

Designing Inclusive Futures: A Teacher Training Module on supporting students with Down syndrome in Primary Schools of Khyber Pakhtunkhwa, Pakistan

Muhammad Nauman Shabbir ¹, Irfan Ullah ², and Faheem Khan ³

¹ PhD Scholar, Department of Education and Research, University of Lakki Marwat, Khyber Pakhtunkhwa, Pakistan.

✉ nauman.shabbir007@gmail.com

² Assistant Professor/HOD, Department of Education and Research, University of Lakki Marwat, Khyber Pakhtunkhwa, Pakistan.

✉ irfan@ulm.edu.pk

³ Instructor, Regional Professional Development Centre (Male), Dera Ismail Khan, Khyber Pakhtunkhwa, Pakistan.

✉ faheemk2213@gmail.com

This article may be cited as Shabbir, M. N., Ullah, I., & Khan, F. (2024). Designing Inclusive Futures: A Teacher Training Module on supporting students with Down syndrome in Primary Schools of Khyber Pakhtunkhwa, Pakistan. *ProScholar Insights*, 3(1), 47-53. <https://doi.org/10.62997/psi.2024a-31020>

Abstract: This study examines the challenges and opportunities for enhancing inclusive education for students with Down syndrome (DS) in primary schools in Khyber Pakhtunkhwa, Pakistan. It assesses teachers' awareness and understanding of DS, identifies barriers to creating inclusive classrooms, and evaluates the effectiveness of a tailored training module to improve teachers' capacity to support students with DS. A qualitative research design was employed, involving semi-structured interviews and focus group discussions with 15–20 teachers across diverse districts. The findings reveal that teachers possess limited awareness of DS, face resource and structural constraints, and struggle with addressing health and behavioural challenges associated with DS. However, the tailored training module demonstrated significant improvements in teachers' knowledge, skills, and classroom practices, though systemic issues like resource gaps and stigma persist. The study underscores the need for mandatory teacher training, resource allocation, smaller class sizes, and community awareness campaigns to foster sustainable, inclusive education for students with DS. The study came to the conclusion that there is a significant need for focused educational interventions because of the poor level of awareness and comprehension regarding Down syndrome among teachers. The report suggested that schools should be given funding to provide classroom assistants, specialized learning materials, assistive technology, and resource centres where teachers may obtain information and support. Furthermore, in order to fight stigma and foster community support, policies requiring smaller class sizes and more assistance for inclusion should be promoted in conjunction with awareness efforts.

Keywords: Inclusive Education, Down Syndrome, Teacher Training, Special Education Needs

Corresponding Author:

Faheem Khan

Instructor, Regional Professional Development Centre (Male), Dera Ismail Khan, Khyber Pakhtunkhwa, Pakistan.

✉ faheemk2213@gmail.com

Introduction

The major element of inclusive education is access and engagement. Therefore, every student needs to access the school. The facilities related to inclusive education should be provided to inclusive classrooms, and teaching must be done accordingly. Teachers face many problems while teaching in class. One of the difficulties facing students with Down syndrome issues (Rusdiansyah & Sudana, 2024). In Pakistan and particularly Khyber Pakhtunkhwa (KP), the adaptation of inclusive education is at its early stages. Therefore, there is a dire need to examine inclusive education and its future and design training manuals for PSTs to uplift their teaching skills as per the inclusive classroom.

Across the globe, almost one child out of 1,000 is affected with Down syndrome, and resultantly, they face health issues that affect their academics and learning styles. So, they need to teach in a particular way (Centers for Disease Control and Prevention, [2023](#)). Unfortunately, teachers lack skills and limited knowledge regarding dealing with students with Down syndrome, which is shown in the literature. Social integration and academic participation are hampered due to a lack of awareness and limited resources. Students' learning and social integration may be hampered by this lack of readiness, highlighting the necessity of focused professional development (Opoku et al., [2019](#)). Teachers might be faced with tackling students with Down syndrome in a formal setting to meet the educational objectives and inclusiveness. Such difficulties include a lack of resources, skills, knowledge, and a proper environment in the school. Some teachers tackle inclusive classrooms on the basis of their own built knowledge and skills, which is sufficient to cope with such an environment and uplift the students with Down syndrome (Opoku et al., [2019](#)). Moreover, these difficulties are made worse by institutional obstacles, such as a lack of cooperation between general education and special education instructors and inadequate support from school administrators (Carrington et al., [2022](#)).

A child with trisomy 21 is born with an extra copy of the 21st chromosome, hence the name. Another name for this is Down syndrome. Children suffer from numerous physical and psychological issues as a result. There are currently several options for resolving the issues associated with Down syndrome, including institutional and cultural support for individuals with the condition and their families. Children who are born with one or more extra chromosomes are susceptible to a disorder called mosaicism. The Down syndrome exhibits less symptoms than trisomy 21 (Sabat et al., [2020](#)). Disparities in social awareness and skills can also lead to conflict in a person's relationships with their peers. It can be difficult for a student with Down syndrome to understand and follow instructions because they may struggle with executive control of working memory. A syndrome is a distinguishable group of traits that naturally arises from the combination of physical, mental, and health features. John Langdon Down was the first to identify Down syndrome, a genetic condition that impairs a person's motor, verbal, and cognitive abilities and causes a variety of physical deformities (Porter, [2022](#)).

The disorder results from a chromosome anomaly, especially the formation of 47 chromosomes rather than the typical 46. Because of their unique appearance, people with Down syndrome are relatively easy to identify. Using computer technology to teach visually is generally the most beneficial way for students with Down syndrome. Making visual representations of information or text passages to help with understanding is an essential ability. (Felix et al., 2020). While most individuals with Down syndrome could benefit from greater time spent on tasks, each person has varying levels of cognitive processing ability. Before they can recall new information, students with Down syndrome can require more time than their peers to completely assimilate and integrate it. Due to their frequent inability to focus for prolonged periods of time, students with Down syndrome may eventually become disruptive. If their reading comprehension falters and they lose their place on the page, give them a ruler to run down the page or tell them to use their finger as a guide. For these pupils to stay on course, they need a lot of encouragement, affirmation, and support. Furthermore, it is advantageous to assign them specific activities that are tailored to their needs and offer them chances to succeed (Opoku et al., [2019](#)).

Teachers must successfully handle the various difficulties faced by kids with Down syndrome in order to support both their cognitive and physical skill development. For instance, they might have lower IQs, delayed mental and physical development, ear infections, ocular diseases, cardiac, pulmonary, and gastrointestinal abnormalities, thyroid dysfunctions, exhaustion, muscle weakness, hyperflexibility, small neck and head, small oral cavity, persistent nasal discharge, constipation, communication difficulties, especially when using complex words, trouble remembering information in long-term memory, limited motivation for tasks, distraction, trouble applying prior knowledge to new tasks, problems managing tasks and activities, and attitude-related issues (Onyedibe et al., [2018](#)). A complex strategy is needed to close these gaps, one that includes determining the obstacles to inclusivity, creating customized training materials, and evaluating instructors' present awareness levels. Research on professional development reveals that training is essential for teachers to deal with real-world problems faced by the teachers in the classroom. Moreover,



training equipped teachers with the latest skills to enhance the quality of education in the teaching-learning process in inclusive classrooms (Rusdiansyah & Sudana, 2024). In Khyber Pakhtunkhwa, there is no such training given to teachers, particularly in dealing with students with Down syndrome and inclusive classrooms. The purpose of this study is to determine the students' awareness and understanding regarding inclusive education and how they deal with students with Down syndrome. By addressing these aspects, the research aims to contribute to the growing body of knowledge on inclusive education and offer practical solutions for improving teacher preparedness, ultimately fostering a more inclusive educational environment in Khyber Pakhtunkhwa.

Objectives

1. To find out the existing level of awareness of Primary School teachers (PSTs) regarding Down syndrome and how they deal with students with Down syndrome.
2. To find out the current challenges face by the PSTs while creating inclusive classroom environment which support students with Down syndrome.
3. Design the training Manual with the purpose of enhancing PSTs' knowledge and skills as per their needs.

Research Questions

1. What is the current level of awareness and understanding among primary school teachers in Khyber Pakhtunkhwa about Down syndrome and its impact on learning?
2. What challenges do teachers face in creating an inclusive classroom environment for students with Down syndrome?
3. How can a training module be designed to address the needs of teachers and improve their capacity to support students with Down syndrome in primary schools?

Significance of the Study

For educators, students, legislators, and the general public, the suggested study "Designing Inclusive Futures: A Teacher Training Module on Supporting Students with Down Syndrome in Primary Schools of Khyber Pakhtunkhwa" is important. This study assists teachers in enhancing their skills in dealing with students with Down syndrome. This study promotes providing training with high-quality pedagogical skills. As mentioned earlier, there is a lack of resources and training to support students with Down syndrome. This research empowers students to create inclusiveness through access and engagement with different ages, cultures, colors, ethnic groups, and physical and cognitive impairments. The present study has significant scope to prove the training model to other areas and communities.

Review of Related Literature

Awareness and Understanding of Down Syndrome among Teachers

One of the most important changes to the educational system is inclusive education, which has led to more kids with developmental disabilities attending regular classrooms. The inclusion of students with disabilities in mainstream classrooms presents a new challenge for educators, necessitating the acquisition of skills and knowledge that were previously unnecessary. Teachers are thought to have a key role in implementing inclusive transformation in schools, and their perspectives on children with disabilities, as well as their optimistic yet reasonable expectations, are important considerations. However, knowledge or information regarding the traits of children with disabilities should also be taken into account. Studies reveal a relationship between educators' attitudes toward inclusion and their understanding of the traits of kids with disabilities. (Down Syndrome International, 2023; Inclusion Collaborative, 2023). Different events and programs around the world have started regarding awareness of inclusiveness and Down syndrome. In Khyber Pakhtunkhwa, there is no such training given to teachers, particularly in dealing with students with Down syndrome and inclusive classrooms. The purpose of this study is to know the student's awareness and



understanding regarding inclusive education and how they are dealing with students with Down syndrome (Rafii & Fortea, [2023](#))

Challenges in Creating Inclusive Classrooms

One of the key purposes of Inclusive education is access for every student irrespective of colour, age, ethnic group, and physical and mental impairment. Therefore, Students with Down syndrome have the right to access inclusive classroom rooms. But there are many challenges faced by the teachers, which are given below:-

1. There is a lack of resources in the schools.
2. The government is less focused on developing inclusive schools.
3. Lack of training and un-equipped teachers in school to deal with students with DS.
4. Lack of awareness programs by the government regarding inclusive education
5. Lack of training programs for teachers about inclusive education and awareness of Inclusiveness.

Students with DS have feel difficulties to speech which influence on peer interaction and language issues. Moreover, students with DS have difficulty to participate in the inclusive classrooms and get less support from the teachers as compared th other children in the class.

Research indicates that the ability of students with any impairment can be enhanced through empathy and motivation. Such challenges can be properly dealt with through adequate teaching, proper training, use of AV aids and proper planning for inclusive classrooms (Rafii & Fortea, [2023](#)).

Designing Effective Teacher Training Modules

One of the most crucial stages is the development of a training manual for inclusive classrooms and strategies to deal with Ds students. Key components of such programs include:

Building Knowledge: The module for inclusive education should be rich of content, knowledge and advance knowledge and proper instruction should be given in the manual with proper activities.

Practical Strategies: The effective training module always based on practical strategies such as collaborative and cooperative work, differentiated instruction, effective use of ICT to emphasizing the strengths of DS' students.

Collaborative Approaches: Group work, teamwork and other collaborative strategies should included in the module, whose main focus is to strengthen the students with DS (Rafii & Fortea, [2023](#)).

Addressing Research Questions

Training is essential for teachers to deal with real-world problems faced by the teachers in the classroom. Moreover, training equipped teachers with the latest skills to enhance the quality of education in the teaching-learning process in inclusive classrooms (Rusdiansyah & Sudana, [2024](#)). In Khyber Pakhtunkhwa, there is no such training given to teachers, particularly in dealing with students with Down syndrome and inclusive classrooms. The purpose of this study is to determine the students' awareness and understanding regarding inclusive education and how they deal with students with Down syndrome. To achieve inclusive education objectives, teachers must be skilled and equipped to deal with students with DS and create inclusive classrooms.

Research Methodology

Research Design

Interpretivism research philosophy was used. Therefore, the qualitative research method was employed. The researcher used semi-structured interviews and Focus Group Discussions (FGD) to collect information.



Population

The population for this study included primary school teachers in Khyber Pakhtunkhwa, Pakistan, who had experience teaching in public or private schools. The focus was on teachers who had encountered students with Down syndrome or were engaged in inclusive education practices.

Sample

The sample is a small part of the population. In qualitative research, there is no such limit of sample size.

Sample Size

The researcher selected 20 primary school teachers from different districts by using a purposive sampling technique. Moreover, 3 FGDs were created, including 6 PSTs, in which they shared their experiences.

Data Collection Methods

The researcher used Semi structured interview including five leading and ten prompting questions and Focus group discussions: These were organized to identify common challenges and brainstorm ideas for a training module.

Data Analysis

Data were documented, coded, and transcribed, and key themes were extracted to develop a framework for the training module.

Delimitations

Only Khyber Pakhtunkhwa primary school teachers were the subject of the study; other educational levels or geographical areas were not included. Other disabilities and general inclusive education issues were not discussed in the study, which instead focused on Down syndrome. To guarantee relevance, the study eliminated teachers who had no exposure to Down syndrome in their courses, even though it included teachers with a range of experience levels. This design was set up to offer thorough insights while yet being practical for a qualitative investigation. A comprehensive strategy for addressing the research topics was guaranteed by the integration of focus groups, interviews, and document analysis.

Research Gap Discussion

Global efforts such as the Sustainable Development Goals (United Nations, [2015](#)) are in line with the inclusion of pupils with Down syndrome (DS) in mainstream education. However, there are still a lot of gaps in the way inclusive education is being implemented in places like Pakistan's Khyber Pakhtunkhwa. There is a dearth of localized research, especially on misconceptions and cultural attitudes that affect teachers' preparation, despite international studies showing that teachers' awareness of DS influences inclusive practices (Giel-Romo, [2014](#); Wishart & Manning, [1996](#)). Globally, obstacles such as a lack of resources, a lack of training, and social stigma are well-documented (Sirlopú et al., [2008](#)). However, Pakistan's particular difficulties, such as huge class sizes and infrastructural deficiencies, receive less attention (Lynch et al., [2024](#)).

The socioeconomic realities of teachers in low-resource settings are frequently overlooked by training modules created in high-resource contexts (Singh, [2022](#)). Additionally, current frameworks do a poor job of integrating the intersection of health and educational needs, such as treating diseases like hearing impairments that are linked to Down syndrome (Thomas et al., 2010). To close these gaps, guide policy, and develop successful, inclusive educational institutions that are suited to the needs of Khyber Pakhtunkhwa's DS students, localized, evidence-based research is crucial.



Findings

1. The findings of the study reveal that PST KP has very limited knowledge and resources about Down syndrome. They lack an understanding of inclusive education and Down syndrome, which influence inclusive classrooms.
2. The findings of the study show that they have limited access to professional training regarding inclusive education.
3. Due to a lack of resources, big class numbers, and issues meeting the behavioural, social, and health requirements of students with Down syndrome, PSTs had a tough time establishing inclusive classrooms.
4. The result of the study depicts that Teachers' knowledge, abilities, and inclusive practices were enhanced by a customized training program; but, long-term development necessitates tackling systemic problems such as societal stigma, professional support, and resource shortages.

Conclusions

Awareness Gaps: The study concluded that PSTs have limited knowledge and awareness about inclusive education and strategies to tackle students with Down syndrome

Persistent Challenges: There are limited training opportunities for PSTs about inclusive education and instructional strategies to teach students with Down syndrome.

Training Effectiveness: As mentioned before, there is limited training on inclusive education. Therefore, Teachers' attitudes toward inclusion can be successfully increased by customized training modules and their implementation through training.

Recommendations

1. It is recommended that mandatory training programs on inclusive education and Down syndrome be created and implemented for all Khyber Pakhtunkhwa primary school teachers.
2. Schools require funding to provide teaching assistants, specialized learning materials, assistive technology, and resource centers where instructors can obtain information and support.
3. To fight stigma and foster community support, policies requiring smaller class sizes and more assistance for inclusion should be promoted in addition to awareness-raising initiatives.
4. Establishing professional networks to support educators is essential, as is conducting frequent assessments to improve training initiatives and guarantee their efficacy.



References

- Amin, M. T., Aftab, M. J., Batool, A., Hassan, Z., & Ahmed, I. (2023). Examining The Educational Problems Of Children With Down Syndrome; Special Education Teachers' And Psychologists' Perspectives, Pakistan. *Journal of Positive School Psychology*, 7(5), 506–520. <https://www.journalppw.com/index.php/jpsp/article/view/16800>
- Carrington, S., Lassig, C., Maia-Pike, L., Mann, G., Mavropoulou, S., & Saggars, B. (2022). Societal, systemic, school and family drivers for and barriers to inclusive education. *Australian Journal of Education*, 66(3), 251–264. <https://doi.org/10.1177/00049441221125282>
- Centers for Disease Control and Prevention. (2023). Down syndrome: Facts and statistics. Retrieved from <https://www.cdc.gov>
- Giel-Romo, J. (2014). *Primary Education Teachers' Perceptions of Effective Inclusion of Students With Down Syndrome* [Doctoral dissertation]. Walden University.
- Lynch, P., Nabwera, H. M., Babikako, H. M., Rasheed, M., Donald, K. A., Mbale, E. W., & Gladstone. (2024). Experiences of identifying preschool children with disabilities in resource-limited settings-an account from Malawi, Pakistan and Uganda. *Disability & Society*, 39(8), 2053–2073. <https://doi.org/10.1080/09687599.2023.2181769>
- Onyedibe, M. C. C., Ugwu, L. I., Mefoh, P. C., & Onuiri, C. (2018). Parents of children with Down Syndrome: Do resilience and social support matter to their experience of carer stress?. *Journal of Psychology in Africa*, 28(2), 94-99. <https://doi.org/10.1080/14330237.2018.1455308>
- Opoku, M. P., Tawiah, R., Agyei-Okyere, E., Osman, S., & Afriyie, S. A. (2019). Teaching students with Down syndrome in regular classrooms in Ghana: views of secondary school mathematics teachers. *International Journal of Disability, Development, and Education*, 66(2), 218–232. <https://doi.org/10.1080/1034912x.2018.1527297>
- Porter, J. (2022). Evaluating performance on a bespoke maths game with children with Down syndrome. *Journal of Computer Assisted Learning*, 38(5), 1394-1407. <https://doi.org/10.1111/jcal.12685>
- Rafii, M. S., & Fortea, J. (2023). Down syndrome in a New Era for Alzheimer disease. *JAMA: The Journal of the American Medical Association*, 330(22), 2157–2158. <https://doi.org/10.1001/jama.2023.22924>
- Rusdiansyah, R., & Sudana, D. (2024). Analysis of Inclusive Teaching Strategies for Addressing Communication Disorders in Children with Down Syndrome: A Case Study at SLB. *IDEAS: Journal on English Language Teaching and Learning, Linguistics and Literature*, 12(2), 1152–1166. <http://ejournal.iainpalopo.ac.id/index.php/ideas/article/view/5158>
- Sabat, C., Arango, P., Tassé, M. J., & Tenorio, M. (2020). Different abilities needed at home and school: The relation between executive function and adaptive behaviour in adolescents with Down syndrome. *Scientific Reports*, 10(1), 1683. <https://doi.org/10.1038/s41598-020-58409-5>
- Singh, R. (2022). *Inclusive Education in ASEAN: Fostering Belonging for Students with Disabilities*. Economic Research Institute for ASEAN and East Asia.
- Sirlopú, D., González, R., Bohner, G., Siebler, F., Ordóñez, G., Millar, A., & De Tezanos-Pinto. (2008). Promoting positive attitudes toward people with Down syndrome: the benefit of school inclusion programs 1. *Journal of Applied Social Psychology*, 38(11), 2710–2736. <https://orca.cardiff.ac.uk/id/eprint/133929>
- Thomas, K., Girdler, S., Bourke, J., Deshpande, A., Bathgate, K., Fehr, S., & Leonard, H. (2010). Overview of health issues in school-aged children with down syndrome. In *International Review of Research in Mental Retardation* (pp. 67–106). Elsevier.
- United Nations. (2015). Transforming our world: The 2030 agenda for sustainable development. Retrieved from <https://www.un.org>
- Wishart, J. G., & Manning, G. (1996). Trainee teachers' attitudes to inclusive education for children with Down's syndrome. *Journal of Intellectual Disability Research: JIDR*, 40 (Pt 1), 56–65. <https://doi.org/10.1111/j.1365-2788.1996.tb00603.x>

