

Incorporating Teaching-Learning Materials in Instruction: Perspectives of Special Educators in Bangladesh

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***Abstract:** Teaching-learning materials are considered as a valuable tool for effective instructional practice in responding to the diverse needs of the students. This mixed-method study aimed to understand the current condition and challenges of the usage of teaching-learning materials by the special educators in the context of Bangladesh. A total of 101 special educators across the country were selected as research participants in quantitative part of the study. In qualitative part, 15 special educators were selected. Survey and in-depth interview were utilized to extract the data. The survey questionnaire was developed and adapted with the light of previous study and interview questions were developed aligning with research objectives and with the understanding of previous relevant research. Survey data was analyzed by descriptive statistical analysis and interview data was analyzed by thematic analysis technique. Result indicated teachers' interest and positive mindset in using teaching materials in the classroom in several areas such as a tool for effective teaching and assessment, ensuring effective learning environment and professional capacity enhancement. Besides, some challenges were also explored from the experiences of the special educators in the context of developing and utilizing the teaching materials. The study findings can be implicated in policy practice to promote special educators' professional development and also in arranging necessary means to provide teaching learning materials in the class.*

***Keywords:** Teaching-Learning Materials, Special Educators, Instructional Practices, Learner Diversity, Bangladesh Context.*

1. Introduction

Teaching Learning Materials (TLM) are tools that are used by educators to enhance and facilitate learning. TLM are not only used to help achieve learning objectives, they make learning more practical as well as pleasurable (Kapur, 2021). TLMs are beneficial for the educators in various ways including reducing their teaching time and increasing their teaching qualities (Koşar, Yüksel, Özkilic, Avci, Alyas, & Çiğdem, 2003). Eniyawu (2005) described TLMs as tools that are utilized in turning abstract concepts into concrete mediums. He also noted the fact that the instructors use teaching learning materials to complement and enrich their lessons. Ikerionwu (2000) also described TLMs as tools or resources that help the instructor make learning more meaningful for students.

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In special education, the use of Teaching Learning Materials (TLMs) plays a significant role in supporting diverse learning needs. For children with disabilities, TLMs are not merely supplementary; they are critical tools that help overcome barriers to learning, promote active participation, and enhance overall educational outcomes. Special educators, therefore, need to be well-equipped with the knowledge, skills, and resources to effectively integrate these materials into their teaching practices (Saris & Chevalier, 2017).

The role of TLMs becomes even more crucial in inclusive settings, where students with different types of disabilities, such as learning disabilities, hearing impairments, and intellectual disabilities, are taught together (Ainscow et al., 2016). The importance of TLMs in special education cannot be overstated. These materials, which include tactile, visual, auditory, and multimodal resources, play a vital role in making learning more accessible and engaging for students with disabilities (Aloraini, 2019). TLMs are designed to facilitate interaction, understanding, and participation in the learning process, particularly for children who may struggle with conventional instructional methods (Sharma & Muthukrishna, 2019). According to Davis (2016), visual aids such as charts, pictures, and graphic organizers are invaluable tools for students with intellectual disabilities, as they assist in simplifying complex information. Additionally, these visual materials can cater to students with hearing impairments, providing alternatives to verbal instructions (Prentice, 2014). Similarly, tactile materials like braille books, raised-line drawings, and textured surfaces are essential for students with visual impairments. They help these students access the same curriculum as their peers, promoting inclusivity in the classroom (Ellis & Kuehner, 2015). Furthermore, auditory materials, such as voice-recorded instructions and sound-based tools, are key for students with hearing impairments or those with attention difficulties (Beukelman & Mirenda, 2013). TLMs can be particularly beneficial in helping bridge communication barriers, provide sensory experiences, and reinforce conceptual understanding. For example, visual aids such as pictures, charts, and videos can support children with hearing impairments, while tactile materials like braille books or textured surfaces can aid those with visual impairments (Jung & Kim, 2015). Auditory materials, such as recorded speech or music, can be used to engage students with hearing disabilities or those with attention deficits (Dukes, 2017). The goal of using such materials is not only to assist in knowledge acquisition but also to foster a more inclusive educational environment where children with special needs can thrive.

In Bangladesh, a country characterized by its socio-economic challenges, the education of children with disabilities has long been marginalized. Like in many developing countries, Bangladesh faces significant challenges in providing quality education to children with disabilities. According to the World Bank (2013), approximately 1.6 million children in Bangladesh live with disabilities, yet the education system has struggled to accommodate their needs. Teaching special children in Bangladesh presents several challenges, including limited access to specialized training for teachers, a lack of appropriate teaching learning materials, and insufficient support from educational policies. Additionally, there is often a shortage of resources and infrastructure to

accommodate children with special needs in mainstream schools. These barriers hinder the effective inclusion and educational development of special children in the country (Rahman & Islam, 2019). Among these challenges, one of the major barriers special educators in Bangladesh face is in utilizing TLMs effectively. These include insufficient training, lack of resources, and inadequate support from educational authorities. As Hossain et al. (2020) highlight, the majority of special educators in Bangladesh have limited exposure to specialized training on the use of TLMs. Consequently, many teachers resort to traditional teaching methods that may not meet the diverse needs of students with disabilities. Furthermore, the scarcity of high-quality, culturally appropriate, and affordable TLMs exacerbates the challenges in special education (Tashakkori & Teddlie, 2010). Many teachers in Bangladesh also lack access to technology, which could play a significant role in improving the availability and diversity of TLMs (Islam & Habib, 2020).

Another critical issue concerning the use of TLMs in Bangladesh is the availability and accessibility of these materials in schools. A study by Rahman (2018) found that many special education schools in Bangladesh suffer from inadequate facilities and resources, including TLMs. While some schools may have access to basic materials such as charts, flashcards, and audio-visual tools, more specialized resources such as braille books, adaptive technologies, and learning software are often absent. The lack of proper funding, coupled with the absence of a comprehensive policy for the distribution of TLMs, further exacerbates the problem (UNICEF, 2018). In addition, the lack of a systematic approach to evaluating the effectiveness of TLMs in special education settings leaves much to be desired in terms of informed decision-making and resource allocation.

There is a growing body of research that emphasizes the role of technology in enhancing the accessibility and effectiveness of TLMs for students with disabilities. In developed countries, the integration of assistive technologies has transformed the educational landscape for students with disabilities (Edyburn, 2013). For instance, screen readers, voice recognition software, and interactive whiteboards have made it easier for students with visual or motor impairments to participate in learning activities. In the context of Bangladesh, however, the adoption of such technologies has been slow, and many schools still rely on outdated or manual teaching materials. The digital divide, which refers to the gap in access to modern technologies between different regions and socio-economic groups, remains a significant challenge (Hassan & Zaman, 2017). Access to such technology remains limited in Bangladesh, where budget constraints and lack of training often impede the integration of these modern tools in special education classrooms (Mansur & Karim, 2019).

Despite these challenges, there are promising efforts in Bangladesh to improve the quality of special education through the use of TLMs. One promising aspect of TLM usage among special educators is the growing collaboration between special education teachers and experts in assistive technology. In Bangladesh, some NGOs, such as the Bangladesh Protibondhi Foundation and ActionAid Bangladesh, have initiated projects to train teachers on the use of low-cost and accessible TLMs, such as locally made tactile maps and audio books (BRAC, 2019). These organizations often partner with

international bodies, like the Global Partnership for Education, to increase the availability of resources and to support teachers in integrating TLMs into their daily practices (UNESCO, 2020). This type of collaboration helps to address both the resource and training gaps that special educators face, creating more sustainable and context-sensitive solutions to the challenges of inclusive education. Several non-governmental organizations (NGOs), such as BRAC and Handicap International, have initiated programs aimed at training teachers and distributing learning materials to schools for children with disabilities. These initiatives have demonstrated the potential of TLMs in transforming special education practices, especially when combined with community involvement and advocacy for policy changes (Duflo et al., 2017). Additionally, international organizations like UNESCO and the World Bank have also supported efforts to improve inclusive education in Bangladesh, including the provision of TLMs and teacher training programs (UNESCO, 2020).

This research article aims to explore the current state of TLM usage among special educators in Bangladesh, examining both the opportunities and obstacles that exist in this area. Through a comprehensive analysis of the practices of special educators, the research seeks to delve into the usage of TLMs among special educators in Bangladesh, exploring their practices, challenges, and the impacts on the quality of education for students with special needs.

By understanding the challenges and potential solutions related to TLM usage, this research contributes to the broader conversation on improving the quality of special education in Bangladesh.

The research was conducted focusing on the following objectives:

- a. To explore the current scenario of using TLM among the special educators in Bangladesh.
- b. To identify the challenges faced by the special educators in using TLM.

2. Methods

This study employed a mixed-methods design to explore the incorporation of teaching learning materials in special education classrooms in Bangladesh. A total of 101 participants, consisting of 51 male and 50 female special education professionals from across the country were chosen as the sample group for this study. The participants, all special education teachers with varying levels of experience, were selected to ensure gender and geographical diversity.

Table 1: Percentage distribution of respondents along with categorizations

Category	Subcategory	Frequency (n)	Percentage (%)
Gender	Male	51	50.49%
	Female	50	49.50%
	Total	101	100%

Level of Education	BSEd	39	38.61%
	Bachelor's Degree	38	37.62%
	Master's Degree	20	19.80%
	Other	4	3.96%
Experience (Years)	0–5 Years	25	24.75%
	6–10 Years	34	33.66%
	11–15 Years	26	25.74%
	16+ Years	16	15.84%
Geographical Location	Urban	48	47.52%
	Semi-Urban	33	32.67%
	Rural	20	19.80%
Age Group	20–30 Years	22	21.60%
	31–40 Years	40	39.60%
	41–50 Years	28	27.72%
	51+ Years	11	10.89%

In addition to the quantitative survey, 15 participants were selected from the same pool of special educators for qualitative interviews to provide deeper insights into their experiences with TLMs in practice.

The quantitative data were gathered using a 12-item checklist inspired by Koparan's (2017) study which was adapted for the Bangladesh context. This checklist, rated on a 5-point Likert scale from "Strongly Disagree" to "Strongly Agree," aimed to assess educators' perceptions of the importance, effectiveness, and challenges associated with TLMs in special education classrooms. The survey allowed for a broad understanding of teachers' views on TLM usage. For the qualitative phase, semi-structured interviews were conducted with 15 participants. The interviews included 8 open-ended questions designed to explore participants' experiences with different types of TLMs, the benefits and challenges they faced, and the support they needed for effective integration. These interviews provided rich, detailed insights into the practical use of TLMs.

Quantitative data were analyzed using descriptive and inferential statistics to identify trends and significant differences in responses. The Likert scale data were coded numerically, and statistical software was used to analyze the responses. The qualitative data from interviews were analyzed thematically. Transcripts were coded to identify recurring themes related to TLM use, allowing for the identification of common challenges, strategies, and experiences, ensuring that the findings accurately represented the participants' perspectives.

All participants were informed about the purpose of the study, and their informed consent was obtained prior to participation. Confidentiality was maintained throughout the research, and all data were anonymized. Participants of this study were assured that their provided responses would be used only for research purposes. They were also ensured that they had the right to withdraw their participation from the study at any time without consequence.

Mixed-methods approach allowed for a comprehensive understanding of the use of teaching learning materials in special education classrooms in Bangladesh, providing both statistical insights and rich, qualitative data from experienced educators.

3. Result

From the interview and survey data, the findings are showcased below with several factors and themes.

A. Perspective on material usage

Preference on utilizing materials

All of the participants in their interview agreed with the fact that using teaching learning materials has greater aspect in increasing students’ attention, creativity, learning interest, memorizing ability and many more positivity.

Respondent 5 mentioned that,

We, the special educators always search the best alternatives while teaching. Our students are diversified with needs, strength and abilities. Teaching using only traditional methods is never sufficient for them. That’s why, we like to use multiple types of teaching learning materials for developing any concept or skill.

On the other hand, in survey data, a majority of the teachers expressed their strong interest, positive view and preference on using the materials in classroom.

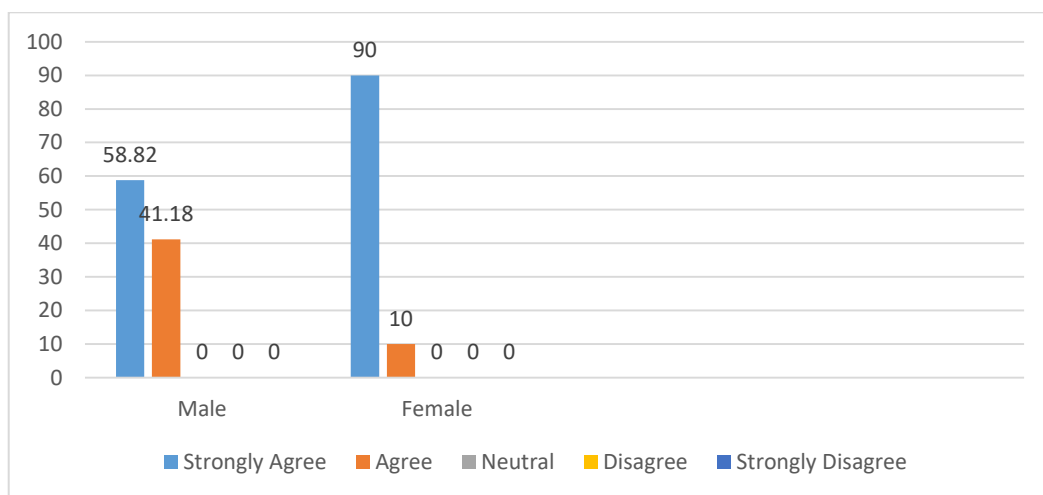


Figure 1: Interest of Special Educators to use Teaching Learning Materials

The above-mentioned chart shows the interest of special educators to use teaching learning materials in the class. Here, 58.82% of the male respondents strongly agreed and 41.18% agreed to their preference to use it while teaching. On the contrary, 90% of female teachers strongly agreed to it.

Effect on teaching-learning environment

In survey, special educators expressed that using different types of teaching learning materials can change the ambience of classroom. The following chart is linked with the statement that whether special educators think using materials makes the learning environment joyous or not. The statistical finding of this figure shows that, 70.59% males and 68% females strongly agree with the statement. 23.53% males and 30% females agree. Respectively 5.88% and 2% of male and female participants remain neutral.

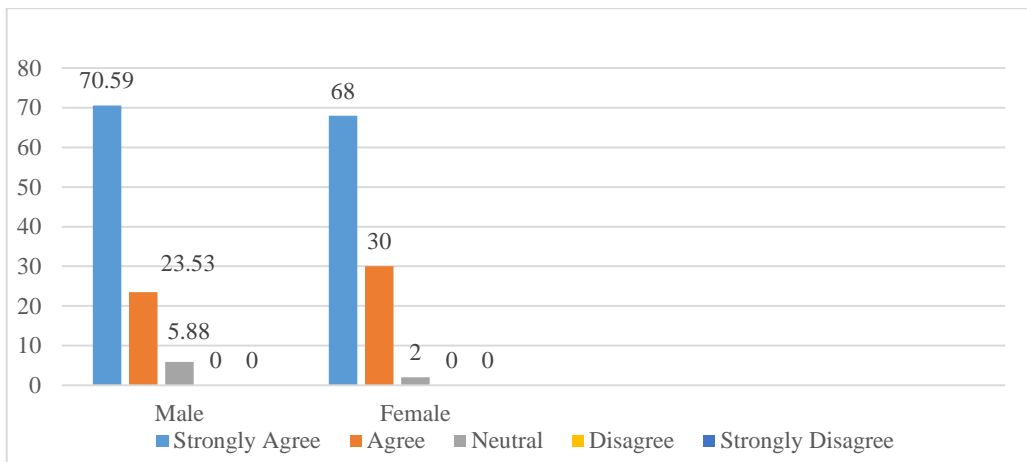


Figure 2: *Special Educators Perception on the Effect of Using TLM on Classroom Environment*

In the interview majority of the respondents also indicated the significance of TLM on the class environment. Respondent 12 mentioned,

As we consider text books as primary teaching learning material, we have to add some supportive approaches with that which can promote the learning process more progressively. Especially for the slow learners and the learners with special needs use different types of materials are proved beneficial beyond any question.

Respondent 7 said,

Materials can provide sensory delivery of a content. They can touch, observe a material and sometimes they can smell or taste it. This multisensory implication can benefit students more effectively.

Participant 1 mentioned that,

Like the general students, teaching learning materials hold a greater importance to the learners with special needs as, they help them consider their capability. It is often used as an approach of different therapeutic services.

Effective Teaching

Both the qualitative and quantitative data revealed the impact of TLM in effective teaching of the students with special needs.

Respondent 5, 6 and 11 specifically mentioned their observation about the gradual improvement of students' learning via teaching with the help of different materials. Respondent 6 stated,

I feel confident that my teaching effectiveness among students has significantly improved after using materials rather than my starting period of my career.

Respondent 11 added,

After seeing previously observed materials can help students recall the content, which enhances the learning sustainability of the students. Colorful and differently functional materials can rapidly grab their attention in lesson.

The survey outcomes also matched with the interview findings. In survey, all of the respondents found the materials as an effective tool for boosting the learning of the students.

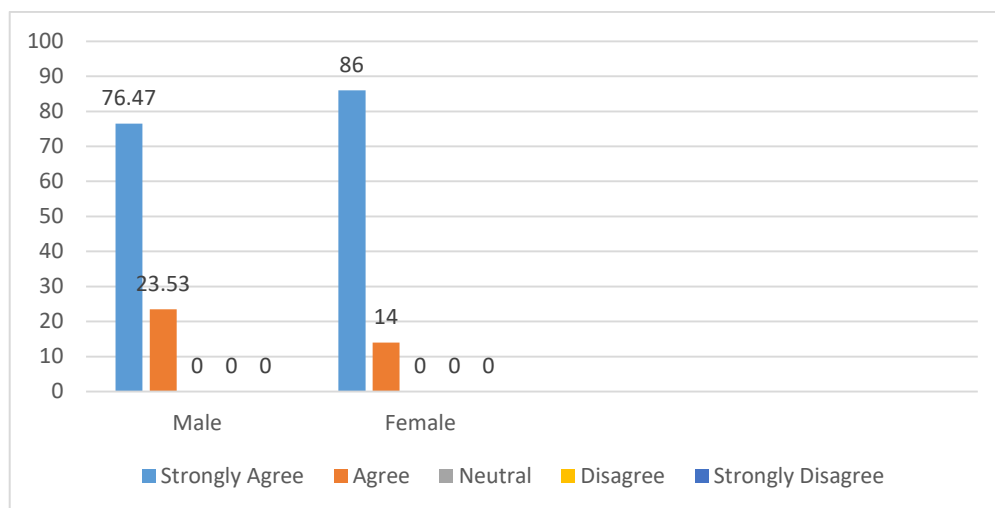


Figure 3: *Special Educators Perception on the Effect of Using TLM on Academic Achievement*

Above displayed chart exhibited all positive responses about the statement of the endurance of learning of the students with special needs after using teaching learning materials in any content.

Also, the following chart is about a statement which states that using materials while teaching encourages students with special needs to acquire new information and knowledge where, 88.24% male and 76% female participants strongly agreed.

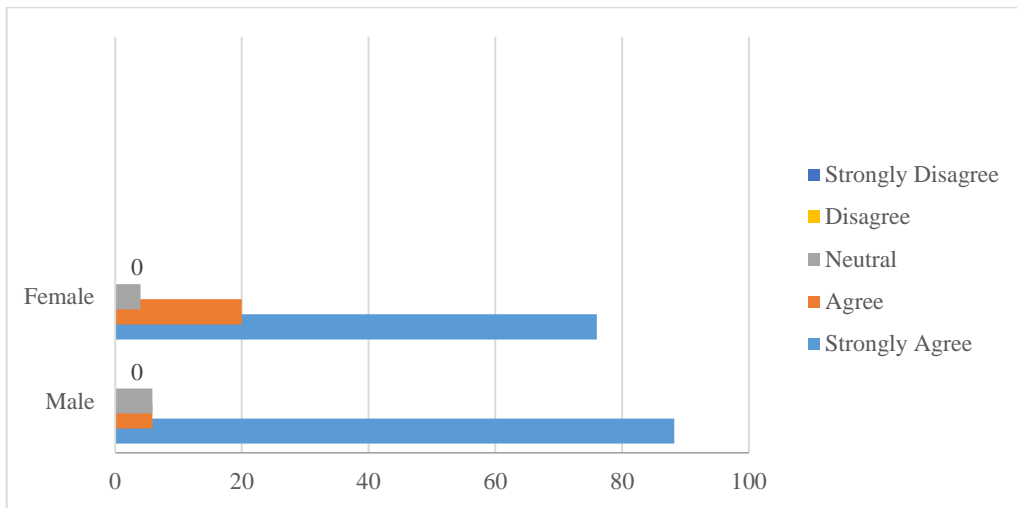


Figure 4: *Special Educators Perception on the Role of TLMs in Encouraging Learners*

5.88% male and 20% female respondents agreed on this. Besides, 5.88% and 4% respective male and female respondents remained neutral to the statement.

Moreover, the participants also expressed their positive attitude regarding the fact that the materials can help in attaining learning outcome within a short time span.

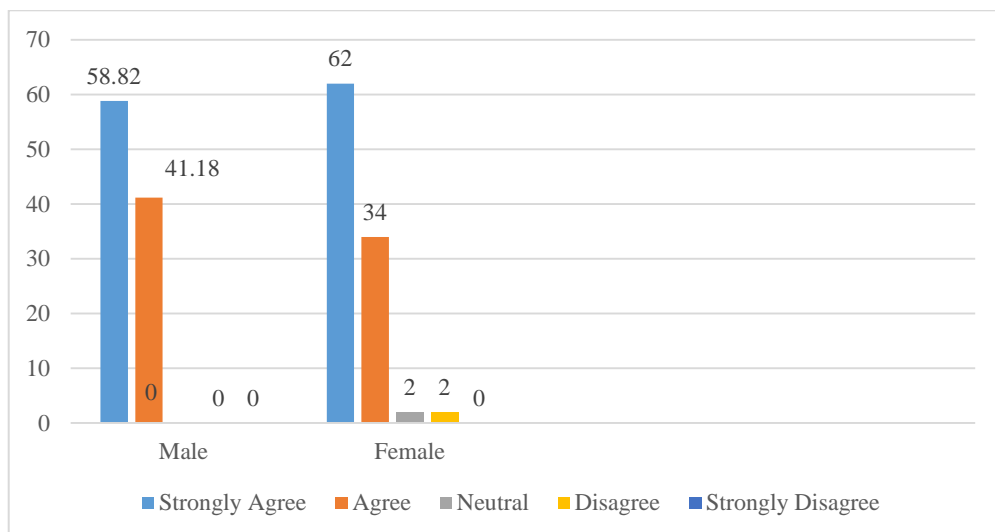


Figure 5: *Effectiveness of TLMs in Attaining Learning Outcome in Shorter Time Period*

In the chart above, survey participants responded to the statement if TLM can ensure proper learning outcome within a comparatively shorter time span. The survey findings show maximum positive response regarding this statement.

A Tool for Assessment

A significant number of the participants acknowledged that teaching learning materials are being used to assess students along with teaching content. They mentioned is as an easier option in assessment of the learning of the students. Participant 3 mentioned,

After providing content knowledge through a material, the same material can be used as an assessment tool to measure understanding and learning sustainability of the students.

Besides, Respondent 6 added her experience like this,

We can use different learning materials to measure students' achievement, current level of performance, learning progress. And for that, all we have to select the appropriate material considering some factors, like- student's interest level, capability etc.

Professional Capacity Enhancement

Most of the special educators agreed that using and creating materials enhances their creativity and confidence in teaching. Respondent 4 mentioned,

As a classroom teacher I know the IQ range and learning needs of all of my students. While creating any material I have to creatively think about those needs of my students. Whenever, I see them learning things with the help of those creation of mine, it gives me immense satisfaction as a special educator.

Respondent 7 stated that,

Before presenting any concept, a teacher needs proper planning of how he/she is going to execute the lesson. Its needs of thorough research and self-study to get a crystal scenario. This research and preparation are the success of creating a material that makes a teacher more efficient and skillful in the professional life.

In survey data, almost all of the participants identified TLM as an important tool for their professional development.

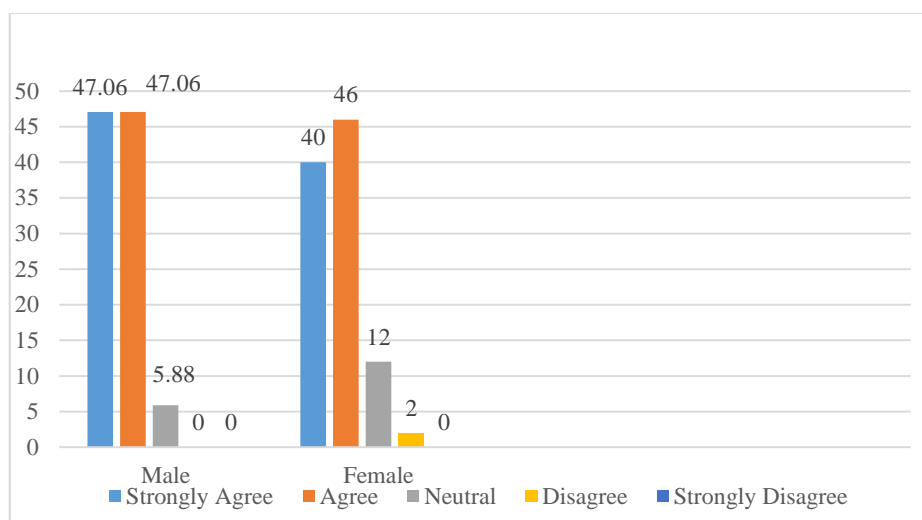


Figure 6: Role of TLMs in Professional Development of Special Educators

As displayed in this chart, majority of the respondents assent about the role of using TLM in their professional development as a special educator.

B. Challenges in using teaching learning materials

Hazards of using materials

Many participants in their interview mentioned that they have to make materials within a very low cost and therefore, some of the materials are not much durable. Respondent 2 stated that,

Materials that are easy to make and budget friendly are not long lasting, that’s why those cannot be used for a long time. On the other hand, it is very time consuming for the class teacher to manage extra time to create and organize those materials along with the heavy pressure of classes.

Besides, some teachers identified that large number of the students is a challenge for them because they cannot make materials for such large group within a short time. Therefore, they cannot offer range of materials to all of the students effectively. Respondent explained,

Working closely with one child or two children may be fun with materials, but when you imagine a class size of five students or more, every child wants to have those materials, because they consider those as a part of their play toys. This can create chaos in the learning environment.

Insufficient Funding

Participants showed a mixed response in the survey data about the acknowledgement of funding to make materials for their class. A majority of the participants disagreed on the statement about having sufficient funding to arrange teaching materials. The chart below shows the stand of the participants.

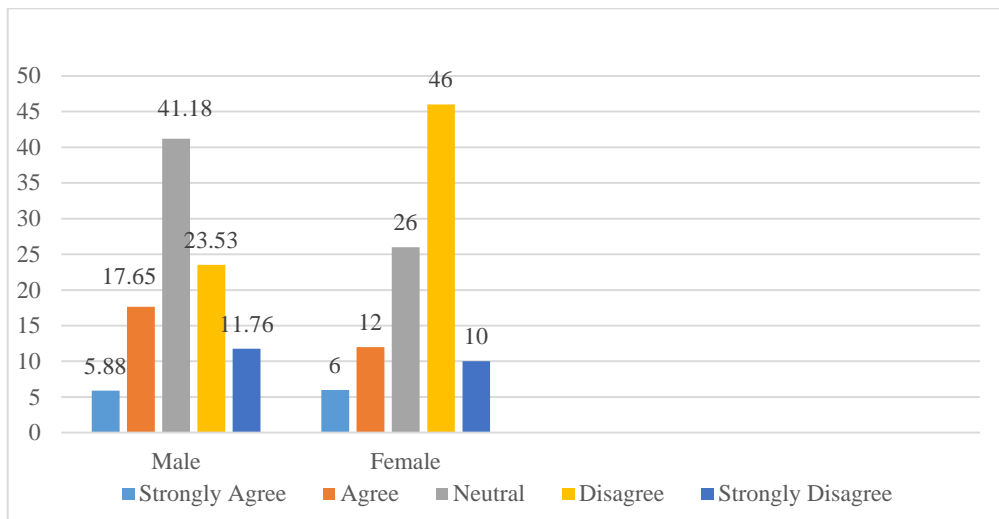


Figure 7: Sufficiency in Funding for Arranging Materials

The interviewees also expressed similar responses. Many respondents expressed the lack of funding as a vital challenge for them to arrange appropriate materials for the students with special educational needs. Respondent 2 denied getting any support from the institution and said,

I didn't get any financial support from my work place. I have to make them with my own cost.

However, some participants said they get funding but the process is complicated and sometimes the fun is not enough. Respondent 5 mentioned,

In my institution we get some financial support to create materials, but for that we have to convince the need and appropriateness of the material.

Respondent 8 added a different perspective,

We submit a budget after making a material & get the bill from the authority. We can use scanner and printer of our institution while making materials. We can also send materialistic needs like- marker, tape, glue, color paper etc.

Lack of Training and Skill

Respondents commonly expressed about lack of training facilities in material development and usage. At the same time most of them urged the necessity of quality training regarding this tremendously important learning aspect. Respondent 1 said,

As a student of education, I had some course content about teaching learning materials, as- how to use them, considerable factors to create materials, guidelines and protocols of using it on different types of students etc. But as I am working now as a special educator, I didn't get any further training from my workplace

Respondent 7 added,

We generally don't receive any training or workshop about material, but I think it is highly significant to get a proper training before we start our teaching career. Because special need children are seemed to be highly benefited through teaching learning materials.

On the other hand, a majority of the participants in the survey expressed that they have training and necessary skills in managing the materials. However, some of the respondents denied it.

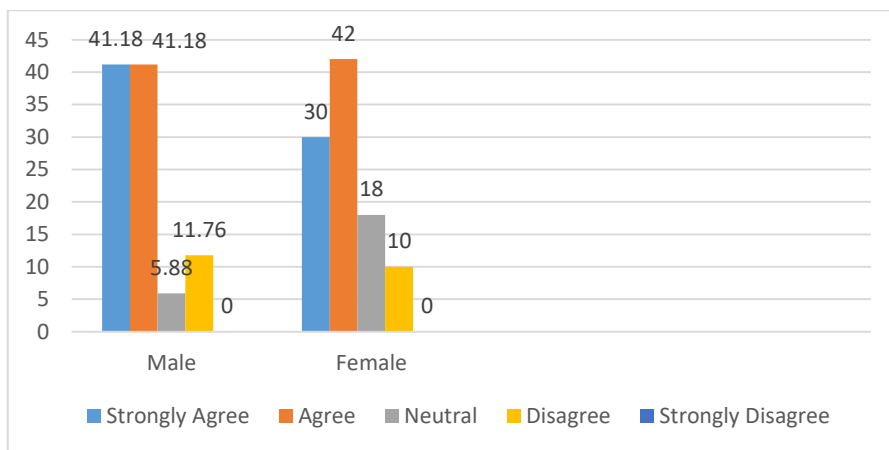


Figure 8: Special Educators Skills and Knowledges in Developing TLMS

In this chart above, respondents were asked if they think they have sufficient skill and knowledge for developing and using teaching learning materials where much positive response was unveiled from the special educators. Though a portion of respondents denied of having related proper skills and knowledge needed.

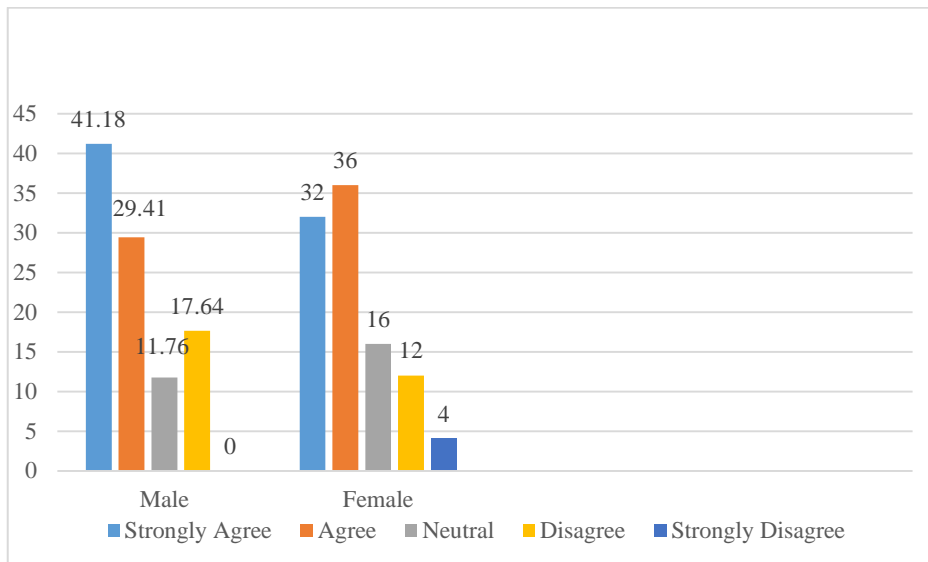


Figure 9: Training on Development of TLMs

The above-mentioned chart seeks response about if the respondents received sufficient training for creating and using materials. Where, a variety of mixed response appeared. Special educators are mostly seen having positive response about getting training about TLM. On the other hand, a portion of them expressed negative responses.

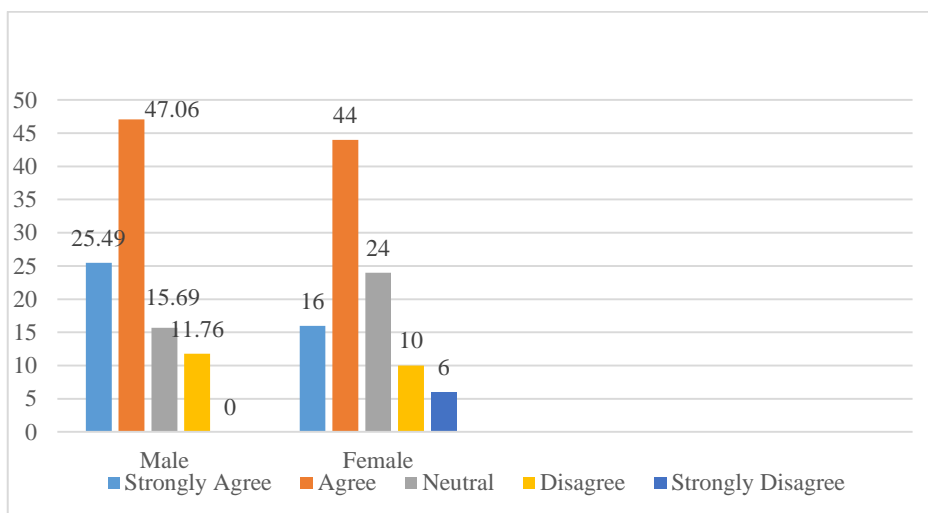


Figure 10: Assistance of Co-workers in Developing TLMs

The above-mentioned chart displays a much-differentiated reaction from the respondents. The statement was about whether the participants receive any assistance from their coworkers in the workplace while preparing any material. A combination of positive, negative and neutral opinion appeared regarding this aspect.

On the other hand, some teachers similarly mentioned the lack of co-workers' support in adapting and developing TLM. Respondent 8 mentioned,

Sometimes we take general approval of our senior colleagues before administering any material. But sometimes, we don't get the directions to generate new ideas or adapting a material.

Therefore, it can be concluded that co-workers' assistance in developing teaching materials is somewhat present.

4. Discussion

This study has identified several factors as well the perception on teaching learning materials from the voice of the special educators. In the context of perception, the study indicated that the teaching learning materials are considered as a significant tool in delivering the instructions in the class. Moreover, the special educator expressed their confidence on the materials by signifying the fact that these materials are vital to address the needs and strengths of the students with diverse abilities. This finding is in line with the previous study (Ahemd, Baloch & Karim, 2024) that also identified that teaching learning materials are very influential on students' academic performance. Several studies marked teaching learning materials as visually supported tool to understand and comprehend the relevant contents (Riyan, 2016) as well as offer hands on learning to the students rather than only typical learning activity (Shabiralyani et al., 2015). Besides, the current study revealed that the teaching learning materials are important in creating a joyful learning environment in the class. Besides, a strong preference has been found in special educators in the context of using materials in the class. Several study finding (Ahemd, Baloch & Karim, 2024; Amos, Eghan & Oppong, 2022; Kassim, & Nordin, 2024) is aligned with these perspectives emphasizing that teachers are interested in using the materials as it is considered as a strong tool to boost students' cognitive abilities as well as offering a range of options to the students in participating learning activities. Moreover, the present study found that teaching materials are helpful in effective teaching from several points of view such as boosting the confidence in teaching, attracting the students in exploring the new contents, time-efficiency in achieving learning outcomes. These findings are also aligned with previous research (Koparan, 2017; Amos, Eghan & Oppong, 2022) that mentioned teaching learning materials' significance in increasing confidence and interest in both students and the teachers. In addition, Sugiman et al. (2020) found that teaching aids are helpful for the students with disabilities in imaginative thinking such as mathematical reasoning. Besides, the effect of teaching aids creates a joyful learning for them. Also, in the context of increasing the meaningful participation of the students with special educational needs, the study found that materials and teaching aids play a vital role in including all the students in classroom

activities. This finding is also aligned with previous study findings (Andersen, Beuchert and Nielsen, 2025; Adjiovski et al., 2024) indicating that teachers' aides interventions increased the overall participation of the students with special needs in the classroom activities as well as in improvement in scores. Moreover, teaching learning aides can be a significant indicator of teachers' acknowledgement about their students with diverse needs in recognizing the competencies as well as addressing the maltreatment that the students faced. Similarly, teachers' appropriate response by offering relevant materials to the students with diversity ensures social justice (Rutherford, 2011). Besides, the study highlighted the fact of effective teaching mentioning the role of teaching aids in managing the classroom well and increasing teachers' confidence. This result parallels with another study (Adjiovski et al., 2024) which found that teaching aids can be helpful in regulating students' behavior in the class that also helps the teachers in practicing effective instruction. Furthermore, the study found teaching learning materials as an effective tool for assessment of learning of the students indicating the versatile usage of aids rather than using it only in teaching. García-Carrión et al. (2018) also mentioned that interactive learning environment with rich resources and activities and systematic evaluation fosters students' learning outcome.

Apart from the positive perspectives, the study showcased several challenges the teachers face in utilizing the teaching learning materials in the classroom. First of all, the lack of sufficient materials hampers the teachers in instructional practice. Also, the budget friendly materials are not always sustainable which is also a barrier for the special educators as they have to be preoccupied with making teaching materials constantly. A study (Okongo et al., 2015) also indicated that the lack of appropriate teaching materials and resources hinders the intended pedagogical practice in the classroom. Secondly, the study showed that the lack of funding is another barrier for making and utilizing appropriate materials. Because of insufficient funding, the teachers struggle to provide sustainable and culturally adapted materials in addressing range of learning needs of the students with special needs. This result parallels with previous study finding that also acknowledged the need of sufficient financial support to provide a range of teaching learning materials and relevant resources (Althbiti & Algahtani, 2019; Okongo et al., 2015; Ahemd, Baloch & Karim, 2024). Thirdly, the present study revealed that lack of training and professional capacity development programs also adversely impacts on the teachers' understanding and usage of teaching learning materials in the class. In addition, the study identified the need of relevant continuous professional development program for the special educators to adapt and use the learning materials. Several studies similarly mentioned that relevant workshops, training programs are a much-needed factor to improve teachers' capacity to develop, adapt and use relevant aids and resources to support the diverse learning needs (Rajapaksha & Chathurika, 2015; Althbiti & Algahtani, 2019; Ahemd, Baloch & Karim, 2024; Alhassan & Abosi, 2014). Moreover, lack of time, limited knowledge and understanding on teaching aids and how to use those significantly hampers teachers' effectiveness in instructional practice (Rajapaksha & Chathurika, 2015). Nevertheless, aside from the challenges teaching learning materials can be utilized in diverse area of instruction practice and students' attainment.

5. Conclusion

The study explored several perspectives and experiences of the special educators in employing teaching learning materials in the instructional practice. The study findings indicated special educators' interest and positive mindset in utilizing teaching aids in the classroom. However, several challenges were showcased by the special educator in incorporating the materials in the classroom effectively. The study recommends relevant training and workshops for the teachers to understand and explore the diverse leaning materials that will empower them in adapting and making sustainable and budget friendly aids for instructional practice. This research finding also indicates the need of funding as well as administrative support for the teachers to accommodate relevant leaning materials in the classroom. The major limitation of this study is that it didn't include rural perspective in detailed. Therefore, this study recommends several research in exploring the rural contexts as well as the cultural adaptation of teaching learning materials. The study findings may implicate into policy practice recognize the special educators' effort and offer professional development programs that can ensure effective instructional practice for responding to the diverse attributes of the students with special educational needs.

References

- Adjiovski, B., Bogatinoska, D.C., Ismajloska, M. *et al.* (2024). Enhancing Educational Technology in Lectures for School Students with Learning Disabilities: A Comprehensive Analysis. *SN COMPUT. SCI.* 5, 716 <https://doi.org/10.1007/s42979-024-03049-z>
- Ahmed, S., Baloch, M. A., & Karim, H. (2024). Investigating the Impact of Teaching-Learning Materials on Students' Academic Performance in Government Primary Schools in the Naseerabad Division, Balochistan, Pakistan. *Journal of Development and Social Sciences*, 5(1), 538–545. [https://doi.org/10.47205/jdss.2024\(5-1\)49](https://doi.org/10.47205/jdss.2024(5-1)49)
- Ainscow, M., Booth, T., & Dyson, A. (2016). *Inclusive education: Developing a global perspective*. Routledge.
- Alharbi, F. (2018). Exploring the use of educational apps for children with disabilities: A review of practices. *Disability and Technology Journal*, 5(3), 112-124.
- Alhassan, A.-R. K., & Abosi, O. C. (2014). Teacher Effectiveness in Adapting Instruction to the Needs of Pupils With Learning Difficulties in Regular Primary Schools in Ghana. *Sage Open*, 4(1). <https://doi.org/10.1177/2158244013518929>
- Aloraini, S. (2019). The role of teaching-learning materials in special education: A critical review. *International Journal of Special Education*, 34(2), 112-124.
- Althbiti, R., Algahtani, F. (2019). Perspectives of Special Education Teachers of Using Technology to Support Learning for Children with Intellectual disabilities. *International Journal of Recent Research in Social Sciences and Humanities (IJRSSH)* Vol. 6, Issue 4, pp: (76-83), Available at: www.paperpublications.org
- Amin, N. (2017). Disability education and the challenges of resource availability in Bangladesh. *Journal of South Asian Education*, 12(1), 31-43.
- Amos, S., Eghan, M. P. K., & Oppong, E. (2022). The Impact of Instructional Materials in Teaching and Learning of Biology in the Colleges of Education in the Central Region of Ghana. *Open Journal of Educational Research*, 2(5), 213–221. Retrieved from <https://www.scipublications.com/journal/index.php/ojer/article/view/400>
- Andersen, S.C., Beuchert, L. and Nielsen, H.S. (2025), Effects of teachers' aides on students with special needs. *Scand. J. of Economics*. <https://doi.org/10.1111/sjoe.12579>

- Anwar, N., & Alam, M. (2018). Teacher training for inclusive education in Bangladesh: Challenges and opportunities. *Asian Journal of Inclusive Education*, 6(1), 1-10.
- Aziz, S., & Rahman, F. (2019). Addressing cultural barriers in special education: The case of Bangladesh. *International Journal of Inclusive Education*, 23(2), 255-270.
- Beukelman, D. R., & Mirenda, P. (2013). *Augmentative and alternative communication: Supporting children and adults with complex communication needs* (4th ed.). Paul H. Brookes.
- BRAC. (2019). *Supporting children with disabilities in Bangladesh: A report on inclusive education initiatives*. BRAC Publications.
- Cook, A. M., & Polgar, J. M. (2015). *Assistive technologies: Principles and practice* (4th ed.). Elsevier Health Sciences.
- Davis, R. L. (2016). Enhancing learning through visual aids for children with intellectual disabilities. *Journal of Special Education*, 46(3), 109-119.
- Dufflo, E., Kremer, M., & Robinson, J. (2017). Education and the economics of inequalities: Perspectives from Bangladesh. *Education and Economics Review*, 41(3), 2-16.
- Dukes, R. L. (2017). The effectiveness of auditory materials in special education classrooms. *Journal of Special Education Technology*, 32(4), 45-56.
- Edyburn, D. L. (2013). Assistive technology and learning: A review of the literature. *Journal of Special Education Technology*, 28(4), 1-12.
- Ellis, R., & Kuehner, C. (2015). Tactile learning tools for children with visual disabilities: A review. *Journal of Visual Impairment & Blindness*, 109(4), 27-39.
- Eniyawu, J. (2005). Effect of instructional materials on teaching of economics in secondary schools in Akoko North-East Local Governemnt Area of Ondo State. *Ikere Journal of Education*, 7, 117-120.
- García-Carrión, R., Molina Roldán, S., & Roca Campos, E. (2018). Interactive Learning Environments for the Educational Improvement of Students With Disabilities in Special Schools. *Frontiers in psychology*, 9, 1744. <https://doi.org/10.3389/fpsyg.2018.01744>
- Hassan, R., & Zaman, N. (2017). Bridging the digital divide in Bangladesh: Implications for education. *Journal of Educational Technology and Society*, 20(1), 45-56.
- Hossain, M., Ahmed, R., & Parveen, S. (2020). Special education in Bangladesh: Challenges and opportunities. *Bangladesh Journal of Educational Research*, 19(2), 88-102.
- Hossain, M., Rahman, M., & Parveen, S. (2020). Overcoming barriers in special education in Bangladesh: The role of teachers and resources. *Bangladesh Journal of Education*, 19(2), 88-104.
- Ikerionwu, J. C. (2000). Importance of teaching aids and resources in classroom teaching. In A. M. Oyenyin (Eds.), *Perspective of classroom teaching*. Abuja: Martmonic investment Ltd
- Islam, M., & Habib, S. (2020). ICT integration in special education: Barriers and solutions in Bangladesh. *Journal of Educational Technology and Research*, 22(4), 92-104.
- Jung, S., & Kim, S. (2015). The impact of multimodal teaching materials on students with special needs: A study of inclusive classrooms. *Journal of Educational Psychology*, 107(2), 345-358.
- Kalyva, E., & Avramidis, E. (2014). Using multimedia content to support children with autism spectrum disorder. *Journal of Autism and Developmental Disorders*, 44(9), 2265-2278.
- Kapur, Radhika. (2021). Teaching-Learning Materials: Significant in Educational Institutions of all Levels
- Kassim, A. & Nordin, M. N. (2024). An Effective Teaching Aids Using Visual, Auditory and Kinesthetic Learning Styles for Students with Special Needs. *Special Education [SE]*, 2(1), e0009. <https://doi.org/10.59055/se.v2i1.9>
- Koparan, T. (2017). Analysis of Teaching Materials Developed by Prospective Mathematics Teachers and Their Views on Material Development. *Malaysian Online Journal of Educational Technology*, 5(4), 14-34. Retrieved from <https://mojet.net/index.php/mojet/article/view/111>
- Koparan, T. (2017). Analysis of teaching materials developed by prospective mathematics teachers and their views on material development. *Malaysian Online Journal of Educational Technology*, 5(4), 51-65.

- Koşar, E., Yüksel, S., Özkılıç, R., Avcı, U., Alyas, Y., & Çigdem, H. (2003). Öğretim teknolojileri ve materyal geliştirme [Instructional technology and material development]. Ankara, Turkey: PegemA Yayınları.
- Kumar, A., & Kaur, A. (2016). Professional development in special education: The role of training programs for teachers. *Journal of Special Education*, 45(1), 76-88.
- Lloyd, R. M. (2017). Integrating touch-screen technologies in special education. *Special Education and Technology Review*, 29(2), 48-58.
- Mansur, M., & Karim, M. (2019). Bridging the technology gap in special education: The Bangladesh experience. *International Journal of Educational Technology*, 34(3), 45-59.
- O'Neill, M., & McMahon, J. (2014). Teacher training for inclusive education: A review of best practices. *Journal of Education for Students Placed at Risk*, 19(1), 34-46
- Okongo, R.B.; Ngao, G.; Rop, N.K.; Nyongesa, W.J. (2015). Effect of Availability of Teaching and Learning Resources on the Implementation of Inclusive Education in Pre-School Centers in Nyamira North Sub-County, Nyamira County, Kenya. *Journal of Education and Practice*, 6(35), 132–141. <https://files.eric.ed.gov/fulltext/EJ1086389.pdf>.
- Oliver, M. (2017). Teaching strategies for inclusion: Designing effective TLMs. *Journal of Special Education Innovation*, 21(1), 24-35.
- Prentice, R. (2014). Visual materials in special education: Tools for effective teaching. *Journal of Visual Impairment and Blindness*, 108(5), 473-485.
- Rahman, M. (2018). Educational challenges for children with disabilities in Bangladesh: A survey of special education schools. *International Journal of Disability, Development and Education*, 65(3), 207-218.
- Rahman, M. M., & Islam, M. R. (2019). Challenges in teaching special children in Bangladesh. *Journal of Special Education*, 10(2), 45-59.
- Rahman, R. (2020). Special education in Bangladesh: Challenges of teacher preparedness and resources. *Journal of Disability Studies in Education*, 16(3), 289-301.
- Rajapaksha, N. & Chathurika, D. (2015). Problems Faced by Preschool Teachers When Using Teaching Aids in the Teaching Learning Process. *International Journal of Multidisciplinary Studies (IJMS)*. 2. 97-109. 10.4038/ijms.v2i1.68.
- Riyan, J. (2016). The Role of Visual Learning in Improving Students' High-Order Thinking Skills. *Journal of Education and Practice*, 7 (24), 115-121.
- Rutherford, G. (2011). "Doing Right By": Teacher Aides, Students with Disabilities, and Relational Social Justice. *Harvard Educational Review*, 81, 95-1
- Saris, R., & Chevalier, C. (2017). Effective use of TLMs in inclusive classrooms: A case study. *International Journal of Inclusive Education*, 21(5), 485-498.
- Shabiralyani, G., Hasan, K., Hamad, N., & Iqbal, N. (2015). Impact of Visual Aids in Enhancing the Learning Process Case Research: District Dera Ghazi Khan. *Journal of Education and Practice*, 6, 226-233.
- Sharma, U., & Muthukrishna, N. (2019). Teaching strategies for children with disabilities: A guide for educators. *Journal of Inclusive Education*, 27(4), 12-20.
- Sugiman, Suyitno, H., Junaedi, I., & Dwijanto. (2020). The Creation of Teaching Aids for Disabled Students as Mathematical-Thinking-Imaginative Product. *International Journal of Instruction*, 13(3), 777-788. <https://doi.org/10.29333/iji.2020.13352a>
- Tashakkori, A., & Teddlie, C. (2010). Mixed methods in social and behavioral research. *Sage Publications*.
- UNESCO. (2020). *Inclusive education: Achieving education for all*. UNESCO Report on Global Education, 21(3), 33-44.
- UNICEF (2018). The state of the world's children: Children with disabilities. *UNICEF Publication*.
- World Bank (2013). Disability in Bangladesh: A situation analysis. *World Bank Report on Social Protection*, 8(2), 10-18.