Inclusive education Senegal: Phase 2 findings report

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Sightsavers

Contents

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Acronyms and abbreviations

CBPR	Community-based participatory research
FGDs	Focus group discussions
WHO	World Health Organization
APE	The Association of Parents of Students (L'association des Parents d'Elèves)
BPO	Blind People's Organisation
CORIPH	Council for the Rehabilitation and Integration of Persons with Disabilities
CRFPE	Regional Centre for Training of Education Personnel
DEE	Board of Elementary Education (Direction de l'enseignement élémentaire)
DPO	Disabled People's Organisation
GAS	Global Accounting System
HI	Handicap International
LMIC	Low and middle income Countries
IE	Inclusive education
IT	Itinerant teacher (Maître referent)
MoE	Ministry of Education
LV	Low vision
MoH	Ministry of Health and Social Action
NGO	Non-governmental organisation
PTA	Parent-Teacher Association
UNICEF	United Nations Children's Fund
UNCRPD	United Nations Convention on the Rights of Persons with Disabilities
USD/$	United States Dollars
VI	Visual impairment
XOF/FCFA	West African CFA Francs

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Executive summary

The Social Framework Act, adopted by the government of Senegal in 2010, provides for the promotion and protection of the rights of children and adolescents with disabilities to free education in mainstream schools close to their homes. The government also aspires to make schools fit for children in all their individuality and has strived to achieve fair and equal access to quality education without discrimination based on sex, social origin, or disability.

Despite these efforts, studies from Senegal show that children with disabilities are twice as likely to have never attended school. Studies also show that children with disabilities accessing education have poorer attainment and learning outcomes than children without disabilities.

Sightsavers, in partnership with Senegal's Ministry of Education, implemented an inclusive education project focussing on strengthening the education system and developing school-level inclusion practices. Project activities addressed barriers to educational participation. These included:

- Identifying children with disabilities who were missing out on or excluded from education
- Training schoolteachers
- Motivating parents
- Educating and mobilising local communities
- Physically adapting the infrastructure of schools

The overwhelming majority of children with disabilities who attended these project schools had vision impairments.

The study presented here was an integral part of the project. It was conducted in two phases. The first phase took place in 2017 and 2018 and the second was conducted in 2022. The second phase explored how project participants experienced the project and what challenges in the delivery of inclusive education could and could not be addressed.

Objective

The study aimed to explore inclusive education experiences of boys and girls with disabilities, carers, and teachers in the inclusive education schools supported by Sightsavers in Senegal. More specifically, the study aimed to understand:

- The experiences of children with disabilities in accessing and remaining in education, including during the Covid-19 pandemic
- The experiences of parents/carers of children with disabilities and other community members on inclusive education practices and the education of children with disabilities in local schools
- The perspectives of teachers and education stakeholders on inclusive education practices
- Views on how gender affects experiences and learning of boys and girls with disabilities

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Why is this study important?

This research study contributes to the existing knowledge base on disability inclusion in education in Senegal and similar contexts (schools in regions of Africa that do not have sufficient facilities, resources and teacher training to accommodate all children with disabilities). Additionally, it provides vital evidence on how leveraging knowledge from project participants and beneficiaries can develop and refine contextually appropriate and gender-responsive approaches in education. The approaches will contribute to the achievement of Sustainable Development Goal (SDG) 4.

How did we conduct the research?

The research used community-based participatory research (CBPR) methodology and was conducted in five schools in Senegal, spread over three regions:

- Dakar: Pikine 23 B school in Guédiawaye, Malick Diop in Thiaroye, and Sherif 1 in Rufisque
- Kaolack region: Alioune Cissé school
- Louga region: Regional school 1

An ethical approval was obtained from the Senegal National Ethics Committee.

We trained five teachers and five members of the community as community-based researchers to facilitate parent, teacher, and student focus groups. The researchers were either members of the parent association or other interested members of the community, all living near the inclusive schools.

These researchers conducted three focus group discussions in each school, with Sightsavers staff supporting the process. All data collected was analysed using a thematic analysis approach. The researchers and stakeholders also validated study results and drew recommendations.

Study findings

Intersection of gender, disability, and education

The project has made significant progress in identifying and enrolling girls with visual impairments in schools, ensuring their regular attendance and academic progress.

Students, parents, and teachers have all agreed that progress has been made on overall teaching and learning, particularly in a gender-sensitive school environment. Girls with disabilities have reported better support from their parents, siblings, and community members, and less discrimination from family and community members since the project started.

Adaptations in the school environment have been made, particularly for girls, promoting confidence and independence. Teachers have received training to understand the different gender needs of girls and employ positive discrimination towards them. They reported that they now value learning abilities of both genders and promote gender-sensitive interactions.

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Inclusive school clubs and engaging with mothers in parent-teacher meetings have improved home learning and increased confidence in children with disabilities. However, students with disabilities continued facing challenges at school and at home, including availability of accessible learning materials, limited parental support, and restricted learning during Covid-19. The intersectionality of gender and disability continued affecting students at school, with girls facing mockery from other children, especially boys.

Teachers and stakeholders recommended engaging male students in disability and gender awareness activities to reduce negative attitudes towards girls with disabilities. Additionally, they suggested engaging girls with vision impairments in sports, and improving transport and road safety for commuting to school.

What worked well, and the recommendations that were effectively achieved

The project successfully implemented many recommendations from the Phase 1 study. Adjustments included building toilet facilities, providing transport allowances, offering school lunches, and making adaptations for visually impaired children in sports activities.

Teaching techniques and seating arrangements were adjusted for increased numbers of students with vision impairments. Assistive devices and accessible education materials were provided. Community sensitisation and inclusive education advocacy initiatives contributed to reducing discriminatory behaviours towards children with disabilities, which were commonly reported during Phase 1 of the study.

Support for parents to send their children with disabilities to school, including training in disability-specific skills (e.g. braille), travel allowances, and allowances for regular parent-teacher communication, has significantly improved since Phase 1 of the study.

Aspects of inclusive education that continued to be challenging, and recommendations that could not be achieved or were partially achieved

Despite the above achievements, the study evinced several challenges and recommendations that could not be fully addressed and continued hindering the delivery of quality inclusive education for children with disabilities in project schools.

School and classroom infrastructure created barriers to quality education for children with disabilities. These included:

- Small classroom sizes and overcrowded school premises
- Noise during lessons
- Inadequate number of toilets and water, sanitation, and hygiene (WASH) facilities
- Inability to provide boarding at school for children with disabilities living far away

The number of teachers trained in inclusive pedagogy was limited, and the number of training sessions for teachers was insufficient to fully develop their skills and competencies to support children with visual impairments in mainstream schools. Teachers recommend training on a diverse range of impairments and educational needs, training for all staff in inclusive schools, and a platform for mentoring and exchange of experiences with other inclusive schools.

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The number of braille textbooks available to schools remained limited, and children with visual impairments could not take them home for home learning, which undermined their academic progress and disadvantaged them compared to children without disabilities. Girls with disabilities reported having less access to materials for home learning than boys, especially during Covid-19 school closures.

Geographical maps and new French and mathematics textbooks procured by the government were not available in braille. Therefore, lessons based on numerical and pictorial information, such as mathematics, geometry, geography, and sciences, remained a major challenge for both teachers and students with visual impairments.

Sports activities adapted for children with visual impairments were available only to boys. Tests and examination time were not adapted to accommodate needs of children who used braille. Insufficient time available to children with disabilities affected their academic performance and test results. Missed classes and dropouts continued to be a problem. Schools lacked mechanisms for a follow-up with students who did not attend classes or stopped coming to school. Stigma of children with disabilities continued in some communities, emphasising the need for continuing disability sensitisation activities and community engagement.

Road safety remained a critical concern for children with visual impairments, particularly girls, who were reported to be subject to teasing and abuse on their way to school. Teachers and other stakeholders highlighted the need for disability awareness activities for transport service providers. This would allow students with disabilities, mainly girls with disabilities, to commute to and from school safely.

Parents appreciated training sessions provided, but not all parents of children with visual impairments could be trained in braille, which limited their support to their children at home.

Recommendations

Future inclusive education initiatives need to focus on addressing the areas that continue to be challenging and could not be fully resolved during the project. More specifically, schools need support to improve their premises and infrastructure. They need to:

- Have more spacious classrooms to accommodate large number of students, many of whom experience difficulties in mobility
- Identify and implement noise reduction strategies in classrooms to help children with visual impairments to concentrate better
- Develop guidelines for the appropriate ratio of toilets and WASH facilities to students and increase the number of facilities available
- Better understand the needs of students who live far from schools and face a long commute. They should consider opportunities for safe boarding practices, assessing the strengths and weaknesses

Review of teacher training curriculum in the light of teachers' experiences and needs, specifically:

- Teachers' skills and competencies to provide student support across the full spectrum of the curriculum, particularly science and mathematics

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- Teachers' knowledge on how to support students with different impairments and educational needs
- Training curriculum and delivery mechanisms for other school staff (e.g. school administrators)
- A platform for mentoring and exchange of experiences with other inclusive schools.

Review and improve the availability of books and other educational materials, specifically:

- Recommend an appropriate ratio of books in braille to students with visual impairments, and increase the number of books to ensure that students with visual impairments have two sets of books, for home and for school
- Develop a system to ensure that all newly procured textbooks and other educational materials (e.g. maps, geometry tools) are available in the right quantity in a format accessible to students with visual impairments

Review the teaching curriculum and ensure guidelines for adaptation of all subjects and extra curriculum activities, including sports, are accessible to children with visual impairments and are appropriate for both boys and girls. Sports activities adapted for children with visual impairments were available only to boys.

Make tests and examination accessible to children with disabilities, making adaptations based on the universal design principles and specific impairment needs.

Develop mechanisms for follow-up in the community on children who regularly miss classes or drops out.

Review transport requirement of all children with disabilities attending schools and develop strategies for safe and accessible school transportation.

Develop mechanisms for funding and delivery of training for families of children with visual impairments on disability and in braille.

Introduction

Education is a basic human right that works to improve an individual's economic wellbeing, reduce social inequalities, and ensure sustainable development [1]. Education is one of the most powerful tools by which economically and socially marginalised children and adults can lift themselves out of poverty and participate fully in society.

The UN Convention on the Rights of Persons with Disabilities [2] (Article 24) commits state parties to ensure:

- People with disabilities are not excluded from the general education system on the basis of disability
- People with disabilities can access an inclusive, quality, and free primary education and secondary education on an equal basis with others in the communities in which they live
- Reasonable accommodation of the individual's requirements is provided
- People with disabilities receive the support required, within the general education system, to facilitate their effective education
- Effective individualised support measures are provided in environments that maximise academic and social development, consistent with the goal of full inclusion

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According to the United Nations Educational, Scientific and Cultural Organization (UNESCO), inclusion essentially means that every child, adolescent, and youth has the same importance within the education system [3] and is guaranteed equitable and quality education and learning, irrespective of their age, gender, residency, or other individual characteristics [4]. Therefore, access to inclusive education for all is fundamental to full realisation of the right to education [5].

The study aimed to explore the experiences of inclusive education amongst boy and girls with disabilities, their parents, and teachers in five inclusive schools in three regions of Senegal. The study was integrated within an inclusive education project funded by Irish Aid and supported by international non-governmental organisation (INGO) Sightsavers.

Inclusive education in Senegal context

Data on disability in Senegal are limited. According to the 2013 general population census [6], 5.9 per cent of the country's population live with a disability and the prevalence of disability is slightly higher among women (6.2 per cent) compared to men (5.6 per cent). The number of children with disabilities in the country is estimated at 35,000 and 60 per cent of these children are believed to be out of school [7].

Over the years, Senegal has signed many international initiatives focused on Education for All (EFA). In 2000, the country hosted the World Education Forum, where 164 governments pledged to achieve this important global commitment [8]. The forum highlighted a need for national policies and funding agencies to reflect the broad goals of EFA, including children with special learning needs [9].

The Dakar framework action for EFA was adopted by Senegal in 2000 [10], and since then the government has strived to achieve six main objectives of the framework:

1. Early childhood care and education
2. Access to free, compulsory, and quality primary education
3. Addressing the learning and access needs of young people and adults
4. Improving adult literacy and access to continuing training
5. Ensuring gender equality in accessing quality primary and secondary education
6. Improved quality of education, resulting in improved literacy, numeracy, and life skills

Senegal signed the Convention on the Rights of Persons with Disabilities in April 2007 and ratified it in December 2009. The convention has become part of the internal legal order of Senegal, which means it takes precedence over other laws of the land. The government's Social Framework Act 2010 guarantees children and adolescents with disabilities the right to free education in a mainstream environment close to their home.

The Senegalese government aspires to make schools fit for children in all their individuality and strives to achieve quality and equity in access to education for all without discrimination on the grounds of sex, social origin, or disability.

In the National Review of Education for All, conducted in 2015, the Ministry of National Education stated that inclusive education must be achieved by adapting education supply to demand. Therefore, the government has been pursuing nationwide reforms to ensure the quality of classroom instruction is high and that it inspires families and communities to become more involved in helping children with disabilities to learn.

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Despite these multiple legal frameworks and efforts, several studies from Senegal have highlighted that children with disabilities continue to be twice as likely to have never attended school compared with children without disabilities and are still unable to fulfil their right to quality education and learning [11, 12, 13].

A report on the situation in the education sector (Rapport National sur la Situation de l'Education [14] RNSE) states that out of 10,343 public primary schools in Senegal in the academic year 2018-2019, only 16 schools were 'inclusive' and that the majority of the 2,171,967 primary school students, including 11,353 students with disabilities, were not able to benefit from inclusive education practices.

The implementation of inclusive education in Senegal faces many challenges, including limited availability of inclusive education facilities, negative attitudes of communities towards people with disabilities, poverty and insufficient training and pedagogical skills of teachers [15].

In many parts of Senegal, faith-based organisations and charities play an important role in supporting and providing education, livelihoods and health care services for children and adolescents with disabilities. However, while these services have benefited some children with disabilities and their families, their segregated provision often undermines the idea of inclusion [16].

Study rationale

Sightsavers has implemented several inclusive education projects in West and Central African countries, including Senegal, Mali, Liberia, Sierra Leone, and Cameroon, with a focus on strengthening national and local education systems and supporting the implementation of educational policies at national and sub-national levels [17].

In partnership with the Ministry of Education and funding from Irish Aid, Sightsavers has been implementing an inclusive education project in Senegal. The aim is to increase the capacity of local educational institutions to support access of children with disabilities to quality education to improve their life chances. The project contributes to the delivery of Sustainable Development Goal (SDG) 4, which aims to 'ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.'

Project activities focus on barriers to educational participation. These include finding children with disabilities excluded from education, training schoolteachers, motivating parents, mobilising local communities, and adapting school infrastructure.

The study aimed to explore how children with disabilities, their parents and teachers experience inclusive education interventions, which project interventions worked well and not so well, and how these interventions could be improved in the future.

The study explored how gender intersected with disability and how boys and girls with disabilities experienced inclusive education practices and the changes introduced by the project.

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Aims and objectives

This research aimed to explore the experiences of inclusive education by boys and girls with disabilities, their carers and teachers in inclusive education schools supported by Sightsavers in Senegal. More specifically, the study aimed to:

- Understand the experiences of children with disabilities in accessing and remaining in education, including during the Covid-19 pandemic
- Understand the experiences of parents/carers of children with disabilities and other community members on inclusive education practices; and education of children with disabilities in local schools
- Understand the perspectives of teachers and education stakeholders on inclusive education practices; and explore how gender affects experiences and learning of boys and girls with disabilities
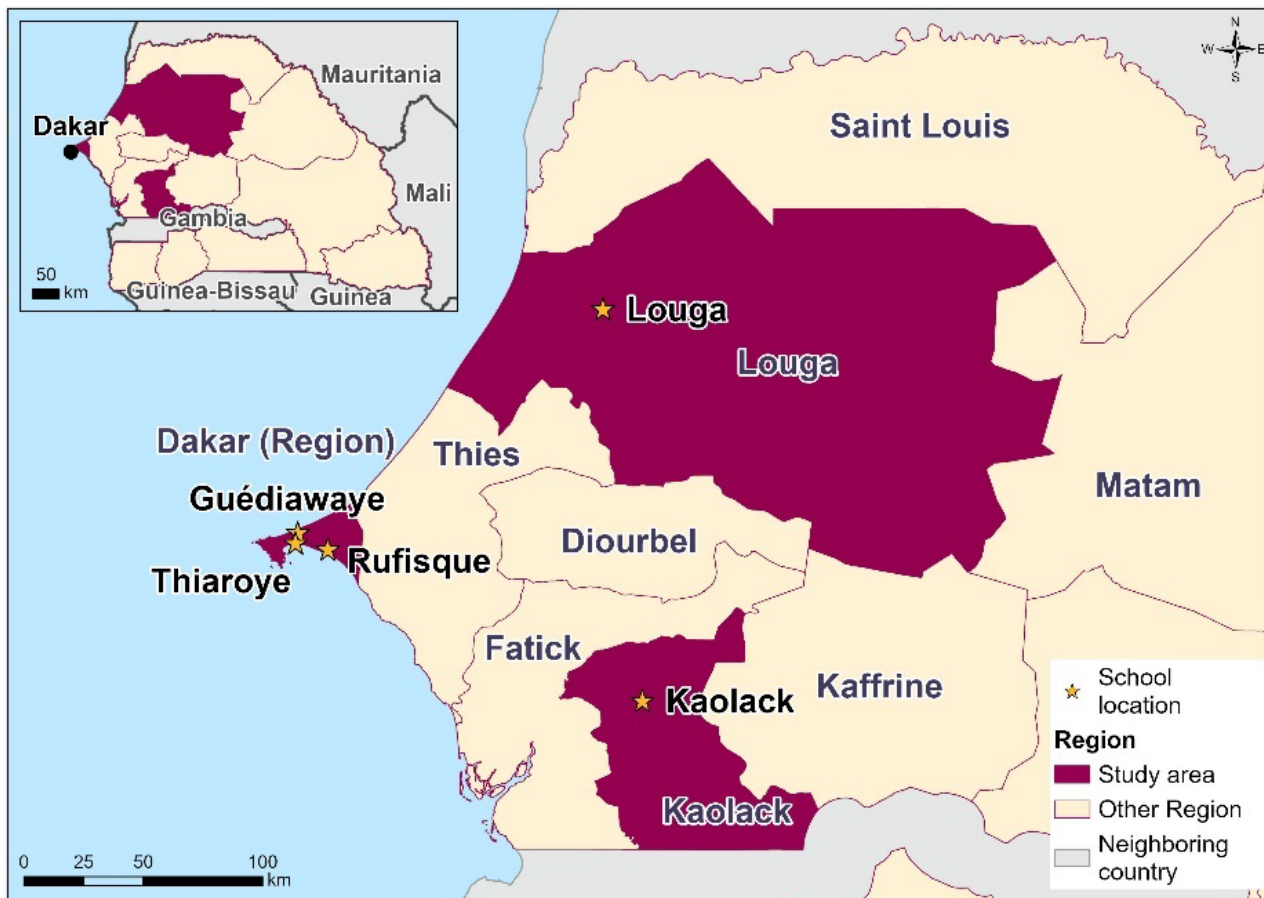
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Methodology

Study location

The study took place in five schools in Senegal, located in three regions:

- Dakar: Pikine 23 B school in Guédiawaye, Malick Diop in Thiaroye, Sherif 1 in Rufisque
- Kaolack: Alioune Cissé school
- Louga: Regional school 1

Figure 1. The regions where the study took place

Sightsavers has been supporting inclusive education interventions for several years in the five schools. In Dakar, the inclusive education project has been in operation since 2011. In Kolack and Louga, the project started in 2017.

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Study design

The study used qualitative Community-Based Participatory Research (CBPR) methodology. CBPR is a collaborative research approach that is designed to ensure and establish structures for participation by communities affected by the issue studied, in the research process and subsequent social change [18, 19].

The CBPR aims to improve knowledge and understanding of the situation under consideration, pool efforts and integrate interventions and policy changes to improve the quality of life of a community [20]. It involves respectful collaboration with the community [21]. Its features include non-hierarchical mutual dialogue and an understanding of shared decision-making and ownership [22], and where community members actively participate in planning, collecting, analysing, and disseminating data [23, 24, 25]. In this research, the community was represented by peer researchers, who have actively participated and contributed to all research activities and processes.

Peer researchers are members of the community where the study is conducted [26]. They are not professional researchers but work closely with a professional researcher. The term peer researcher is used when a community researcher interviews his/her peer, such as a teacher asking questions to another teacher or a parent asking questions to another parent.

The study had two interrelated phases. The first phase took place in early 2018, soon after the inclusive education project was initiated in Kaolack and Louga, and the new phase of the project started in Dakar.

The first round of data collection used the same CBPR methodology and aimed to explore the experiences of children with disabilities, their carers, and teachers, identify specific challenges they faced, and provide recommendations for the project implementers. The report presenting the findings of the first round of data collection is available on the Sightsavers website [27].

The recommendations for the project, based on the findings of the first phase of the study, are shown below.

Recommendations made by children with disabilities in Phase 1

- Provide materials for geometry and drawing, notebooks, and books
- Help with school buses
- Establish canteens at schools
- Develop safe options for boarding at school
- Facilitate the environment to get around more easily

Recommendations made by teachers in Phase 1

- Strengthen inclusion training by expanding it to include classroom practices
- Develop continuing professional development programme
- Organise knowledge exchange with other inclusive schools
- Award teaching diplomas certifying training in inclusive education
- Improve mechanisms to cover costs required by inclusive education (parents are often in extreme poverty)

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- Advocate for assistance with transportation of some children with disabilities to and from school
- When enrolling, check if the impairment affecting the child is associated with other health disorders
- Plan for the implementation of a similar project in secondary schools
- Strengthen sensitisation of the community to help with community participation and mobilisation
- Advocate with local authorities to ensure sustainability of the inclusive practices developed by the project
- Source provision of adapted teaching materials in sufficient quantities

Recommendations made by parents/carers in Phase 1

- Advocate for a braille specialist to support blind children who need reinforcement in braille
- Look for funds for the purchase of a regional braille printer to support the production of textbooks
- Seek provision of a school bus for those with particular difficulties in getting to and from school
- Advocate for an operational canteen
- Advocate for a well-qualified school-home supervisor
- Consider safe boarding options
- Establish a parent (of children with disabilities) association to support advocacy efforts

This study is a follow-up study conducted in 2022. It explored how the project participants experienced the new phase of the project, which challenges could and could not be addressed, and which new opportunities and challenges arose in the course of the project implementation.

Study population and sampling

We used a purposive sampling approach by inviting boys and girls with disabilities who were enrolled in the five project schools to participate in various project activities. We also invited parents/carers, community members involved in parent associations and community mobilisation activities, and teachers trained by the project and teaching inclusive classes. Participants were recruited to ensure a variety of genders, ages, and experiences of engagement with the project.

Children were selected purposefully across various classes for the purpose of this research. We used the definition of disability from UNCRPD Article 1. It describes people with disabilities as those with long-term physical, sensory, intellectual, and mental impairments which, in interaction with various barriers, can hinder their full and effective participation in society on an equal basis with others [28].

As Sightsavers has supported the study schools for some time, the schools had established records of children with disabilities. The children were selected and invited to participate in the research based on these records.

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Training of peer researchers

In each of the study sites, Sightsavers recruited and trained five teachers and five members of the local community to co-create and co-implement the study. Disability, age, and gender were considered when selecting peer researchers. Three members of the community were from the local parent association and two were interested members of the community, all living near the inclusive schools.

Peer researchers were trained in study design, data collection, and deductive data analysis. The training covered study objectives, CBPR principles and ethics, and interview guides and procedures.

Data collection

Data were collected using focused group discussions (FGDs) [29, 30]. Three FGDs, each one with students with disabilities, parents/carers, and community members and teachers, were organised in each school (15 FGDs in total).

The schools and the research team jointly planed for data collection. Each FGD session was facilitated by two peer researchers and supervised by Sightsavers staff. FGDs were conducted in quiet classrooms to minimise disruption. Special measures were adhered to, to ensure Covid-19 safety.

FGDs lasted approximately 60 to 90 minutes and were conducted using an interview guide. Discussion topics were informed by the study objectives and information collected from the implementation of the inclusive education project. All FGDs were audio-recorded with the consent of each participant and assent from the parent/carer in case of children. The audio recordings were transcribed word for word.

Additional data were collected during the finding validation and dissemination workshops. The workshops were recorded, transcribed, and analysed to supplement the data from the FGDs.

Data processing and analysis

The data were analysed thematically [31, 32] using NVivo version 12 [33] software, applying both inductive and deductive approaches. Inductive analysis was done by the research team, informed by the data and study objectives. Deductive analysis was done together with peer researchers. The analysis involved the following steps: transcribing the interviews, familiarisation with the transcripts and audio recordings, producing a coding framework, coding and identifying key themes across the transcripts, merging themes, searching for key findings under each theme, comparing and finding associations, and providing explanations for the findings.

The coding framework used was generated and agreed between the members of the research team. The codes were iteratively defined using constant comparison within and between codes to ensure that they accurately reflected the raw data.

Once the deductive analysis was complete, emerging findings were discussed and themes were finalised with all peer researchers. The findings were then validated with relevant stakeholders and peer researchers. This exercise was effective in adding missing

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information, clarifying the topics, contextualising the nuances, and developing recommendations.

Ethical considerations

An ethical approval was obtained from the Senegal National Ethics Committee prior to the study (SEN21/69). An informed consent was sought from all participants, assuring confidentiality and anonymity of the data collected. Informed consent forms for students with vision impairments were read out in the presence of their parents; and a verbal consent and an accent from the parent was obtained in all cases. A study information sheet was also given to all participants.

The research process followed the following key principles: mutual respect, equality and inclusion, democratic participation of all, active learning, making a difference, collective action, and personal integrity.

Results

Sample characteristics

A total of 45 children with disabilities, 40 parents/carers and 10 teachers participated in this study. Children (27 boys and 18 girls) were aged 7 to 12 years. Parents/carers (10 male and 30 female) were aged 27 to 60 years and the teachers interviewed (7 male and 12 female) were aged 32 to 50 years. In Koalack, only women attended the parents' FGD.

Students' experiences of inclusive education

When discussing their experiences in inclusive schools, students with disabilities across all project areas expressed that their access to education had generally improved.

Since the start of the Inclusive education project, they saw:

> 'More children with disabilities, mostly with vision impairments, which encouraged them to come to school regularly.'

The increase in the number of students was attributed to the schools' proactive search and enrolment of children with vision impairments in local communities. Female students reported that the increased number of girls with disabilities in schools made them: 'feel normal', they were 'not isolated' anymore, and they felt 'important and included.'

Most students with disabilities across all schools liked the changes introduced in their schools 'because of the variety of topics taught, calm environment, and teacher's welcoming and supportive behaviour.'

The schools were perceived to be 'safer than staying at home.' Students reported feeling 'more motivated to come to school regularly and not wanting to miss out on learning.'

Some students in Dakar said that, in the past, they did not feel confident enough to engage in sports activities and now their confidence and self-belief significantly increased. This is how a student from Thiaroye school described the changes he experienced in his school:

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'Eating facility and access and opportunity to play blind football has improved since last year for me.'

Students also talked about several specific interventions helping them to remain in schools, including motorbike transport support in villages where public transport was not available, support and more positive attitudes from their sighted peers and adults, improved teaching methods, more accessible school facilities, and meals provided during lunch breaks.

Another factor that helped students remain in education was teachers' continuous engagement with their parents through meetings and text messages. Students reported that this had motivated their parents to take their education seriously.

Detailed accounts of students' experiences in the project schools were organised in six themes, presented below.

1 Commute to school

While discussing their experiences of commuting to schools, students with disabilities noted that the transport support available in their schools had improved in the past few years. The availability of transport was one of the key factors that helped children with disabilities remain in education and achieve their educational goals. The travel time has reportedly decreased, thanks to the availability of Jakartas (motorbike taxies available for hire) and other vehicles. This has led to 'improved school attendance and return to school after lunch.'

However, the transport support was not optimal, and many students continued experiencing challenges with getting to schools. Guédiawaye in Dakar was the only school where students with vision impairments did not report any negative experiences with transport. Students from other schools, especially those who lived far from the school, continued having problems with commuting to schools. In Kaolack, for example, the transport available was not regular and the students had to wait for some time to be taken home, as one student explained:

'It is true that we are supported for transport but, sometimes, some students wait until 1pm without being able to return home for lunch.'

A student from Louga shared similar experiences with irregularity of transport available to them:

'Our car, we pay for it every month, but sometimes we are forced to wait hours for it after finishing school to return home.'

Another student from Kaolack explained how he had to leave home very early in the morning and stay in school with the school guard, because his journey to school took over two hours (Figure 2) and there was a limited number of public buses available. Students who lived so far away preferred to board, but this option was not available to them:

'I leave Touba very early to come and study. When I come, I spend the day at the guard's house, that's where I stay. If there was a possibility to be accommodated here, in the school, and a restaurant to eat for people like me, who come from far, it would be very good for us.'

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Figure 1. Average journey time to and from school (extracted using Google Maps).
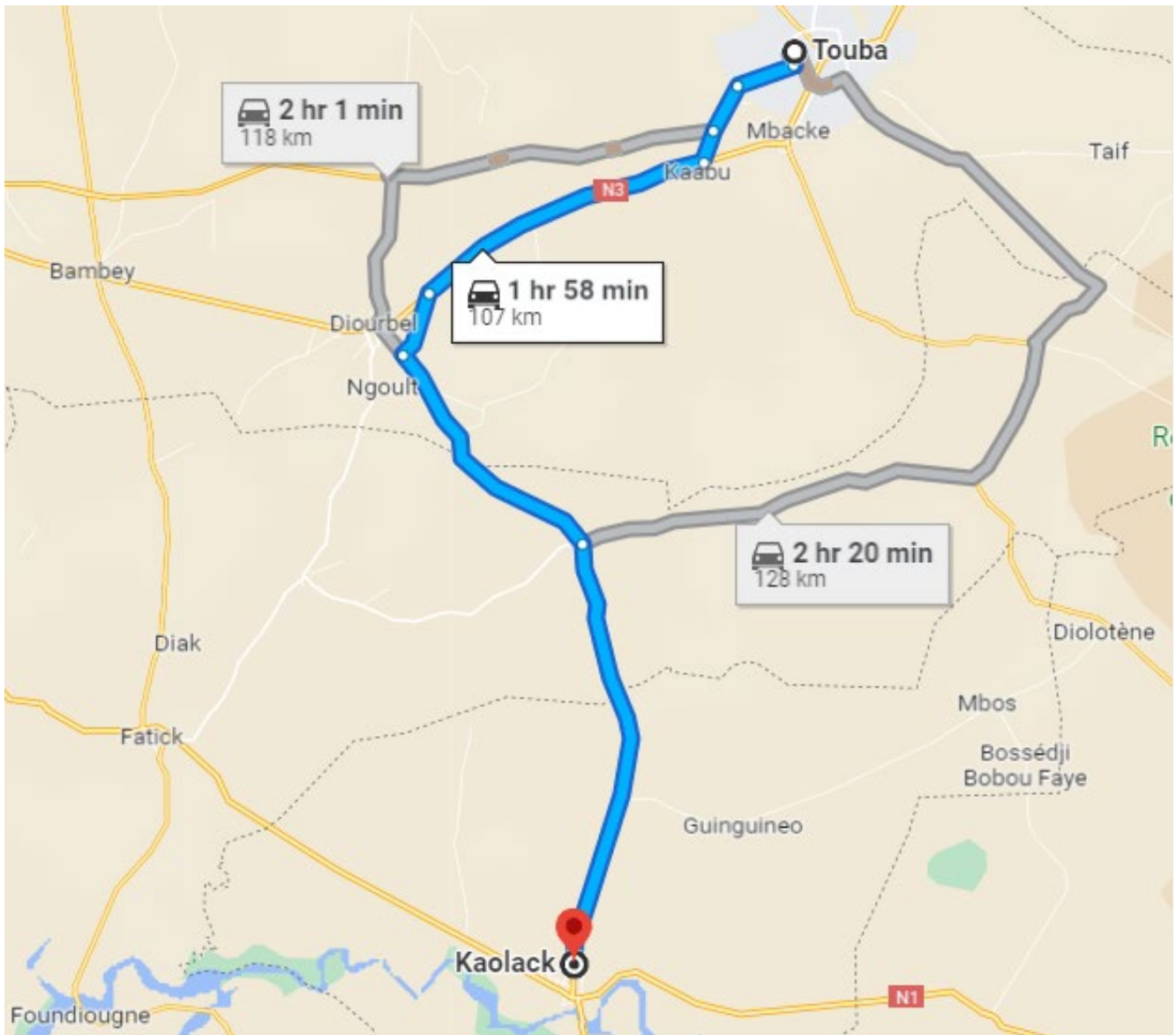
Students from Thiaroye school in Dakar who took public bus transport route 69 to get to school explained how they had to:

> 'Leave home very early and reach back home after 8 in the evening' and 'arriving late for school due to heavy traffic in that route.'

While other students who took that route had to 'walk to school' because they had 'no money for bus fare.' All students taking that particular public transport in this school said that they wanted to have a dedicated bus that takes a route straight to school.

Most students from Rufisque school in Dakar also said they wanted to have a dedicated school bus:

> 'It will save us from waiting for family members to come to pick [us up] after school and sometimes the wait is for hours as family members are busy with work.'

Similar comments were made in Kaolack by students who took Jakartas to get to school. It was argued that while the service worked for some students with disabilities, it was

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challenging for others. Some students said that heavy traffic and bumpy roads were difficult for students who were blind:

> 'It is very difficult being blind to come to school on time with motorcycle taxis safely because of traffic and bumpy roads. A bus could help us to be safely on time at school and take us home.'

Participants across all schools noted that:

> 'Students who were struggling with transport have dropped out after a few months of joining the school.'

Some female participants across all schools argued that girls with a vision impairment struggled more with the school commute than boys with vision impairments. They felt unsafe about not knowing who they were traveling with on Jakartas and facing mockery/teasing while walking to school.

Road safety was also highlighted as a major challenge by many students with vision impairments across all schools. Some students pointed out that many drivers did not realise that the students were blind and expected them 'to get out of their way, like other children do', which sometimes resulted in accidents, as one student from Louga pointed out:

> 'A motorcycle, Jakarta, ran over a blind child from my community. It is very difficult to stay safe for a blind person.'

A need for visible warning signs such as white canes or visibility vests was raised by all students.

2 Access to inclusive learning materials and teaching

School learning

Students across all schools stressed the importance of accessible and good quality educational materials adapted to their individual needs.

> '[We] require accessible and adapted learning materials and teaching methods to acquire sufficient learning [and] marks to progress and continue education.'

When asked about their experiences of learning, when in school, the majority of students from all study areas said that their understanding of lessons had improved in recent years. They attributed it to teachers' adaptations of their teaching speed, simpler explanation methods, and opportunities for children with disabilities to learn alongside their non-disabled peers.

The adapted teaching technique noted by the students in Kaolack and Louga was:

> 'Snapping or clicking fingers to encourage visually impaired children to raise hands to answer a teacher's questions.'

Thanks to the learning from the training on gender-sensitive pedagogy, it was noted that teachers made extra efforts to invite girls with disabilities to come to the board to answer questions and allow additional time for girls who felt shy to express themselves.

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In Guediawaye and Rufisque schools in Dakar, students with vision impairments were allocated first and second rows of desks to be able to hear their teachers better. Priority seating for children with disabilities was mentioned in all schools.

Most students interviewed said that they were engaged in classroom discussions during the lessons. Girls across all schools highlighted that their teachers encouraged them to speak up, to answer questions, and praise them when they answer correctly.

Despite these adapted teaching methods, noise in the classrooms was reported to remain a major barrier to learning across all schools, as one student from Thiaroye school in Dakar explained:

> 'Students make too much noise, they do not listen. If they make less noise, we could follow lessons more easily.'

Students from all schools expressed continuous challenges in understanding numerical- and pictorial-based lessons because teachers and non-disabled students did not 'explain everything what they are writing on the board.'

Students suggested that 'verbalising every step, especially while solving math problems or science diagrams on the black board,' may address the problem.

All students noted that their learning in subjects such as history and geography had improved, as one student from Guédiawaye school explained:

> 'My learning has improved because I really like the stories we are told about our ancestors, and also the way we are taught about everyday life'.

However, it was also noted that students' learning in mathematics, numerical activities, and especially geometry remained to be a challenge. For example, the methods used for teaching geometry required students to draw, but the schools lacked accessible tools and equipment. This is how a student from Kaolack described his experiences of learning mathematics:

> 'Maths is very difficult, and calculations are too tiring with the limited numbers of cubes between us.'

Another student from the same school echoed:

> 'We would also like to see an increase in materials, especially anti-slip sheets, rhythm cubes and geometric materials. We also need more dictaphones.'

Similar concerns were expressed by students in Guediawaye and Rufisque schools in Dakar. As shared by one student in Rufisque school:

> 'It is very difficult to do mathematics without proper calculators and we do not have any.'

And this is how a student from Louga described the lack of accessible educational materials in their school:

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> 'We must have a map of Senegal in braille to learn geography better and need calculation tablets and the geometric materials as there are not enough'.

It was also pointed out that access to braille books in classrooms had improved across all schools. However, with the increased number of children with vision impairments in schools, the quantity of braille learning materials and books was not sufficient to cover all the needs. As a result, students should not take their braille books home to do their homework and study at home. The majority of students interviewed said that their fully sighted peers had more books and learning materials, and therefore progressed better in their studies.

Additionally, many students interviewed said that the subject assessments were not appropriately adapted, and the time allocated for the tests was not sufficient for students with vision impairments, resulting in lower marks and subsequent inability to transit to the next grade. One student from Guediawaye school in Dakar explained:

> 'Time allocated for tests [and] examinations are not adequate for children who are blind, as braille reading and writing takes longer.'

At school, intersectionality of gender and disability was reported because of challenges using inadequate WASH facilities and prevailing negatives attitudes from boys outside of classrooms.

Girls with disabilities continued to face mockery from other children, especially boys at school. Sometimes intervention from parents and headteachers helped in shifting attitude among male peers. Additionally, as shared by a female student from Louga school, views of girls with disabilities were only engaged on the discussion about:

> 'Menstruation and sanitary pads, but they were never consulted about other issues they face while learning or in sports activities like blind football.'

Home learning

As stated above, one of the key problems highlighted by many students across the study schools was the lack of accessible learning tools, braille books, and geometry instruments to learn at home. Students had access to standard textbooks at home, but it meant they required help from someone in their household to read out the task. A student from Louga said:

> 'At home, when I have exercises to do, I have to go borrow a book and call someone to read the exercise for me. If I had a book in braille, it would be better to do the work by myself.'

The lack of accessible educational materials and textbooks appeared to have affected girls more than boys because families did not prioritise buying books and educational materials for daughters with vision impairments, as shared by a female student from Kaolack:

> 'Parents still think boys' education is more important than girls' education because they say girls who have disabilities cannot and do not need to deal with outside world.'

Another female student from Guediawaye shared:

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'Boys like us (with a vision impairment) in our school have better bags, learning materials and some books at home than girls like us from our class.'

Many students across all schools also said that their home learning could improve if their family members knew braille and could support them with their studies:

'When I have the black notebook, they can assist me, but if it is braille, no one can help me.'

A similar comment was made in the school in Kaolack region:

'Our parents don't know how to use braille. We would like to see them trained on the use of braille so if we make mistakes, they can correct them.'

Students whose family members knew braille (during Phase 1 of the inclusive education programme, parents and family members from intervention schools were trained braille) reported better learning, as one student from Thiaroye school noted:

'My older brother helps me revise at home, so I perform better at school. He masters braille very well.'

Students from Louga also reported that their elder siblings and classmates who knew braille helped them with their homework. Overall, across all schools, students who did not receive any support at home reported struggling at school too.

3 Learning during Covid-19 school closure

Study participants noted that, during the Covid-19 pandemic, the Ministry of Education developed materials and strategies for home learning called 'Learning at Home'. The materials included videos and audio lessons broadcasted through television and radio channels with a manual in braille, and lessons and homework shared via WhatsApp. Additionally, Sightsavers, in collaboration with the Directorate of Elementary Education, organised distance learning courses for visually impaired students, commonly called teleworking.

Study participants further explained that learning for students with vision impairments during school closure was supported in several ways, including in-person tutors and the use of digital technology. For example, a student from Kaolack highlighted the support of a reference teacher:

'During school closure [we] were put in touch with the reference master who trained us.'

A student from Louga reported attending a Qur'anic school, which stayed open during the lockdown:

'[I attended] Qur'anic school when the regular school was closed.'

Many students across all schools reported receiving videos to watch on their phones and having homework to do after that. Their elder siblings often supported them with the homework given. However, a number of students across all schools could not continue their studies during the lockdown because they did not have phones or computers. The lack of access to digital devices was more commonly raised by girls than boys.

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Girls also said that they had very little support from other family members during school closure. They argued that their parents supported learning for their male siblings, while the girls were given house chores to do. Lack of access to homework in braille was also shared as a major challenge for children with vision impairments learning at home.

4 Adaptations of the school environment

Students with mobility difficulties and vision impairments said that the physical accessibility of school premises, and especially classrooms and toilets, had improved in the past few years. For example, a student from Louga noted:

> 'It's easier to move around without worries after Sightsavers built the ramp here.'

It was further explained that all students who joined the school for the first time, and all existing students at the beginning of each academic year, received mobility orientation for key locations within the schools, which helped to boost students' confidence and independence:

> 'Teachers and mentors held hands to show us the way to the toilet, position of classrooms and introduced us to the various teachers.'

> 'Physical environment adjustments and training boosted confidence and independence.'

Furthermore, students from all five schools highlighted that having eating facilities in their schools created a more supportive learning environment because 'children no longer had to go home for lunch and return to school'.

Eating facilities were reported to be particularly important for children with vision impairments, as it took them 'longer to go home during the school break than for other children.'

Despite these reported improvements, there continued to be a number of challenges related to the physical accessibility of schools. Firstly, the number of toilets available in the schools was not adequate for the increased number of children, particularly for girls. Most schools continued to lack toilets designated for children with disabilities. However, all schools had toilets with a ramp and only the school in Kaolack had a designated toilet with a ramp.

Secondly, while the number of children enrolled in the project schools grew during the course of the project, the classroom space and numbers did not substantially increase. The small classroom size posed mobility challenges for some children with visual impairments, as a student from Thiaroye school in Dakar explained:

> '[We] had to rely on other children when moving within the school.'

Another issue highlighted by study participants across all five schools was the focus of the project schools on children with vision impairments. It was argued that the schools were not appropriate to accommodate the needs of children with severe mobility impairments, hearing impairments and learning impairments, as a student from Kaolack pointed out:

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'Schools do not have facilities to accommodate these [hearing, mobility and learning] types of disabilities, and do not have any activities to enrol children with other disabilities.'

5 Students' participation in parent-teacher communication

Children with disabilities were asked whether they were included in the meetings between their parents and teachers, and whether they were given any feedback and any opportunity to voice their concerns. The responses of the children varied. Some students said that they were present at the meetings and were very proud when the teacher talked to their parents about their successes. A student from Guediawaye school said:

'When my father or mother talks to my teacher in front of me, I feel very proud of my achievements.'

Similar experiences were noted by a student from Louga school:

'When my father comes to school and I am present at the meeting, it makes me really happy.'

The importance of being present at parent-teacher meetings and having an opportunity to share experiences and concerns was highlighted by most students across all five schools. A student from Louga school said:

'I should be present when people talk about me and ask me questions that I can answer because I am the one who is learning here and also experiencing the problems.'

6 Community attitudes

Opinions of children on the attitudes towards them in the community varied. The majority of children interviewed reported that they felt positive changes and that the support towards their learning in the community had increased. For example, this is how a student from Guediawaye school in Dakar described her relationships with her neighbours:

'My neighbours are amazed by the braille method we use; they are very interested in supporting what I do.'

Similar comments were made by a student in Louga school:

'Community people are interested and more willing to support us, encourage us to do well in study and sports, and motivate us by giving gifts.'

Some students said that other community members started believing in their ability to learn, which in turn boosted their confidence and self-esteem and improved their school attendance, as a student from Kolack school explained:

'People in my community now say they are confident about my capacity to learn at school.'

A similar comment was made by a female student from Thiaroye school in Dakar:

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'I really like the knowledge we are given at school. There are many people who said that blind people cannot study, but here at Thiaroye school, blind people study.'

In Thiaroye school in Dakar, community members reportedly paid for the school meals of the girls with vision impairments, which helped the girls to remain in school during lunch breaks and improved their school attendance, retention, and learning.

There were, however, a few students, largely from Rufisque and Guediawaye schools, who reported that negative perceptions of children with disabilities remained persistent in their communities. They reported misconceptions and poor understanding of children with vision impairments and their needs, as a student from Rufisque school explained:

'One day I almost landed at the police because of a misunderstanding with a neighbour who called me a thief because I had pushed him because I could not see him.'

Teachers' experiences of delivering inclusive teaching

Teachers across all five schools reflected on their experiences of delivering inclusive teaching and learning. These reflections have been organised in three themes.

1 Teachers' training and competency

Reflecting on their knowledge and competencies to provide inclusive education, teachers across all schools noted that the initial training supported by Sightsavers had helped them to engage with local communities and identify children with disabilities out of school and enrol them in education.

The subsequent additional training during the course of the project included 'teaching methods, braille, seminars on inclusion, and training on mathematics for the blind', which built their skills further and supported the delivery of inclusive teaching. Teachers interviewed said that these new skills and competencies helped children with disabilities achieve better learning outcomes and progress from one grade to another.

However, the teachers also said that the training provided focus on teaching children with vision impairments only, and that 'most children with hearing impairments, severe physical disabilities and learning disabilities were still out of school.'

Teachers further noted that one or two training sessions on inclusive education was not sufficient to fully develop the necessary teaching skills. Teachers called for continuous professional development programmes and mentoring schemes with a focus on diverse range of disabilities. Teachers also stressed that the inclusive education training should not be limited to a few teachers per school and that:

'All teachers and support staff should receive disability inclusion training to ensure more inclusive and accessible teaching and learning environments.'

One potential weakness of the current system highlighted by the teachers interviewed was the inability of classroom teachers to 'follow up on children who dropped out [of school].'

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It was argued that, at present, classroom teachers did not have time or capacity to follow up on such children in the community and facilitate their re-enrolment. The problem was noted in all project schools.

2 Interventions to support inclusive education

When speaking about the delivery of inclusive education in the project schools, the teachers interviewed highlighted a number of interventions, which facilitated teaching and learning of children with vision impairments.

Eye examinations, provision of assistive devices and treatment, such as surgery, facilitated the enrolment of children with vision impairments who were previously out of school.

Children who were blind or had severe vision impairments were provided with accessible education materials and textbooks, as a teacher from Guediawaye school in Dakar described:

> 'Distribution of necessary teaching and learning materials to all blind and visually impaired students at the beginning of each school year has definitely supported their teaching and learning.'

However, teachers in all project schools pointed out that the textbooks for French and mathematics received from the government were not available in braille, leaving visually impaired children without textbooks, which affected their learning, especially at home. The majority of teachers interviewed praised the Learning at Home programme and teaching materials introduced during the Covid-19 school closure. All teachers found these materials 'useful and important.'

Another important intervention highlighted by the teachers was the provision of eating facilities in the project schools. Teachers explained that, in the past, children struggled to find food around the schools and had to go home for lunch. However, children who lived far from the school would not return for the afternoon classes and were often at risk of dropping out of school. The situation changed, as a teacher from Louga explained:

> 'Now that children do not have to go home for lunch, their chance of not returning to school has diminished and this has improved their learning outcome.'

A teacher from Thiaroye school in Dakar explained how an eating facility in the school was organised and supported by the local community:

> 'A school eating facility has encouraged the local community to support these children. Some community members now offer donations for eating facilities to keep girls with disabilities at school.'

All intervention schools now provide meals for all children with disabilities and community support is appreciated by the head teachers.

Another important intervention noted by the teachers was inclusive school clubs. For example, a teacher from Guediawaye school in Dakar noted:

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'Inclusive clubs have been especially beneficial, as children had many trainings, particularly on children's rights but also on the gender issue. In inclusive clubs, there are girls and boys.'

Another teacher from the same school added:

'At the level of the inclusive school club, for example, there is an action plan that includes an action of including girls at school level.'

When asked about interventions or activities that could further advance the delivery of inclusive teaching in the project schools, the teachers interviewed called for a platform to share experiences, successes, challenges, and learnings with other inclusive schools. For example, a teacher from Louga said:

'Our teaching could benefit from sharing and learning as we all have adapted the trainings given to us to match the needs of children with disabilities at our specific school.'

A similar comment was made by a teacher from Guediawaye school in Dakar:

'Many organisations engage with us about inclusive education and access to education for girls, but we don't see all of them meeting together in one place with us and sharing experiences and learnings. Their connection, collaboration and coordinated intervening regularly could really improve our teaching capacity and children's access and retention in school.'

Another suggestion made by the teachers, particularly in Rufisque and Thiaroye schools in Dakar, was one-to-one meetings with parents of children with disabilities to give them specific feedback on their children's support and learning. For example, a teacher from Thiaroye school pointed out:

'In parent-teacher meetings, we include all parents, not specifically parents of children with disabilities. That is why we have a bit of a problem with giving useful feedback to these children and parents.'

Also, teachers across all schools pointed the need to provide additional time to children with disabilities during exams, as one teacher from Louga explained:

'Time allocated for tests and examinations is the same for all children. This time is insufficient for children with visual impairments as braille reading and writing requires longer time.'

A teacher from Kaolack made a similar comment:

'[Limited assessment time] led to lower marks of children with visual impairments in the assessments and undermined their academic progress.'

3 Interventions to support gender-inclusive education

When asked about interventions that supported the delivery of gender inclusive education in pilot schools, teachers across all project areas said that the training supported by Sightsavers helped them to engage with local communities and enrol girls with disabilities who were out of school. This engagement, especially community sensitisation, helped to

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raise community awareness of disability and gender. The training also helped teachers to better understand the gender differences in educational experiences of boys and girls and adapt their teaching practices accordingly.

However, all teachers interviewed said that disability awareness and training was not sufficient to accommodate diverse needs of the increased number of children with disabilities in their schools. The schools required more spatial classes and improved capacity across the entire school, as a teacher from Kaolack explained:

> 'Girls have different needs, and trainings and support supplies are helpful, but we need to better overall capacity of the entire school. Otherwise, we will only be scratching the surface of gender inclusive education.'

Participants also mentioned several specific interventions, which helped to support girls' retention in schools. Participants from Thiaroye school in Dakar mentioned UNICEF-supported activities, which 'gave sanitary pads to the girls', distributed iron tablets and organised training on gender-based violence.

Other important interventions that helped teachers to better understand and address the needs of girls with disabilities include Bees Solidarity providing sanitary tissues to girls in Guediawaye school in Dakar; the Lotary club separating boys' and girls' toilets in Rufisque school in Dakar; and called Scofi, a national women teachers' association, which helped girls with their learning and academic progress.

Also, many teachers said that one problem that needed to be addressed was girls' access to educational materials and supplies, as a teacher from Kaolack region explained:

> 'Parents buy learning resources and school bags for their boys first. Even though girls are sent to schools, they are not provided with adequate supplies by the families.'

During finding validation workshops, teachers shared the need for engaging with male students in disability and gender awareness activities to minimise prevailing negative attitudes of some male students towards female students with disabilities. Moreover, teachers also highlighted the need for engaging with transport service providers in these awareness activities so that students with disabilities, mainly girls, can commute to and from school without any safety concerns.

Parents' experiences of supporting children's learning

This group of participants discussed their experiences of being parents, careers, and supporters of children with disabilities and their education. Findings have been organised in five themes presented below.

1 Knowledge of interventions that support inclusive learning

When discussing their knowledge and understanding of interventions, which facilitated education of children with disabilities in project schools, most parents, particularly in Dakar and Kaolack, agreed that interventions supported by Sightsavers had made significant positive changes to the lives of their children. Participants talked specifically about the

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enrolment and support of girls with visual impairments. This is how a parent from Rufisque school in Dakar described their experience with the project:

> 'I am aware of the project since my child has been here. I know that the project is going well and really supports visually impaired children. Therefore, I also brought another child to this school'.

A similar comment was made by a parent from Thiaroye school:

> 'Sightsavers' project prompted us to bring our children to school and their [Sightsavers] involvement in our school is supporting children in the context of inclusive education.'

A parent from Guediawaye school was very emotional when she described how she changed views on her child's ability to learn:

> 'At first, I decided to keep my child at home. It was thanks to my neighbour that she [my child] came to school. I did not believe that a child who does not see could learn or go to school.'

Some parents pointed out that one of the key benefits of the pilot project was free provision of education materials, which the parents would not be able to afford on their own, as a parent from Kaolack explained:

> 'We have seen the help given to our children and material provided. If we had to buy them, we could not afford it, so we thank you very much and we encourage you to continue to help us.'

All parents across all project schools pointed out that the pilot project helped their children to attend school and learn well for a better future, and without this support, they would not have sent their disabled children to school.

In Louga, parents' knowledge of the Sightsavers' support varied. One parent, for example, said:

> 'Our children study here but we were not aware of any plans or project that is helping.'

However, another parent from the same area said the following:

> 'I know Sightsavers has been supporting the school to deliver education for disabled [children]. They also built a ramp here to allow children with disabilities to move alone to their classroom. Last year the project gave help'.

Several participants also raised concerns about insufficient government support to inclusive schools. For example, a parent from Kaolack said:

> 'Even though support from the government may have improved a little, their presence in meetings and providing adequate and meaningful support to school is still lacking'.

All participants noted that visibility of different stakeholders and their coordinated work was critical for the expansion and sustainability of inclusive education across the country.

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2 Reflections on school-parents communication

While discussing their engagement and relationships with schools and teachers, the majority of carers across all schools said that their communication with the schools had improved due to regular meetings with teachers and other parents and provision of allowances for phone use.

These improved relationships with the teachers and other parents reportedly contributed to their 'better understanding [of] children's learning needs and how [they] can support them.' Parents across all schools also thanked the project for providing telephone credit and regular catch-ups with teachers, as one parent form Rufisque school noted:

> 'Without the credit, I would not have been able to know how my child is doing at school and especially not be able to support with learning at home during school [Covid] closure.'

All parents interviewed agreed that, despite their struggle to keep up with the housework, regular engagement with the teachers was critical to ensure that their children received good quality support.

3 Availability of accessible learning resources and tools at home

The lack of accessible learning resources at home, especially during the Covid-19 school closure, was one of the key issues highlighted by the parents interviewed across all five schools. All participants pointed out the need to have braille textbooks and other materials at home:

A parent from Kaolack region shared:

> 'Supporting learning at home is not possible without proper materials.'

A parent from Louga region expressed:

> 'Children need tablets and math instruments so they can study at home. Otherwise, it is very difficult for them to revise at home.'

Reflecting on their experiences during the Covid-19 school closure, all parents across all schools said that studying at home was stressful, as the school closure interrupted children's habits and day-to-day routine:

A parent from Guediawaye school, Dakar, said:

> 'It was very stressful for the children because they were already used to the atmosphere of the school. My son often asked me when the disease would end.'

While asked about the support received during the school closure, the majority of parents interviewed said it was limited and not very effective. A parent of a child at Thiaroye school, Dakar, said:

> 'In the support process, nothing was received. Despite being given online remedial classes, there was no tablets to do the exercises.'

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One of the key challenges highlighted by the parents was their inability to read braille and thus support their children with the home exercises given to them during the pandemic:

A parent from the Kaolack region shared:

'We do not know how to support as we do not know braille.'

A parent of a child at Guediawaye school also reflected that:

'There was no support to [my] child at home because no one in [our] family is introduced to braille.'

Some parents also said that they required other, non-educational support during the pandemic, particularly with living conditions and food. A parent from Louga region said:

'The closure was not child-friendly. You can't compare going to school and staying at home. It is also necessary to help parents to improve the living conditions of their child with disabilities, whether for food, clothing, and necessary equipment.'

4 Reflection on gender and educational practices

When asked about their reflections on education and gender, the majority of parents acknowledged that boys and girls had different gender-specific needs. However, all felt that the support provided should be equal, irrespective of sex of the child. A parent from Louga region said:

'For support, everyone needs it, whether it is a girl or a boy. Aid must be balanced because we are all poor.'

A similar comment was made by a parent of a child at Thiaroye school in Dakar:

'The support must be balanced as they all study. They need clothes, means of transport and support with work, especially for braille. But it is true that there is a difference between girls and boys, there are specific needs for girls.'

Several parents also noted that the project played an important role in increasing parents' awareness about gender-specific educational needs and about gender-sensitive approaches in education. A parent of a child at Rufisque school, Dakar, said:

'We now know girls with disabilities have different needs and are more vulnerable, so they should receive better support.'

5 Reflections on improvements needed to support inclusive education

When asked about specific challenges faced, the majority of parents said that they struggled to support their children without knowledge of braille. All parents across all schools expressed a strong desire to learn braille. A parent from Kaolack region said:

'Training would allow us to use braille and be able to accompany the children once at home. It would be a good thing. Now we are unable to help or guide them when they come home and sit down to study.'

Another issue highlighted by many parents was more support teachers in the classroom and better support for teachers. A parent of a child at Rufisque school, Dakar, said:

> 'My first concern is the capacity-building of teachers, which will have a direct impact on the quality of our children's education. We need more support teachers in the classroom.'

The parents also wanted to have more inclusive schools in the area to reduce the distances travelled by some families. A parent of a child at Thiaroye school, Dakar, said:

> 'Currently, for this enlistment, I see people left stranded just because of the distance. The fundamental problem is accessibility. The most urgent thing is the multiplication of inclusive schools to capture the maximum number of children. I saw a child who dropped out of school just because of mobility difficulties.'

A parent from Kaolack region added:

> 'What needs to change is to expand the project so that it can capture other children who, until now, are left stranded while demand for inclusive education is high.'

One of the key challenges highlighted by the parents interviewed was transport to get students with disabilities to school. The parents argued that the cost of transportation was very high and the subsidies the families received from the government were not sufficient. A parent from Louga region said:

> 'The price of transportation is very expensive. We live far away, and the children want to study. You have to help us with transportation.'

Another parent from Louga region added:

> 'What the Town Hall gave us for transport was not enough, 12,000 per year. This sum cannot even cover transport for a month.'

In addition, the majority of parents across all schools expressed that they continued to be concerned about the safety of their children while commuting to school. Many children had been hit by vehicles and motorbikes because children could not see which direction the vehicle was coming from, as a parent from Rufisque school in Dakar pointed out:

> 'Nothing has changed about the road safety since this education project started. The risk for a blind child remains the same or has become worse.'

Parents called for Sightsavers to work closely with the government and to develop a solution for affordable, safe, and sustainable transportation of children with disabilities to schools, as expressed by a parent from Louga region:

> 'We all know that Sightsavers supports the education of children with disabilities, but the state and patrons should help them in this work. The children must be provided with means of transport, even if it is a Tata bus that will provide the pick-up.'

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Discussion

Our study sought to explore the experiences of inclusive education by children with disabilities, their carers, and teachers in the inclusive education schools supported by Sightsavers in Senegal.

The study had a strong gender focus. The aim was to explore how gender affects the experiences of girls and boys with disabilities, and the implications of the differences for education and support practices at school and at home.

This section discusses the key findings of the research and examines which recommendations could be successfully implemented and which ones continue to be challenging.

The discussion is built around these key areas:

1. Intersection of gender, disability, and education
2. What worked well in the project, and the recommendations that were effectively achieved
3. The aspects of inclusive education that continue to be challenging, and the recommendations that could not be achieved or were partially achieved
4. Factors that facilitated effective inclusive education practices for all children and, specifically, for boys and girls with disabilities

1 Intersection of gender, disability, and education

Our Phase 2 study findings highlight that the project made specific efforts to identify and enrol girls with visual impairments and ensure their regular attendance and academic progress. Students, parents, and teachers all agreed that huge progress has been made on overall teaching and learning for all children with disabilities, with special focus on a gender-sensitive learning environment at school since the start of the project and Phase 1 of the study.

Girls with disabilities who have been in school since the Sightsavers project started shared of having experienced better support to attend school from their parents, siblings, and community members. Girls also reported facing less discrimination from family members and the community, whose perceived inability of girls with disabilities being able to learn having changed since doing well at school.

As a result of recommendations from the Phase 1 study, several adaptations in the school environment were made. These adaptations reported to be particularly valuable for girls, as they started feeling more confident and independent while navigating around the classroom, school building (to use toilets), and school playground. Provision of sanitary supplies helped to ensure regular attendance and retention of girls with disabilities in schools. However, the quantity of sanitary supplies was not sufficient to meet the demand.

In relation to gender responsive teaching and learning environment, more teachers had received training from Sightsavers. This helped teachers to understand different gender needs of girls in comparison to boys with disabilities. This understanding helped teachers to employ positive discrimination towards girls with disabilities. Teachers now value learning ability of both female and male students equally and support them equally to progress.

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Additionally, teachers now promote gender-sensitive interactions in classroom by giving equal chances to both female and male students to answer questions. They also invited girls with disabilities to come to the board to answer questions while allowing additional time for female students who may be shy to express themselves.

Inclusive school clubs, initiated with support from Sightsavers, has helped in adapting/fine-tuning the Gender Inclusive Education Action Plan. Additionally, engaging with mothers in parent-teacher meetings contributed to improve home learning support and increased confidence in their children with disabilities than engaging with fathers alone. Teachers now have better knowledge on safeguarding and gender-based violence against girls with disabilities.

Despite huge progress since the start of the project and Phase 1 study, students with disabilities, especially girls with disabilities, continue to experience challenges to learn at school and at home. Even though gender was not reported as the main factor or barrier in accessing and learning at school, it was reported as one of the factors influencing access to accessible learning materials and tools at home, whether parents supported home learning, and continuation of learning during Covid school closure.

This finding echoes the existing scholarly literature available on inclusive education and distance learning during Covid-19 from Kenya [34] and Ethiopia [35]. This underlines the need to promote linkages and continuities between different modes of learning to ensure that students are not 'left behind' by a lack of access to particular formats – for example, due to gaps in access to technology that allows them to connect with teachers.

At school, intersectionality of gender and disability was reported to continue because of challenges using inadequate WASH facilities and prevailing negatives attitudes from boys outside of their classrooms. Girls with disabilities continued to face mockery from other children, especially boys at school. This finding is similar to existing scholarly litterateurs from Vanuatu [36], Tanzania [37], and in Malawi and Uganda [38], to name a few.

Additionally, UNICEF's report [39] echoes with the finding of this study, highlighting a lack of accessible school WASH facilities keeping children off school and deterring them from participating equitably in recreational and social activities. Engaging with male students in disability and gender awareness activities to minimise prevailing negative attitudes of male students towards female students was recommended as one potential addressal by teachers and stakeholders.

Girls with disabilities, despite the increased numbers attending school since the project began and Phase 1 of the study, were still not engaged in sports activities such as blind football. Additionally, even though the overall travel provision was reported to have improved since the Phase 1 of the study, girls with vision impairments highlighted that they continue to struggle more with the school commute in comparison to boys with vision impairments. The need for engaging with transport service providers in disability awareness activities and the need for vision impairment visibility/identification to prevent road accidents were also recommended as a potential addressal by teachers and stakeholders.

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2 What worked well in the project, and the recommendations that were effectively achieved

The study revealed that most recommendations from children with disabilities were acted upon. As recommended in Phase 1, several accessibility adaptations in the school environment and in teaching methods were made. Some of these adaptations included accessibility adjustments in the classroom and school areas, adaptations of teaching and learning techniques, community sensitisation for disability awareness and engagement, and support for parents to cover costs for sending their disabled children to school.

Accessibility adjustments in the classroom and other school areas were made by building more toilet facilities, creating provision for transport or transport allowances, provision of an operational canteen and school lunches, and adaptation of sports and outdoor activities to allow participation of visually impaired children. However, participation in sports was only focused on boys with visual impairments, girls were left out.

Adaptation of teaching and learning techniques included adjustment on teaching speed, simplified explanation methods, and using voice and sounds to attract children's attention and encourage them to answer questions. Front-row seating arrangements for students with vision impairments and a mixed seating arrangement for all other students enhanced better participation, leading to positive impacts on students' achievement and social wellbeing, especially female students with disabilities.

Adaptations also included provision of assistive devices and accessible education materials, including braille books and tactile materials. However, availability of these resources was insufficient to match the increased number of students with vision impairments at each project school.

Community sensitisation for disability awareness contributed to reducing negative behaviour towards children with disabilities from their community members, which was reported to be more prevalent during Phase 1 of the study. Additionally, engaging local communities in inclusive education initiatives promoted community participation and mobilisation for supporting children with disabilities with their educational needs at home as well as providing free lunch at a school canteen. Negative attitudes towards children with disabilities still continued in some communities, so there's a need for regular disability sensitisation and continuous community engagement for long-term stigma reduction.

Support was available for parents to cover costs for sending their disabled children to school, including training for parents and siblings on disability-specific learning skills, such as braille, and cash allowances to cover the travel cost for their child. However, the travel allowance was insufficient to cover the overall cost. Braille support for blind children, as recommended in Phase 1, contributed to improved learning outcomes for children with vision impairments. Not all parents/carers of children with visual impairments had an opportunity to be trained in braille, which limited the support they can provide to their children at home.

Support also included provision of allowances for regular parent-teacher telephone communication and provision for internet for WhatsApp groups for learning during Covid-19 school closure.

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3 The aspects of inclusive education that continued to be challenging, and the recommendations that could not be achieved or were partially achieved

Despite the above achievements in delivering inclusive teaching and learning since Phase 1, the study evinced several challenges and recommendations that could not be achieved, which continued to compromise the delivery of quality inclusive education for children with disabilities in the project schools.

Some of these challenges include small classroom sizes and other school premises to accommodate the increased number of students with disabilities, resulting in large classes, overcrowded facilities, and noise during the lessons. Similarly, the number of toilets and WASH facilities did not match the needs of the increased number of students. Another recommendation that could not be achieved was safe options for boarding at school for children with disabilities who live far away.

Continuing professional development programme for teachers was still lacking, and knowledge exchange with other inclusive schools did not take place at all, despite the recommendations in Phase 1. The number of trainings for teachers was not sufficient to fully develop the skills and competencies needed to support children with visual impairments in mainstream schools.

Teachers during this study recommended the need for immediate action to address both of these needs. Teachers also requested:

- Training on a diverse range of impairments and educational needs
- Training for all staff in inclusive schools, including management and school administration
- A platform for mentoring and exchange of experiences and learnings with other teachers and schools

Plan for the implementation of a similar inclusive education project in secondary schools was unknown of or unclear amongst teachers and stakeholders present at the finding validation workshop.

The number of textbooks available in braille remains limited, and children with visual impairments cannot take these textbooks for home learning, which undermines their academic performance compared to children without disabilities.

Geographical maps and new French and mathematics textbooks procured by the government are not available in braille. Therefore, teaching lessons based on numerical and pictorial information as well as mathematics, geometry, geography and sciences remain a major challenge for teachers and students.

The number of accessible teaching materials and equipment (e.g. geometry instruments) for these subjects is not sufficient and teachers are lacking the necessary skills to teach these topics. As a result, children with visual impairments are discouraged to take these subjects, which undermines their future career prospects.

Regarding home learning, girls with disabilities have less access to home learning materials in comparison to peer boys with disabilities or their own male siblings. This was especially a major barrier to learning during Covid-19 school closure. Girls with disabilities also highlighted that their parents supported learning for their male siblings during Covid-19

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school closure and girls were given house chores to do instead. Even though provision of a home tutor was made during school closure, regular support of a well-qualified school-home supervisor, as recommended in Phase 1, was not available.

Additionally, time allocated for tests and examinations has not been adapted to accommodate the needs of children using braille. Insufficient time undermined academic performance and test results of children with visual impairments compared to other children. Teachers and schools also lack mechanisms and resources for a follow-up on children who systematically miss classes or dropped out of school.

Road safety remains a critical concern for children with visual impairments who walk to school. Specific concerns were raised regarding girls with visual impairments, who are often subject to teasing and abuse on their way to school. Moreover, teachers also highlighted the need for engaging with transport service providers in these awareness activities, so students with disabilities, mainly girls, can commute to and from school without any safety concerns.

4 Factors that facilitated effective inclusive education practices for all children and, specifically, for girls and boys with disabilities

The factors that facilitated effective inclusive education practices for all children, especially for girls and boys with disabilities, included interventions and collaborative efforts from government and non-governmental actors. Sightsavers is highlighted to have played a major role in designing and delivering inclusive education to children with disabilities in all five project schools.

Interventions supported by Sightsavers had made significant positive changes in the lives of children with disabilities by identifying and enrolling out-of-school disabled children in respective communities, checking their impairment, whether the impairment is associated with other health disorders, and providing appropriate eye treatment for those who needed it. However, efforts to identify and enrol children with diverse types of disabilities remained unaddressed by the project.

Sightsavers' engagement with local communities and with local authorities, advocating to ensure sustainability of the inclusive practices developed by the project, was identified as a key factor that facilitated effective inclusive education for all. Establishment of a parent (of children with disabilities) association to support advocacy efforts was another factor that contributed to effective delivery of inclusive education. However, the study highlighted the need for more effective and meaningful engagement of parents to support the advocacy activity to address the challenges highlighted by the study.

During the Covid-19 pandemic, the Ministry of Education developed materials and strategies for home learning called Learning at Home. The materials included videos and audio lessons broadcasted through television and radio channels, with a manual in braille, and lessons and homework shared via WhatsApp. Additionally, Sightsavers, in collaboration with the Directorate of Elementary Education, organised distance learning courses for visually impaired students, commonly called teleworking.

Other factors and girls' specific interventions helped to support their education and retention in schools, including sanitary pads and iron tablets provided by UNICEF and organised training on gender-based violence.

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Other important interventions that helped teachers to better understand and address the needs of girls with disabilities include Bees Solidarity providing sanitary tissues to girls in Guediawaye school in Dakar; the Lotary club separating boys' and girls' toilets in Rufisque school in Dakar; and called Scofi, a national women teachers' association, which helped girls with their learning and academic progress.

Conclusion

Our study has highlighted that locally adapted teaching and learning approaches for children with disabilities, particularly with vision impairments, improves access to learning. Further study is needed to capture each of these adaptations at individual school level and a platform/mechanism is necessary for teachers to share their learnings.

Our findings also highlight that availability of a 'referent teacher' at community level can be one of the most effective approaches to support home learning. Even though use of digital platforms (radio, television, phone messaging etc) and payment support to use internet was identified as effective distant-learning approaches, a lack of access to devices/tablets for the majority of children with disabilities made this approach inaccessible. Findings also highlighted the need and demand for braille training for parents of children with vision impairments to support home learning, especially during long school closures, such as the closure during Covid-19.

Findings also show that gender-responsive teaching, inclusion of voice, and meaningful engagement in lessons increases participation in mainstream education, learning outcomes and wellbeing of children with disabilities.

This research highly recommends strengthening of these efforts. Based on the positive impact of multiple organisations engaging on teachers' and students' experiences of teaching and learning outcomes, this research empathises the need for a greater priority for collaboration of other local, national and international organisations. Moreover, research also empathises a need for a multi-pronged approach in addressing the multiple issues highlighted to ensure access to quality education becomes barrier-free for all children.

In reference to the most effective, inclusive, and accessible methods for assessing the educational progress and learning outcomes of children with disabilities, findings highlight that schools do not have a particular mechanism developed. Therefore, this research highlights immediate need for adaptation of inclusive and accessible methods for assessments for students with all types of learning needs.

The positive impact of inclusive education intervention on lives of children with disabilities, as highlighted by the research findings and echoed by all student, parent, and teacher participants, supports the need for systems strengthening, structural change, where required, and expansion of inclusive pedagogy in all schools in Senegal. Therefore, policy dialogues and effective engagement with national and international bodies to support and fund existing structural, educational and cultural challenges should remain a priority for Sightsavers and local and national government of Senegal.

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Recommendations

Every child with a disability has the right to access quality education. They have the right to grow up feeling safe and loved, be free to find a sense of belonging, and feel valued at home, at school and within their community. Education is a basic human right and the right to education aims to ensure everyone can access quality education throughout their lifespan [40].

The UN Convention on the Rights of Persons with Disabilities (UNCRPD) [41] (Article 24) states that state parties must ensure successful inclusive education through school transformation and systems change [42]. To act and to translate rights-based commitments into practice, stakeholders (including education sector government officers) present at the finding validation event recommended the following actions.

Schools need support to improve their premises and infrastructure. They need to:

- Have more spacious classrooms to accommodate large number of students, many of whom experience difficulties in mobility
- Identify and implement noise reduction strategies in classrooms to help children with visual impairments to concentrate better
- Develop guidelines for the appropriate ratio of toilets and WASH facilities to students and increase the number of facilities available
- Better understand the needs of students who live far from schools and face a long commute. They should consider opportunities for safe boarding practices, assessing the strengths and weaknesses

Review of teacher training curriculum in the light of teachers' experiences and needs, specifically:

- Teachers' skills and competencies to provide student support across the full spectrum of the curriculum, particularly science and mathematics
- Teachers' knowledge on how to support students with different impairments and educational needs
- Training curriculum and delivery mechanisms for other school staff (e.g. school administrators)
- A platform for mentoring and exchange of experiences with other inclusive schools.

Review and improve the availability of books and other educational materials, specifically:

- Recommend an appropriate ratio of books in braille to students with visual impairments, and increase the number of books to ensure that students with visual impairments have two sets of books, for home and for school
- Develop a system to ensure that all newly procured textbooks and other educational materials (e.g. maps, geometry tools) are available in the right quantity in a format accessible to students with visual impairments

Review the teaching curriculum and ensure guidelines for adaptation of all subjects and extra curriculum activities, including sports, are accessible to children with visual impairments and are appropriate for both boys and girls. Sports activities adapted for children with visual impairments were available only to boys.

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Make tests and examination accessible to children with disabilities, making adaptations based on the universal design principles and specific impairment needs.

Develop mechanisms for follow-up in the community on children who regularly miss classes or drops out.

Review transport requirement of all children with disabilities attending schools and develop strategies for safe and accessible school transportation.

Develop mechanisms for funding and delivery of training for families of children with visual impairments on disability and in braille.

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