



Learning through National Languages: The Case of the Senegalese Educational System

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Abstract

This study examines the use of national languages in the Senegalese educational system, highlighting their role in promoting inclusive and quality learning. The Senegalese 2education for all by 2030. Despite significant efforts, challenges in pedagogical management and teaching quality persist. Research suggests that instruction in the mother tongue is associated with improved learning outcomes, particularly in bilingual school settings. Students develop reading and writing skills more effectively when they can connect sounds and symbols to words in their mother tongue. UNESCO emphasizes that mother tongue-based education fosters social inclusion, cultural preservation, and sustainable development, while also enhancing academic performance and student engagement. In Senegal, programs such as “Ndaw Wune” and the forthcoming generalization of primary education in national languages demonstrate early success, with notable improvements in reading and mathematics. However, several limitations exist, including linguistic diversity, insufficient teaching materials, inadequate teacher training, abrupt transitions to French, and limited budgetary support. This study proposes practical recommendations to address these challenges, such as inclusive language planning, enhanced production of pedagogical materials, teacher training, gradual introduction of French, community sensitization, sustainable financing, and systematic monitoring and evaluation. Overall, this research underscores the critical importance of mother tongue instruction in fostering equitable, high-quality, and culturally responsive education, and provides actionable strategies to strengthen its implementation in Senegal.

Keywords: mother tongue education, bilingual education, inclusive learning, Senegal, national languages

1. Introduction

The PAQUET/EF, which serves as the national education policy framework for the period 2018–2030, is structured around three strategic objectives:

Significantly improve learning outcomes at all levels, with the dual aim of strengthening academic achievement and enhancing skills acquisition.

Expand access, diversify provision, and promote integration across the education and training system, ensuring that the needs of all learners are met.

Establish transparent, effective, and results-oriented governance, emphasizing equity, accountability, and efficient resource use.

Strategically, improving the quality of educational services represents one of Senegal's major development priorities. However, despite the considerable efforts undertaken through successive educational programs, the expected quality improvements have not yet been fully realized. Persistent challenges relate primarily to pedagogical management and the low quality of teaching across all educational levels.

From a scientific standpoint, various studies have consistently demonstrated that bilingual education, particularly in contexts where national languages are used as mediums of instruction, correlates with significant improvements in student performance. This finding is supported by empirical evidence, including the LASCOLAF (2010) Report (June 2010)

Consequently, the use of national languages in education emerges as a key factor capable of enhancing both teaching quality and learning outcomes, offering a promising avenue for improving the overall effectiveness of the Senegalese education system.

1.1. Objectives

This study is part of a broader analytical and reflective approach aimed at highlighting both the advantages and limitations of the educational initiative under consideration, namely, the integration of national languages within the Senegalese education system under the PAQUET/EF (Programme for the Improvement of Quality, Equity and Transparency – Education/Training). It seeks to understand the extent to which this policy contributes to improving the quality of teaching and learning, promoting educational equity, and advancing progress toward the Sustainable Development Goal 4 (SDG 4). All that factors are for inclusive and quality education for all. Through this research, the objective is not only to present a critical assessment of the achievements and challenges encountered, but also **to** propose concrete strategies for improvement that can enhance the system's effectiveness and sustainability. The recommendations formulated will be evidence-based, drawing from documentary analysis, field observations, and stakeholder consultations conducted at various levels of the education sector.

1.1.1 General Objective

The general objective of this study is to examine in depth the strengths and weaknesses of the policy of integrating national languages into the education system, in order to derive relevant insights and formulate strategic recommendations.

Ultimately, this research aims to contribute to national reflection on improving the quality of basic education in Senegal, by proposing concrete directions for a better integration of national languages as a lever for both academic success and social inclusion.

1.1.2 Specific objectives

More specifically, this study seeks to achieve the following objectives:

- To identify and analyze the main advantages of introducing national languages into the education system, focusing on their pedagogical relevance, contextual applicability, and the learning outcomes observed among students.

- To assess the limitations, constraints, and challenges that hinder the effective implementation of this policy, whether institutional, pedagogical, linguistic, or sociocultural in nature.
- To compare the findings with similar initiatives at both national and international levels, in order to draw lessons from best practices and situate the results within a comparative framework.
- To propose realistic and context-appropriate strategies for improvement, grounded in empirical evidence and stakeholder feedback (teachers, learners, supervisors, parents, and policymakers).
- To formulate operational and actionable recommendations that can guide policymakers, education practitioners, and development partners toward a more coherent and effective integration of national languages in the education system.

Overall, this study aims to provide a solid analytical foundation to support informed decision-making and to stimulate dialogue on language and education policy in Senegal. It is therefore both diagnostic, by identifying weaknesses and constraints, and propositional, by offering concrete solutions to advance a more equitable, inclusive, and high-performing education system.

2. Methods

2.1. Research Design and Overall Approach

This study adopts a qualitative, descriptive, and analytical research design, combining document analysis and non-experimental field observations. The objective is not to estimate causal effects through randomized methods or statistical inference, but rather to examine how the integration of national languages into the Senegalese education system contributes to learning quality, inclusion, and equity, as well as to identify the main strengths and constraints of this policy orientation.

The research relies primarily on secondary sources, including national education policy documents, program evaluation reports, and peer-reviewed academic studies. These sources are complemented by structured observations derived from the author's professional engagement in the Senegalese education sector.

This methodological approach allows for triangulation across three dimensions:

- The intentions and strategic frameworks of public policies;
- The documented results of educational programs;
- The pedagogical practices observed in classrooms.

The integration of these different sources aims to produce a contextualized and rigorous analysis of mother tongue based bilingual education in Senegal.

2.2. Observation Settings and Field Insights

Although the study is not based on primary data collection through surveys nor on an experimental design, it incorporates systematic classroom observations conducted within the framework of professional educational activities

These observations focused on:

- Public primary schools in the Kolda region,
- Early-grade classrooms (Grades 1–3),
- Schools implementing bilingual education (national language/French) as well as schools applying conventional French-only instruction;

- Multiple regions of Senegal, reflecting a diversity of linguistic and socio-educational contexts.

To ensure compliance with ethical principles and confidentiality, no school, teacher, or student is identified.

Observation notes primarily focused on:

- Classroom pedagogical interactions and language use and code switching practices;
- Student participation and engagement;
- Teaching practices in reading and mathematics;
- Transitions between the national language and French

These observations do not constitute a nationally representative sample, as the MOHEBS program was first piloted in the Kolda region with funding support from USAID and UNICEF.

However, they provide contextualized empirical insights that enrich the document-based analysis and facilitate the interpretation of findings reported in the literature.

Classroom observations were conducted in 8 public primary schools across the Kolda region between 2022 and 2024. A total of 24 classroom sessions (Grades 1–3) were observed, with an average duration of 60 minutes per session. Observations followed a structured grid focusing on language use, student participation, instructional strategies, and transition practices between L1 and French. Field notes were coded thematically using a deductive framework aligned with the study objectives.

The study draws on four main categories of data sources

2.2.1 Policy and Institutional Documents

National education policies, strategic frameworks, and curricular documents were analyzed, with particular emphasis on the PAQUET/EF (2018–2030) and official documents related to bilingual education and national languages.

2.2.2 Program Documentation and Evaluations

The analysis includes documentation and evaluation reports related to key Senegalese initiatives, notably: The Harmonized Model for Bilingual Education in Senegal (MOHEBS), implemented by the Ministry of National Education, and The “Ndaw Wune” program, implemented by the NGO ARED.

These sources provide program level evidence on implementation modalities, pedagogical approaches, and reported learning outcomes.

2.2.3 Academic and Empirical Studies

Priority was given to peer-reviewed empirical studies, particularly those focusing on:

- Multilingual or bilingual education in Africa,
- Learning outcomes in mother tongue-based instruction,
- Comparative evidence from contexts similar to Senegal.

To be included, studies had to meet the following criteria:

- Relevance to language of instruction or bilingual education,
- Publication between 2010 and 2025,
- Empirical or evaluative methodology,
- Contextual relevance to Africa or multilingual education systems

2.2.4 International Reports and Comparative Evidence

Reports from international organizations (notably UNESCO and the World Bank) were used as normative and comparative references, not as substitutes for empirical evidence. Media articles were included only for contextual illustration and not treated as scientific sources.

2.3. Data Collection Procedures

Data collection followed a structured process:

- Systematic compilation of policy documents, program reports, and academic literature from institutional repositories, academic databases, and official government sources.
- Extraction of qualitative information related to pedagogical practices, language use, implementation challenges, and reported outcomes.
- Extraction of quantitative indicators, where available, such as reading and mathematics performance results reported in program evaluations,
- Organization and coding of documents and observational notes according to analytical themes.

2.4. Data Analysis

The study employs a mixed qualitative and descriptive analytical strategy:

2.4.1 Thematic analysis

A thematic analysis was conducted on policy documents, evaluation reports, and observational notes. Recurring themes included:

- Learning outcomes and literacy acquisition,
- Student engagement and classroom participation,
- Teacher preparedness Qualitative Analysis and pedagogical practices,
- Institutional and linguistic constraints.

2.4.2 Quantitative Descriptive Analysis

Quantitative data extracted from existing evaluations and reports were analyzed using descriptive comparison, focusing on trends and differences between bilingual and non bilingual instructional contexts.

2.5. Ethical Considerations

The study adheres to standard ethical principles:

- Proper acknowledgment and citation of all sources,
- Respect for confidentiality regarding schools, teachers, and learners observed,
- Objective and transparent presentation of findings, avoiding overgeneralization beyond the evidence base.

2.6. Methodological Limitations

This study has several limitations. It does not rely on large scale primary data collection, randomized designs, or nationally representative samples. The findings are therefore interpretive and contextual, rather than statistically generalizable. However, by triangulating documentary evidence, program evaluations, and field observations, the study provides a credible and analytically grounded assessment of mother tongue based education in Senegal.

All quantitative indicators cited in this study are drawn from secondary program evaluations and administrative data. They are used descriptively and do not constitute independent impact estimation.

2.7. Study Objectives Alignment

The methodological design aligns closely with the study's objectives:

- To identify the advantages of mother tongue instruction in promoting comprehension, literacy, and cognitive development.
- To assess the limitations and challenges, including policy gaps, teacher preparedness, and linguistic barriers.
- To compare findings with best practices internationally, providing a contextualized understanding of successes and constraints.
- To formulate evidence-based recommendations for policymakers, educators, and stakeholders aimed at improving inclusive and quality education in Senegal.

3. Results and Discussions

The findings presented in this section derive from documentary analysis, independent program evaluations, and structured field observations. In line with the qualitative and descriptive design of the study, the results synthesize existing evidence rather than generate original statistical estimates. Quantitative findings are drawn from secondary evaluations and are interpreted contextually, not as independent causal impact estimations.

3.1. Conceptual and International Foundations

International syntheses, particularly those produced by UNESCO, associate early instruction in a familiar language with improved literacy acquisition and classroom participation in multilingual contexts. These conclusions are generally derived from comparative reviews of heterogeneous programs and should therefore be interpreted as indicative trends rather than universally generalizable causal estimates.

Policy frameworks commonly describe progressive bilingual education as a sequenced model structured around four interrelated stages:

- Initial consolidation of foundational skills in the mother tongue (L1)
- Development of literacy and numeracy in a familiar language
- Gradual introduction of French (L2)
- Stabilization of functional academic bilingualism

This sequence reflects a theory of change in which the mother tongue functions as a transitional pedagogical lever rather than as a substitute for French. Early cognitive and metalinguistic competencies developed in L1 are expected to facilitate subsequent acquisition of L2. However, the effectiveness of this model depends on contextual factors including teacher preparation, instructional materials, and explicit transition planning.

It is within this framework that Senegal's Harmonized Model of Bilingual Education (MOHEBS) was developed.

3.2. The Harmonized Model of Bilingual Education in Senegal (MOHEBS)

The Harmonized Model of Bilingual Education in Senegal (MOHEBS) constitutes the principal institutional reform aimed at the progressive integration of national languages into public

primary education. Beyond its conceptual architecture, the scope of its implementation can be assessed through coverage and beneficiary data.

The Harmonized Bilingual Education Model, implemented by the Ministry of National Education (MEN), represents a major initiative aimed at integrating national languages into primary and preschool education in Senegal. Launched in 2019, the program seeks to improve the quality of education by placing mother tongues at the core of instruction, while facilitating a gradual transition to French, the official language of instruction. This approach is designed to enhance students’ comprehension, foster engagement, and promote the country’s linguistic and cultural heritage.

Objectives of the Program

The MOHEBS program is structured around several key objectives:

Early Bilingualism: Instruction begins in the child’s mother tongue to ensure a strong foundation in literacy and comprehension. A gradual and systematic transition to French is then introduced, enabling learners to acquire proficiency in both the national language and the official language.

Inclusive Education: The program is designed to accommodate Senegal’s linguistic and cultural diversity, ensuring that children from various regions and language backgrounds have equitable access to education.

Capacity Building: The program emphasizes teacher training in bilingual pedagogical methods and the development of teaching materials in national languages. This ensures that educators are well-prepared to implement bilingual instruction effectively.

Implementation and Coverage

Table 1: Geographic Deployment and Linguistic Expansion of MOHEBS

Implementation Phase	Academies/Localities Involved	Observations
First Generation (7 IAs)	Fatick, Diourbel, Kaolack, Kaffrine, Matam, Louga, Saint-Louis	Initial implementation phase
Second Generation (3 IAs)	Tambacounda, Kédougou	Regional expansion
Dakar Pilot	10 primary schools, 9 preschool institutions	Urban pilot phase
Third Generation (4 IAs)	Sédhiou, Ziguinchor, Thiès, Kolda (30 pilot schools)	Progressive extension
Linguistic Expansion	Expansion from 6 to 8 languages (Wolof, Pulaar, Seereer, Mandinka, Soninke, Joola, Safi-Safi, Balant)	Institutional integration within the concerned academies

Source: MOHEBS administrative data.

These data indicate gradual territorial expansion combined with progressive linguistic diversification. The strategy reflects phased institutional scaling rather than immediate national universalization.

This gradual progression reflects a controlled expansion strategy, combining pilot phases with progressive institutional integration.

The MOHEBS initiative began implementation at the start of the 2021 school year and is operational in nine regions of Senegal: Diourbel, Fatick, Kaffrine, Kaolack, Louga, Matam, Saint-Louis, Tambacounda, and Kédougou. The program currently covers six national languages: Wolof, Pular, Diola, Serer, Soninke, and Mandinka.

Scope of Beneficiaries and Capacity Building

Table 2: Direct Beneficiaries and Trained Actors under MOHEBS

Category	Number of Beneficiaries
Grade 1 students (CI) provided with L1 textbooks	435,800
Grade 2 students (CP) provided with L1 and L2 textbooks	206,337
Teachers trained and provided with instructional guides	12,116
School principals trained	7,325
Inspectors trained	339

Source: MOHEBS administrative data.

These figures indicate substantial institutional scaling. However, coverage data alone do not constitute evidence of learning impact. The pedagogical effectiveness of MOHEBS depends on the quality of in-service training, instructional fidelity, and systematic evaluation of student outcomes.

Building on these considerations regarding implementation quality and evaluation, the following section examines the **Ndaw Wune** program as a complementary initiative aimed at strengthening learning outcomes within the broader bilingual education reform framework.

3.3. The Ndaw Wune Program

The Ndaw Wune program is an educational initiative implemented by the NGO Associates in Research and Education for Development (ARED), launched in 2019 in Senegal. The program targets first and second grade students who face difficulties in reading and mathematics, with a particular focus on strengthening foundational skills among children in rural and vulnerable communities.

The name “Ndaw Wune” holds significant meaning in local languages: in Wolof, it translates as “every child”, and in Pular, it signifies “success”. This dual meaning reflects the program’s central objective: to ensure that every child has an equal opportunity to succeed academically.

Program Design and Pedagogy

ARED has developed a differentiated pedagogy that groups students according to their specific learning needs, allowing for targeted and individualized support. Teachers, referred to as “tutors,” receive specialized training in this methodology and utilize adapted teaching materials, including textbooks, workbooks, and teacher guides, designed to meet the varying levels of student ability.

Ndaw Wune is based on a structured, evidence-informed remedial model grounded in the science of reading and differentiated instruction. The program combines:

- Explicit phonics instruction
- Structured literacy progression
- Small-group differentiated learning
- Continuous assessment
- Positive classroom culture

Students are grouped by competency level rather than grade, allowing tutors to tailor instruction to specific learning needs. The program provides targeted support to CP and CE1 students (Grades 1 and 2 equivalent) through after school sessions delivered in Senegal’s national languages primarily Pular, Serer, and Wolof.

Tutors receive structured pedagogical guides, student exercise books, and ongoing supervision to ensure fidelity of implementation.

Implementation and Reach

The program operates after school, with sessions held three times a week for two hours. Since its launch, the Ndaw Wune program has reached over 3,000 students across four regions of Senegal.

As of the 2024–2025 academic year, Ndaw Wune:

- Operates in 65 schools
- Covers 4 regions: Diourbel, Kaolack, Matam, and Saint-Louis
- Reaches approximately 3,000 students annually

Students scoring lowest in reading and mathematics in trimester assessments are selected and grouped by competency level to ensure targeted remediation

Independent Impact Evaluation An independent evaluation was conducted by the American Institutes for Research (AIR) during the 2024–2025 academic year. The study used a Difference in Differences (DiD) methodology to estimate the program’s impact on foundational reading and mathematics skills.

Impact and Outcomes

Literacy Outcomes

The evaluation found statistically significant positive effects in several literacy subskills:

- Significant gains in letter-sound knowledge
- Improvements in word decoding
- Increased oral reading fluency
- Positive effects on reading comprehension

Wolof speaking students generally showed larger treatment effects than Pular speaking students. For example:

- Effect size of 0.49 standard deviations in decoding
- Effect size of 0.53 standard deviations in oral reading fluency

These results suggest that the structured phonics approach combined with instruction in familiar languages contributes meaningfully to early reading development.

Mathematics Outcomes

Two mathematics subtests showed significant positive impacts:

- Number sense
- Subtraction

These competencies are foundational for early primary mathematics learning. However, no statistically significant effects were found in other subtests such as counting, number discrimination, addition, and basic operations, suggesting that further refinement of the math component may be necessary.

Program evaluations suggest that trained tutors contribute to improved academic support, with reported gains in student engagement and progress in reading and mathematics within the program context. By combining targeted instruction, continuous assessment, and culturally relevant materials, the program addresses gaps in early learning and contributes to the broader goal of inclusive and quality education for all children.

Table 3. Scale-Up Scenarios for Ndaw Wune

Scenario	Description	Total Cost (FCFA)	Total Cost (USD)	Cost per Student (FCFA)	Cost per Student (USD)
Scenario 1	Status quo expansion	650,752,000	\$1.32M	15,353	\$26
Scenario 2	Reduced teacher training days	638,389,875	\$1.01M	12,768	\$22
Scenario 3	Integration into regular school hours	360,055,641	\$620,786	7,201	\$12
Scenario 4	Use of existing materials + integration	263,343,808	\$454,041	5,267	\$9

Source: American Institutes for Research (2025).

These projections are scenario based estimates. They provide planning benchmarks rather than empirical evidence of cost-effectiveness at national scale.

Significance

The Ndaw Wune program suggests that structured, language sensitive, differentiated remediation can significantly improve foundational literacy skills among vulnerable early-grade learners.

By combining targeted intervention, rigorous evaluation, and cost effectiveness analysis, the program provides suggestive evidence that early remediation when well designed and properly implemented can contribute meaningfully to reducing learning poverty and promoting inclusive, quality education in underserved communities in Senegal.

In order to better understand the structural factors shaping these dynamics, the following section presents a comparative analysis of institutional characteristics

3.4. Comparative Institutional Characteristics

The comparison between MOHEBS and Ndaw Wune highlights complementary institutional roles. MOHEBS represents a system-wide bilingual reform embedded within the public education structure, whereas Ndaw Wune operates as a targeted remedial intervention implemented by a national NGO.

MOHEBS emphasizes structured curriculum integration and nationwide teacher training, while Ndaw Wune focuses on differentiated pedagogy, small-group instruction, and intensive remediation. Together, these initiatives illustrate different operational pathways within Senegal’s broader bilingual education landscape.

Table 4. Comparative Overview: MOHEBS and ARED

Criteria	MOHEBS	ARED
Nature	Institutional bilingual education model	NGO specialized in bilingual education
Status	Implemented by Ministry of National Education	Independent national organization
Objective	Systematize bilingual instruction (L1 + French)	Promote literacy and bilingual schooling

Criteria	MOHEBS	ARED
Language of Initial Instruction	National language (early grades) with gradual transition	National languages with introduction of French
Pedagogical Approach	Structured progressive curriculum	Context-based differentiated pedagogy
Materials	Harmonized textbooks and guides	National-language textbooks and local literature
Teacher Training	National pre-service and in-service framework	Specialized bilingual pedagogy training
Scale	Public system expansion	Targeted interventions
Community Engagement	Policy-integrated	Strong parental/community involvement

This comparison highlights complementary roles: MOHEBS represents systemic reform, whereas Ndaw Wune operates as a targeted remedial intervention.

3.5. Reported Learning Related Findings

3.5.1 International and Documentary Trends

Documentary syntheses, particularly those produced by UNESCO, associate mother tongue-based instruction with improvements in early literacy and academic engagement in multilingual contexts. UNESCO (2016) reports gains of up to 30% in selected program settings, while more recent comparative reviews (UNESCO, 2024) summarize descriptive improvements of approximately 15% in reading and mathematics in certain bilingual education initiatives. These figures derive from program-level evaluations and should be interpreted as contextual associations rather than generalized causal estimates.

National policy developments in Senegal reflect growing institutional commitment to multilingual education, including the progressive expansion of instruction in national languages across multiple regions.

Table 5. summarizes selected reported associations drawn from secondary sources.

Reported Advantage	Source / Context
Improved reading comprehension (30%)	UNESCO (2016) synthesis reports
Academic performance gains (15%)	UNESCO (2024) comparative review
Policy expansion in Senegal (12 regions by 2024)	Government policy documentation
Literacy and mathematics improvements in targeted settings	Independent evaluation of Ndaw Wune
Inclusion and social cohesion benefits	UNESCO normative frameworks

These figures originate from secondary sources and program evaluations. They should be interpreted as reported associations within specific contexts rather than universal effect estimates

3.5.2 Analytical Interpretation

Across documentary evidence and program evaluations, several converging patterns emerge:

- Early instruction in a familiar language is associated with improved foundational literacy.
- Structured bilingual models may support smoother acquisition of French when transition mechanisms are explicitly planned.
- Targeted remedial programs, such as Ndaw Wune, show measurable gains under quasi-experimental evaluation designs.

However, evidence strength varies across sources. Administrative coverage data do not directly measure learning impact, and longitudinal national assessments remain limited. Consequently, findings should be interpreted within the descriptive and contextual scope of this study.

The government's decision to expand instruction in national languages to twelve regions by 2024 reflects a favorable policy environment aligned with international best practices. These policy measures reflect an institutional commitment to inclusive, quality education and the progressive integration of local languages into formal instruction.

Local initiatives, such as the Ndaw Wune program, provide additional evidence of the practical benefits of mother tongue instruction. Tutoring in local languages has been associated with measurable improvements in foundational literacy and numeracy skills among students in rural and vulnerable communities, highlighting the program's contribution to early academic success and student engagement.

3.5.3 Broader Implications

Collectively, these findings indicate that bilingual programs serve multiple educational and social functions:

- **Cognitive and Academic Enhancement:** Mother tongue instruction facilitates comprehension, accelerates reading acquisition, and improves performance in core subjects like mathematics.
- **Cultural and Identity Reinforcement:** Integrating national languages into the curriculum strengthens linguistic and cultural identity, contributing to social cohesion and the preservation of heritage.
- **Sustainable Development:** By fostering inclusive learning environments, bilingual education supports the broader goals of quality education for all (SDG 4) and promotes equitable access to education.

3.5.4 Challenges and Considerations for Senegal

For Senegal, the key challenge lies in scaling these practices systematically across the education system. Achieving the full potential of bilingual education will require:

- Comprehensive teacher training in bilingual and mother tongue pedagogical methods.
- Development and distribution of appropriate instructional materials in national languages.
- Ongoing monitoring and evaluation to assess program effectiveness and inform policy adjustments.

When these conditions are met, bilingual education has the potential to transform learning outcomes, promote inclusion, and reinforce the cultural and linguistic identity of students, thereby advancing Senegal's objectives under the PAQUET/EF framework.

Current research and educational policies converge to highlight that mother tongue (or local language) instruction is a fundamental pillar for inclusive, quality, and sustainable education. Evidence indicates that starting formal education in the learner's mother tongue significantly enhances literacy acquisition, academic performance, and overall learning outcomes.

According to UNESCO (2016), students instructed in their mother tongue from the earliest years of schooling are 30% more likely to achieve reading comprehension by the end of primary school. This finding is consistent across various African contexts, including Mozambique, where the introduction of bilingual education in local languages was associated with a 15% improvement in reading and mathematics performance. UNESCO has consistently advocated for multilingual education rooted in the mother tongue, emphasizing its role in cognitive development, cultural preservation, and social inclusion.

On International Mother Language Day (February 2020), the Director-General of UNESCO highlighted the broader societal importance of mother tongues:

"By bringing its speakers together, by allowing them to flourish in common horizons, mother languages are indeed a source of social inclusion, innovation, and imagination; they are also a breath of fresh air for cultural diversity and an instrument of peace."

Empirical studies reinforce these claims. Research suggests that children learn to read and write more easily when they can link the sounds and symbols of a new writing system to words they have already acquired in their mother tongue. In other words, strong oral language skills in the first language facilitate faster and more effective literacy acquisition.

Empirical studies suggest that children learn to read and write more effectively when initial literacy instruction is provided in a language they already master. Strong oral language skills in the first language facilitate the acquisition of reading and writing competencies and may support subsequent learning in additional languages. These findings are context-dependent and should be interpreted as indicative associations rather than universal causal effects. This underscores the importance of integrating the mother tongue into the learning process to improve both comprehension and retention in subsequent languages.

In the Senegalese context, the benefits of mother tongue instruction are becoming increasingly evident. Professor Mbacké Diagne, Inspector General of National Education and Training, responsible for national languages, notes that:

"Children are losing all their skills and falling behind, which partly explains the high number of school failures and dropouts."

To address these challenges, Senegalese education authorities have decided to expand primary education in national languages including Wolof, Pular, and Diola to 12 out of 14 regions by 2024, recognizing that many students struggle with French, the official language of instruction. Complementary initiatives, such as the Ndaw Wune program (ARED, 2021), employ Wolof, Serer, and Pular to reinforce foundational reading and mathematics skills. Initial evaluations indicate significant improvements in student achievement, demonstrating the practical effectiveness of mother tongue-based interventions.

Beyond academic outcomes, mother tongue instruction contributes to cultural preservation, social cohesion, and sustainable development, fostering linguistic identity, community participation, and intergenerational transmission of knowledge. Additionally, experimental programs that combine national languages with French have shown notable success in improving student performance, reinforcing the value of bilingual approaches in multilingual contexts.

Despite these advances, challenges remain: According to OECD (2018), fewer than 10% of 15 year old Senegalese students reach minimum proficiency levels in reading, mathematics, and science. This underscores the urgency of scaling up mother tongue and bilingual programs as a strategy to enhance educational quality, reduce school failure, and ensure more equitable learning outcomes.

3.6. Synthesis

Across administrative records, program evaluations, and international syntheses, several patterns emerge:

- Institutional expansion of bilingual education in Senegal is substantial.
- Targeted remedial programs show promising results under quasi-experimental evaluation.
- International literature consistently associates L1 instruction with improved early learning indicators
- Nevertheless, evidence strength varies across sources. Administrative coverage data do not directly measure learning outcomes, and longitudinal national assessments remain limited.

Therefore, the findings of this study remain interpretive and contextual, consistent with its qualitative and descriptive design.

3.7. Limitations and Challenges in Senegal

Despite the undeniable advantages of mother tongue instruction, its implementation in Senegal faces several significant limitations and challenges. These challenges span linguistic, pedagogical, social, and institutional dimensions, and must be addressed to fully realize the potential of bilingual education.

Multiplicity of national languages:

Senegal is home to more than 20 national languages, six of which are officially codified for educational purposes: Wolof, Pulaar, Serer, Diola, Soninke, and Mandingo. In regions with high linguistic diversity, selecting a single language of instruction can be challenging, and there is a risk that students whose mother tongue differs from the chosen language may experience exclusion or reduced engagement.

Lack of Educational Resources

The availability of textbooks, teaching materials, and digital content in national languages remains limited. Additionally, many national languages suffer from poor spelling standardization and a lack of technical terminology, particularly in scientific and mathematical disciplines. This shortage of resources constrains teachers' ability to deliver high-quality instruction and limits students' opportunities to develop comprehensive subject knowledge in their mother tongue.

Insufficient Teacher Training

Many teachers have not received formal training in bilingual pedagogy or in the written use of national languages. Even trained educators sometimes struggle with standardized spelling, grammar, and language conventions, which can reduce the effectiveness of instruction and undermine students' learning experiences.

Transition to French

While early education emphasizes mother tongue instruction, the Senegalese education system remains predominantly French-speaking from middle school onward. The transition from mother tongue to French can be abrupt if not carefully managed, often resulting in a temporary decline in student performance. Ensuring a gradual and well-supported transition is critical to avoid learning gaps and to maintain students' confidence and academic progress.

Social Perception and Prestige of French

French is widely perceived as a language of social mobility, professional opportunity, and access to higher education. Some families fear that early instruction in the mother tongue may delay mastery of French, leading to reluctance in fully supporting bilingual education programs. This perception can affect student motivation and community buy-in for mother tongue initiatives.

The cost of implementing bilingual education is substantial, including the production of textbooks, teacher training, and awareness campaigns. Budget allocations for mother tongue instruction are often lower than for traditional Francophone programs, limiting the scale, quality, and sustainability of bilingual initiatives.

Lack of Systematic Monitoring and Evaluation

There is a paucity of longitudinal studies tracking cohorts of students educated in national languages. This makes it difficult to obtain reliable data to evaluate program effectiveness, inform policy adjustments, or justify further investments in bilingual education. The absence of systematic monitoring also limits the ability to identify best practices and address emerging challenges effectively.

Summary

While mother tongue instruction offers considerable cognitive, academic, and socio-cultural benefits, these challenges highlight the need for strategic planning, resource allocation, teacher training, and policy support. Addressing these limitations is essential for Senegal to scale bilingual programs effectively, maximize learning outcomes, and achieve the goals of inclusive and quality education as outlined in the PAQUET/EF framework.

4. Recommendations

Mother tongue instruction represents a strategic lever for promoting inclusive, equitable, and high-quality education. Both national and international experiences demonstrate that progressive bilingual education, which combines mother tongue instruction with the gradual introduction of French, enhances learning outcomes, strengthens student engagement, and fosters cognitive development.

Empirical evidence shows that students who begin their education in their mother tongue achieve higher reading comprehension, better academic performance, and greater confidence compared to those taught exclusively in a non-native language. Programs such as MOHEBS and Ndaw Wune in Senegal illustrate the practical benefits of mother tongue-based instruction, particularly in rural and linguistically diverse communities. These initiatives contribute not only to academic success but also to the preservation of linguistic and cultural heritage, social cohesion, and sustainable development.

However, realizing the full potential of mother tongue instruction requires addressing challenges related to language diversity, teacher training, resource availability, and the transition to French, as well as ensuring systematic monitoring and adequate policy support. When effectively implemented, mother tongue-based bilingual education emerges as a powerful tool for improving educational equity, fostering lifelong learning, and promoting the holistic development of students across Senegal.

Based on the evidence presented in this study, several strategic recommendations can be made to enhance the effectiveness, inclusivity, and sustainability of mother tongue instruction in Senegal:

- ***Inclusive Language Planning***

Contextualized Language Assignment: Clearly identify the language(s) of instruction for each school district in consultation with local communities, parents, and cultural associations, thereby reducing the risk of exclusion for students whose mother tongue differs from the instructional language.

- ***Linguistic Mapping***

Develop a linguistic map of the regions, showing the distribution of local languages.

This tool, created in collaboration with local authorities and cultural organizations, can guide policy decisions and ensure that educational planning is responsive to regional linguistic realities.

- ***Strengthening Educational Production***

High-Quality Teaching Materials: Produce and distribute textbooks, audiovisual aids, and digital resources in the main national languages on a massive and sustained scale. Materials should cover all disciplines, including science and mathematics, to ensure that instruction in mother tongues supports comprehensive learning.

Partnerships for Resource Development: Collaborate with local publishing houses, NGOs (such as ARED), and educational specialists to ensure that resources are pedagogically sound, culturally relevant, and widely accessible.

- ***Teacher Training and Support***

Mandatory Bilingual Pedagogy Training: Integrate a compulsory bilingual teaching module into initial and continuing teacher training programs.

Practical Capacity-Building: Offer hands-on workshops, certification in bilingual teaching, and peer mentoring to strengthen teachers' linguistic proficiency and pedagogical skills in the national language.

- ***Gradual Transition to French***

Phased Introduction of French: Introduce French gradually from the second or third grade, alongside mother tongue instruction, to prevent abrupt learning gaps.

Bilingual Support Strategies: Employ co-teaching methods, bilingual textbooks, and comparative vocabulary exercises to facilitate smooth transitions and ensure students develop strong literacy skills in both languages.

- ***Community and Parental Awareness***

Communication Campaigns: Organize campaigns to inform families and communities about the benefits of mother tongue instruction, addressing the perception that French alone ensures success.

Engagement Tools: Use community radio, school open days, and testimonials from former students to highlight positive outcomes and encourage community buy-in.

- ***Strengthening Funding and Resource Allocation***

Dedicated Budget Lines: Allocate specific funding for bilingual education in the national annual Finance Act to ensure program sustainability.

Public-Private Partnerships: Engage in advocacy and collaborations with private sector actors and development partners to supplement government funding and enhance program reach.

- **Monitoring and Evaluation**

Systematic Assessment: Establish a comprehensive monitoring and evaluation system to track student achievement, resource quality, and socio-educational impact.

Evidence-Based Policy Adjustments: Use performance indicators, annual surveys, and longitudinal studies to inform policy decisions and adjust programs based on empirical evidence, ensuring continuous improvement and accountability.

These recommendations aim to maximize the cognitive, academic, and socio-cultural benefits of mother tongue instruction, support a smooth bilingual transition, and create a sustainable, inclusive education system that strengthens both learning outcomes and cultural identity in Senegal.

5. Conclusion

Mother tongue education represents a strategic lever for promoting inclusive, equitable, and high-quality education, while simultaneously preserving cultural heritage. Both national and international experiences confirm that progressive bilingualism, which combines instruction in the mother tongue with French, leads to significant improvements in learning outcomes, enhances student engagement, and strengthens learners' cultural and linguistic identity.

Beyond immediate gains in reading, writing, and numeracy, mother tongue-based education contributes to social cohesion and sustainable development by ensuring that education is accessible, culturally relevant, and meaningful for all students. It recognizes and values learners' linguistic and cultural backgrounds, thereby reducing inequalities among children from diverse socioeconomic and linguistic contexts.

Furthermore, mother tongue instruction can help combat early school leaving, promote gender equity by providing greater educational opportunities for girls, and encourage parental involvement, as families are more likely to support and guide their children's learning when instruction is delivered in a language they understand and use daily.

In conclusion, mother tongue-based bilingual education is not only an effective pedagogical approach but also a potentially important policy instrument for strengthening equity and learning outcomes... It fosters academic success, equity, cultural continuity, and social inclusion, making it a cornerstone of educational strategies aimed at achieving quality and sustainable learning for all in Senegal and beyond.

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Appendix

Structured Classroom Observation Grid

A. General Information About the Observed Session

Date of observation	<input type="checkbox"/>
Region	<input type="checkbox"/>
Type of school (Bilingual / Conventional)	<input type="checkbox"/>
Grade level (Grade 1 / Grade 2 / Grade 3)	<input type="checkbox"/>
Subject observed (Reading / Mathematics / Other)	<input type="checkbox"/>
Duration of session (45–60 minutes)	<input type="checkbox"/>
Observer	<input type="checkbox"/>

B1. Language Use

Indicators	Description of Observations	Coding / Assessment
Primary language of instruction		
Code-switching patterns		
Transition strategies		
Student reactions to language shifts		

B2. Classroom Interaction

Indicators	Description of Observations	Coding / Assessment
Teacher questioning strategies		
Student participation		
Peer interaction		
Classroom climate		

B3. Literacy Practices

Indicators	Description of Observations	Coding / Assessment
Phonological awareness activities		
Reading practices		
Writing activities		
Comprehension questioning		

B4. Numeracy Instruction

Indicators	Description of Observations	Coding / Assessment
Language used for concept explanation		
Evidence of student understanding		
Use of contextualized examples		
Use of concrete materials		

C. Overall Session Assessment

Student engagement	
Clarity of explanations	
Coherence of language transition	

D. Additional Qualitative Notes

Space reserved for open