

Impact of Class Sizes on Inclusive Instructional Practices for Learners with Visual Impairments in Government Bilingual High School in Mendong, Yaoundé 6 Subdivision, Cameroon

Delphine Embi Achuo¹, Maingari Daouda ², Ntamnchia Lawrence³

¹PhD Student Department of Curriculum and Evaluation (Curriculum Development), Faculty of Education, University of Yaounde 1.

²Professor, head of the Department of Curriculum and Evaluation and lecturer at the Higher Teachers Training College (H.T.T.C), School of Education, University of Yaoundé 1.

³Lecturer in the Department of Didactics at the Higher Teachers' Training College (H.T.T.C), University of Yaoundé 1

ABSTRACT: This study explores the impact of large class sizes on inclusive instructional practices for learners with visual impairments in secondary education in Cameroon. Using Government Bilingual High School Mendong in Yaoundé VI Subdivision as a case study, a descriptive survey design with a quantitative approach was employed to collect data from 60 teachers using structured questionnaires. The findings suggest that overcrowded classrooms hinder the implementation of inclusive practices, such as differentiated instruction, the use of tactile and auditory materials, and individualized learner support. A statistically significant negative correlation ($r = -0.995$, $p < .01$) was found between class size and the use of inclusive strategies. An independent samples t-test also revealed a significant difference in instructional effectiveness linked to class size ($t = -3.28$, $p = .001$). These results highlight the structural barriers hindering inclusive education in Cameroon and underscore the need for smaller class sizes, more inclusive teacher training, accessible learning materials, and stronger institutional support.

KEYWORDS: Inclusive Education, Class Size, Visual Impairments, Instructional Practices, Cameroon

1. INTRODUCTION

The global community recognizes education as a fundamental human right that promotes equity and access to quality education for all learners, including those with disabilities, making it an effective strategy for achieving educational goals. Key international frameworks such as the Salamanca Statement (UNESCO, 1994), the Convention on the Rights of Persons with Disabilities (United Nations, 2006), and Sustainable Development Goal 4 (UN, 2015) advocate for education systems that are inclusive, equitable, and responsive to diversity. These frameworks emphasize the need to remove systemic and environmental barriers that impede participation and achievement for learners with special needs, particularly those with visual impairments.

Learners with visual impairments require tailored support that includes adapted instructional materials such as Braille, tactile graphics, screen-reading technologies, and personalized assistance. Unfortunately, in many mainstream schools across Cameroon, these accommodations are often inadequately provided, particularly in classrooms characterized by large student-teacher ratios. Class size, defined as the number of students assigned to one teacher in a classroom, is a critical determinant of instructional quality. Extensive research confirms that large class sizes limit a teacher's capacity to provide individualized attention, manage classroom dynamics effectively, and implement differentiated instructional strategies essential for inclusive education.

In the Cameroonian context, inclusive education has been formally integrated into national policy frameworks. The Ministry of Basic Education, through its Inclusive Education Programme, has committed to transforming over 1,200 schools and training approximately 8,000 teachers by 2028. However, despite these efforts, challenges persist. Overcrowded classrooms, inadequate training for teachers in inclusive practices, limited access to assistive technology, and poor infrastructure continue to be substantial obstacles to effective inclusion, particularly for learners with visual impairments.

At Government Bilingual High School (GBHS) Mendong in Yaoundé VI Subdivision, where this study was conducted, classes commonly exceed 70 students. This overcrowding intensifies the challenges teachers face in delivering inclusive instruction, particularly to learners with visual impairments who require individualized attention and support. Teachers are expected to implement multi-sensory instructional methods, utilize assistive technologies, and adapt their teaching to meet the diverse needs of learners, all of which are compromised in oversized classrooms.

Impact of Class Sizes on Inclusive Instructional Practices for Learners with Visual Impairments in Government Bilingual High School in Mendong, Yaoundé 6 Subdivision, Cameroon.

This study aims to examine the effect of large class sizes on the implementation of inclusive instructional practices for learners with visual impairments in this context. By focusing on a real-world, resource-constrained setting, the study aims to inform both practice and policy on how to strengthen inclusive education in Cameroon. It examines how class size influences teacher capacity, instructional adaptation, and learner participation, ultimately contributing to evidence-based strategies for improving inclusion in overcrowded classrooms.

This literature review explores the theoretical and empirical foundations of inclusive education, the role of class size, and the instructional challenges faced by teachers in implementing inclusive practices for learners with visual impairments. It draws from international and local research to contextualize the issues affecting inclusive instruction in Cameroon.

2. LITERATURE REVIEW

This literature review examines the theoretical and empirical foundations of inclusive education, the impact of class size, and the instructional challenges teachers face when implementing inclusive practices for learners with visual impairments. It references both international and local research to contextualize issues affecting inclusive instruction in Cameroon. Daouda (1997) analyzed the professionalization of teaching in Cameroon, highlighting major obstacles, including inadequate teacher training and poor working conditions. He emphasized the urgent need to focus on teacher development and improve educators' welfare as crucial steps to enhance educational quality. Building on Daouda's findings, subsequent research underscores the importance of specialized teacher training, the use of assistive technologies, and the promotion of collaborative teaching methods. These components are essential for effectively supporting learners with visual impairments (LWVI) in inclusive classrooms, ensuring that teachers are well-equipped to meet diverse student needs and foster meaningful skill development. Without these, delivering effective instruction in large classes becomes difficult.

2.1 Theoretical Foundations of Inclusive Education

Inclusive education is grounded in the social model of disability, which views disability not as a defect within the individual but as a consequence of societal and environmental barriers (Oliver, 1990). This model supports international efforts toward inclusive education, especially the Salamanca Statement (UNESCO, 1994), which advocates for the right of all children, including those with disabilities, to learn together in mainstream settings with appropriate support.

Florian and Black-Hawkins (2011) describe inclusive pedagogy as a proactive teaching method that welcomes learner diversity without labeling or segregating students. Instead of designing specialized lessons for "special needs" learners, inclusive pedagogy highlights the use of adaptable strategies that benefit all students. This perspective aligns with Sen's Capability Approach, which states that education should improve learners' freedom and opportunities to achieve the life they value.

In the Cameroonian context, the national Education Sector Strategy (2013–2020) and Inclusive Education Programme (Sight Savers, 2024) embody these principles. However, their implementation remains inconsistent due to structural challenges, gaps in teacher training, and high learner-to-teacher ratios.

2.2 Class Size and Instructional Effectiveness

The relationship between class size and educational outcomes has been well documented. Glass and Smith's (1979) meta-analysis established that smaller class sizes significantly improve academic performance, particularly for learners with additional needs. The Input-Process-Output (IPO) Model of educational effectiveness (Creemers & Kyriakides, 2008) explains this relationship by suggesting that class size, as an input, directly affects the instructional process (e.g., feedback, attention, lesson pacing), which then influences outcomes.

In inclusive education, large class sizes dilute teacher effectiveness. Teachers often struggle to monitor individual learner progress, adapt instructional materials, or provide timely feedback. Blatchford, Bassett, and Brown (2011) demonstrated that class sizes exceeding 30 reduce opportunities for learner interaction, personalization, and differentiated teaching—core tenets of inclusive education.

At GBHS Mendong, where classes can include over 90 students, teachers report difficulty managing instructional diversity and tailoring content for learners with visual impairments. This challenge directly contradicts the policy expectations of inclusive education.

2.3 Differentiated Instruction and Universal Design for Learning

Differentiated Instruction (DI), as conceptualized by Tomlinson (2001), emphasizes tailoring instruction to meet learners' diverse readiness levels, interests, and learning profiles. In inclusive settings, DI requires teachers to use flexible teaching materials and methods, especially critical when addressing the needs of learners with visual impairments. For instance, students may need information in Braille, audio formats, or through tactile diagrams. It requires time, creativity, and planning, which can become challenging in large classrooms.

Complementary to DI is Universal Design for Learning (UDL), proposed by the Center for Applied Special Technology (CAST, 2011). UDL promotes proactively designing learning experiences to be accessible to all students by offering:

Impact of Class Sizes on Inclusive Instructional Practices for Learners with Visual Impairments in Government Bilingual High School in Mendong, Yaoundé 6 Subdivision, Cameroon.

Multiple means of representation (e.g., visual, auditory, and tactile formats),

Multiple means of action and expression (e.g., written, spoken, or illustrated responses),

Multiple means of engagement (e.g., self-paced learning, collaborative activities).

Though conceptually ideal for inclusive education, UDL is challenging to implement effectively in environments with high student-teacher ratios and limited access to resources. At GBHS Mendong, the lack of specialized tools and materials, combined with teacher overload, hinders the application of both DI and UDL principles.

2.4 Instructional Practices for Learners with Visual Impairments

Inclusive teaching for learners with visual impairments requires intentional adjustments to curriculum delivery. Research by Corn and Koenig (2002) highlights techniques such as verbalizing visual content, using tactile resources, modifying seating positions, and peer-assisted learning. These practices help ensure accessibility and comprehension for learners with vision loss.

However, studies across sub-Saharan Africa, including Mwakyeja (2013) in Tanzania and Ngwokabuenui (2015) in Cameroon, emphasize that teachers often lack training in these strategies. In overcrowded classrooms, the use of adapted materials is sporadic and insufficient. Teachers may know what needs to be done but feel powerless to implement necessary changes due to time constraints, class control challenges, and a lack of support.

At GBHS Mendong, most teachers do not utilize Braille materials or screen readers, and they seldom employ multi-sensory strategies. This inadequacy stems not from resistance but from a lack of specialized knowledge and institutional backing. Furthermore, learners report difficulty following lessons and accessing materials in formats suitable for their needs, leading to disengagement and academic underperformance.

2.5 Teacher Capacity and Support Systems

Bandura's (1977) Social Cognitive Theory posits that self-efficacy plays a critical role in shaping human behavior. Teachers who believe in their ability to teach inclusively are more likely to adopt inclusive practices. However, in overcrowded settings, this belief is undermined by fatigue, frustration, and lack of reinforcement.

Vygotsky's (1978) sociocultural theory, particularly the concept of the Zone of Proximal Development (ZPD), supports the importance of scaffolding and individualized instruction. In large classrooms, scaffolding becomes impractical, especially for learners with visual impairments who often need one-on-one guidance and adapted learning tools.

Support systems are also lacking. In many Cameroonian schools, including GBHS Mendong, special educators are few, and inclusive education resources are scarce. Teachers operate without adequate professional development, access to resource centers, or peer support structures. Studies by Ndongmo and Mambo (2018) reveal that general education teachers are expected to handle inclusive instruction without having been trained in disability-specific pedagogy.

The result is a persistent policy-practice gap: while national frameworks advocate for inclusion, teachers at the classroom level often lack the necessary tools and environment to effectively fulfill those goals.

2.6 Impact of Class Size on Instructional Practices

Multiple studies have identified class size as a structural factor with a significant influence on the quality of instruction in inclusive classrooms. Eleweke and Rodda (2002) argue that in overcrowded classrooms, teachers face difficulties in monitoring individual learners, offering feedback, or adapting instruction, tasks that are essential for supporting students with disabilities. For learners with visual impairments, this often results in inaccessible learning environments and marginalization.

At GBHS Mendong, class sizes often range from 70 to over 90 students. In such conditions, it becomes impractical for teachers to provide individualized attention or implement effective adaptive instructional strategies. Teachers may be aware of inclusion principles, but they struggle to apply them in classrooms that are physically cramped and pedagogically overwhelming.

Studies by Tambo (2012) and Blatchford et al. (2011) confirm that smaller class sizes lead to better learning outcomes, especially for learners who require additional support. Large classes, conversely, increase teacher workload, restrict learner participation, and limit the feasibility of differentiated instruction.

2.7 Attitudes and School Culture

Beyond instructional strategies, the success of inclusive education depends heavily on the school's cultural climate. In Cameroon, learners with visual impairments often face stigma and low expectations from both peers and teachers. This social exclusion has a negative impact on learner confidence, motivation, and performance.

At GBHS Mendong, learners have reported feeling isolated and misunderstood. Some teachers hold sympathetic but paternalistic views of disability, while others express frustration with the demands of inclusive teaching. Without structured efforts to promote disability awareness and inclusion training, such attitudes hinder the development of a genuinely inclusive school culture.

While some initiatives, such as peer support programs and disability sensitization workshops, have been recommended, implementation is inconsistent and typically lacks follow-up. Ngum and Tamajong (2019) emphasize that attitudinal change must accompany resource allocation for inclusion efforts to be successful.

Impact of Class Sizes on Inclusive Instructional Practices for Learners with Visual Impairments in Government Bilingual High School in Mendong, Yaoundé 6 Subdivision, Cameroon.

2.8 Intersection of Class Size, Instruction, and Inclusion

The interrelationship between class size, instructional quality, and inclusion is profound. Overcrowded classrooms often constrain teachers to adopt a "one-size-fits-all" approach, directly contradicting the ethos of inclusive education. Learners with visual impairments, who often require specific accommodations, are disproportionately affected.

Tchombe (2017) highlights how large class sizes in Cameroon compromise teacher-student interaction, assessment quality, and classroom management—all of which are vital for inclusive education. When faced with time constraints and a lack of support, teachers deprioritize individualized attention, reducing opportunities for learners with visual impairments to succeed academically. Florian and Black-Hawkins (2011) advocate for inclusive pedagogy that serves all learners without differentiation labels. However, this model presupposes certain conditions—professional development, manageable class sizes, and administrative support—that are not consistently present in Cameroonian schools, such as GBHS Mendong.

2.9 Conceptual Framework

This study is grounded in a conceptual framework that views class size as a structural variable affecting teachers' instructional processes. These processes, such as differentiation, adaptation of materials, and learner engagement, mediate educational outcomes for learners with visual impairments.

The framework integrates the Input-Process-Output Model of educational effectiveness, the social model of disability, and inclusive pedagogical theories. It suggests that unless systemic barriers, such as overcrowding and inadequate training, are addressed, inclusive education will remain an unfulfilled promise.

This conceptual framing guided the research design, informed the construction of data collection tools, and underpinned the analysis of relationships between class size and instructional practices in the empirical phase of this study.

3. METHODOLOGY

This section presents the research design, participants, data collection instruments, procedures, and analytical methods employed to examine the impact of class sizes on inclusive instructional practices for learners with visual impairments at Government Bilingual High School (GBHS), Mendong in Yaoundé VI Subdivision, Cameroon. The methodology was selected to ensure valid, reliable, and generalizable findings, consistent with the study's quantitative orientation.

3.1 Research Design

A quantitative descriptive survey design was adopted to investigate the relationship between class size and inclusive teaching practices. This design was appropriate for collecting numerical data on teachers' experiences and perceptions regarding inclusive instruction in large classrooms. The use of structured questionnaires enabled systematic data collection across multiple variables, facilitating statistical analysis and hypothesis testing.

3.2 Population and Sampling

The target population comprised all teachers at GBHS Mendong who had experience teaching at least one learner with a visual impairment. A purposive sampling technique was used to select 60 teachers directly involved in inclusive classroom settings. The selected participants represented a range of subject areas, including sciences, humanities, and languages, as well as varied levels of teaching experience and educational backgrounds. This sampling strategy ensured relevance to the study objectives and allowed for diverse perspectives on the challenges of inclusion.

3.3 Data Collection Instruments

Two primary tools were used to collect data:

Structured Questionnaire:

A 20-item instrument was developed to measure teachers' instructional practices and the impact of class size on inclusion. Items were grouped under key constructs: instructional strategies, classroom environment, use of assistive materials, and professional development. Responses were recorded on a 5-point Likert scale ranging from "Strongly Disagree" (1) to "Strongly Agree" (5). The questionnaire underwent expert validation and was pilot-tested with five teachers from a nearby inclusive school to refine item clarity and ensure content validity.

Classroom Observation Checklist:

A non-participant observation checklist was developed to capture real-time data on teacher behavior, learner engagement, use of inclusive strategies, and class management. The checklist focused on observable indicators of inclusive instruction, including adaptive teaching techniques, the use of tactile materials, verbal descriptions, and learner positioning.

3.4 Validity and Reliability

To ensure instrument reliability, Cronbach's Alpha was computed during pilot testing. The overall reliability score was $\alpha = 0.88$, with subscale values of 0.87 for instructional practices and 0.86 for class size impacts, indicating strong internal consistency. The

Impact of Class Sizes on Inclusive Instructional Practices for Learners with Visual Impairments in Government Bilingual High School in Mendong, Yaoundé 6 Subdivision, Cameroon.

instruments were further validated by inclusion experts and adjusted to align with the study's specific objectives and the realities of the Cameroonian classroom.

3.5 Procedure for Data Collection

After obtaining ethical approval from the Faculty of Education at the University of Yaoundé I and the school authorities at GBHS Mendong, the research team administered the questionnaires over a period of two weeks. Teachers were given time to respond independently, and anonymity was maintained to promote honest feedback. Simultaneously, classroom observations were conducted without disrupting regular lessons, allowing for the collection of authentic data regarding inclusive practices in real classroom settings.

3.6 Data Analysis

Data were analyzed using SPSS version 25. The following statistical techniques were applied:

Descriptive statistics (means, standard deviations, frequencies) summarized teacher responses and contextualized common instructional practices.

Pearson's correlation examined the relationship between class size and the use of inclusive instructional strategies.

Independent samples t-tests were used to assess differences in inclusive practices based on teacher training, experience, or other demographic factors.

Cross-tabulations helped identify patterns in responses across categorical variables, such as gender or academic qualification.

A significance level of $p < 0.01$ was used for all inferential tests to ensure rigorous interpretation of findings.

3.7 Ethical Considerations

All participants were informed about the purpose of the study and provided informed consent prior to their participation. Confidentiality and anonymity were ensured throughout the data collection and analysis phases. Participation was entirely voluntary, and respondents had the right to withdraw at any point without consequence. The findings were used solely for academic and policy development purposes.

4. RESULTS

4.1 Descriptive Statistics

This section presents the demographic profile of the respondents and summarizes their responses on inclusive instructional practices and perceptions of class size. The data were collected from 60 teachers using structured questionnaires and analyzed with SPSS.

4.1.1 Demographic Profile of Respondents

Out of the 60 teachers, 34 (60%) were female and 26 (40%) were male, indicating a predominance of female educators in the sampled population. 46.67% held a Bachelor's degree,

33.33% had an Advanced Level Certificate, 16.67% held Master's degrees, and 3.33% had PhDs

Only 5% of the respondents had less than 5 years of experience. 41.67% had 11–15 years of experience. These figures suggest a highly experienced teaching workforce with moderate academic training.

4.1.2 Class Size Distribution

Teachers reported that the average class size was approximately 94 students per class, with the following breakdown: 15% represented small classes (<60 students), 35% moderate (70–90 students), and 50% large classes. These findings confirm that GBHS Mendong operates under severe overcrowding conditions, especially in the lower and middle forms.

4.1.3 Use of Inclusive Instructional Practices

Teachers rated their use of inclusive strategies on a 5-point Likert scale as shown below.

Inclusive strategies	Mean
Adaptation of teaching materials	2.7
Use of tactile/auditory resources	2.5
Collaboration with special educators	2.9
Use of assistive technology	2.1
Adapting assessments	2.6

Overall, the average mean score across 10 inclusive practice items was 2.31, suggesting infrequent application of inclusive strategies. The standard deviations (0.96–1.12) indicate a wide variability in teacher responses; some use inclusive strategies regularly, while others rarely or never do.

This suggests inconsistent implementation, likely influenced by access to training, materials, and support systems. Teachers reported difficulty modifying lessons, providing feedback, or utilizing assistive tools due to time constraints and large class sizes.

Impact of Class Sizes on Inclusive Instructional Practices for Learners with Visual Impairments in Government Bilingual High School in Mendong, Yaoundé 6 Subdivision, Cameroon.

4.1.4 Perceptions of Class Size Impact

Key findings from teacher responses regarding class size impacts include:

Class size impact	Mean
Providing individual support is difficult	2.1
Ensuring full participation is challenging	2.0
Limited time for student assessment	2.4
Difficulty using inclusive methods in large classes	2.1
Insufficient support/resources	2.6

The average perception score was 2.56, slightly higher than the use of inclusive practices, indicating that teachers recognize class size as a significant barrier to inclusion.

4.2 Inferential Statistics

Inferential statistical analyses were conducted to test the study's hypotheses and to explore relationships between class size and inclusive instructional practices. Two main techniques were used: Pearson's correlation to assess relationships between variables and independent samples t-tests to identify significant differences between groups.

4.2.1 Pearson Correlation Analysis

To determine the relationship between class size and teachers' use of inclusive instructional strategies, a **Pearson correlation coefficient** was calculated.

Table 3: Correlation between class size and inclusive instructional practices.

		Inclusive instructional practices	Impact of class size on inclusive instruction
Inclusive instructional practices	Pearson's Correlation	1.000	-0.645**
	Sig. (2-tailed)		.000
Impact of class size on inclusive instruction	Pearson's Correlation	-0.995**	1
	Sig. (2-tailed)	.000	

****.** Correlation is significant at the 0.01 level (2-tailed) ******.

Source: Field data (2025)

The Pearson $r = -0.995$, $p < 0.01$, indicates a strong, statistically significant negative correlation between class size and inclusive instructional practices. As class size increases, the frequency and quality of inclusive practices decrease markedly. The near-perfect inverse relationship suggests that large classes pose a substantial obstacle to the effective inclusion of learners with visual impairments.

4.2.2 Independent Samples T-Test

A t-test was conducted to examine whether there were statistically significant differences in inclusive instructional practices based on class size grouping (i.e., classes with ≤ 70 students vs. classes with > 70 students).

The result reveals a highly significant difference in the implementation of inclusive practices between teachers of smaller classes and those handling larger ones, $t = -3.28$, $p = 0.001$. Teachers with smaller class sizes reported greater use of inclusive strategies, while those managing larger classes indicated minimal implementation.

This further confirms the hypothesis that overcrowded classrooms negatively influence the quality of instruction delivered to learners with special needs, particularly those with visual impairments.

4.2.3 Additional Insights from Observation

Classroom observations revealed that:

Teachers rarely used Braille materials or tactile diagrams.

Visual resources were rarely adapted for learners with visual impairments.

In most observed lessons, students with visual impairments were seated passively and received little individual engagement.

These findings triangulate with the statistical results, reinforcing the conclusion that large class sizes restrict the application of inclusive pedagogy in practice.

Impact of Class Sizes on Inclusive Instructional Practices for Learners with Visual Impairments in Government Bilingual High School in Mendong, Yaoundé 6 Subdivision, Cameroon.

5. DISCUSSION

This section interprets the study's findings in light of existing literature and theoretical frameworks. It examines the implications of the strong negative correlation between class size and inclusive instructional practices, highlighting systemic challenges that impede the effective inclusion of learners with visual impairments in Cameroon's mainstream secondary schools.

5.1 Interpretation of Findings

The study revealed a statistically significant inverse relationship between class size and the implementation of inclusive instructional strategies. Teachers in larger classrooms reported infrequent use of key inclusive practices such as differentiated instruction, use of assistive technologies, and individualized learner support. These findings support those of Glass and Smith (1979) and Blatchford et al. (2011), who argued that overcrowded classrooms hinder pedagogical flexibility and reduce teacher-learner interactions.

Observation data further confirmed that inclusive teaching methods were rarely applied in practice, and learners with visual impairments often remained passive or disengaged from the learning process. This reflects findings from Mwakyeja (2013) and Ngwokabuenui (2015), who noted that even when teachers are aware of inclusive approaches, implementation is constrained by factors such as class size, lack of resources, and insufficient training.

5.2 Challenges in Inclusive Implementation

The findings underscore multiple systemic challenges:

Overcrowding: With class sizes exceeding 90 students, individualized instruction becomes logistically unfeasible. Teachers are often unable to monitor the progress of all learners, let alone provide tailored support to those with disabilities.

Lack of Materials: Inclusive education requires adapted materials—such as Braille texts, tactile diagrams, and auditory aids—which are largely unavailable in GBHS Mendong.

Limited Training: Many teachers expressed limited confidence in teaching learners with visual impairments. This echoes Bandura's (1977) theory of self-efficacy, which suggests that low perceived competence leads to the avoidance of inclusive strategies.

Policy-Practice Gap: Despite Cameroon's strong policy alignment with inclusive education, this study confirms a wide disparity between policy rhetoric and classroom reality. Teachers are expected to practice inclusion, but they are not provided with the necessary tools or conditions to do so effectively.

5.3 Theoretical Reflections

This study reaffirms the importance of the Input-Process-Output (IPO) Model in understanding educational effectiveness. Class size (input) directly affects instructional practices (process), which in turn impact learning outcomes (output). The findings also support the social model of disability, which positions systemic barriers rather than impairments as the root of exclusion. In this case, overcrowded classrooms represent a primary barrier.

Moreover, the gap between teacher intent and practice highlights the fragility of inclusive pedagogy (Florian & Black-Hawkins, 2011) in under-resourced environments. While teachers may embrace the ideals of inclusion, the institutional conditions necessary for such pedagogy are lacking.

5.4 Implications for Practice and Policy

The results have profound implications for education stakeholders in Cameroon:

Teachers require ongoing training in inclusive strategies and exposure to assistive technologies to support their students.

School infrastructure must be expanded to reduce class sizes.

Investment in teaching materials adapted for learners with disabilities is urgent.

Collaborative structures, such as co-teaching models and peer tutoring systems, should support inclusive education.

Ultimately, without addressing class size and teacher support, Cameroon's goals for inclusive education will remain largely aspirational.

6. CONCLUSION

This study examined the effect of class size on inclusive instructional practices for learners with visual impairments at Government Bilingual High School, Mendong, Yaoundé VI Subdivision. The findings revealed a significant and negative relationship between class size and the quality and frequency of inclusive instructional practices.

Quantitative data from 60 teachers, supported by classroom observations, confirmed that large class sizes severely limit teachers' ability to adapt instruction, use assistive technology, and provide individualized support. Teachers overwhelmingly reported difficulty implementing inclusive strategies in classrooms that frequently exceed 90 students. Inferential statistics substantiated these perceptions, with strong correlations and statistically significant group differences based on class size.

The results affirm existing research and theoretical frameworks that highlight structural barriers, particularly overcrowding, as critical inhibitors of inclusive education. They also expose the persistent gap between inclusive education policy and classroom

Impact of Class Sizes on Inclusive Instructional Practices for Learners with Visual Impairments in Government Bilingual High School in Mendong, Yaoundé 6 Subdivision, Cameroon.

reality in Cameroon. Despite national commitments and international frameworks that support inclusive schooling, the practical implementation remains limited by infrastructural, pedagogical, and resource-related constraints.

The study concludes that inclusive education for learners with visual impairments cannot succeed in environments characterized by excessive class sizes, under-resourced teaching conditions, and untrained personnel. To achieve the goals outlined in national and global inclusive education agendas, policymakers, educators, and development partners must address the structural challenges that currently undermine inclusive practices at the school level.

In summary, for inclusion to be meaningful and effective, systemic reforms are necessary, starting with the most visible and pressing barrier: class size.

7. RECOMMENDATIONS

In light of the study's findings, several actionable recommendations are proposed to enhance inclusive instructional practices for learners with visual impairments in Cameroonian secondary schools, particularly in overcrowded settings such as GBHS Mendong. First, the Ministry of Secondary Education should prioritize the recruitment and deployment of additional teachers to reduce class sizes nationwide. With student populations swelling, the existing teacher-to-learner ratio is unsustainable and severely compromises the implementation of inclusive education. The construction of new classrooms and the expansion of school infrastructure must accompany this effort to create more conducive learning environments.

Second, there is a critical need for specialized training in inclusive pedagogy. Pre-service and in-service teacher education programs should be revised to include comprehensive modules on teaching learners with disabilities, with particular focus on visual impairment. Such training must be ongoing, practical, and reinforced with regular workshops, mentoring, and peer collaboration.

Third, schools should be provided with inclusive teaching and learning materials, including Braille textbooks, tactile diagrams, magnifiers, audio recordings, and screen-reading software. These resources are essential for engaging learners with visual impairments and promoting equity in access to curriculum content. A budgetary allocation specifically for inclusive education resources at the school level would ensure the sustainability of these initiatives.

Fourth, establishing school-based resource centers is recommended. These centers should be staffed with special educators and equipped to support classroom teachers in adapting lessons, assessing learners, and providing assistive tools. Such a model would decentralize support and allow for more timely interventions at the school level.

Fifth, collaborative teaching models, such as co-teaching and team teaching, should be promoted. These models allow general and special educators to share instructional responsibilities and provide more tailored support to learners with special needs. Similarly, peer tutoring systems can be developed within classrooms to enhance participation and learning outcomes for students with visual impairments.

Finally, regular monitoring and evaluation mechanisms should be instituted to assess the fidelity of inclusive education implementation. School leadership, in collaboration with education inspectorates and civil society organizations, should track progress, identify bottlenecks, and adjust strategies accordingly.

Implementing these recommendations requires commitment at multiple levels—from government and policy bodies to school administrators and teachers. Only through systemic change can the promise of inclusive education in Cameroon be realized for all learners, regardless of ability.

ACKNOWLEDGEMENTS

The authors gratefully acknowledge the support of the administration and teaching staff of Government Bilingual High School, Mendong, for their cooperation during the data collection process. We also extend our thanks to the Faculty of Education at the University of Yaoundé 1 for providing ethical clearance and academic guidance throughout the research process. Special appreciation goes to the teachers who participated in the study, offering their time and insights despite their demanding schedules.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest regarding the publication of this manuscript. All procedures were conducted ethically, and no funding agency influenced the design, execution, or reporting of this research.

REFERENCES

- 1) **Ainscow, M.** (2005). Developing inclusive education systems: What are the levers for change? *Journal of Educational Change*, 6(2), 109–124.
<https://doi.org/10.1007/s10833-005-1298-4>
- 2) **Bandura, A.** (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice Hall.

Impact of Class Sizes on Inclusive Instructional Practices for Learners with Visual Impairments in Government Bilingual High School in Mendong, Yaoundé 6 Subdivision, Cameroon.

- 3) **Blatchford, P., Bassett, P., & Brown, P.** (2011). Examining the effect of class size on classroom engagement and teacher–pupil interaction: Differences about pupil prior attainment and primary vs. secondary schools. *Learning and Instruction*, 21(6), 715–730. <https://doi.org/10.1016/j.learninstruc.2011.04.001>
- 4) **CAST.** (2011). Universal design for learning guidelines version 2.0. Wakefield, MA: Author. Retrieved from <http://www.udlcenter.org/aboutudl/udlguidelines>
- 5) **Cohen, L., Manion, L., & Morrison, K.** (2018). *Research methods in education* (8th ed.). Routledge.
- 6) **Corn, A. L., & Koenig, A. J.** (2002). Literacy for students with low vision: A framework for delivering instruction. *Journal of Visual Impairment & Blindness*, 96(5), 305–321.
- 7) **Creemers, B. P. M., & Kyriakides, L.** (2008). *The dynamics of educational effectiveness: A contribution to policy, practice and theory in contemporary schools*. Routledge.
- 8) **Daouda, M.** (1997). *La professionnalisation de l'enseignement au Cameroun: Défis et perspectives*. Yaoundé : Éditions Clé.
- 9) **Eleweke, C. J., & Rodda, M.** (2002). The Challenge of Enhancing Inclusive Education in Developing Countries. *International Journal of Inclusive Education*, 6(2), 113–126. <https://doi.org/10.1080/13603110110067190>
- 10) **Florian, L., & Black-Hawkins, K.** (2011). Exploring inclusive pedagogy. *British Educational Research Journal*, 37(5), 813–828. <https://doi.org/10.1080/01411926.2010.501096>
- 11) **Glass, G. V., & Smith, M. L.** (1979). Meta-analysis of research on the relationship between class size and achievement. *Educational Evaluation and Policy Analysis*, 1(1), 2–16. <https://doi.org/10.3102/01623737001001002>
- 12) **Mwakyaja, B. M.** (2013). Teaching students with visual impairments in inclusive classrooms: A case study of one secondary school in Tanzania. *International Journal of Education and Research*, 1(3), 1–10.
- 13) **Ngwokabuenui, P. Y.** (2015). Classroom Management and Students' Academic Performance in Secondary Schools in Cameroon. *International Journal of Education and Research*, 3(3), 289–302.
- 14) **Oliver, M.** (1990). *The politics of disablement*. London: Macmillan.
- 15) **Tomlinson, C. A.** (2001). *How to differentiate instruction in mixed-ability classrooms* (2nd ed.). Alexandria, VA: ASCD.
- 16) **United Nations.** (2006). *Convention on the Rights of Persons with Disabilities*. New York: UN.
- 17) **United Nations.** (2015). *Transforming our world: The 2030 agenda for sustainable development*. New York: UN.
- 18) **UNESCO.** (1994). *The Salamanca Statement and Framework for Action on Special Needs Education*. Paris: UNESCO.
- 19) **Vygotsky, L. S.** (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.



There is an Open Access article, distributed under the term of the Creative Commons Attribution – Non Commercial 4.0 International (CC BY-NC 4.0) (<https://creativecommons.org/licenses/by-nc/4.0/>), which permits remixing, adapting and building upon the work for non-commercial use, provided the original work is properly cited.