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AN ANALYSIS OF THE SUCCESS RATE OF CANDIDATES WITH VISUAL IMPAIRMENT IN THE CAMEROON GENERAL CERTIFICATE EXAMINATION ORDINARY LEVEL (2015–2025)

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Abstract

The Cameroon General Certificate of Education (GCE) Ordinary Level examination serves as a critical gateway to advanced secondary education and employment. Candidates with visual impairment have historically faced disproportionate barriers in accessing and succeeding in high-stakes examinations, yet empirical evidence documenting their candidate-level success trajectories remains scarce in the Cameroonian context. This study analyzed and interpreted the candidate-level success rates of visually impaired candidates in the GCE Ordinary Level examination over an eleven-year period (2015–2025), with the aim of identifying performance patterns and informing targeted intervention strategies. Using anonymized subject-level result data obtained from the Cameroon GCE Board for 206 candidates with visual impairment across eleven examination sessions, this study applied the official GCE candidate-level success criterion: a candidate was classified as having passed the examination successfully only if they obtained the passing grades (A, B, or C) in at least four subjects. Descriptive statistics were computed to determine annual success rates, subject-load distributions, and longitudinal trends. The overall eleven-year candidate-level success rate stood at 35.9% (74 out of 206 candidates). Annual success rates fluctuated significantly, ranging from 0.0% in 2017 to 57.9% in 2024. In the 2025 examination session, only 39.1% of candidates with visual impairment (9 out of 23) met the success threshold. A substantial proportion of candidates (21.4%) entered the examination with fewer than four subjects, rendering success practically impossible for this study. Among those who did complete, English Language emerged as the most frequently attempted compulsory subject, while Mathematics presented the most difficult barrier to success. The findings reveal a persistent success crisis among visually impaired candidates that has not substantially improved over the review period. Urgent policy attention is required to ensure that candidates with visual impairment are afforded equitable opportunities to accumulate the minimum subject passes required for certification.

Keywords: visual impairment, GCE ordinary level, candidate-level success, inclusive education, Cameroon, high-stakes examination

INTRODUCTION

The right to education for persons with disabilities is enshrined in international frameworks, most notably the United Nations Convention on the Rights of Persons with Disabilities (CRPD) and Sustainable Development Goal 4, which mandates inclusive and equitable quality education for all (UNESCO, 2019). Despite these commitments, children with disabilities in sub-Saharan Africa remain disproportionately excluded from educational systems. In low-income countries, including Cameroon, children with disabilities are 2.5 times more likely to have never attended school compared to their peers without disabilities (UNESCO, 2019). For those who do access schooling, the transition from primary to secondary education is fraught with challenges, and success in terminal examinations remains elusive.

The Cameroon General Certificate of Education (GCE) Ordinary Level examination represents one of the most significant academic milestones in the Anglophone education sub-system. Established in 1977 following the Cameroonisation of the University of London GCE examinations, the GCE Board now administers examinations to over 138,000 candidates annually at the Ordinary Level (Cameroon GCE Board, n.d.). Success in at least four subjects at this level is a prerequisite for progression to

Advanced Level studies, teacher training colleges, and numerous public and private sector employment opportunities. The examination therefore functions not merely as an assessment of learning but as a structural gatekeeper to socioeconomic advancement.

For candidates with visual impairment, this gatekeeping function assumes particularly stark dimensions. Anecdotal evidence and sporadic media reports have long suggested that visually impaired candidates perform poorly relative to their sighted peers. The 2025 examination session offered a striking illustration: while the national pass rate stood at 79.12%, the candidate-level success rate for visually impaired candidates was only 39.13%. This disparity—wherein approximately eight out of ten sighted candidates passed the examination, compared to roughly four out of ten visually impaired candidates—raises profound questions about equity, access, and the adequacy of support systems.

Existing literature on visual impairment and education in sub-Saharan Africa has focused predominantly on enrollment gaps, literacy acquisition, and primary success (Wodon et al., 2019). Far less attention has been devoted to the examination performance of visually impaired learners at the secondary level, and almost no empirical studies have traced candidate-level success rates over an extended period. This study addresses that lacuna by analyzing eleven years of subject-level result data for candidates with visual impairment who sat the GCE Ordinary Level examination between 2015 and 2025.

The central research question guiding this investigation is: What are the candidate-level success patterns of visually impaired candidates in the GCE Ordinary Level examination, and how have these patterns evolved over the past eleven years? By shifting the analytical focus from subject credit pass rates—which can obscure the holistic experience of individual candidates—to candidate-level success rates, this study seeks to provide a more accurate portrait of educational outcomes for this population. The findings are intended to inform policy discussions, teacher training priorities, and examination accommodation strategies.

Literature Review

Visual Impairment and Educational Outcomes in Sub-Saharan Africa

The education of children with visual impairments in sub-Saharan Africa is characterized by a constellation of systemic, pedagogical, and attitudinal barriers. A comprehensive UNESCO study examining eleven countries in the region found that children with visual impairments consistently underperformed relative to their sighted peers on standardized assessments of reading and mathematics (Wodon et al., 2019; Jariwala et al., 2023). The same study documented alarming transition failures: in Kenya, Liberia, Malawi, and Uganda, only 5.2%, 13.8%, 8.5%, and 9.2% respectively of students with visual impairments enrolled in primary education progressed to secondary school (Wodon et al., 2019). These statistics underscore that the challenges confronting visually impaired learners are not confined to the classroom but extend across the entire educational pipeline.

In Cameroon specifically, inclusive education remains in its nascent stages. Although the government signed the UNESCO Salamanca Statement in 1994 and has enacted legislation protecting the rights of persons with disabilities—including Act No. 2010/002, which penalizes discrimination against learners with disabilities—the effective implementation of inclusive education has been lacking (Tanyi, 2016). A recent study on inclusive education in Cameroon identified physical inaccessibility, inadequate teacher preparedness, scarcity of specialized resources, and persistent social stigma as principal barriers to the education of children with special needs (Oneke Arrah & Swain, 2021). These structural deficits inevitably cascade into poor examination outcomes.

Subject-Specific Barriers: Mathematics, Science, and Language

Research consistently indicates that students with visual impairments encounter particular difficulties in subjects that rely heavily on visual-spatial reasoning and graphical representation. Mathematics and

science curricula are replete with abstract concepts, diagrams, charts, and spatial configurations that are typically conveyed through visual channels (Kapperman et al., 2000). Kapperman et al. (2000) documented how the visual nature of mathematical textbooks—containing images, line graphs, bar graphs, and pie charts—creates formidable access barriers when these elements are not adequately transcribed into braille or described in digital formats.

In Botswana, Habulezi et al. (2017) found that only nine braille users sat the secondary science examination in 2016, and there was a 100% failure rate; in preceding years, the pass rate never exceeded 33%. The researchers attributed this catastrophic failure to the visual presentation of science content, inappropriate pedagogical practices, lack of tactile materials, absence of braille notes, and preconceptions among teachers that students with visual impairments cannot study science (Habulezi et al., 2017). Similar barriers pervade mathematics instruction. Bell and Silverman (2016) reported that 82% of blind and visually impaired youth surveyed in the United States experienced trouble accessing information that teachers put on the board, while 70% of blind children were found to be at least one grade level behind in mathematics, with 20% trailing by five or more grade levels. These findings from high-resource contexts suggest that the challenges in low-resource settings like Cameroon are likely amplified by scarcity of assistive technology, limited braille production capacity, and inadequate specialist teacher training.

Language subjects, while less visually dependent in their assessment, present their own challenges. For candidates using braille, the production of extended written responses in English or French requires proficiency in literary braille codes and access to reliable braille writers or electronic notetakers. Delays in receiving accessible materials, documented extensively in the literature, place visually impaired candidates at a systematic disadvantage (Bell & Silverman, 2016).

Teacher Preparedness and Attitudinal Barriers

The quality of teaching support available to visually impaired learners is perhaps the most critical determinant of examination success. In sub-Saharan Africa, specialist teachers of children with visual impairments are scarce and unevenly distributed, with the majority concentrated in special schools rather than mainstream institutions (Wodon et al., 2019). In Cameroon, student teachers in regular training colleges often receive no orientation whatsoever on the education of children with visual impairments, and practicing teachers have little access to continuous professional development in this field (Wodon et al., 2019).

Maguvhe (2015), drawing on lived experience as a blind technician in South Africa, argued that teachers frequently lack practical knowledge of the capabilities of blind and partially sighted learners in mathematics and science, leading to self-fulfilling prophecies of failure. This attitudinal barrier—what Fraser and Maguvhe (2008) termed the "compounding negative effects of human attitudes"—is reinforced by the absence of blind and partially sighted role models in scientific and mathematical professions (Maguvhe, 2015).

Examination Systems and Accommodations

High-stakes examinations such as the GCE Ordinary Level are designed primarily for sighted candidates, with adaptations for visually impaired learners often treated as afterthoughts. The Cameroon GCE Board generally administers examinations that rely on printed question papers, visual diagrams, and strict time constraints—conditions that disadvantage candidates who read braille or use screen magnification (Cameroon GCE Board, n.d.). While accommodations such as extra time, separate rooms, and brailled question papers are sometimes provided, the consistency and quality of these accommodations remain uncertain.

The concept of candidate-level success—defined here as obtaining at least four subject passes—shifts the analytical lens from isolated subject performance to holistic examination success. This approach aligns with the structure of the GCE Ordinary Level itself, where certification and progression depend on crossing a multi-subject threshold rather than excelling in any single discipline. To date, no published study has applied this candidate-level lens to visually impaired candidates in Cameroon.

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METHOD

Research Design

This study employed a quantitative descriptive design, analyzing secondary data comprising the complete subject-level results of candidates with visual impairment who sat the GCE Ordinary Level examination from 2015 to 2025. The study was guided by three specific objectives: (1) to analyze the candidate-level success rates of visually impaired candidates over the eleven-year period; (2) to interpret the patterns and trends evident in these success rates; and (3) to identify the subjects and years associated with the most significant barriers to success.

Data Source and Population

The data were obtained from the Cameroon General Certificate of Education Board in anonymized format. The dataset contained 1,524 subject entries for 206 distinct candidates across eleven examination sessions (2015–2025). Each record included the candidate code, examination year, subject code, subject name, grade awarded, and corresponding point value. The dataset represented the complete population of visually impaired candidates who sat the GCE Ordinary Level during the review period, rather than a sample.

Operational Definitions

For the purposes of this study, the following operational definitions were applied:

Pass grade: Grades A, B, and C were classified as passing grades, consistent with the GCE Board's certification standards.

Fail grade: Grades D, E, U (Unclassified), and X (Absent or excluded) were classified as failing grades.

Candidate-level success: A candidate was deemed to have completed the examination successfully if they obtained passing grades in at least four subjects. This threshold corresponds to the minimum requirement for progression to GCE Advanced Level and other post-secondary pathways.

Subject load: The total number of subjects attempted by a candidate in a given examination session.

Data Analysis

Data were cleaned and analyzed using Python (Pandas and Matplotlib libraries). The analysis proceeded in three stages. First, candidate-level summaries were computed for each examination year, including total number of candidates, number of subjects attempted per candidate, number of subjects passed per candidate, and the candidate-level success rate. Second, subject-level pass rates were calculated for each year to enable longitudinal trend analysis; these rates are presented graphically but are not the primary focus of interpretation. Third, descriptive statistics were generated to identify patterns in compulsory subject performance (English Language, Mathematics, and French) and to examine the distribution of subject loads across the candidate population.

Ethical considerations were addressed through the use of fully anonymized data. No candidate names, school identifiers, or demographic characteristics beyond examination results were included in the dataset.

RESULTS

Overview of Candidate-level success Rates

Over the eleven-year period, a total of 206 candidates with visual impairment sat the GCE Ordinary Level examination. Of these, only 74 candidates (35.9%) achieved the minimum threshold of four subject passes required for success. The remaining 132 candidates (64.1%) failed to meet this threshold, meaning that nearly two-thirds of visually impaired candidates who entered the examination did not attain accreditation eligibility.

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Yearly success rates exhibited significant unpredictability (see Figure 1). The lowest success rate was recorded in 2017, when none of the nine candidates (.0%) achieved four subject passes. The year 2016 was only a bit better, with a single candidate out of thirteen (7.7%) completing successfully. By contrast, 2023 and 2024 represented relative high points, with success rates of 56.7% (17 out of 30 candidates) and 57.9% (11 out of 19 candidates) respectively. The most recent examination session of the study, 2025, saw a drop to 39.1% (9 out of 23 candidates), suggesting that the gains of 2023–2024 may not be sustainable.

Figure 1 below present the candidate-level success rates and subject-level pass rates for visually impaired candidates in the Cameroon GCE Ordinary Level examination (2015–2025), computed directly from the anonymized subject-level result dataset.

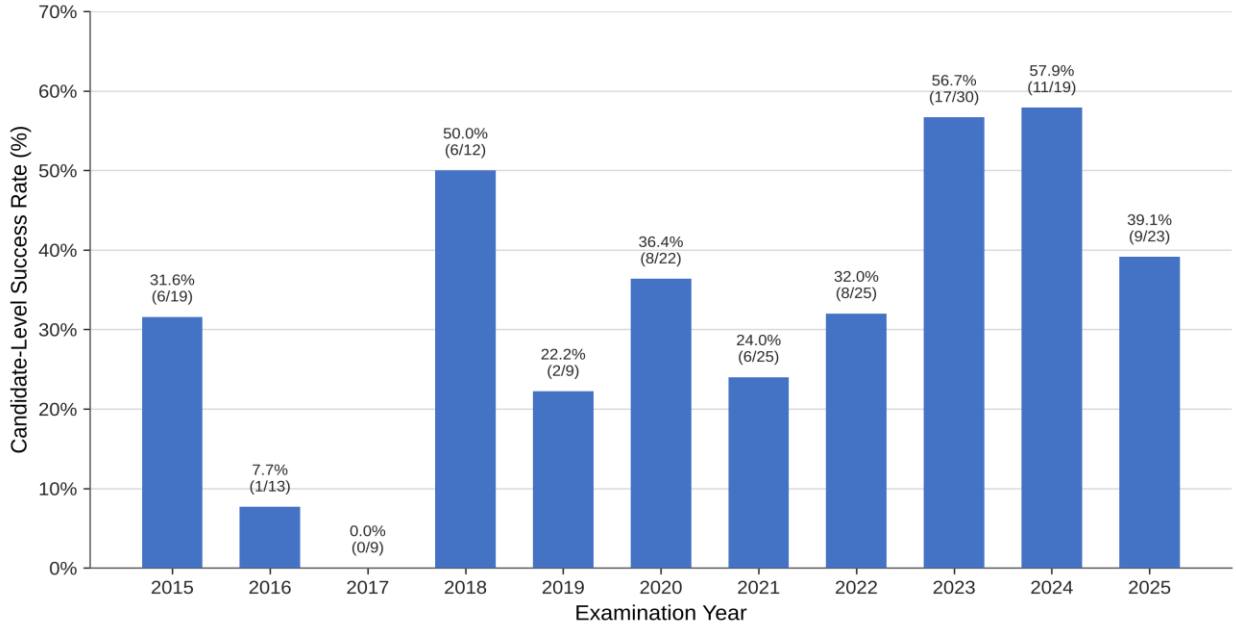


Figure 1. Candidate-level success Rates for Visually Impaired Candidates in GCE Ordinary Level (2015–2025)

Note. N = 206 candidates across eleven examination sessions. A candidate was classified as successful only if they obtained a passing grade (A, B, or C) in at least four subjects. Values above each bar indicate the annual success rate and the corresponding success fraction (number of successful candidates / number of candidates that year).

Subject Load and Structural Barriers to Success

A tricky finding emerging from the data concerns the subject load attempted by certain candidates. Thirty-nine candidates (18.9% of the total population) entered the examination with fewer than four subjects. This is not an abnormally. This cohort likely represented candidates who had earlier passed the exam but failed certain subjects which they later found necessary for their progression and therefore registered to take only those subjects. Regardless, under the study's success criteria, these candidates were fundamentally incapable of meeting the threshold for success, regardless of their performance in the subjects they attempted.

Among candidates who attempted four or more subjects, the distribution of passes was heavily skewed toward failure. Forty-four candidates (21.4% of all candidates) failed every subject they attempted, obtaining zero passes. A further 42 candidates (20.4%) passed only one subject, while 23 candidates (11.2%) passed two subjects and 23 candidates (11.2%) passed three subjects. Only nine candidates (4.4%) achieved exactly four passes—the minimum required for success—while the majority of successful candidates exceeded this threshold, with 14 candidates passing five subjects, 18

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passing six subjects, 17 passing seven subjects, 13 passing eight subjects, two passing nine subjects, and one candidate passing ten subjects.

These distributions reveal a bimodal pattern: a substantial cluster of candidates at the lower end of the pass spectrum (0–3 passes) and a smaller but significant cluster at the upper end (5–10 passes). Relatively few candidates occupied the middle ground of exactly four passes, suggesting that candidates who overcome initial barriers tend to perform well across multiple subjects, while those who struggle tend to struggle thoroughly.

Compulsory Subject Performance and Success Implications

The data revealed stark disparities in performance across compulsory subjects, with significant implications for candidate-level success. English Language, which is compulsory for all candidates, recorded a pass rate of 46.2% across the eleven-year period (91 passes out of 197 entries). While this represents the highest pass rate among the three compulsory subjects, it still means that more than half of all attempts resulted in failure. French, the second official language, recorded a pass rate of 28.7% (51 passes out of 178 entries).

Mathematics emerged as the most difficult barrier to success. With only 22 passes out of 171 entries, the subject recorded a pass rate of 12.9%. This finding is consistent with international literature documenting the visual-spatial demands of mathematics and the inadequacy of instructional adaptations for visually impaired learners (Kapperman et al., 2000). Given that Mathematics is a required subject for many post-secondary pathways, its low pass rate substantially constrains the success prospects of visually impaired candidates.

Among non-compulsory subjects, Commerce recorded the highest pass rate at 68.5%, followed by Logic at 68.2% and History at 49.3%. At the lower end, Chemistry (18.8%), Computer Science (20.7%), and Geography (26.4%) presented significant challenges. The variability in subject performance suggests that success is not merely a function of general academic ability but is strongly mediated by subject-specific accessibility.

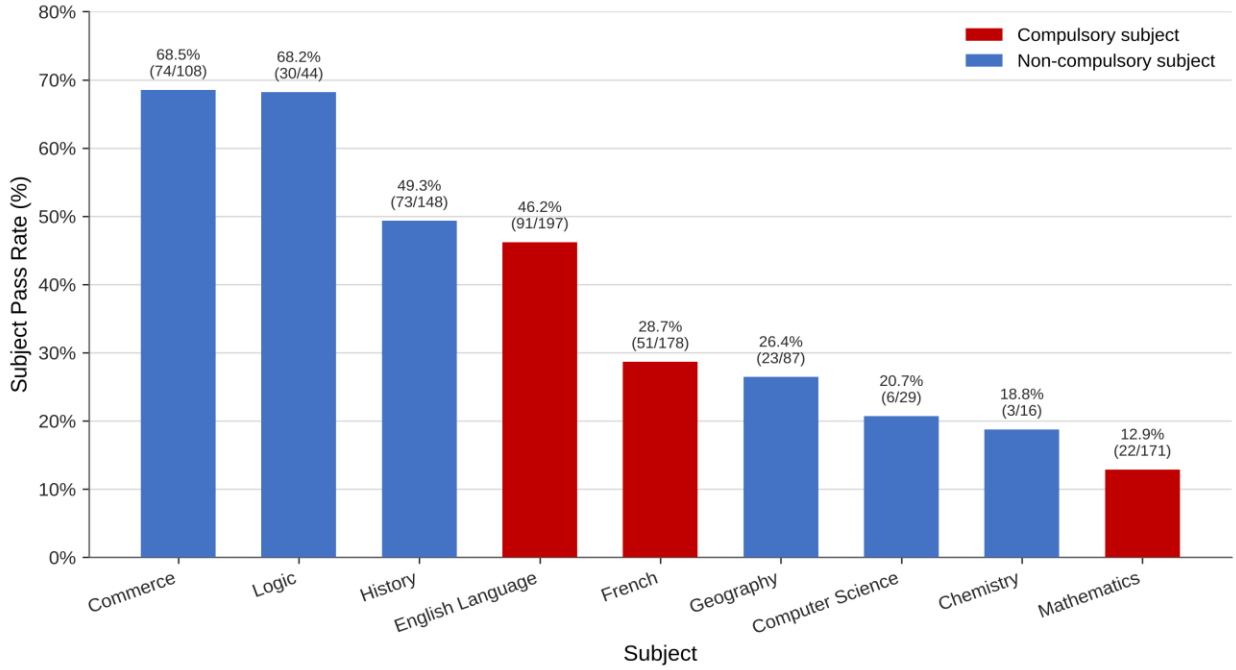


Figure 2. Subject-Level Pass Rates for Candidates With Visual Impairment in GCE Ordinary Level
Note. Bars show the eleven-year pass rate for each subject (passes / entries). Red bars denote the three compulsory subjects (English Language, French, and Mathematics); blue bars denote non-compulsory subjects selected for comparison.

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Temporal Trends and Cohort Effects

The eleven-year data series reveals no clear long-term improvement in candidate-level success rates. The early years of the series (2015–2017) were characterized by very low success, with the three-year average standing at just 17.2%. A partial recovery was observed in 2018 (50.0%) and 2020 (36.4%), but 2019 (22.2%) and 2021 (24.0%) saw renewed declines. The period 2022–2024 showed the strongest performance, with the three-year average success reaching 48.7%. However, the drop to 39.1% in 2025 raises concerns about whether this represented a genuine systemic improvement or a temporary interval effect.

The number of candidates entering the examination has generally increased over time, from 19 candidates in 2015 to 30 in 2023, before declining slightly to 23 in 2025. This increase may reflect improved access to secondary education for visually impaired learners, but the fact that success rates have not risen proportionally suggests that access to schooling has outpaced access to quality support.

The 2025 Examination Session in Context

The 2025 session merits particular attention given the documented disparity between the national pass rate (79.12%) and the visually impaired candidate success rate (39.13%). The magnitude of the gap is striking. Among the 23 visually impaired candidates who sat the examination in 2025, nine met the four-subject threshold, while fourteen did not. One candidate failed all subjects attempted, and several others passed only one or two subjects. The average subject load in 2025 was 8.7 subjects per candidate, the highest in the eleven-year series, yet the success rate remained below the eleven-year average.

DISCUSSION, CONCLUSION, and RECOMMENDATIONS

Interpreting the Success Crisis

The finding that only 35.9% of visually impaired candidates achieved candidate-level success over an eleven-year period constitutes a crisis that demands urgent policy attention. This figure is not merely a statistical abstraction; it represents 132 individual candidates who, despite having accessed secondary education and presented themselves for a high-stakes examination, were unable to accumulate the four subject passes required for progression. In a context where the GCE Ordinary Level functions as a prerequisite for virtually all forms of advanced training and formal employment, these candidates face severely constrained life chances.

The success crisis must be understood as a product of cumulative disadvantage. Visually impaired learners in Cameroon typically encounter barriers from the earliest stages of schooling: inadequate early intervention, limited access to braille literacy instruction, scarcity of assistive devices, and social stigma (Oneke Arrah & Swain, 2021; Suh, 2026). By the time they reach the examination stage, these accumulated deficits manifest as low subject loads, poor compulsory subject performance, and high rates of total failure. The data showing that 21.4% of candidates passed no subjects whatsoever suggest that a significant minority of visually impaired candidates are entering the examination with preparation levels that make success virtually impossible.

The Mathematics Barrier

The catastrophic failure rate in Mathematics (12.9%) warrants specific discussion. Mathematics is not merely another subject; it is a gatekeeper discipline. Failure in Mathematics severely restricts a candidate's options for Advanced Level science and commercial streams, technical education, and numerous professional fields. For visually impaired candidates, the barriers to mathematical learning are well-documented in the literature: the visual nature of mathematical notation, the scarcity of Nemeth braille training for teachers, the absence of tactile graphics, and the cognitive load imposed by non-visual problem-solving (Kapperman et al., 2000).

In Cameroon, these generic barriers are compounded by systemic factors. Teacher training institutions do not adequately prepare mainstream mathematics teachers to adapt their instruction for visually impaired learners, and specialist teachers are concentrated in special schools that may not offer the

full GCE curriculum (Wodon et al., 2019). The result is that visually impaired candidates often receive mathematics instruction that is either watered down in content or delivered by teachers who lack confidence in their ability to teach the subject accessibly. The data from this study suggest that these pedagogical failures translate directly into examination failure, disrupting candidate success.

The Absence of Sustained Improvement

Perhaps the most troubling aspect of the findings is the absence of sustained improvement over the eleven-year period. Despite international commitments to inclusive education, national policy reforms, and the expansion of special education services in Cameroon, candidate-level success rates have not trended upward. The peak years of 2023 and 2024, while encouraging, were followed by a decline in 2025, and the overall series remains characterized by instability rather than progress.

This stagnation mirrors findings from the broader sub-Saharan African context. Wodon et al. (2019) found that while literacy rates for children with visual impairments had increased in recent decades, the disability gap relative to non-disabled peers had not narrowed. In Uganda, Ministry of Education data revealed that only 135 out of 3,709 visually impaired students enrolled in secondary education sat the terminal examination, suggesting massive examination attrition (Wodon et al., 2019; Suh, 2026).

For Cameroon, the policy implications are clear. The recent launch of a CFA100 billion inclusive education reform (2024–2028), which targets the transformation of 1,289 schools and the training of 8,075 teachers, represents a potentially transformative intervention (StopBlaBlaCam, 2026; Sightsavers, 2024). However, unless this reform explicitly addresses examination preparation, subject-load planning, and specialist pedagogical support for visually impaired candidates, its impact on success rates may be limited.

Methodological Considerations

This study's focus on candidate-level success rates represents a methodological advance over studies that report only subject-level pass rates. Subject-level rates can create a misleadingly positive impression of performance if they obscure the fact that few candidates are passing multiple subjects simultaneously. By requiring four subject passes for success, this study aligns its analytical framework with the actual structure of the GCE Ordinary Level and the real-world consequences of examination failure.

However, the study is not without limitations. The anonymized dataset did not include information on candidate demographics (age, sex, type of visual impairment, school type), making it impossible to analyze success rates by sub-group. Additionally, the dataset did not capture whether candidates received examination accommodations such as extra time, brailled papers, or scribes, factors that could significantly influence performance. Future research should seek to integrate these variables to develop a more nuanced understanding of the determinants of success.

Conclusion

This study has provided the first comprehensive analysis of candidate-level success rates for visually impaired candidates in the Cameroon GCE Ordinary Level examination. The findings reveal a persistent and deeply concerning pattern of failure: over an eleven-year period, nearly two-thirds of candidates failed to achieve the four subject passes required for success. Mathematics emerged as the most significant barrier, while English Language, though the strongest of the compulsory subjects, still recorded a failure rate exceeding 50%. The data showed no evidence of sustained improvement over time.

These findings carry urgent implications for policy and practice. First, targeted interventions are required to improve mathematics instruction for visually impaired learners, including specialist teacher training, provision of tactile graphics, and access to braille mathematics codes. Second, the ongoing inclusive education reform must prioritize the transition from access to outcomes, ensuring that visually impaired learners who enroll in school are equipped to succeed in terminal examinations.

The GCE Ordinary Level examination is intended to certify academic achievement and open doors to future opportunity. For the majority of visually impaired candidates in Cameroon, it currently functions as a barrier rather than a bridge. Closing the success gap is not merely a technical challenge of examination administration; it is a moral imperative that tests the nation's commitment to leaving no learner behind.

Recommendations

Based on the empirical findings of this study, the following structural, pedagogical, and policy interventions are recommended to mitigate the high failure rates among visually impaired candidates and to ensure equitable outcomes in the Cameroon GCE Ordinary Level examination:

- ✓ The Ministry of Secondary Education should mandate and fund specialized professional development programs focusing on braille literacy, tactile graphics interpretation, and inclusive teaching methodologies. Pre-service and in-service teacher training must equip educators with the pedagogical tools necessary to translate abstract concepts—particularly in Mathematics—into accessible formats for visually impaired learners.
- ✓ Educational authorities must prioritize the timely production and distribution of specialized learning aids.
- ✓ Given that Mathematics represents the most significant barrier to certification, targeted remedial programs and specialized instructional frameworks must be established. Designing mathematics curricula that rely less on visual intuition and more on tactile and analytical conceptualization will help reduce the prohibitive failure rates observed in this subject.
- ✓ The Cameroon GCE Board should review its examination administration protocols to ensure fair assessment practices. Beyond the provision of extra time, examinations must be systematically audited for visual bias. Alternative assessment formats, transcribed tactile components, and trained invigilators/amaurosis specialists should be systematically integrated into examination centers.
- ✓ National inclusive education frameworks must transition from an input-based approach (focusing primarily on enrollment numbers) to an outcome-oriented paradigm. Educational policies should mandate continuous institutional accountability, rigorous tracking of academic progress, and structured learning support throughout the secondary school cycle, ensuring that inclusion translates into certified academic success.

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Ethics and Conflict of Interest

All ethical rules were observed at each stage of the research. The author declares that he acted in accordance with ethical rules in all processes of the research. The author declares that they do not have any conflict of interest with other persons, institutions or organizations.

Data Availability

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

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