

<Original Article>

Challenges and Opportunities in Pullout Classes for Secondary Students with Visual Impairments: Insights from Special Education Teachers in Senegal

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Abstract

Students with severe disabilities often receive support through pullout classes, where special needs teachers provide tailored instruction and reinforcement outside of regular classroom settings. While these sessions are critical for addressing specific learning challenges, the pullout approach presents unique challenges and opportunities for students and educators. This study explored the experiences of special education teachers who conducted pullout classes for secondary students with visual impairments in Senegal, focusing on the obstacles they encountered and the potential advantages of this support model. Using a descriptive qualitative approach, the study involved six participants, and data were collected through interviews conducted at the special school where these sessions were conducted after the students' regular classes. Key challenges identified included a lack of specialized resources, limited professional training for teachers, and scheduling conflicts which resulted in a heavy workload for students with visual impairments. However, teachers also noted the benefits of pullout sessions, such as positive learning outcomes and a better understanding of regular courses.

Keywords: students with visual impairments, pullout classes, secondary education, special education teachers, inclusive education

Introduction

In recent years, Senegal has made significant progress in promoting the inclusion of students with disabilities in regular schools (United States Agency for International Development [USAID], 2021). However, challenges persist, especially for secondary school students with visual impairments (SVIs), who face critical barriers to effectively accessing the general education curriculum (Diasse & Kawai, 2021). To address these challenges, special education services often employ pullout classes, where students receive tailored instructional support outside of regular classroom schedules. For students with disabilities, such as SVIs, these sessions provide essential support, allowing special education teachers to provide targeted assistance in areas where students may struggle in regular classroom settings (Fernandez & Hynes, 2016; Karin et al., 2012).

Pullout classes are particularly valuable for

students who require adaptive materials, alternative learning strategies such as small-group instruction, and individualized reinforcement of key concepts (Hurt, 2012; Travers, 2011). By offering a focused learning environment, these sessions allow special education teachers to address specific learning needs while easing some constraints experienced in regular classrooms. This instructional model, despite its challenges, holds the potential to significantly improve the educational outcomes of students with disabilities (Bumpa & Wangmo, 2021; Fernandez & Hynes, 2016;). Teachers in Senegal face several limitations in the regular classroom, including large class sizes, lack of specialized resources, inconsistent professional training, and a shortage of collaboration with special education staff (Ceralli, 2019; Diasse & Kawai, 2024; Drame & Kamphoff, 2014; United Nations Educational, Scientific and Cultural Organization [UNESCO], 2020). These limitations impact the effectiveness of regular classes, making it difficult for educators to fully address the needs of their SVIs.

Sweller's (1988) cognitive load theory provides valuable insights into the limitations of traditional

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problem-solving methods for learning. His research suggests that conventional problem-solving is not effective for schema acquisition due to the high cognitive demands it places on learners, thereby diverting cognitive resources away from learning processes. This concept is relevant within inclusive education, particularly in resource-limited settings such as Senegal, where teachers face challenges adapting instructional practices to support students with special learning needs. Cognitive load theory underscores the importance of designing instructional methods that facilitate schema acquisition without overloading cognitive capacity, especially for students who need individualized attention and specialized materials (Kirschner et al., 2006; Sweller, 1988).

While pullout classes function as a crucial support mechanism, it is essential to understand both the strengths and limitations of this approach from the perspective of the special education teachers who run the classes. Much of the existing research on inclusive education has focused on the challenges faced by regular educators in adapting to diverse student needs (Belay & Yihun, 2020; Miyauchi, 2020; Morelle & Tabane, 2019; Mwakyeja, 2013; Negash & Gasa, 2022; Tseeke, 2021). However, limited attention has been given to the experiences of special education teachers, particularly those working with SVIs at the secondary level. This study seeks to fill this gap by exploring the perceived challenges and opportunities of pullout classes as identified by special education teachers. By focusing on the perspectives of special education teachers who conduct these sessions, the current study aims to provide a nuanced understanding of the dual nature of the pullout model as both a beneficial and challenging support system for SVIs.

Purpose of the Study

This study aims to explore the experiences of special education teachers conducting pullout sessions for secondary school SVIs in Senegal. Specifically, it aims to examine the challenges these teachers face in supporting SVIs through pullout classes and identify the opportunities pullout sessions provide to enhance students' learning experiences. By understanding the perspectives of special education teachers, this research seeks to contribute to developing effective practices and policies for supporting SVIs in low-resource educational settings.

Two research questions guide the current study:

- (1) What challenges do special education teachers encounter when conducting pullout sessions for SVIs in Senegalese secondary schools?
- (2) What opportunities do pullout classes offer to improve the learning experiences and educational outcomes of SVIs in Senegalese secondary schools?

Pullout Classes in Inclusive Education

Pullout classes are widely recognized in special education as a support model where students with disabilities receive focused, individualized instruction outside the mainstream classroom (Hurt, 2012; Karin et al., 2012). This intervention is particularly valuable for students who need targeted attention, as it enables special education teachers to address specific academic and social-emotional needs (Volonino & Zigmond, 2007). Pullout sessions allow special education teachers to adapt instruction to students' learning style, pace, and required accommodations, fostering a supportive environment that may be challenging to achieve in a typical classroom setting (Hurt, 2012; Travers, 2011).

Research on pullout classes has shown several benefits for students with disabilities, particularly in areas requiring specialized intervention (Bumpa & Wangmo, 2021). The literature highlights that students in pullout settings often exhibit improved focus, increased academic engagement, and enhanced learning outcomes due to the tailored approach and close teacher-student interactions (Fernandez & Hynes, 2016; Hall, 2009). Additionally, pullout sessions can provide an environment where teachers address foundational skills or reinforce content with fewer distractions than in regular classrooms. (Barton, 2016).

However, the pullout model also faces substantial criticisms. Some educators argue that the effectiveness of pullout classes can be compromised by logistical issues, such as inadequate scheduling and lack of alignment with regular classroom instruction (Fernandez & Hynes, 2016). Teachers and administrators frequently need help coordinating pullout schedules around core academic classes, which can lead to conflicts and cause students to miss essential content (Bumpa & Wangmo, 2021; Fernandez & Hynes, 2016). Furthermore, research highlights that placing students with disabilities into a segregated environment for remedial teaching contributes to

lower self-esteem, increased stigmatization, and creates barriers to social inclusion (Demo et al., 2021; Hurt 2012). These critiques underscore the importance of examining how pullout classes are implemented and managed, especially in low-resource contexts such as Senegal, where the model may face additional challenges.

Challenges in Teaching Students with Visual Impairments

SVIs face distinct educational challenges that require specialized instructional techniques, assistive technology, and adaptive learning resources. Previous research indicates that SVIs often struggle to access visual information, engage with standard instructional materials, and participate fully in classroom activities (Haakma et al., 2018; Kızılaslan, 2020; Mwakyeja, 2013; Tseeke, 2021). To address these needs, educators working with SVIs must rely on adaptive strategies such as tactile and auditory learning aids, modified instructional materials, and Braille (Bajaj, 2019; Dettmer et al., 2009; Kelly & Smith, 2011). However, integrating these resources into a mainstream classroom remains a persistent challenge, particularly in under-resourced contexts where specialized materials and assistive technologies are limited (Le Fanu et al., 2022; Maguvhe, 2015; Negash & Gasa, 2022; Tseeke, 2021; UNESCO, 2020).

The literature emphasizes that SVIs benefit significantly from individualized instruction tailored to their sensory needs (Bajaj, 2019; Dettmer et al., 2009; Kelly & Smith, 2011; Salisbury, 2008). According to Bajaj (2019), tactile learning materials and audio-assisted resources are critical for conveying complex concepts that would otherwise be inaccessible in a visually dependent format. However, providing these resources consistently is often challenging, and teachers may need to adopt creative strategies to engage SVIs in regular education schools. Several barriers continue to impact the teaching of SVIs in regular education settings (UNESCO, 2020). Limited training in visual impairment-specific teaching strategies poses a significant challenge, as many educators feel underprepared to support these students effectively (Mwakyeja, 2013; Negash & Gasa, 2022). Furthermore, the scarcity of accessible materials and assistive devices is a recurring issue, particularly in regions like Senegal, where resources for special education are constrained (Ceralli, 2019;

UNESCO, 2020). This lack of resources often results in reliance on reinforcement in pullout classes, where special education teachers can provide individualized support (Barton, 2016; Diasse & Kawai, 2024; Bumpa & Wangmo, 2021).

Self-Efficacy and Teacher Preparedness

Teacher self-efficacy, or the belief in one's ability to achieve desired educational outcomes, is crucial for effective teaching, especially in challenging environments (Bandura, 1997; Tseeke, 2021). High self-efficacy has been linked to better instructional practices, effective classroom management, increased persistence in overcoming challenges, and greater adaptability in addressing student needs (Aloe et al., 2014; Duan et al., 2024; Klassen & Tze, 2014). For special education teachers working with SVIs, self-efficacy is particularly important due to the need for specialized skills, adaptability, and patience in supporting students with unique learning needs.

Studies show that teacher preparedness plays a significant role in determining self-efficacy levels, with specialized training and experience being critical components (Negash & Gasa, 2022; Tseeke, 2021). Teachers who have received training specific to visual impairments are generally more confident in their ability to modify curricula, utilize assistive technology, and develop individualized learning plans for students (UNESCO, 2020). Additionally, experience with SVIs bolsters self-efficacy, allowing teachers to develop and refine the necessary skills over time (Tseeke, 2021). However, in low-income countries, such as the Sub-Saharan African region, opportunities for specialized training are often scarce, leaving many teachers feeling inadequately prepared and underconfident (Ceralli, 2019; Habulezi & Phasha, 2012; Le Fanu et al., 2022).

In environments like Senegal's education system, where resources and training are limited, a lack of support can significantly hinder self-efficacy. Special education teachers often report a heavy workload for SVIs, insufficient resources, and a lack of professional development opportunities (Diasse & Kawai, 2024; UNESCO, 2020; USAID, 2021). These constraints affect teacher efficacy and student outcomes, as teachers with limited skills may struggle to effectively meet the needs of SVIs.

Research Gaps

While there is a substantial body of literature on the benefits and limitations of pullout classes and

the specific needs of SVIs, there are noticeable gaps in research related to the context of Senegal. Much of the existing research on pullout classes and teacher efficacy focuses on well-resourced environments where teachers have access to assistive technology, specialized training, and adequate funding (Fernandez & Hynes, 2016; Hurt, 2012; Travers, 2011). However, the challenges and dynamics within low-income counties, such as Senegal, remain underexplored. Moreover, studies specifically examining pullout support strategies are scarce (Bumpa & Wangmo, 2021; Demo et al, 2021), leaving questions about how this model functions within the unique constraints of the Senegalese education system.

Another gap lies in the perspectives of special education teachers themselves. Few studies prioritize the insights of these educators, who are directly responsible for implementing pullout classes and adapting instruction to meet the needs of SVIs. Understanding their experiences is essential for identifying the practical challenges and potential benefits of pullout classes and informing future policy and practice improvements.

Research Method

The current study employed a descriptive qualitative research design to gain an in-depth understanding of the experiences of special education teachers conducting pullout sessions for SVIs in Senegalese secondary schools. A qualitative approach was chosen as it allows for exploring personal insights, experiences, and perspectives, which is particularly useful when examining the complex and often nuanced challenges and benefits inherent to pullout classes (Creswell, 2013). Through this approach, the current study aims to uncover both the specific obstacles teachers encounter and the unique opportunities they perceive within this instructional model, providing a rich, detailed account that could not be captured by quantitative methods alone (Baxter & Jack, 2008; Merriam & Tisdell, 2016).

Participants

The study involved six special education teachers from a special school in Senegal who provided pullout classes to SVIs in two high schools. Teachers were selected based on specific criteria to ensure a range of perspectives. The criteria required that all participants had experience working with

SVIs and had conducted pullout sessions regularly for at least five academic years. Their backgrounds varied in teaching subjects, including scientific and literary subjects. This diverse sample enabled a more comprehensive understanding of the challenges and opportunities encountered by teachers and students during the pullout experiences.

Data Collection Procedures

Data were collected through semi-structured interviews conducted with each of the six participating teachers. The semi-structured format was selected to allow for flexibility in responses, enabling teachers to discuss their experiences freely while ensuring that all major topics were covered. Interviews, lasting 45 to 60 minutes, took place in the special school where the teachers delivered pullout sessions for secondary school SVIs. To minimize interruptions and create a comfortable atmosphere, interviews were held in the staff room before or after the teachers' classes. An interview guide was developed to steer the conversation toward key areas of interest, including positive outcomes for SVIs and major challenges facing both students and teachers.

Data Analysis

The data collected from the interviews were analyzed using thematic analysis, a qualitative method that involves identifying, coding, and interpreting themes within the data (Braun & Clarke, 2006). Thematic analysis was selected for its ability to reveal common patterns across participants' responses, which is essential for understanding shared challenges and opportunities in the pullout model. The analysis process followed these steps:

- **Transcription and Familiarization:** Each interview was transcribed verbatim, after which the researcher reviewed the transcripts to become familiar with the content.
- **Coding:** Using an inductive approach, initial codes were assigned to data segments that addressed specific aspects of the research questions.
- **Theme Development:** The codes were reviewed and grouped into broader themes.
- **Interpretation:** Each theme was analyzed in the context of the current study's objectives to draw meaningful insights about the dual

nature of pullout sessions –both as a crucial support mechanism and an area requiring substantial improvement.

Results

Four themes were identified from the data: (1) enhanced learning outcomes, which emerged as the primary theme for the advantages of pullout sessions, (2) training barriers, (3) resource constraints, and (4) heavy workload, which were identified as the main challenges. Each of the themes is presented in the following sections.

Enhanced Learning Outcomes

The pullout sessions consistently emerged as a critical factor in facilitating improved learning outcomes for SVIs. Teachers highlighted the opportunity to tailor instruction specifically to the needs of each student, as well as flexibility and attention that were often challenging to achieve within mainstream classroom settings. According to Teacher 1:

Pullout sessions allow me to focus on each student's unique needs, which is impossible in a large, general classroom. This individualized approach enables SVIs to engage more deeply in classroom activities, as instruction is customized to their pace and learning style.

Teacher 2 echoed this view, noting that:

In the pullout setting, I can use tactile learning materials and audio resources that support comprehension, which are often impractical in regular secondary schools. Students often gain a good understanding of their textbooks through the text-to-audio device I use with my laptop to conduct my French classes.

Teacher 3 highlighted that pullout sessions also allow them to address specific content areas where SVIs were often left behind in regular classes. He remarked:

In math and physics, where visual representations dominate, I provide alternative explanations or use tactile resources to enhance students' understanding of key concepts. Though they have limited skills in these subject areas, the pullout classes often help clarify certain concepts and allow practice with the available resources.

Teacher 4 shared a similar perspective, saying, "In regular classes, SVIs often miss important information due to the rapid pace and visual reliance.

Pullout sessions give them the space to ask questions and clarify doubts without feeling rushed." She added further: "This supportive environment fosters an atmosphere where SVIs feel comfortable engaging with the lesson, contributing to more consistent academic progress." Furthermore, Teacher 5 noted an improvement in students' self-esteem and motivation, stating:

When I improve their understanding, it boosts their confidence for regular classes, too. They feel more capable and motivated. This benefit underscores the positive impact of pullout classes on SVIs' social-emotional development, which is essential for their overall educational experience.

For Teacher 6, support also helped bridge the gaps in notetaking. He reported:

In regular classes, SVIs often struggle to follow instructions or keep up with notetaking, which creates significant barriers in preparing for classroom assignments. Pullout classes offer an opportunity to fill in the missing information from regular classes, enabling SVIs to stay on track with their peers.

Despite these advantages, significant challenges persist, impacting on the pullout sessions' overall effectiveness.

Training Barriers

Interviewed special education teachers expressed frustration with training and the shortage of professional development opportunities. Although most had initial Braille training, the lack of ongoing professional development opportunities regarding practice was a persistent issue. Teacher 1, for instance, noted: "While my initial training provided a good foundation in Braille skills, I have not had the chance to pursue further training on teaching strategies and resource implementation for SVIs." This sentiment was echoed by Teacher 4, who stated:

I feel like I am often learning on the job. The internal Braille cell has been helpful but implementing the most effective practices for my students without formal training is often challenging. We receive some support through workshops from our internal partners, such as Sensorial Handicap Cooperation; however, these sessions are not held regularly.

As a result of this lack of ongoing support, some teachers find themselves relying on experiential

learning to develop their skills. Teacher 2 mentioned:
 Most of what I know comes from trial and error. I have learned a lot from my colleagues and through practical experience, but I wish there were more structured training opportunities available. This reliance on informal learning often leads to a lack of confidence, particularly for beginner teachers.

Moreover, Teacher 5 emphasized that despite his dedication to supporting SVIs, he often encounters limitations due to insufficient training. He stated, “I want to provide the best support for my students, but I sometimes feel inadequate in meeting their needs. I know there are more effective strategies, and I need guidance to learn and apply them to my students.”

Teacher 3 and Teacher 6 also corroborated the lack of training opportunities for special education teachers. Teacher 6 reported:

Training is a major concern for special education teachers assigned to work with SVIs. There is no clear policy for special education teacher training. Most of us have first started working with these students without having any formal training. I remember to have worked for one year without receiving training. This is due to limited qualified trainers available for specialized training programs.

Teacher 3 added: “The issue is that these trainers now work for international NGOs, reducing their availability for public service.”

Resource Constraints

The data highlights the critical need for improved access to assistive technology, curriculum materials, and other resources to effectively support SVIs. Teacher participants expressed frustration about the scarcity of assistive technology available to enhance learning experiences for SVIs. Teacher 4, for example, stated: “We still lack basic tools like audio recorders and Braille displays. Without these resources, effectively creating an engaging learning environment is often challenging.”

This sentiment reflects a common theme among special education teachers who feel their effectiveness is limited by the absence of necessary technological support. Echoing this concern, Teacher 1 emphasized that:

Students lack accessible curriculum materials, particularly textbooks in Braille and audio. This creates a significant barrier to their

understanding of core subjects like French and other foreign languages. Without materials tailored to their specific requirements, we always struggle to help them keep pace with their peers, which often leads to students’ disengagement regarding some subjects.

Teacher 3 pointed out that besides textual resources, there is a notable shortage of tactile learning materials, such as plastic paper tracers and squares, which students need across various subjects.

We often have to improvise in subjects like mathematics and geography, where visual representations are key. The absence of tactile resources makes it difficult for students to grasp complex concepts. This lack of materials not only impacts instructional strategies but also hinders the student’s ability to participate meaningfully in lessons.

Teacher 6 highlighted the impact of these constraints on their teaching approaches, stating that:

I find myself spending much time creating my own materials or modifying existing ones. While I am committed to helping my students, this is incredibly time-consuming and takes away from the actual teaching time. The need for teachers to supplement inadequate resources can lead to increased workloads and stress, ultimately affecting the overall effectiveness and job satisfaction.

The cumulative effect of these resource constraints creates a challenging teaching environment for both teachers and students. Teacher 2 remarked: “We are trying our best, but when the materials are not available, it feels like we are fighting an uphill battle. Seeing students struggle because we do not have what they need is disheartening.” Teacher 5 added: “This pervasive lack of resources impacts educators and places a significant burden on students, who require appropriate materials to succeed academically.”

Heavy Workload

The dual schedule associated with inclusion and the pullout model placed an immense demand on students’ time and energy, often leading to exhaustion and decreased motivation to join the sessions. The structured pullout schedule, with additional hours dedicated to each subject, often doubles the workload for SVIs compared to their

sighted peers. This physical and mental strain makes it challenging for students to stay fully engaged in both settings. Teacher 2 described the intensity of the students' daily schedules, stating: "These students barely have time to catch their breath. After a full day in regular classes, they go straight to pullout sessions. They often look exhausted in class, which impacts effective engagement in the lesson." Reflecting on the issue, Teacher 4 corroborated this view, saying:

We try to cover as much as we can in the pullouts, but the students are often tired in the afternoon, and sometimes, it is clear that they can't absorb anything more. That is why some of them often opt to skip pullout classes, mainly when they judge to have a good understanding of the regular course.

This disengagement is particularly noticeable in subjects heavily reliant on visual materials, such as mathematics and sciences. In his comments, Teacher 3 emphasized the connection between subject accessibility, excessive workload, and student absenteeism, with the combination creating a cycle of disengagement that diminishes the intended benefits of pullout sessions. He claimed: "Most of them [SVIs] find subjects like math exhausting. They find it already tough to follow, and with the additional pullout hours, many feel overwhelmed. Some of them stop coming when they cannot keep up." Teacher 6 made a similar remark, indicating that the strain of balancing regular classes with pullout sessions leaves little time for students to rest or process new information. He contended that:

Though the pullout courses are critical to enhance accessibility, there is a lot to ask of them. They have their regular schoolwork, then another two hours for each subject in pullout. By the end of the day, many of them are completely worn out.

Discussion

The findings in this study underscore the complex, dual nature of pullout classes as both a critical support mechanism and a source of significant challenges in the education of SVIs in Senegal. Through an exploration of teachers' perspectives, several key themes emerged, reflecting both the effectiveness of pullout classes in enhancing learning outcomes and the barriers limiting their potential. This section interprets the findings and discusses their implications, followed by a conclusion

that highlights the study's limitations and recommendations for future directions.

Advantages of Pullout Classes

One prominent finding is that pullout classes significantly enhance the learning outcomes for SVIs by allowing teachers to provide tailored instruction, targeted accommodations, and adaptive resources that are challenging to implement in mainstream classrooms. This finding aligns with previous studies that highlight the value of pullout sessions in enhancing students' individual skills and reinforcing their comprehension of regular classroom content (Fernandez & Hynes, 2016; Hurt, 2012; Travers, 2011; Volonino & Zigmond, 2007). The ability to offer personalized instruction in pullout settings supports students' engagement and comprehension, as demonstrated in studies by Barton (2016) and Bumpa and Wangmo (2021), which demonstrate that students with special education needs often achieve greater academic success when they receive individualized attention. Teachers in this study noted that pullout sessions facilitated a deeper understanding of complex concepts and increased student engagement, particularly in visually demanding subjects such as math and science. Nonetheless, these benefits depend heavily on the availability of resources and teachers' experience and specialized training, as the support quality can directly impact student outcomes (Kelly & Smith, 2011).

Challenges Limiting the Effectiveness of Pullout Classes

The barriers surrounding teacher preparedness and training emerged as significant obstacles impacting the effectiveness of pullout classes. Although most teachers had foundational skills in Braille, the absence of ongoing professional development limited their ability to implement more effective and adaptive strategies (Negash & Gasa, 2022; Tseeke, 2021). This finding is particularly relevant in low-resource contexts like Senegal, where specialized training is limited (Ceralli, 2019; UNESCO, 2020; USAID, 2021). Teachers reported relying on trial-and-error learning methods to support SVIs effectively, a challenge also noted by Barton (2016), and Fernandez and Hynes (2016), who found that the lack of specialized knowledge can lower teachers' self-efficacy and negatively affect instructional quality. This reliance on informal

methods can lead to reduced self-efficacy, as Bandura (1997) noted, and aligns with previous studies showing that specialized training can lead to positive attitudes, improved self-efficacy, and effective instruction for SVIs (Haakma et al., 2018; Ravenscroft et al., 2019). These findings underscore the need for a structured, ongoing training program that empowers teachers with the skills to support SVIs effectively. Consequently, there is a clear need for more frequent, formalized training opportunities to improve the self-efficacy and practical knowledge of special education teachers.

Resource limitations also emerged as a central challenge in implementing pullout classes. Teachers cited the scarcity of essential materials, including Braille textbooks, tactile learning resources, and assistive technologies, which restricted their ability to provide high-quality, adaptive instruction. The scarcity of necessary tools constrains instructional quality and places additional stress on teachers, who must compensate by creating their own materials, reducing the time available for instruction, and increasing the workload of teachers. This finding aligns with Kelly and Smith (2011), who found that assistive technology is crucial in providing equitable educational opportunities for SVIs. The lack of resources further challenges students' engagement in regular academic activities, which can lower their motivation and academic achievement over time (Barton, 2016; Mwakyeja, 2013; Tseeke, 2021).

A crucial insight from the study is the heavy workload for SVIs associated with managing both regular and pullout classes, presenting a significant challenge for the students, who often experience exhaustion and diminished engagement due to their packed schedules. The dual schedule model requires SVIs to attend regular classes alongside their sighted peers, followed by additional hours in pullout sessions for each subject (Diasse & Kawai, 2024). While pullout classes are designed to reinforce comprehension and provide individualized support, the cumulative workload can be overwhelming, limiting the effectiveness of these sessions. This intense schedule has emerged as a core factor contributing to student fatigue, absenteeism, and disengagement, potentially undermining the intended benefits of the pullout model.

Teachers highlighted how this dual workload often leads to exhaustion and diminished engagement in both settings, especially in subjects that rely heavily on visual materials, such as

mathematics and sciences. This observation aligns with theories of cognitive load, which suggest that excessive demands on students' mental resources can reduce their capacity to process new information effectively (Sweller, 1988). By increasing cognitive and physical strain, the pullout workload may inadvertently hinder learning, a finding supported by Fernandez and Hynes (2016), who emphasize the need for workload considerations in special education planning. This insight calls for adaptive instructional strategies incorporating cognitive load theory, enabling a balanced approach to pullout classes that maximize benefits without overburdening students.

While pullout classes provide a supportive environment that allows teachers to address the specific learning needs of SVIs, the study highlights challenges in implementing this model. Scheduling conflicts with regular classes were reported as a frequent issue, as pullout sessions often overlap with core academic lessons, resulting in missed content. This scheduling difficulty reflects a common critique of the pullout model in the literature, where misalignment with general classroom instruction is noted as a limiting factor (Fernandez & Hynes, 2016).

Given the rapid pace of secondary school curricula, especially in visually intensive subjects, the risk of students falling behind highlights the need for strategic planning. Balancing inclusion and pullout support is especially crucial in contexts like Senegal, where resources are constrained, as suggested by UNESCO (2020) and Ceralli (2019), who discussed similar challenges in Sub-Saharan African inclusive education systems. In the context of Senegal, where resources are constrained, balancing inclusion and the pullout model is critical to prevent students from facing counterproductive demands. The Senegalese education system thus faces the dual challenge of ensuring that SVIs receive adequate pullout support without compromising their engagement and progress in mainstream classes.

Implications

The insights from this study underscore the importance of developing a cohesive policy framework for special education that prioritizes both resource allocation and teacher training. Adequate funding for assistive technologies, such as Braille displays and audio resources, would substantially improve the instructional environment for SVIs, as

highlighted by Le Fanu et al. (2022) and UNESCO (2020). Establishing standardized training programs focused on instructional strategies for SVIs would empower teachers to provide more effective support and address the unique educational needs of these students. In low-resource settings like Senegal, a coordinated effort among government, non-governmental organizations, and international partners is essential to bridge existing gaps in resources and training (Maguvhe, 2015; USAID, 2021). Furthermore, findings on excessive workload emphasize the need for a balanced approach to scheduling pullout classes. A collaborative framework between regular and special education teachers could foster flexible student-centered scheduling policies that support the physical and cognitive well-being of SVIs (Fernandez & Hynes, 2016; Volonino & Zigmond, 2007).

Conclusion

This study highlighted the pivotal role of pullout classes in supporting students with visual impairments (SVIs) while also revealing the challenges that special education teachers face in delivering effective support. Addressing these challenges requires systemic reforms in resource provision, teacher training, and instructional planning to fully realize the benefits of the pullout model within Senegal's inclusive education framework. However, the study's scope was limited by its small sample of six special education teachers, which constrains the generalizability of its findings. Future research should examine a larger and more diverse sample to capture a broader spectrum of perspectives. Incorporating the experiences of SVIs themselves would provide critical insights into the effectiveness of pullout classes from the student perspective. Additional research on integrated instructional models that combine pullout and in-class support may offer alternative strategies for addressing the needs of SVIs more comprehensively within inclusive settings. Such studies could inform effective practices for meeting the educational needs of SVIs in regular classrooms, advancing the broader goals of equity and accessibility in education.

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Challenges and Opportunities in Pullout Classes for Secondary Students with Visual Impairments: Insights from Special Education Teachers in Senegal

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重度の障害がある生徒は、特別支援教育教員による個別指導や補充指導を受ける「取り出し授業」を通じて、通常の教室環境の外で学習支援を受けることが多い。こうした授業は、特定の学習上の課題に対処する上で重要な役割を果たす一方で、生徒と教員の双方にとって特有のメリットとデメリットが存在する。本研究は、セネガルにおける視覚障害のある中学生を対象とした取り出し授業を担当する特別支援教育教員の経験を調査し、彼らが直面する課題と、この指導モデルが有する可能性に焦点を当てたものである。本研究では、記述的現象学アプローチを採用し、3つの中学校に勤務する6名の特別支援教育教員に対するインタビューを通じてデータを収集した。その結果、専門的なリソースの不足、限られた専門的研修機会、スケジュール調整の困難さが主要なデメリットとして特定され、視覚障害のある生徒に対して過重な負担となっていることが明らかになった。一方、取り出し授業によって学習成果の向上や通常の一斉授業における理解促進といったメリットも得られていることが、教員から指摘された。

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