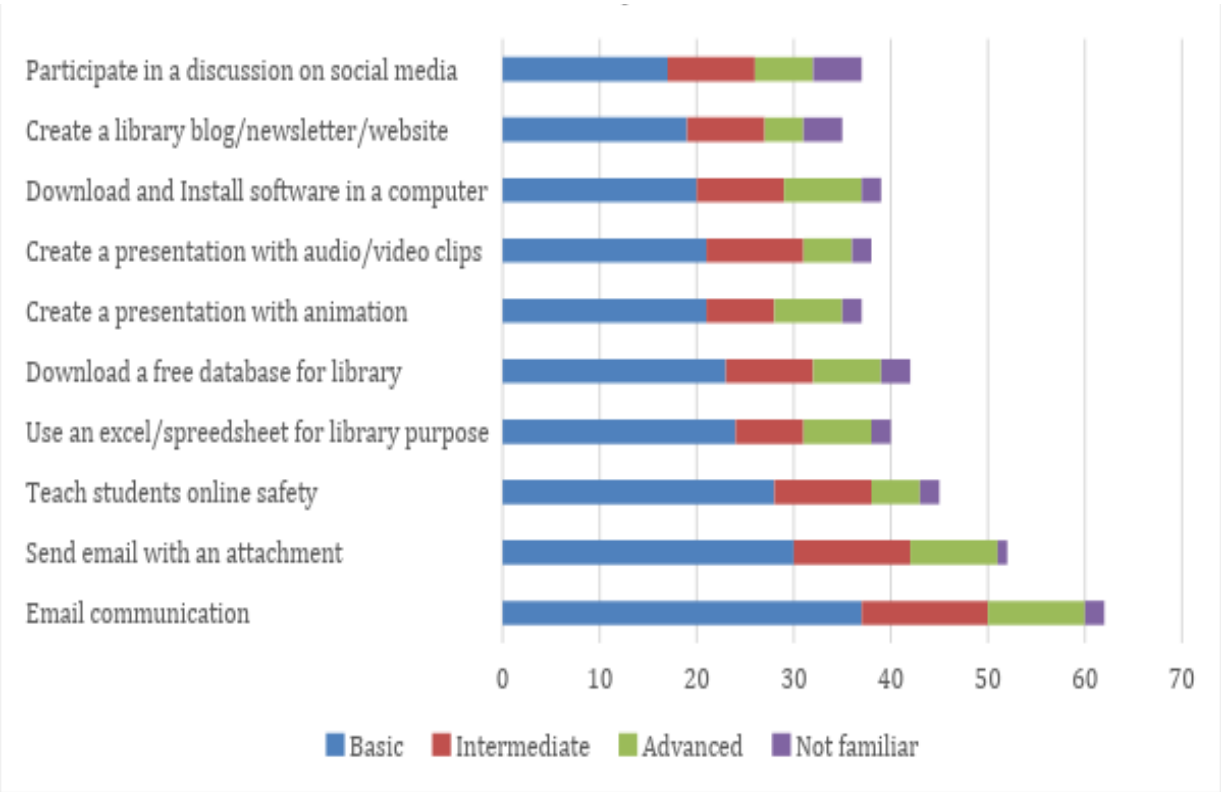


**others- personal computer/internet data*

Research Question 2: What ICT literacy do assistant librarians have?

Data received from the survey not only indicates that there are insufficient ICT facilities in school libraries, but it also revealed that a significant number of NGSSs library professionals have only basic ICT literacy skills - as indicated in Figure 4. Although, almost all of them seem comfortable using email for communication purposes, only a small number of assistant librarians possess advanced ICT skills such as creating a library blog, library website, library newsletters or downloading and running a library software. However, a majority of the participants are knowledgeable in teaching digital literacy skills and online safety in a classroom setting. A small percent of assistant librarians acknowledged that they are not familiar with the ICT applications mentioned in Figure 4.

Figure 4: ICT and Internet literacy of NGSSs assistant librarians (n=62)



To some extent, the outcome of Figure 4 indicates that the LIS diploma curriculum requires a revision and ICT literacy of LIS students need to be strengthened. The reason we mentioned the LIS diploma curriculum is that the majority of the participating school librarians possess an LIS diploma. Moreover, related ministries and departments can organize ICT training for appointed school library professionals to improve their ICT literacy skills. This is also one of the desired skills of school librarians, since they want to develop to carry out their work better.

To understand the NGSSs assistant librarians' attitudes towards their professional goals, the survey asked them, 'What would help you to carry out your work more effectively?' The top three areas of improvement, out of seven, were focused on 'Library Management', 'ICT' and 'Teaching Skills'. These were highly desirable skills that they would like to improve (see Table 2). From the same question, we also identified assistant librarians' personal ambitions such as better salary and higher education. These results can be seen in Table 2.

Table 2: Professional goals of NGSSs Assistant Librarian (n=80).

	Professional aspirations			
	Frequency	Percent	Valid Percent	Cumulative Percent
Better Salary	3	3.8	3.8	7.5
Higher Education	4	5.0	5.0	12.5
I am not sure	1	1.3	1.3	13.8
ICT Training	**23**	**28.7**	**28.7**	**42.5**
Library Management Training	**37**	**46.3**	**46.3**	**88.8**
Principal/Headmaster/Teacher Support	3	3.8	3.8	92.5
Teaching Skills Development	**6**	**7.5**	**7.5**	**100.0**
Total	80	100.0	100.0	

Discussion

Data received from this study confirmed that NGS school libraries in Bangladesh have a significant shortage of ICT facilities and services even though a majority of secondary schools have ICT and multimedia facilities. As noted by Shuva and Akter (2015), if the GOB immediately takes the necessary initiative to ensure ICT facilities to all schools, colleges and public libraries by 2021, Bangladesh will be able to mitigate the current digital divide scenario. If we are to address the worrying state of digital literacy in Bangladesh, an effort must be placed in both primary and secondary education. Nowshin (2018) argued there is no alternative to quality ICT-based education in all primary and secondary schools in Bangladesh. Proper attention on these aspects, therefore, is crucial to gain maximum benefit of using ICT in secondary education in Bangladesh.

As observed from the data set, many of the responding assistant librarians have a lack of technology skills, and there is no comprehensive initiative from the GOB to upgrade their knowledge and skills. In Bangladesh, there is no professional and institutional organization that offers specialized training or courses on school librarianship (Hossain, 2018). As a result, there is almost no opportunity for school library professionals to fulfill their professional aspirations they need to address from the concerned authority such as the Ministry of Education. It was observed in the province of Ontario, Canada, that schools with professionally-trained school library staff have reading achievement scores that are approximately 5.5 percentile points higher than average in Grade 6 EQAO (Education Quality Assessment Organisation) results. Data such as this should be taken seriously, since it demonstrates the importance of professional training and its positive impact on student learning (Ontario School Library Association [OSLA], 2014). It also emphasizes that trained professionals add value to the development of much needed skills such as critical thinking and literacy skills, which could be transferable to other subject disciplines or further aided with the use of technology.

Referring to the literature review, numerous studies claimed that ICT knowledge and skills are essential for libraries and librarians to form communities, disseminate information, collaborate, converse and create content anywhere and anytime (Bailie, 2015). Similarly, JISC's (2017) 'Seven Elements of Digital Literacies' model put ICT literacy at the heart, linking together information, data and media literacies, digital creation and problem solving and innovation.

Through this investigation, we gain insight into how NGSSs assistant librarians of Bangladesh feel. Further investigations need to take place in order to address possible solutions from assistant librarians, relative to their contexts. As a first step, providing ICT facilities and access to the Internet would empower their professional attitudes and improve the efficiency in their services, but the concerned authority is yet to realize this impression.

In addition to this, further emphasis needs to be placed on professional development. Although some self-directed PD is in place using social media, without the resourcing provided by policy-driven outputs, grassroot initiatives are unsustainable (Inskip, 2018), which suggest a combined approach to PD for optimal output. The GOB and the concerned authorities need to provide the necessary scope and motivation to upgrade the professional capacity of school library professionals.

Recommendations

Establish ICT Facilities in School Libraries

With the country moving towards a digital future, it is essential that school libraries also evolve with time, which is also encouraged in the National Education Policy 2010. The government should confirm ICT facilities and Internet access to each school library in Bangladesh. This is to ensure we have a future generation who are qualified in ICT skills. Failing to support this could result in a lack of information and a digital literate workforce in the future of Bangladesh. It is understood that for a developing country like Bangladesh, it is not possible to establish ICT facilities for all 20,000 secondary school libraries in a year or two. This would need to be a gradual initiative. Nonetheless, it is possible to create a 'scope and sequence plan' that will pave the way for school libraries towards sustainable development including ICT facilities and services. The GOB also can allow some particular budget or incentives for the school libraries on the proper implementation of ICT in selected school to see how an ICT equipped digital school library impacts its community of learners and teachers. Experts can be appointed to make digital school libraries, create digital contents according to the curriculum for further impact justification. Finally, Bangladesh can follow some other developing countries in the execution of ICT strategies in school libraries.

Improve School Librarians' ICT Skills

To offer ICT-based services in school libraries, library professionals need necessary professional developmental opportunities. The GOB, related ministries and departments need to team-up and initiate relevant PD for school librarians and at the same time streamline the existing ICT training projects across the country. The attitude and skills of school library professionals can be developed positively by conducting seminars and conferences on 'ICT Application in School Libraries' in national, regional and district levels. It is strongly recommended that with proper training, school library professionals have substantial prospects in developing information and digital literacy among school students by further supporting the use of technology beyond simply using it for mundane tasks, but to make meaningful use by scaffolding collaboration and critical thinking skills. This would further contribute to building a digital Bangladesh and reduce the risk of digital divide.

Build Partnerships with Related Stakeholders

With the governmental bodies, non-government organizations of the country have an important role in developing libraries as part of the 'Corporate Social Responsibility' and the GOB should encourage this partnership by offering tax exemption. Public libraries and school cooperation are at the heart of the "Want to Read" programme (Hossain, 2016). Schools that do not have libraries or lack reading materials can be taken on excursions to public libraries or libraries in other schools to introduce the library and its resources.

The Library Association of Bangladesh (LAB), Bangladesh Association of Librarians, Information Scientists and Documentalists (BALID), School Library Association of Bangladesh (SLABD) and other professional bodies should work hand in hand to promote the importance of school libraries and libraries in general. LIS faculties and practitioners should work hand-in-hand to convince policymakers and other donor agencies for funding in school libraries. Radio, television and online media could also do more to promote reading, for example by broadcasting books on air or featuring school library programs. Better collaboration between these various bodies would also help to close the gaps between urban and rural areas and between different districts.

Conclusion

This study explored the general ICT environment of secondary school libraries, particularly those in rural areas and found that they are not up to standards with providing necessary ICT based services, and user access which is required by the latest national education policy. School library professionals also lack 21st century ICT skills necessary for a robust school library service. Although school libraries are important resource centres that support curriculum delivery and important pedagogical matters, it is alarming that in Bangladesh, only a minority of secondary school libraries are equipped with ICT facilities. It can be inferred that, policymakers and school management in Bangladesh are yet to figure out a suitable plan for building school libraries equipped with ICT or they fail to recognize the role of ICT in quality education. This reinforces the argument that in Bangladesh, to support the country's ICT master plan in secondary education and the Digital Bangladesh initiative, one of the efforts that should be made is a combination of policy and non-governmental initiatives to equip school libraries with ICT facilities. In addition to this, there needs to be further development in building the capacity of school librarians to ensure robust library services across the country.

This was an exploratory study with limited samples; therefore, further studies are needed to examine how school libraries and librarians envision having ICT and Internet access: in developing and promoting services; the effect of this usage on student learning, and understanding the culture surrounding ICT usage for library services. This additional research would assist policymakers in making informed decisions when planning a new project or policy for school libraries and librarians. It is suggested that future studies should cover a broader population including students, teachers and administrators. Research could perhaps be undertaken using the 'UNESCO ICT Competency Framework for Teachers' (2011) as a starting point for measuring school librarian ICT literacy. It is also encouraged that future academic research go beyond questionnaires and use interviews and observation methods for an in-depth look at the impact of ICT facilities in school libraries. This would raise awareness for the need to invest and fund ICT facilities in school libraries. It is envisioned that ICT, that is incorporated in school libraries, would open multiple opportunities for school library professionals to offer 21st century services to their users. The result of disregarding these realities pose greater risks and as a result increasing the digital divide in Bangladesh.

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