

Teaching Inclusion under Constraint: Instructional and Psychosocial Support for Learners with Visual Impairment in Mogadishu, Somalia

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ABSTRACT

Inclusive education is tested not by placement alone but by what learners are able to do, say, access, and become within ordinary classroom life. This study examined how teachers in four inclusive schools in Mogadishu, Somalia, used instructional and psychosocial support to enable the participation of learners with visual impairment. A convergent mixed-methods design combined a teacher questionnaire, interviews with learners and school administrators, classroom observations, and document review. Teachers relied most strongly on verbal explanation of visual content (91%), individualized support (81%), and collaborative learning (75%), while tactile resources (47%) and Braille-based support (41%) were less common. Psychosocial practices were more consistently reported: encouragement and motivation (97%), emotional support (88%), an inclusive classroom climate (84%), and peer-support facilitation (78%). Qualitative evidence showed that teachers often used relational and low-cost pedagogical strategies to compensate for shortages of accessible materials and assistive technology. These practices widened opportunities for participation, but they also revealed a fragile form of inclusion that depended heavily on teacher improvisation. The study argues that teacher agency can mitigate exclusion but should not become a substitute for systemic responsibility. Sustainable inclusion requires both relationally responsive teaching and reliable access to disability-specific resources, professional learning, and institutional support.

Keywords: inclusive education; visual impairment; teacher support; classroom participation; psychosocial support; Somalia

INTRODUCTION

Inclusive education is increasingly understood as a question of participation, belonging, learning, and voice rather than simple physical placement. This distinction is particularly important for learners with disabilities and is consistent with the right to inclusive education articulated in the Convention on the Rights of Persons with Disabilities (United Nations, 2006). A learner may be present in a mainstream classroom yet remain excluded from the lesson when information is inaccessible, classroom interaction is organized around sighted norms, or support is available only through the goodwill of individual teachers and peers. Recent scholarship similarly emphasizes that access without participation can reproduce rather than remove educational exclusion (Adugna et al., 2024; Ainscow & Viola, 2024; Asres, 2025).

For learners with visual impairment, participation is closely tied to how information is represented, how classroom talk is organized, whether teachers can adapt materials, and whether learners are treated as legitimate contributors to classroom life. Recent African evidence identifies persistent shortages of Braille texts, accessible digital resources, trained personnel, and specialist support, but also shows that carefully organized peer support, verbal description, teacher collaboration, and adaptive pedagogy can expand participation (Maesala & Ferreira, 2024; Negash & Gasa, 2022; Tesfaye & Hailu, 2024). These findings move the discussion beyond the question of whether a learner with visual impairment is enrolled and towards the conditions under which the learner can participate with increasing confidence and independence.

Teachers occupy a particularly demanding position in this process. They translate policy aspirations into moment-to-moment decisions about explanation, pacing, questioning, grouping, feedback, and access to learning materials. Yet teacher agency is not exercised in a vacuum. It is shaped by training, class size, available resources, school leadership, collaboration, and the wider education system. Studies from Uganda, Ethiopia, South Africa, and other African settings show that teachers frequently support inclusion while working with limited preparation and uneven institutional backing (Genovesi et al., 2024; Maesala & Ferreira, 2024; Sikoyo et al., 2023). Teacher commitment therefore matters, but treating commitment as the primary solution risks individualizing a structural problem.

The Somali context brings these tensions into sharp relief. Somalia's National Education Sector Strategic Plan 2022-2026 identifies equity, quality, teacher development, and system strengthening as priorities in a sector still rebuilding after prolonged conflict and institutional disruption (Federal Government of Somalia, Ministry of Education, Culture and Higher Education [MoECHE], 2022). The 2022 education sector analysis likewise documents persistent constraints in financing, infrastructure, teacher supply, and governance (UNESCO IIEP Regional Office for Africa & Global Partnership for Education [GPE], 2022). Within disability-inclusive education, a study in Puntland found that limited teacher preparation, inaccessible infrastructure, shortages of learning materials, financial pressures, and negative attitudes continued to restrict the educational experiences of learners with disabilities (Gelle & Dirie, 2023).

What remains less visible in this literature is the everyday pedagogical work teachers perform when specialist resources are scarce: how they make visual content audible, how they use peer relationships, how they provide individualized guidance without isolating learners, and how emotional encouragement influences willingness to participate. These practices deserve attention because they show both the possibilities and limits of inclusion under constraint. They may create immediate access, but they may also conceal the extent to which schools rely on teacher improvisation in place of dependable systems of support.

This study therefore examines instructional and psychosocial support practices used by teachers to facilitate the classroom participation of learners with visual impairment in selected inclusive schools in Mogadishu. It addresses three questions: (1) What instructional support strategies are used most frequently? (2) What psychosocial support practices characterize teachers' work with learners with visual impairment? and (3) What do the combined quantitative and qualitative findings reveal about the relationship between teacher agency, resource constraints, and meaningful participation? By centering classroom practice rather than enrollment, the study speaks directly to international debates about what counts as inclusion and contributes evidence from a fragile education system that remains underrepresented in inclusive-education research.

LITERATURE REVIEW

Theoretical perspective

The study is informed by the Social Model of Disability, which distinguishes impairment from the disabling effects of social, environmental, and institutional arrangements (Oliver, 1996). Applied to education, this perspective shifts attention away from explanations that locate participation difficulties solely within a learner's visual impairment. A diagram that cannot be accessed tactually or verbally, a teacher who points to the board without description, an assessment available only in print, or a classroom routine that gives little response time can all produce disability in practice. The analytic question is therefore not simply what a learner cannot see, but how teaching and school organization either widen or narrow opportunities to participate.

At the same time, a purely barrier-removal reading of the Social Model can be insufficient for visual impairment because participation may require impairment-specific means of access, including Braille, tactile graphics, screen-reading technology, orientation support, and appropriately adapted assessment. Contemporary African research shows that these resources remain unevenly available and that lack of access can constrain learning even when teachers hold positive attitudes towards inclusion (Negash & Gasa, 2022; Sikoyo et al., 2023; Tesfaye & Hailu, 2024). Digital tools can widen access, but their educational value depends on availability, accessibility, teacher competence, and purposeful integration rather than technology alone (UNESCO, 2023). The present study therefore uses the Social Model as a critical starting point rather than as a complete explanation:

participation emerges through the interaction of environmental accessibility, teacher practice, relational support, and access to disability-specific resources.

This relational dimension is especially important. Inclusive teaching is not only technical adaptation; it also involves whether learners feel safe to answer, ask for clarification, take academic risks, and be recognized by peers and teachers as capable participants. Watermeyer et al. (2024) argue that teachers working with learners with visual impairment require relational as well as instrumental competence because emotional responses to disability can shape classroom inclusion. Ubisi (2025) similarly foregrounds care and support in the educational lives of learners with visual impairment. These perspectives help explain why encouragement, respectful relationships, and peer support are analytically relevant rather than peripheral 'soft' practices.

For this study, teacher support is therefore understood in two overlapping forms. Instructional support refers to adaptations that make curricular content and classroom tasks more accessible, including verbal description, individualized guidance, group learning, tactile resources, and Braille. Psychosocial support refers to practices that strengthen confidence, belonging, motivation, and social participation, including encouragement, emotional reassurance, inclusive classroom climate, and facilitated peer support. The distinction is useful analytically, but the two forms of support are intertwined in practice: a clear verbal explanation can reduce uncertainty and increase confidence, while emotional encouragement can make a learner more willing to use newly accessible information in classroom discussion.

Classroom participation was operationalized as learners' opportunities to access lesson content, answer or ask questions, contribute to group tasks, and remain engaged in classroom activity. These indicators were examined through the observation checklist and through learner and administrator accounts. Independence referred to the extent to which a learner could access information and undertake a task without continuous mediation by a teacher or sighted peer; it was treated as a qualitative continuum rather than a scored outcome. Meaningful inclusion was used as an interpretive construct requiring the convergence of access, classroom voice, belonging, and increasing agency. The study did not use a standardized participation or inclusion scale and did not measure learning gains; consequently, it identifies patterns of reported and observed practice rather than testing the effectiveness of particular strategies.

Teacher support in resource-constrained inclusive classrooms

Recent research across sub-Saharan Africa consistently identifies a gap between inclusive policy commitments and the material conditions of classrooms. Adugna et al. (2024), in a scoping review of Eastern Africa, found that children with disabilities continue to face interconnected institutional, economic, attitudinal, and resource barriers. Asres (2025) similarly concludes that policy frameworks do not automatically translate into inclusive practice. These studies are important because they caution against reading national policy adoption as evidence that learners experience meaningful inclusion.

Research focused specifically on visual impairment gives this policy-practice gap a concrete pedagogical form. In Ethiopia, Negash and Gasa (2022) found shortages of Braille books, limited access to assistive technology, and weak curriculum adaptation. Tesfaye and Hailu (2024) likewise reported insufficient Braille and audio resources and uneven support services, while noting the value of sighted-peer support. In Uganda, Sikoyo et al. (2023) found that many university staff lacked formal preparation for adapting teaching and assessment for students with visual impairment. Although the educational levels differ, the recurring pattern is similar: participation depends on the availability of accessible resources and on teachers' capacity to integrate those resources into ordinary pedagogy.

A second strand of literature emphasizes collaboration, teacher learning, and the dispositions teachers bring to inclusion. Cross-national evidence shows that teachers' attitudes towards inclusive education vary with professional and contextual conditions and cannot be separated from preparation and support (Charitaki et al., 2024). Maesala and Ferreira (2024) show that teacher collaboration can help educators respond to limited resources and inexperience when including learners with visual impairment. Steyn, Koen, and Theron (2024) similarly highlight collaborative problem-solving among teachers as a means of developing practical strategies

for learners with visual impairment. These findings challenge the image of the isolated 'heroic' teacher and point instead to professional communities in which inclusive expertise is shared and developed collectively.

A third strand draws attention to psychosocial and relational conditions. Watermeyer et al. (2024) argue that successful inclusion of learners with visual impairment requires attention to teachers' emotional and relational competence. Ubisi (2025) demonstrates that care and support are inseparable from wider questions of recognition and exclusion. This matters in low-resource settings because psychosocial support is often materially inexpensive, yet it is not cost-free in professional terms: it requires time, sensitivity, expectations of competence, and a classroom culture in which disability does not reduce the learner's status.

The literature therefore suggests that inclusion under constraint is neither simply a story of failure nor a celebration of teacher resilience. Teachers can and do create meaningful opportunities for participation through low-cost adaptations and supportive relationships, but these strategies operate within systems that may continue to withhold accessible materials, specialist expertise, and sustained professional development. The present study examines this tension in Mogadishu and asks what becomes visible when instructional and psychosocial supports are considered together.

METHODS

Research design and setting

A convergent mixed-methods design was used because the study sought both a descriptive account of the support strategies teachers reported and an explanation of how those strategies were experienced and enacted in classrooms. Quantitative and qualitative data were collected during the same phase, analyzed separately, and then brought together during interpretation. This approach is consistent with contemporary mixed-methods guidance that treats integration as an analytic process rather than a final act of placing two sets of results side by side (Creswell & Inoue, 2025; Creswell & Plano Clark, 2026; Fetters & Tajima, 2022).

The study was undertaken in four purposively selected schools in Mogadishu that enrolled learners with visual impairment. The source study identified the schools by name; in this article they are reported as Schools A-D to reduce unnecessary institutional identifiability. Selection reflected the schools' experience of educating learners with visual impairment and their relevance to the study questions.

Participants and sampling

The target population comprised 108 potential participants: 60 learners with visual impairment, 40 teachers, and 8 school administrators. The planned sample was 96 participants (52 learners, 36 teachers, and 8 administrators). Learners and teachers were selected through simple random sampling within the participating schools, while administrators were selected purposively because of their leadership responsibilities and knowledge of school-level inclusive practices. The quantitative results are based on 32 usable teacher questionnaires, representing 88.9% of the 36 teachers selected for the survey. The qualitative component was designed around interviews with the 52 sampled learners and all 8 administrators, supplemented by classroom observations and school documents. The retained study record used for this article does not provide a participant-level completion table disaggregated by school, sex, or degree of visual impairment; therefore, qualitative quotations are identified by participant role and number and are not presented as prevalence estimates.

Data generation

The teacher questionnaire contained 24 Likert-type items scored from 1 (strongly disagree) to 5 (strongly agree). It addressed two broad domains: instructional support (including verbal explanation, individualized guidance, collaborative learning, tactile resources, and Braille-related support) and psychosocial support (including encouragement, emotional support, peer support, and classroom climate). The questionnaire was reviewed by specialists in inclusive education and piloted before administration to improve clarity, relevance, and consistency of administration. Because this article reports strategy-specific descriptive indicators rather than constructing or testing a latent scale, frequencies and percentages are emphasized rather than composite-score inference.

Semi-structured interviews used eight open-ended prompts to explore participants' experiences of teacher support, barriers to participation, and classroom inclusion. Interviews lasted approximately 30-45 minutes. Classroom observations were undertaken across the four participating schools using a structured checklist focused on instructional adaptation, teacher-learner interaction, psychosocial support, and learner participation; field notes recorded concrete instances of access, contribution, teacher assistance, and peer mediation. Document review included lesson plans, attendance records, learner progress records, and relevant school or policy documents. The archived record does not specify the exact number and duration of observation sessions, which limits assessment of observational coverage and is acknowledged below.

Data analysis and integration

Teacher questionnaire data were analyzed in IBM SPSS Statistics using descriptive statistics. The article reports percentages only for practices for which complete results were available; these percentages indicate the frequency of teacher endorsement, not effectiveness or causal impact. Interview transcripts and observation notes were analyzed thematically through repeated reading, initial coding, clustering related meanings, reviewing candidate themes against the source material, and refining theme boundaries and labels. Attention was given to confirming, contrasting, and deviant accounts. Where interview, observation, or documentary evidence differed, the divergence was retained and examined during mixed-methods integration rather than resolved by majority view. The archived analysis record does not document independent double-coding or a formal inter-coder agreement statistic; the analysis is therefore reported as a reflexive thematic interpretation following Braun and Clarke (2021), with cross-source comparison used to strengthen credibility.

Integration occurred after the initial quantitative and qualitative analyses. The researchers compared the direction of questionnaire results with interview, observation, and documentary evidence, asking where the strands converged, where one strand explained the other, and where the combined evidence complicated a simple interpretation. A joint display is used in the results to make these mixed-methods connections explicit, consistent with Fetters and Tajima's (2022) guidance on transparent integration.

Ethics

The study received ethical approval from Victoria University and permission from the participating schools. Participation was voluntary. Informed consent was obtained from adult participants, and consent/assent procedures appropriate to learner participation were followed. Confidentiality was supported through participant coding, and accessible data-collection procedures were used so that visual impairment did not become a barrier to participation in the research itself.

RESULTS

The results are organized around two dimensions of teacher support and then integrated to show what the pattern may mean for participation. Percentages refer exclusively to teacher-reported questionnaire responses ($n = 32$). Observation and interview material is presented separately as contextual or converging evidence and should not be read as an independent estimate of how often a practice occurred. The most striking contrast was between practices teachers could enact through talk and relationships and practices that depended on specialized material resources.

Instructional support strategies

In the teacher questionnaire, verbal explanation of visual content was the most frequently reported instructional strategy (91%), followed by individualized learner support (81%) and collaborative or group learning (75%). Tactile learning materials were reported by 47% of teachers and Braille-related instructional support by 41%. These figures describe teacher endorsement within the 32 usable questionnaires. They do not establish how consistently the practices occurred, whether all learners experienced them, or whether they improved participation or learning outcomes.

Table 1. Teacher support strategies reported in the usable questionnaire dataset (n = 32)

Domain	Support strategy	Reported use (%)
Instructional	Verbal explanation of visual content	91
Instructional	Individualized learner support	81
Instructional	Collaborative/group learning	75
Instructional	Tactile learning materials	47
Instructional	Braille-related instructional support	41
Psychosocial	Encouragement and motivation	97
Psychosocial	Emotional support	88
Psychosocial	Inclusive classroom climate	84
Psychosocial	Peer-support facilitation	78

Field Data, 2026

Observation and interview evidence illustrated what verbal explanation could mean in practice. In observed lessons, teachers described diagrams aloud, read otherwise inaccessible written material, restated visually presented information, and used questions to check understanding. Interview accounts similarly described one-to-one clarification after whole-class explanation. These qualitative accounts converged with the questionnaire pattern, but the study design did not permit practice-by-practice verification for every reporting teacher.

A school administrator summarized the practical limit of this approach: “Teachers try their best to support learners, but the shortage of Braille materials and assistive devices limits what they can do”. (School administrator 1, field data, 2026). Teacher effort was visible and consequential, yet it operated inside a resource environment that restricted the range of possible adaptations. Verbal description could make a diagram discussable, for example, but it could not always give the learner the same opportunity to inspect, revisit, or independently manipulate information that an accessible tactile or digital representation would provide.

Group work occupied an intermediate position. Its relatively high use (75%) widened opportunities for participation and allowed peers to share information, but observation data suggested that peer support could sometimes become compensatory. When a peer repeatedly read, located, or interpreted material that the learner could not access independently, collaboration helped participation in the immediate task while also revealing a gap in institutional accessibility. This distinction becomes important in interpreting inclusion: peer assistance is valuable when it supports reciprocal learning, but it is less inclusive when it functions as the only route through which a learner can reach the curriculum.

Psychosocial support strategies

Psychosocial practices were also frequently endorsed in the teacher questionnaire: encouragement and motivation (97%), emotional support (88%), cultivation of an inclusive classroom climate (84%), and facilitation of peer support (78%). These percentages represent reported practice, not direct evidence of effectiveness. Learner interviews associated encouragement with willingness to speak, answer questions, and remain engaged when tasks were difficult, while observations supplied illustrative instances of supportive interaction.

One learner explained, 'My teacher always encourages me to speak in class and tells me that I can perform like everyone else' (Learner 18, field data, 2026). In observed lessons, teachers used positive reinforcement,

respectful interaction, deliberate invitations to contribute, and collaborative activities. The convergence is suggestive, but it should not be interpreted as proof that encouragement caused greater participation; rather, it shows that reported encouragement was compatible with learner accounts and selected observed episodes.

The strong psychosocial profile also points to a practical reality of low-resource schools. Teachers can often offer encouragement even when they cannot provide a Braille textbook. This does not make encouragement a substitute for accessibility. Rather, it shows that inclusion has relational and material dimensions that can develop at different rates. In the participating schools, relational inclusion appeared stronger than the material infrastructure needed for consistently independent access.

Mixed-methods integration

Table 2. Integrated interpretation of teacher support and participation

Quantitative pattern	Qualitative/observational evidence	Integrated interpretation	Inclusive-education implication
Verbal explanation 91%	Teachers routinely described visual information aloud.	Teacher-controlled adaptations were feasible even where specialist materials were scarce.	Accessible talk can widen participation, but should complement rather than replace durable accessible materials.
Individualized support 81%	Teachers provided one-to-one clarification and additional guidance.	Personal support helped learners remain engaged when whole-class instruction was inaccessible.	Individualization should build access and autonomy rather than create permanent dependence.
Braille 41%; tactile resources 47%	Participants reported shortages of Braille, tactile materials and assistive devices.	The weakest supports were those most dependent on system-provided resources and specialist competence.	Teacher effort cannot substitute for institutional responsibility for accessible curriculum resources.
Encouragement 97%; emotional support 88%	Learners linked encouragement with willingness to speak and participate.	Relational support was a major enabling condition for classroom voice and confidence.	Inclusion requires recognition, high expectations and psychologically safe participation.
Peer support 78%; group learning 75%	Peers helped learners access instructions and activities.	Peer support functioned as both social inclusion and a workaround for inaccessible materials.	Peer assistance should be reciprocal and supplementary, not the main access mechanism.

Field Data, 2026

Taken together, the findings show a pattern of adaptive inclusion under constraint. Teachers used the resources most immediately available to them - speech, time, encouragement, questioning, and peer organization - to reduce barriers to participation. These practices mattered. Yet the same pattern reveals why teacher resilience should not be romanticized. The lower use of Braille and tactile resources indicates that some forms of access could not be generated through goodwill alone. Inclusion was therefore enabled by teacher agency but remained vulnerable because too much depended on individual improvisation.

DISCUSSION

Teachers' instructional strategies

The findings add to a growing African literature showing how teachers report and enact adaptations where formal support is incomplete. Similar patterns are reported in Ethiopia, where shortages of Braille and audio resources coexist with informal peer support and teacher adaptation (Negash & Gasa, 2022; Tesfaye & Hailu, 2024), and in South Africa, where collaboration helps teachers respond to limited experience and resources (Maesala & Ferreira, 2024). In Mogadishu, teacher-reported questionnaire responses showed a gradient between teacher-controlled adaptations and system-dependent supports. Observations and interviews offered compatible examples of this gradient, but they did not verify the reported frequency of each practice across all teachers or establish that the practices were effective.

This distinction is analytically important. It would be easy to read the high percentages for verbal and psychosocial support as evidence that inclusion is functioning well. A more cautious interpretation is that teachers are successfully creating partial access within conditions that remain structurally unequal. A teacher can describe a graph orally; a learner may still lack an accessible version to study independently. A peer can read a passage; the learner may still depend on another person each time the text is revisited. Teacher agency therefore reduces exclusion without necessarily removing the conditions that generate it.

From a Social Model perspective, this is precisely where the location of 'difficulty' becomes visible. The problem is not that learners with visual impairment cannot participate. Participation rises when classroom communication is adapted and when teachers actively include them. The limiting factor appears when the environment fails to provide alternative access routes. At the same time, the findings refine a simple barrier-removal account because impairment-specific resources remain essential. Removing attitudinal exclusion does not make Braille unnecessary; inclusive systems must combine barrier removal with reliable forms of access that recognize different sensory ways of learning.

Psychosocial support

The strength of psychosocial support deserves equal attention. Nearly all teachers reported using encouragement and motivation, and learners' accounts connected encouragement with willingness to speak. This aligns with Watermeyer et al.'s (2024) argument that the inclusion of learners with visual impairment involves relational competence and with Ubisi's (2025) emphasis on care and recognition. A learner who expects embarrassment, pity, or dismissal may remain silent even when the lesson is technically accessible. Conversely, respectful invitations to contribute can make participation socially possible.

The Somali context may amplify the value of relational support. Schools operate within a broader setting affected by conflict, displacement, poverty, uneven infrastructure, and limited public financing. Gelle and Dirie (2023) identify several of these pressures in Somali disability-inclusive education, while the national sector analysis documents wider system constraints (UNESCO IIEP Regional Office for Africa & GPE, 2022). Under such conditions, the teacher's relational role can become unusually important. Yet psychosocial support should not be framed as a low-cost replacement for investment. Its strength lies in complementing accessible pedagogy, not compensating indefinitely for absent resources.

The findings also complicate the common recommendation to increase peer-assisted learning. Peer interaction and group work can reduce social isolation, provide natural opportunities for cooperation, and normalize difference. Tesfaye and Hailu (2024) found comparatively positive sighted-peer support in Ethiopian schools, and collaboration is widely recognized as a resource for inclusive practice. The Mogadishu data support this value but introduce an important qualification: when peers become the principal means through which inaccessible text, diagrams, or instructions are mediated, peer support can conceal a failure of curricular accessibility.

This does not mean peer support should be reduced. It means its quality should be judged by whether it expands reciprocity and independence. Inclusive peer learning allows the learner with visual impairment to contribute

knowledge, make decisions, and access tasks in ways that do not make participation contingent on another student's constant assistance. The policy implication is therefore not simply 'more peer support' but better-designed peer collaboration alongside accessible materials and teacher expertise.

The study's central contribution is the idea of inclusion under constraint as a two-sided achievement. On one side is teacher resourcefulness: the capacity to redesign explanations, provide additional guidance, invite participation, and build confidence. On the other is systemic fragility: the absence or scarcity of Braille, tactile materials, assistive technology, and sustained specialist support. Treating only the first side as the story risks turning resilience into policy. It can normalize a situation in which teachers are praised for coping while the conditions requiring them to cope remain unchanged.

This point resonates with Ainscow and Viola's (2024) emphasis on the systemic nature of inclusion and with recent evidence that policy commitments need organizational conditions, professional learning, and coordinated action to become educational reality (Asres, 2025; Genovesi et al., 2024). In Somalia, the National Education Sector Strategic Plan already identifies teacher development, equity, and system strengthening as priorities (MoECHE, 2022). The present findings suggest that these priorities should converge around classroom participation: professional development should be linked to accessible resource provision, and resource distribution should be linked to the pedagogical capacity to use those resources effectively.

CONCLUSION

The study shows that teachers in the participating Mogadishu schools were not passive in the face of resource scarcity. They used verbal explanation, individualized guidance, collaborative learning, encouragement, emotional support, and peer relationships to open spaces for learners with visual impairment to participate. These practices demonstrate professional agency and reveal that inclusive pedagogy can advance even when material conditions are difficult.

But this is only half of the conclusion. The lower use of Braille and tactile resources shows the boundary of what teacher commitment can achieve. When accessible participation depends on whether an individual teacher can improvise, inclusion remains fragile. A sustainable inclusive system should make good practice easier rather than heroic: teachers need training, accessible materials, assistive technologies, collaboration, and institutional routines that support participation as an ordinary expectation.

The broader contribution is therefore a warning against confusing adaptive coping with completed inclusion. Relational support can strengthen confidence; verbal adaptation can create immediate access; peers can widen participation. None of these should excuse the system from providing the resources that make participation increasingly independent. In Somalia and comparable resource-constrained contexts, meaningful inclusion will be strengthened when teacher agency and systemic responsibility are treated as complementary rather than interchangeable.

Limitations

The four schools were purposively selected because they enrolled learners with visual impairment and were relevant to the study questions. They should not be treated as statistically representative of schools in Mogadishu or Somalia, particularly schools without an established inclusion profile. The quantitative strand is also limited by 32 usable teacher questionnaires. Percentages based on this small sample are descriptive and can change markedly with a difference of only one or two responses; no population estimates, significance tests, or causal claims are warranted.

The questionnaire measured teacher-reported practice and may be affected by recall and social-desirability bias. Observation and interview evidence provided contextual checks and examples but was not designed to produce matched teacher-level verification or prevalence estimates. In addition, the retained record does not contain a fully disaggregated interview completion table, the exact number and duration of observation sessions, or documentation of independent double-coding. The cross-sectional design did not measure change in participation, independence, or learning outcomes over time. Findings should therefore be interpreted as an

exploratory account of reported practices and qualitative experiences in four schools, not as evidence that any specific practice is effective.

Implications for policy, teacher education and school practice

1. Schools and teacher-education providers should deliver short, practice-based training in verbal description, accessible questioning, additional response time, reciprocal group work, respectful feedback, and autonomy-supporting assistance. Schools can pair this with simple participation monitoring: whether learners can access the task, answer or ask questions, contribute to group work, and complete activities with decreasing reliance on continuous mediation. These actions use existing staff and routines and are therefore the most feasible starting point in resource-constrained Somali schools.
2. School leaders should establish collaborative professional-learning groups in which teachers share adaptations, review participation evidence, observe one another, and solve accessibility problems with learners and, where available, disability specialists or organizations of persons with disabilities. Schools or local clusters can develop low-cost tactile materials from locally available resources and create shared Braille and tactile-resource banks. Training should accompany resource provision so that materials are incorporated into routine teaching and accessible assessment.
3. Education authorities and partners should treat Braille texts, tactile graphics, accessible digital content, and assistive technology as core instructional infrastructure. Investment should begin with a needs and readiness assessment, then prioritize Braille and tactile resources that can be maintained locally. Screen readers and other digital devices should be introduced in phases alongside electricity or charging arrangements, compatible content, teacher and learner training, technical support, repair, and replacement budgets. Device distribution without these conditions is unlikely to produce durable access.
4. Across all three priorities, psychosocial support should remain part of inclusive pedagogy rather than a substitute for material access. Encouragement, high expectations, psychologically safe interaction, and deliberate invitations to contribute should be integrated into teacher preparation, professional learning, and school-quality review (Watermeyer et al., 2024). Implementation can be monitored through a small participation dashboard combining learner voice, periodic classroom observation, accessible-task completion, group-work contribution, and increasing independence, rather than relying on enrolment or attendance alone.
5. A feasible sequence for Somalia is therefore: first strengthen everyday teaching and participation monitoring; next organize collaborative learning and shared Braille/tactile resources; and then scale assistive technology where infrastructure, content, training, and maintenance are in place. This ordering does not make technology or specialist resources less important. It protects scarce investment while ensuring that immediately achievable improvements begin now and that longer-term system responsibility remains explicit.

Future research should examine how specific support strategies relate to observable participation and learning outcomes over time, compare school and regional contexts within Somalia, and investigate how learners themselves define helpful and unhelpful support. Participatory approaches that involve learners with visual impairment as research collaborators would be especially valuable in ensuring that studies do not reproduce adult assumptions about what inclusion should look like (Wickenden, 2024). Research should also distinguish between support that increases autonomy and support that unintentionally creates dependency.

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