

The Impacts of Non-Governmental Organization (Ngo) Involvement on Literacy Levels in Primary Schools of Lumezi District, Zambia

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Abstract – This study examined the impacts of Non Governmental Organization (NGO) involvement on literacy levels in primary schools in Lumezi District, Eastern Province, Zambia. It addressed a persistent empirical gap about whether and how NGO literacy interventions translated into measurable improvements in early grade reading and writing. The study situated the problem within national and district evidence showing continued low learning outcomes despite increased NGO presence and framed the inquiry around program types, effectiveness, collaboration with local education authorities, changes in literacy before and after NGO engagement, and implementation challenges. A convergent mixed methods design was employed. Quantitative data were collected through an adapted Early Grade Reading Assessment (EGRA) style literacy test administered to Grade 2 and Grade 4 pupils and structured questionnaires for teachers and school administrators; qualitative data were gathered via semi structured interviews with NGO staff and DEBS officials, focus group discussions with parents and teachers, and document review. Quantitative analyses used descriptive statistics, paired samples t tests and ANOVA to compare pre and post intervention outcomes; qualitative data were analysed thematically and triangulated with quantitative findings to explain mechanisms and contextual constraints. The study produced evidence that NGO interventions produced short term gains in reading fluency and decoding where structured phonics, regular coaching and provision of leveled readers were implemented, while sustainability depended on the strength of collaboration with district education authorities, teacher retention, and local ownership. The findings underscored that coordination with DEBS and integration with national literacy frameworks enhanced continuity, whereas limited follow up, funding volatility and language mismatch constrained long term impact. The research concluded with recommendations to strengthen joint planning, embed capacity building within district systems, and prioritise mother tongue materials during early grades to improve and sustain literacy gains.

Keywords – NGO involvement; literacy levels; primary education; Lumezi District; early grade reading; Zambia..

I. INTRODUCTION

This chapter introduced the study that examined the impacts of Non Governmental Organization (NGO) involvement on literacy levels in primary schools in Lumezi District. The research responded to a widening policy and practice concern: despite expanded inputs from NGOs in rural Zambian schools, measurable literacy outcomes remained uneven. The chapter set out the rationale, the research problem, objectives and questions, and it described the study's scope, significance and limitations. It also defined key terms used throughout the report and positioned the inquiry within both national education priorities and evidence from comparable contexts.

The study adopted a pragmatic stance, recognising that NGOs had become prominent actors in delivering literacy supports—teacher training, reading materials and community reading activities—particularly in areas where government resources were constrained. While previous evaluations and program reports suggested positive effects of structured early grade reading interventions, few studies had systematically compared pre and post intervention literacy outcomes in Lumezi District or examined the interaction between NGO programming and district systems. The chapter therefore established the need to move beyond activity inventories toward rigorous, mixed method assessment of outcomes and mechanisms that shaped those outcomes.

Finally, the chapter outlined how subsequent chapters would address the literature, methodological choices, empirical findings and their implications for policy and practice. It clarified that the study focused on Grade 2 and Grade 4 learners in selected primary schools with at least one year of NGO engagement, thereby enabling an examination of both immediate learning gains and factors affecting sustainability.

Background of the study

Early grade literacy has been widely recognised as foundational for subsequent learning, social participation and economic opportunity; nations with persistent low early reading scores face long term human capital constraints (World Bank, 2020). In Zambia, national assessments and international indicators had repeatedly signalled that many primary pupils performed below expected grade level literacy benchmarks, with rural districts disproportionately affected (World Bank, 2020). Lumezi District, situated in Eastern Province, reflected these national patterns: schools experienced shortages of teaching and learning materials, variable teacher preparedness for early grade reading pedagogy, and limited local capacity for sustained pedagogical support.

NGOs had increasingly filled gaps in the education ecosystem by delivering targeted literacy interventions. Programmes typically combined structured phonics instruction, teacher professional development, provision of leveled readers and community literacy activities, and they

were often presented as complements to government initiatives such as the Primary Literacy Programme (PLP) (Mwanza & Phiri, 2021). Evaluations from neighbouring districts and regional programmes indicated that structured early grade reading interventions implemented with fidelity produced measurable gains in oral reading fluency and comprehension (Kimeu, 2018; Kabwe & Phiri, 2022). Yet other reviews cautioned that gains often declined after NGO exit when district systems were not sufficiently engaged to sustain practices (Mbewe et al., 2023; Kasonde, 2020).

Scholars emphasised that the effectiveness of NGO interventions depended not only on the intervention model but also on contextual factors: alignment with national curricula, linguistic appropriateness of materials, transport and infrastructure constraints in rural settings, teacher turnover, and the quality of NGO–government collaboration (Tembo & Banda, 2020; Kitwe & Chisala, 2023). This study therefore situated its inquiry in the recognition that Lumezi’s literacy outcomes must be understood as the product of interventions and their interactions with systemic and local realities.

Problem Statement

Although NGOs had become visible partners in Zambia’s basic education sector, evidence from Lumezi District suggested that literacy outcomes among primary pupils remained below national expectations. Schools in the district reported varying levels of NGO activity—mobile libraries, teacher workshops, reading camps—but standardised assessments and classroom observations indicated persistent deficits in decoding, fluency and comprehension. The central problem was that while NGOs invested resources and introduced pedagogical models, there was limited systematic evidence on the extent to which those inputs translated into sustained improvements in pupils’ reading and writing skills in Lumezi.

Furthermore, the degree of collaboration between NGOs and the district education structures appeared inconsistent: some initiatives were developed in close coordination with DEBS and aligned to the national literacy framework, while others operated with minimal district engagement. This variability raised questions about ownership and sustainability. Additional complicating factors—teacher attrition, language diversity in early grades, and constrained school budgets—made it difficult to isolate NGO impact from other determinants of literacy. Consequently, policymakers, NGOs and district officers lacked robust, context specific evidence to guide allocation of resources, prioritise interventions, and design transition strategies after project completion.

The study therefore sought to assess the actual influence of NGO involvement on literacy outcomes in selected primary schools in Lumezi District, to compare literacy levels before and after NGO engagement, and to identify the contextual factors that enabled or hindered the persistence of learning gains. By generating empirical evidence on both outcomes and mechanisms, the research aimed to inform

more coordinated, sustainable approaches to improving early grade literacy in rural Zambian contexts.

Purpose of the study

The purpose of this study is to examine how Non – Government Organization (NGO) involvement influences literacy levels in primary schools of Lumezi District. Specifically, the study seeks to determine the extent to which NGO literacy programmers, resources and support strategies contribute to improvements in pupils’ reading and writing abilities and to understand the factors that enhance or hinder the effectiveness and sustainability of these interventions.

Research Objectives

General objective

To examine the impacts of NGO involvement on literacy levels in primary schools of Lumezi District.

Specific objectives

- To identify the types of literacy programmes that NGOs implemented in selected primary schools.
- To assess the effectiveness of NGO led interventions on pupils’ reading and writing skills.
- To evaluate the level and quality of collaboration between NGOs and local education authorities (DEBS).
- To compare literacy levels before and after NGO involvement.
- To explore the challenges that NGOs faced when implementing literacy programmes in rural primary school contexts.

Research questions

- What types of literacy programmes did NGOs implement in primary schools of Lumezi District?
- How effective were NGO led interventions in improving pupils’ reading and writing skills?
- To what extent did NGOs collaborate with local education authorities in literacy development?
- What changes occurred in literacy levels before and after NGO involvement?
- What challenges did NGOs encounter when implementing literacy programmes in rural primary schools?

Characteristics of the phenomena

The phenomena under investigation combined two interrelated elements: the presence and programming strategies of NGOs, and the observable literacy outcomes among early grade pupils. NGO involvement manifested in diverse modalities: structured curricular supplements (phonics and guided reading), teacher professional development and coaching, provision of leveled readers and classroom materials, and community outreach such as reading camps or parental literacy sessions. These interventions were typically projectised, time bound and

donor funded, producing distinct patterns of inputs, activities and short term outputs in participating schools (Kimeu, 2018; Makori & Hoorens, 2020).

Literacy outcomes exhibited multiple measurable characteristics. At the learner level, outcomes included decoding accuracy, oral reading fluency (words per minute), reading comprehension, and writing ability—each of which could be quantified through standardized early grade assessments (RTI International, 2018). At the classroom level, characteristics included the frequency and fidelity of guided reading sessions, the use of leveled texts, teacher instructional practices, and formative assessment routines. At the system level, characteristics comprised the degree of alignment with the national curriculum, the extent of DEBS engagement in planning and monitoring, and the presence of mechanisms for sustaining practice after project closure (Mwanza & Phiri, 2021).

Importantly, the phenomena displayed temporal and contextual variability: some schools demonstrated immediate gains during active NGO support, while others showed limited change; in some cases gains dissipated after NGO exit. The phenomena were therefore dynamic and contingent, reflecting interactions among programme design, teacher capacity, classroom resources, linguistic fit of materials, and the strength of local educational governance (Tembo & Banda, 2020; Mbewe et al., 2023).

Factors related to the phenomena

Multiple interrelated factors shaped both NGO programming and literacy outcomes in the study context. Programme design factors included the instructional model adopted (for example, structured phonics versus whole language approaches), the intensity and duration of teacher coaching, and the provision of leveled texts and teaching aids. Empirical syntheses suggested that interventions with clear, scripted lessons, regular in class coaching and plentiful graded readers produced larger short term gains in decoding and fluency (McEwan, 2018; Kabwe & Phiri, 2022).

Institutional and governance factors were central. The degree of NGO collaboration with District Education Board Secretary (DEBS) offices influenced alignment with national policies and the potential for embedding practices within district routines. Where NGOs conducted joint planning, shared monitoring data, and engaged DEBS in training, interventions were more likely to be continued or adapted locally after donor funding ended (Santos et al., 2018; Mwanza & Phiri, 2021). Conversely, bypassing district structures often led to limited ownership and a rapid decline in activities post project (Kasonde, 2020).

Human resource factors also mattered. Teacher qualifications, prior experience with early grade pedagogy, attendance and turnover affected implementation fidelity. High turnover eroded institutional memory and reduced cumulative gains from capacity building efforts (Makori & Hoorens, 2020). The availability and motivation of community volunteers, who often supported reading

corners or reading aloud activities, influenced programme reach, but volunteer retention was sensitive to incentives and supervision (Adewumi & Ogunleye, 2021).

Contextual constraints included logistical and infrastructural issues—poor roads, limited transport for materials, and seasonal disruptions—that affected the delivery and regularity of interventions in rural Lumezi (Tembo & Banda, 2020). Financial sustainability was a recurring factor: short term grants limited continuity and constrained schools' ability to procure replacement texts or fund ongoing coaching once projects ended (Mbewe et al., 2023).

Linguistic and cultural fit of materials introduced additional complexity. Zambia's multilingual classrooms required adaptation of reading materials to learners' home languages in early grades; programmes that neglected mother tongue support risked weaker comprehension and limited transfer to English literacy (Kitwe & Chisala, 2023). Finally, household factors—parental literacy, home reading practices and socio economic status—interacted with school interventions to shape individual pupil trajectories, making attribution to NGO inputs contingent on broader ecological conditions.

Collectively, these factors suggested that impact depended less on any single element and more on the coherence among programme design, institutional alignment, teacher capacity and contextual supports. The study therefore examined interventions and outcomes with attention to these interacting determinants to provide actionable insights for practitioners and district policymakers.

Global Statistical Scenario

Global evidence indicated that low early grade literacy remained a major development challenge despite expanded access to primary schooling. International assessments and global monitoring reports had estimated that learning poverty — the share of 10 year olds unable to read and understand a simple text — affected a substantial proportion of children in low and middle income countries, with sub Saharan Africa exhibiting some of the highest rates (World Bank, 2020). By 2020, the World Bank reported that learning poverty in many African countries exceeded 50 per cent, signalling that enrolment gains had not automatically translated into learning gains (World Bank, 2020). UNESCO's global literacy monitoring likewise documented persistent deficits in foundational reading and noted that progress had been uneven across regions and income groups (UNESCO, 2021).

Meta analyses and randomized evaluations aggregated across low income contexts had demonstrated that structured early grade reading interventions produced measurable improvements in foundational skills, but effect sizes varied widely by program design, implementation fidelity and contextual fit (McEwan, 2018; Nieminen & Malambo, 2019). Interventions that combined teacher coaching, provision of leveled readers, and scripted lesson sequences typically delivered larger short term gains in

decoding and oral reading fluency than stand alone material donations (RTI International, 2018; McEwan, 2018). International reviews also emphasised that interventions implemented in partnership with local education authorities produced more durable outcomes through increased ownership and systemic integration (Santos, Langa & Chongo, 2018).

Funding patterns and program duration emerged as statistical determinants of sustainability. Cross country analyses showed that short term, grant funded projects frequently produced sizeable gains during active implementation but that effects tended to diminish where transition mechanisms to government systems were weak (Mbewe, Mulenga & Tembo, 2023). Statistical syntheses therefore underscored a dual finding: NGOs and targeted reading programmes had proven potential to reduce learning poverty in the short term, and the probability of sustained impact increased when programs were aligned with national curricula, used mother tongue instruction in early grades, and partnered closely with district authorities (McEwan, 2018; Kitwe & Chisala, 2023). These global patterns framed the empirical rationale for investigating NGO contributions to literacy in Lumezi District as part of a broader effort to understand how local implementation conditions modulated statistically observed program effects.

Local Statistical Scenario

Zambia's national and sub national indicators reflected the global pattern of high learning poverty coupled with uneven program effects. National reports and studies had documented that a large share of Zambian primary pupils scored below grade level benchmarks in reading and comprehension, with rural districts generally performing worse than urban centres (World Bank, 2020). Regional evaluations and district assessments in Eastern Province showed variability: some schools that participated in structured early grade reading programmes recorded notable increases in oral reading fluency, while others exhibited minimal change, often linked to differences in program intensity, teacher coaching and material availability (Kabwe & Phiri, 2022; Tembo & Banda, 2020). Program evaluations in Zambia reported average effect sizes for NGO supported reading interventions ranging from modest to moderate (0.25–0.45 standard deviations) for fluency and comprehension depending on intervention fidelity (Niemenen & Malambo, 2019; Kabwe & Phiri, 2022). Post implementation monitoring in several provinces had revealed declines in gains where district systems had not been fully engaged and where funding ceased, suggesting that district level coordination and resource planning were critical determinants of whether statistical gains persisted (Mbewe, Mulenga & Tembo, 2023; Kasonde, 2020). These local statistics provided empirical grounding for selecting Lumezi District as a case where NGO activity occurred but where sustained literacy improvements were not uniformly evident.

Scope of the Study

The study examined NGO involvement in literacy within selected primary schools of Lumezi District, Eastern Province, Zambia. It focused on Grade 2 and Grade 4 cohorts because these grades captured early grade foundational skills and the transition toward grade appropriate comprehension; the design permitted pre and post intervention comparisons. The geographical scope was confined to four purposively selected schools that had received at least one year of NGO literacy support, thereby enabling investigation of both immediate effects and indicators of sustainability. Institutional actors included teachers of Grades 2 and 4, headteachers, parent representatives, District Education Board Secretary (DEBS) officers and NGO literacy staff; this inclusive stakeholder set facilitated triangulation of quantitative pupil outcomes with qualitative accounts of implementation and coordination.

Methodologically, the study employed a convergent mixed methods approach: an adapted EGRA style pupil assessment and structured questionnaires generated quantitative measures of decoding, fluency and writing; semi structured interviews, focus group discussions and document review produced qualitative insights into program fidelity, collaboration and contextual constraints. The temporal scope covered the most recent 12–24 months of NGO activity in each selected school to capture both active implementation and early post implementation dynamics. The study excluded secondary schools and urban settings outside Lumezi District and did not attempt national generalisation; findings were intended to be contextually informative for district policy and NGO programming decisions.

Usefulness of the study in the present scenario

The study generated evidence that was immediately useful to multiple stakeholders operating at national, district and community levels. For district planners and DEBS officials, the empirical comparison of pre and post intervention literacy metrics provided a robust basis for prioritising resource allocation and for negotiating roles with NGOs: quantitative gains disaggregated by school and grade enabled DEBS to identify practices worth scaling and to target schools that required follow up support (Kabwe & Phiri, 2022). Thematic findings on collaboration and sustainability informed district strategies to formalise joint planning, data sharing and transition agreements, thus reducing the probability that short term gains would evaporate after donor withdrawal (Santos, Langa & Chongo, 2018; Mbewe, Mulenga & Tembo, 2023).

For NGOs and programme designers, the study offered actionable lessons about intervention design and contextual adaptation. Evidence linking specific components (structured phonics, frequent coaching, availability of leveled readers) to greater learning gains clarified which program elements warranted continued investment, while qualitative accounts of logistical and linguistic constraints directed implementers to prioritise mother tongue resources and more realistic transport and distribution plans for rural settings (RTI International, 2018; Kitwe & Chisala, 2023).

The assessment of teacher retention and capacity highlighted the need for embedded coaching models that could be absorbed into district professional development systems rather than external, time limited workshops (Makori & Hoorens, 2020).

For schools and communities, the study validated local observations and provided evidence to support advocacy for sustained support. Parent and teacher data clarified the role of home reading practices in reinforcing school interventions, thereby informing community level literacy campaigns and PTA activities. For academia and development researchers, the study added context specific data to the Zambian evidence base, enabling future meta analyses and comparative studies to account for district level variation. Finally, policymakers at ministry and donor levels could use the study's findings to refine funding models toward multi year, government aligned interventions that combined material provision with systemic capacity building—an approach the literature suggested would maximise both short term impact and long term sustainability (McEwan, 2018; Mbewe, Mulenga & Tembo, 2023).

Operational Definitions

- Non Governmental Organization (NGO): an independent, legally constituted organisation created by private individuals or groups that implemented humanitarian, development or advocacy programmes (Lewis & Kanji, 2009).
- Literacy: the capacity to read, write and comprehend texts at levels necessary for communication, learning and participation in daily life; operationalised here as decoding accuracy, oral reading fluency and reading comprehension (UNESCO, 2021).
- Literacy Program: a structured set of pedagogical activities, curricula and resources aimed at improving reading and writing skills among learners (Rogers, 2016).
- Intervention: a set of planned actions—teacher training, provision of leveled readers, coaching, community engagement—introduced to improve literacy outcomes (Slavin, 2020).
- Reading Proficiency: the measurable ability to decode and understand texts, assessed through standardized early grade instruments (RTI International, 2018).
- Educational Collaboration: cooperative planning, implementation and monitoring between NGOs, schools and DEBS to achieve shared literacy goals (Hargreaves & Fullan, 2012).
- Sustainability: the continued practice and institutionalisation of effective literacy

approaches after external funding or direct NGO support ended (Kasonde, 2020).

Chapterization

The thesis comprised five chapters organised to provide a coherent narrative from problem definition to conclusions and recommendations. Chapter One introduced the study, articulated the background, problem statement, objectives, research questions, scope and operational definitions; Chapter Two reviewed theoretical and empirical literature on NGO literacy interventions, program effectiveness, collaboration and implementation challenges; Chapter Three described the methodological approach, sampling, instruments, data collection and analysis procedures, ethical considerations, work plan and budget; Chapter Four presented empirical results, integrating quantitative assessment outcomes with qualitative themes from interviews and FGDs while triangulating findings across sources; Chapter Five discussed the findings in relation to the literature, drew conclusions, offered policy and practice recommendations, acknowledged limitations and suggested directions for future research.

Chapter summary

This chapter had established the foundation for the study by locating the research problem within national and international concerns about early grade literacy and by specifying the purpose and objectives of the inquiry. It summarised global and local statistical patterns that motivated the case study of Lumezi District and delineated the study's scope, methodological focus on Grades 2 and 4, and stakeholder boundaries. The chapter also identified interrelated factors that shaped NGO programming and literacy outcomes—programme design, institutional collaboration, teacher capacity, logistical constraints, language fit and household practices—and provided clear operational definitions to ensure conceptual clarity. Finally, the chapter outlined the thesis structure across five chapters and explained the study's practical relevance for DEBS, NGOs, schools and policy actors, thereby setting the stage for the literature review and the empirical investigation that followed.

II. LITERATURE REVIEW

1. Overview

This chapter reviewed theoretical and empirical literature relevant to the impacts of Non Governmental Organization (NGO) involvement on early grade literacy in primary schools. It established a conceptual scaffold for the study by synthesising evidence on five interrelated themes: types and modalities of NGO literacy programmes; measured effectiveness of those programmes on decoding, fluency and comprehension; the nature and quality of NGO–government collaboration; temporal patterns of literacy change before, during and after NGO engagement; and implementation constraints in rural contexts that mediated programme outcomes. The review drew on international meta analyses, regional evaluations from sub Saharan Africa, national and district studies from Zambia and

neighbouring countries, and program reports that collectively illuminated both promising models and recurrent limitations. Sources ranged from randomized evaluations and quasi experimental studies to qualitative implementation reviews and post implementation

The chapter was organised to move from descriptive to analytic threads. It began by mapping the common intervention components NGOs employed—structured phonics, guided reading, teacher coaching, provision of leveled texts and community mobilisation—and considered how those components were operationalised across different contexts. It then examined evidence of impact, emphasising effect sizes, outcome metrics and the methodological rigour of evaluations. The next section interrogated how collaboration with district education authorities influenced both fidelity and sustainability, drawing on comparative studies that contrasted NGO only sites with jointly managed programmes. The review subsequently addressed longitudinal patterns, presenting evidence of immediate gains and subsequent retention or decline of outcomes after NGO withdrawal. Finally, the chapter analysed cross cutting implementation constraints—teacher turnover, linguistic mismatch, transport and logistical barriers, and short term financing—that

Throughout the review, attention was given to methodological caveats that shaped interpretation: heterogeneity in outcome measures (for example, differing EGRA subtests and scoring conventions), variation in treatment intensity and duration, selection biases in purposive programme sites, and variable use of control or comparison groups. Where possible, the synthesis prioritised studies with transparent sampling, baseline measures, and inferential analyses, while contextualising findings from qualitative and programmatic reports that illuminated mechanism and process. This integrated approach aimed to generate an evidence base that was analytically rigorous yet sensitive to the local realities that the present study in Lumezi District would need to address.

2. Empirical Literature Review

Empirical studies on NGO led literacy interventions in low and middle income countries had produced mixed but instructive evidence about what worked, for whom, and under what conditions. Meta analytic and randomized research consistently showed that structured early grade reading programmes produced measurable improvements in foundational skills when interventions were delivered with fidelity, resourced with graded texts and coupled with sustained coaching (McEwan, 2018; RTI International, 2018). McEwan's meta analysis identified that programmes with explicit phonics elements and frequent guided practice tended to yield larger gains in decoding and fluency than diffuse or ad hoc material provision (McEwan, 2018). The EGRA toolkit and related studies provided standardised measurement approaches that enabled comparisons across contexts and underscored the value of oral reading fluency and comprehension as sensitive indicators of programme impact (RTI International, 2018).

Regional evidence from sub Saharan Africa corroborated these general patterns while highlighting contextual contingencies. Randomized and quasi experimental evaluations in East and Southern Africa reported moderate effect sizes for combined packages of teacher training, coaching and leveled reader distribution (Nieminen & Malambo, 2019; Makori & Hoorens, 2020). For example, programme evaluations by Room to Read and similar actors found effect sizes between 0.3 and 0.5 standard deviations for specific reading constructs where coaching was intensive and text supply adequate (Makori & Hoorens, 2020). These studies were methodologically robust where they employed baseline–endline comparisons and control groups, though they sometimes suffered from attrition and implementation heterogeneity across schools.

Country level studies in Zambia and neighbouring Malawi provided directly relevant empirical context. Kabwe and Phiri (2022) reported that an NGO reading intervention in Chipata District increased mean oral reading fluency by approximately 30 words per minute over eight months relative to comparison schools; the study used pre and post assessments and controlled for basic demographic covariates. Jiru et al. (2019) in Malawi documented sustained improvements over three years where interventions included embedded coaching and system level engagement, though they cautioned that sustainability required formalised handover plans and district budgetary commitment. These studies employed mixed methods designs that combined quantitative assessment with qualitative process evaluation, which strengthened causal inference about mechanisms (teacher practice change, classroom use of leveled texts) beyond simple before–after summaries.

Conversely, several empirical reviews and post implementation studies signalled the fragility of gains when system integration was weak. Mbewe, Mulenga and Tembo (2023) produced a post implementation review in Zambia showing that reading proficiency in some programme cohorts declined to near baseline within 18–24 months of NGO exit. Their analysis attributed the decline to several measurable factors: absence of routine in service coaching after donor withdrawal, depletion or deterioration of leveled texts, and teacher turnover that interrupted accumulated capacity. Similarly, Kasonde (2020) argued that short term grant cycles and absence of budgetary transition plans frequently undermined programme continuity despite positive short term outcomes.

Empirical work also unpacked the role of NGO–government collaboration. Comparative evaluations found larger and more enduring effects where NGOs worked in partnership with district education authorities, conducted joint training, shared monitoring data, and embedded coaching within DEBS routines (Santos, Langa & Chongo, 2018; Mwanza & Phiri, 2021). Studies that compared NGO only versus jointly managed sites observed higher post project retention of practices and more systematic incorporation of reading schedules into the school calendar

where DEBS participated actively (Santos et al., 2018). These studies often used matched comparison designs and implementation fidelity metrics to link partnership quality with outcome persistence.

Methodological strengths across high quality empirical studies included the use of standardised assessments (EGRA variants), baseline comparators, control or comparison groups, and mixed methods process evaluation that traced inputs to classroom practice. Weaknesses commonly observed were short follow up periods that limited assessment of sustainability, limited reporting on attrition and sampling procedures in program reports, and inconsistent attention to contextual covariates such as household literacy practices and pupil socio economic status that could confound attribution. Several studies relied on purposive selection of high performing or well connected schools, raising concerns about external validity for more remote, resource constrained settings like portions of Lumezi District (Tembo & Banda, 2020).

Language and cultural fit emerged as a recurrent empirical theme. Kitwe and Chisala (2023) documented that programmes neglecting mother tongue instruction in early grades produced weaker comprehension gains among learners whose first language differed from the language of instruction. Studies that intentionally developed materials in relevant early languages and trained teachers to scaffold transfer to English reported better comprehension outcomes and smoother progression in reading skills (McEwan, 2018; RTI International, 2018).

Finally, implementation level studies highlighted logistical constraints—transport for leveled readers, seasonal school accessibility, and volunteer retention—that materially affected programme dosage and equity of reach (Tembo & Banda, 2020; Adewumi & Ogunleye, 2021). These process findings were critical because they explained variance in measured impact beyond program design, demonstrating that two schools receiving ostensibly the same intervention could experience divergent outcomes due to differences in delivery reliability and local absorptive capacity.

In sum, the empirical literature indicated that NGO supported literacy interventions had clear potential to improve foundational reading skills when programmes combined structured instructional models, ongoing in class coaching, and adequate supplies of graded texts, and when they partnered meaningfully with local education authorities. However, the literature also cautioned that sustaining gains required explicit strategies for system integration, language adaptation, logistical planning and financial transition—issues that the present study in Lumezi District would investigate with particular attention to local dynamics and longitudinal patterns.

3. Theoretical Review

This section reviewed theoretical perspectives that had informed understanding of how NGO interventions could influence literacy outcomes in early grades. Three theoretical families were most salient in the literature and

in the design of this study: (1) the Input Process Output (IPO) and systems theories of educational change; (2) theories of teacher professional learning and instructional improvement; and (3) language acquisition and cognitive foundations of early reading. Each was explicated, its relevance to NGO led literacy work was evaluated, and strengths and limitations for the present study were considered.

Input Process Output and systems theories framed NGOs as external actors supplying inputs (materials, training, funding) that interacted with school level processes (teacher practice, classroom routines, monitoring) to produce learning outputs (decoding, fluency, comprehension). Systems perspectives emphasised feedback loops, institutional capacity and interdependence among actors (Hargreaves & Fullan, 2012). They helped explain why identical inputs could yield divergent outcomes across schools: variation in local absorptive capacity, governance, and routine monitoring shaped whether inputs were translated into sustained practice. The IPO framing was useful because it oriented measurement to multiple levels — inputs (texts, coaching), processes (lesson fidelity, frequency of guided reading), and outcomes (EGRA subtests) — thereby supporting the mixed methods design. Its limitation lay in its relative functionalism: without attention to power, incentives and political economy, IPO models risked understating

Theories of adult learning and teacher professional development underpinned expectations about how training and coaching would change classroom instruction. Situated learning, coaching based change models, and the concept of professional capital suggested that one off workshops rarely produced durable change unless coupled with sustained in class coaching, peer communities of practice, and institutional supports (Hargreaves & Fullan, 2012; Makori & Hoorens, 2020). Empirical reviews had shown that frequent coaching, job embedded professional development and instructional coaching increased fidelity and produced larger effect sizes than episodic training (McEwan, 2018). These theories were directly relevant: they foregrounded mechanisms by which NGOs' teacher development efforts would (or would not) translate into improved reading instruction. A limitation was that many coaching models assumed stable teacher cadres and sufficient managerial capacity to absorb coaching into district routines; high teacher turno

Cognitive and language acquisition theories provided foundational guidance on instructional design for early reading. Phonics and decoding were supported by cognitive models of word recognition; automaticity and fluency were framed in terms of repeated practice and scaffolding (RTI International, 2018). Theories of bilingual language development and transfer emphasised the centrality of mother tongue instruction in early grades to build comprehension and to scaffold transfer to the second language of instruction (Kitwe & Chisala, 2023). These theoretical positions justified programmatic choices such as structured phonics, graded readers in early languages, and

scaffolded comprehension activities. Strengths included strong empirical support from experimental and quasi experimental studies; limitations included the complexity of multilingual classrooms and the political and logistical challenges of producing and distributing mother tongue materials at scale.

A fourth, cross cutting theoretical perspective — the sustainability and institutionalisation literature — informed expectations about post project outcomes. Theories of policy implementation and institutionalisation suggested that practices became durable when they were routinised in local systems, authorised by official actors, resourced through local budgets, and socially embedded among practitioners (Santos, Langa & Chongo, 2018; Kasonde, 2020). This lens explained empirical findings where short term gains eroded in the absence of handover plans or budgetary commitments. Its practical implication was to measure not only immediate learning gains but also indicators of institutional ownership (DEBS involvement, budget lines, inclusion in school improvement plans). A limitation was the long timeframes often required to detect institutionalisation; short research cycles risked underobserving nascent but important processes.

In sum, theory had guided both programme design and evaluation choices. The IPO and systems frameworks justified a multi level measurement strategy; teacher learning theories directed attention to coaching intensity and fidelity; language acquisition theories supported emphasis on phonics and mother tongue materials; and institutionalisation theory foregrounded sustainability metrics. Each theoretical strand had explanatory power but also constraints: functionalist models underplayed political economy; coaching models assumed stable human resources; cognitive theories faced logistical constraints in multilingual settings; and institutionalisation perspectives required longitudinal observation. The present study therefore adopted an integrative theoretical stance that combined these perspectives to examine not only whether NGO inputs produced literacy gains but how and under what local conditions those gains persisted or declined.

4. Conceptual Framework

This section presented the conceptual framework that guided the study. The framework articulated how NGO inputs and contextual factors were expected to interact through process mechanisms to produce literacy outcomes, and how institutionalisation and sustainability mediators would influence the persistence of effects. The framework was orientated toward measurable constructs and analytical linkages to support the convergent mixed methods design.

Framework components and linkages

1. Inputs (Independent variables): NGOs provided three main categories of inputs that were operationalised in the study: (a) Instructional resources — leveled readers, teaching aids, scripted lesson plans; (b) Capacity building — teacher training workshops, in class coaching and refresher trainings; and (c) Community mobilisation — reading camps, PTA engagement and volunteer reader

programmes. These inputs were measured by program documentation (number/type of materials distributed), teacher reports (training hours, coaching frequency), and NGO activity logs.

Contextual Moderators: Local contextual factors moderated how inputs converted into classroom processes. Key moderators included: (a) Institutional alignment — degree of collaboration with DEBS, presence of joint planning and monitoring; (b) Human resource stability — teacher qualifications, attendance and turnover rates; (c) Linguistic fit — availability of mother tongue materials and teacher competence in local languages; and (d) Logistical constraints — transport, seasonal accessibility and school infrastructure. These moderators were measured through interviews, DEBS records, and school surveys.

Process Mechanisms (Mediators): The framework identified proximal mechanisms through which inputs were expected to influence learning: (a) Instructional fidelity — regularity and quality of guided reading lessons, accuracy of phonics instruction; (b) Teacher practice change — use of formative assessments, differentiated grouping, and interactive read aloud; and (c) Home school reinforcement — parental engagement in reading activities and community reading events. These mediators were observable in classroom observations, teacher questionnaires, and parental FGDs.

Outcomes (Dependent variables): Literacy outcomes were operationalised at learner and classroom levels: (a) Learner level — decoding accuracy, oral reading fluency (WPM), reading comprehension scores and writing performance as measured by an adapted EGRA and writing rubric; (b) Classroom level — frequency of guided reading sessions, proportion of pupils with access to leveled texts, and teacher use of formative assessments. Quantitative instruments provided standardized measures while qualitative data supplied explanatory depth.

Sustainability and Institutionalisation (Long term mediators): The framework included a pathway for long term persistence: institutional uptake (DEBS adoption of approaches, budget line inclusion) and programme handover mechanisms (training of district trainers, incorporation into school improvement plans) were treated as necessary conditions for outcomes to be sustained after NGO exit. These were measured through DEBS interviews, policy documents and administrative records.

Feedback loops and adaptation: The model recognised bi directional influences: process outcomes informed NGO adaptations (for example, changes in coaching intensity), and DEBS feedback shaped NGO programming. Monitoring and evaluation systems constituted an information pathway that allowed iterative improvement.

Analytical implications

The conceptual framework guided variable selection and the mixed methods analytic strategy. Quantitatively, the model implied mediation and moderation analyses: testing whether process mediators (instructional fidelity) explained the relationship between inputs and learning outcomes, and whether contextual moderators (teacher turnover, linguistic fit) altered effect sizes. Qualitatively, the model guided thematic coding to unpack mechanisms, governance relations and sustainability dynamics.

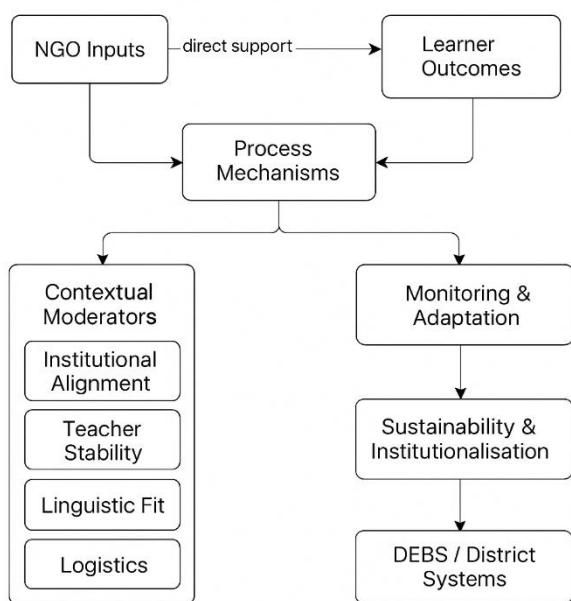


Figure 2.1: Conceptual Framework of NGO Involvement and Its Impact on Educational Outcomes in Lumezi District

Conceptual framework illustrating how NGO inputs influenced process mechanisms (instructional fidelity, teacher practice, home school reinforcement) to produce learner and classroom literacy outcomes, and how contextual moderators and sustainability pathways mediated persistence; feedback loops represented monitoring based adaptation and DEBS engagement.

Evaluation of the framework

The conceptual framework synthesised theory and empirical findings into an operational model suited to the study's mixed methods approach. Its strengths included explicit mediation and moderation pathways, incorporation of institutionalisation as a longitudinal condition, and alignment with standardised outcome measures (EGRA). It supported concrete hypotheses (for example, that instructional fidelity would mediate input–outcome links, and that strong DEBS collaboration would moderate effect persistence).

Limitations were acknowledged. The framework simplified complex political and economic dynamics that could influence NGO–government relations; it treated moderators as relatively discrete when, in practice, they were deeply interdependent (for example, teacher stability related to local labour markets and remuneration policies). It also

required longitudinal data to test sustainability claims robustly — a constraint for short research windows. Finally, measurement of some constructs (e.g., "instructional fidelity") relied on observational instruments that required rigorous training to ensure reliability.

The conceptual framework provided a coherent and testable map for the research. It linked tangible NGO inputs to observable classroom processes and learner outcomes while explicitly accounting for contextual modifiers and sustainability pathways. The framework thus oriented the study's instrumentation, data collection and analytic strategy toward identifying not only whether NGO involvement changed literacy outcomes in Lumezi District but also how those changes were produced and whether they were likely to endure.

Research Gap

Despite a growing corpus of empirical work on NGO supported early grade reading programmes in sub Saharan Africa and targeted evaluations in Zambia, important gaps persisted that limited both explanatory power and practical applicability for district level decision making. First, much of the published evidence had emphasised short term treatment effects measured during active implementation, with relatively few studies providing rigorous longitudinal follow up that captured the trajectory of gains after NGO withdrawal. Post implementation reviews had signalled declines in performance once support ceased (Mbewe, Mulenga & Tembo, 2023; Kasonde, 2020), yet systematic, multi wave measurement beyond 12–24 months remained rare. As a result, the literature produced plausible evidence of immediate efficacy for particular instructional packages, but it was less definitive about the conditions that sustained learning over medium and long time horizons. This limited capacity to inform policy decisions about transition

Second, many evaluations prioritised average treatment effects without adequately unpacking heterogeneity across schools, classrooms and learners. Studies reported mean effect sizes (McEwan, 2018; Nieminen & Malambo, 2019), but fewer investigations systematically modelled moderators such as teacher stability, DEBS engagement, linguistic fit of materials, or logistical constraints that the process literature identified as likely determinants of divergent outcomes (Tembo & Banda, 2020; Kitwe & Chisala, 2023). Where moderators were examined, analysis tended to be descriptive rather than inferential, limiting ability to test interaction hypotheses (for example, whether strong district collaboration amplified the effect of coaching intensity). This analytic gap reduced the usefulness of evidence for targeting interventions to contexts where they were most likely to succeed.

Third, the majority of high quality experimental and quasi experimental studies had been implemented in sites that were comparatively accessible and sometimes purposively selected for favourable implementation conditions (Makori & Hoorens, 2020; Kabwe & Phiri, 2022). Such selection biases raised questions about external validity for remote, resource constrained schools where transport, seasonal

accessibility and supply chains were more fragile. Implementation level reports repeatedly documented delivery difficulties in rural settings—book distribution failures, coach absenteeism, and volunteer attrition (Tembo & Banda, 2020; Adewumi & Ogunleye, 2021)—but rigorous causal studies rarely sampled the most marginal schools. Consequently, the literature offered limited guidance on program adaptations or cost effective delivery models appropriate for districts such as Lumezi with dispersed communities and weak infrastructure.

Fourth, language and cultural adaptation received increasing attention but was still under investigated in empirical impact studies. Several studies and reviews argued that mother tongue materials and deliberate scaffolding to English were principled and effective (RTI International, 2018; Kitwe & Chisala, 2023). However, there were few controlled comparisons that isolated the marginal contribution of mother tongue materials versus other components (coaching, text provision). The paucity of disaggregated experimental designs constrained the ability to prescribe language policy options tailored to multilingual classrooms typical of Zambia, where teacher competences in local languages and political considerations shape feasible choices.

Fifth, measurement and reporting practices introduced interpretive challenges. Studies used variations of EGRA and writing assessments, but scoring conventions, subtest choices and thresholds for “proficiency” differed across studies (RTI International, 2018; Nieminen & Malambo, 2019). Program reports sometimes omitted details on sampling frames, attrition, and fidelity metrics, reducing transparency and impeding meta analytic synthesis. Moreover, few studies integrated household level covariates (parental literacy, home reading practices, socio economic status) consistently, even though household factors were likely to moderate the effectiveness of school based literacy inputs (Miller et al., 2017). The result was an evidence base that was rich in case level narratives but uneven in comparability.

Sixth, theory driven causal mediation analyses were uncommon. While process evaluations described plausible mechanisms—improved instructional fidelity, increased guided reading frequency, teacher use of formative assessment—relatively few studies formally tested mediation pathways linking NGO inputs to learning gains through measured process variables. Without mediational testing, claims about “how” interventions produced results remained inferential rather than empirically substantiated (McEwan, 2018; Makori & Hoorens, 2020). This constrained the capacity of implementers to prioritise the essential components of complex programmes when resources were limited.

Finally, governance and sustainability mechanisms were under documented in ways that mattered for scale up. Evaluations often reported the presence or absence of DEBS engagement but seldom examined the institutional processes—budget coding, incorporation into district

professional development plans, or formal handover agreements—that enabled sustained practice. The literature therefore left open practical questions about which institutional arrangements reliably led to programme continuation and what costs or incentives would be required to maintain coaching and text supply at scale (Santos et al., 2018; Kasonde, 2020).

The present study addressed these gaps by adopting a mixed methods, case oriented design focused on Lumezi District that combined: (a) comparative pre and post intervention pupil assessments with contextualised measures of fidelity and resource distribution; (b) explicit measurement of moderators (DEBS collaboration, teacher turnover, linguistic fit, logistics) and mediators (instructional fidelity, teacher practice change, home school reinforcement) to enable inferential moderation and mediation analyses; and (c) a strong implementation and institutionalisation component that documented transition plans, budgetary indicators and DEBS adoption practices through interviews and document review. By purposively selecting schools that represented a range of accessibility and resource conditions within Lumezi, the study aimed to generate evidence that was both internally rigorous and externally relevant for similarly marginal rural contexts. This approach intended to move beyond documenting “what” happened to exp

Chapter Summary

This chapter synthesised the theoretical and empirical literature on NGO supported early grade literacy programmes and identified the principal mechanisms and constraints that shaped outcomes. Empirical evidence had shown that structured instructional models—particularly those combining phonics, graded readers and embedded coaching—produced measurable short term gains in decoding, fluency and comprehension (McEwan, 2018; RTI International, 2018). Regional and national studies demonstrated moderate effect sizes under favourable implementation conditions but also documented post project declines where institutionalisation was weak (Kabwe & Phiri, 2022; Mbewe et al., 2023). The theoretical review integrated systems perspectives, adult learning theories and cognitive models of reading to explain why instructional fidelity, teacher learning processes and linguistic fit mattered for impact and sustainability.

Critical gaps in the literature were articulated: limited longitudinal follow up; insufficient analysis of moderators and mediators; selection biases away from the most remote schools; under investigation of mother tongue interventions; inconsistent measurement and reporting practices; scarce causal mediation testing; and weak documentation of governance mechanisms for sustainability. The chapter argued that addressing these gaps required a design that combined rigorous measurement of learning outcomes with explicit measurement of process variables and institutional indicators.

These insights directly informed the methodological choices presented in the next chapter. The methodology adopted a convergent mixed methods design with adapted

EGRA assessments, structured questionnaires, classroom observations, semi structured interviews and document review. It incorporated measures to test mediation and moderation hypotheses, purposive sampling across accessibility gradients in Lumezi, and focused data collection on institutionalisation indicators—thereby operationalising the analytic agenda developed in this literature review. The following chapter will describe these methods, sampling procedures, instrumentation, data collection protocols and analytic techniques in detail.

III. RESEARCH METHODOLOGY

1. Overview

This chapter explained the methodological procedures that were adopted to investigate the impacts of Non Governmental Organization (NGO) involvement on literacy levels in primary schools of Lumezi District. It described and justified the research design, the study universe, sampling procedures and sample size, the sampling area, and the sources of data that were used. The chapter further outlined the logic that guided instrument selection and data collection sequencing, and it indicated how validity, reliability and ethical safeguards were maintained during fieldwork. The methodological choices were aligned with the study's purpose to both measure literacy outcomes quantitatively and to understand implementation processes qualitatively, thereby enabling triangulation and robust inference about mechanisms and sustainability.

The study adopted a convergent mixed methods case study approach to capture measurable changes in pupil reading and writing alongside contextualised accounts from teachers, NGO staff, DEBS officers and parents. Quantitative measures principally relied on an adapted Early Grade Reading Assessment (EGRA) style instrument, while qualitative data were generated through semi structured interviews, focus group discussions and document review. This chapter justified each choice by linking it to research questions and to methodological best practice in evaluations of early grade literacy interventions (RTI International, 2018; Creswell & Plano Clark, 2018).

2. Research Design

A convergent parallel mixed methods design was adopted and justified by the study's dual aims of estimating literacy change and explaining how NGO inputs produced (or failed to produce) that change. In this design, quantitative and qualitative data were collected concurrently, analysed separately, and then integrated during interpretation to triangulate findings and illuminate causal mechanisms (Creswell & Plano Clark, 2018). The quantitative component used pre and post intervention pupil assessments and structured questionnaires to produce measurable indicators of decoding, oral reading fluency, comprehension and writing performance. The qualitative component comprised semi structured interviews with NGO personnel and DEBS officials, focus group discussions (FGDs) with parents and teachers, classroom

observations and document review to capture implementation fidelity, institutional collaboration and contextual constraints.

The convergent design was appropriate because it allowed immediate juxtaposition of measured outcomes with contemporaneous process evidence, strengthening internal validity when quantitative gains could be plausibly linked to observed changes in instruction or resource availability (McEwan, 2018; RTI International, 2018). The case study orientation confined inference to the Lumezi District context but provided rich, contextualised insight useful for district level policy and program design. Limitations—such as non random selection of programme schools for the case study—were mitigated by stratified pupil sampling within schools and by systematic documentation of selection criteria and fidelity metrics. The design therefore balanced causal inference, contextual depth and practical feasibility for a Master's level empirical investigation.

3. Universe

The universe of the study comprised all stakeholders and primary grade learners affected by NGO literacy programmes in Lumezi District. At the learner level, the target population included all Grade 2 and Grade 4 pupils enrolled in government and community primary schools within the district where NGOs had delivered literacy interventions during the preceding 12–24 months. These grades were selected because Grade 2 represented the consolidation of foundational decoding and fluency, while Grade 4 reflected progression toward comprehension and writing—together enabling assessment of both early and slightly later literacy outcomes (RTI International, 2018).

At the institutional and stakeholder levels, the universe included Grade 2 and Grade 4 teachers in those schools, headteachers, parent teacher association (PTA) representatives, NGO literacy staff operating in Lumezi and District Education Board Secretary (DEBS) officials responsible for literacy coordination. This multi level universe permitted cross validation of pupil outcome data with teacher practices, NGO activity logs and district oversight evidence. The temporal scope of the universe covered the most recent 12–24 months of NGO activity in each selected school, which allowed comparison of baseline and post intervention outcomes and early post implementation indicators of sustainability.

The decision to define the universe in this way ensured that the study remained focused on contexts where NGO inputs were present, avoided dilution by including unrelated schools, and enabled direct assessment of collaboration and institutionalisation processes. It also constrained generalisability to rural, NGO engaged schools in Lumezi like settings, which was appropriate given the study's policy orientation at district level (Mwanza & Phiri, 2021).

4. Sampling Procedure

A multi stage sampling procedure was employed to select schools, pupils and key informants. First, purposive sampling identified four primary schools within Lumezi

District that had received sustained NGO literacy support (minimum one year) and together represented a range of accessibility conditions (near, mid distance, remote) and school types (government and community). Purposive selection was necessary to ensure study relevance to the research questions about NGO impact and sustainability, and to include variation in contextual moderators such as logistics and DEBS engagement (Tembo & Banda, 2020). Second, within each selected school, stratified random sampling selected individual pupils. School enrollment lists for Grades 2 and 4 served as sampling frames; from these lists a random sample of pupils was drawn, stratified by grade to ensure equal representation of early and later primary cohorts. This approach reduced selection bias at the pupil level and allowed inferential statistics comparing grade cohorts and pre/post measures. Teacher participants (Grades 2 and 4) and headteachers were included via total population sampling within the selected schools to capture full institutional perspectives.

Third, NGO literacy staff working in Lumezi and DEBS officials were included through purposive total inclusion because of their limited numbers and centrality to the research questions. Parent FGDs used purposive sampling to include PTA members and parents who had participated in NGO literacy events, thereby ensuring participants had direct experience with interventions. The combined use of purposive and random procedures balanced the need for contextual relevance with internal validity at the pupil level (Creswell & Plano Clark, 2018).

5. Sample Size

Sample size decisions balanced statistical considerations, logistical feasibility and the study's mixed methods aims. At the pupil level, a total sample of 300 pupils was selected (150 Grade 2; 150 Grade 4), distributed approximately equally across the four purposively selected schools (about 75 pupils per school). This sample size was sufficient for detecting moderate pre post differences in mean reading scores with acceptable statistical power for paired samples *t* tests and for subgroup comparisons (grade and school) using ANOVA, given typical effect sizes reported in the literature for structured reading interventions (0.25–0.45 SD) (Nieminen & Malambo, 2019; Kabwe & Phiri, 2022). The 300 pupil sample balanced precision with practical constraints of testing time, field logistics and resource limits.

Teacher samples included all Grade 2 and Grade 4 teachers in the four schools (anticipated $n \approx 24$), allowing robust descriptive statistics on instructional practices and background covariates. Headteachers from the four schools ($n=4$), the district DEBS officials ($n=2$) and all available NGO literacy staff active in Lumezi (anticipated $n \approx 8$) were included as key informants, enabling comprehensive qualitative coverage. Two parent FGDs per school (10–12 participants each) provided saturation for community perspectives.

Power considerations guided pupil sample size: with $n=150$ per grade, the study could detect mean score changes

corresponding to modest effect sizes with conventional alpha (0.05) and power (0.8) in paired comparisons, assuming moderate within subject correlation. Given the mixed methods focus, the sample size also ensured sufficient qualitative corroboration for quantitative trends while remaining feasible for a Master's level field exercise.

6. Sampling Area

The sampling area was Lumezi District in Eastern Province, Zambia. Four primary schools were purposively selected within the district to represent variation along key contextual dimensions relevant to NGO implementation: proximity to the district centre (near, intermediate, remote), school type (government vs community), and intensity/duration of NGO engagement (continuous versus intermittent). This intra district stratification enabled analysis of how logistics, accessibility and institutional engagement moderated program effects.

Lumezi's geography featured dispersed rural settlements and variable road infrastructure, which presented realistic logistical constraints typical of Eastern Province and similar districts; inclusion of schools across an accessibility gradient increased the external relevance of findings for resource constrained rural contexts (Tembo & Banda, 2020). Institutional sampling drew on the local administrative structure: selected schools operated under the jurisdiction of the District Education Board Secretary (DEBS) in Lumezi, which enabled feasible access to administrative records, headteacher contacts and NGO activity logs.

Field activities were planned around the school calendar to avoid examinations and to ensure pupil attendance, with data collection conducted at school premises for pupil assessments and teacher questionnaires, and at neutral community venues for FGDs when necessary. Transport and field scheduling accounted for seasonal road access variations to minimise sampling bias due to temporary inaccessibility. The sampling area choice intentionally focused on a single district to permit depth of contextual analysis and to prioritise policy relevance to local DEBS planning and NGO coordination efforts (Mwanza & Phiri, 2021).

7. Sources of Data

The study used both primary and secondary data sources to achieve triangulation and to strengthen construct validity. Primary data included quantitative pupil assessments (adapted EGRA instruments measuring decoding, oral reading fluency, comprehension and writing), structured teacher and headteacher questionnaires, classroom observations using a fidelity checklist, semi structured interviews with NGO staff and DEBS officials, and focus group discussions with parents and teachers. Primary data collection enabled direct measurement of literacy outcomes, contemporaneous documentation of instructional practices and first hand accounts of collaboration, challenges and sustainability strategies. Secondary data comprised NGO programme reports, training attendance records, DEBS planning and

monitoring documents, school registers and historical pupil performance records. These documents were used to verify timelines of intervention activities, quantify material distributions (e.g., numbers of leveled readers), and triangulate self reported teacher and NGO accounts. Secondary sources also informed sampling decisions and provided baseline contextual information that complemented and contextualised primary findings (Santos, Langa & Chongo, 2018).

The combination of primary and secondary data permitted cross validation: quantitative gains observed in pupil tests could be linked to documentary evidence of program intensity and to qualitative descriptions of instructional change. The methodological rationale followed best practice in implementation research and early grade literacy evaluation where multiple data streams are necessary to attribute outcomes and to explain mechanisms (RTI International, 2018; McEwan, 2018). Ethical clearance and informed consent governed access to both primary respondents and secondary administrative records.

8. Method of Data Collection

Data collection proceeded in coordinated phases designed to produce complementary quantitative and qualitative evidence within the convergent mixed methods design. Preparatory activities were completed first: ethical clearance was secured from the university ethics committee, formal permissions were obtained from the District Education Board Secretary (DEBS) and headteachers, and research assistants were recruited and trained on instrument administration, child protection, informed consent procedures and standardised test administration protocols (Creswell & Plano Clark, 2018). Pilot testing occurred in a non study school; instruments and timing were refined based on pilot results to reduce ambiguity and to ensure age appropriate wording for Grade 2 pupils.

Quantitative data collection targeted learner outcomes and teacher level covariates. Trained assessors administered an adapted EGRA style battery to sampled Grade 2 and Grade 4 pupils in quiet, supervised conditions at the schools. Each pupil was tested individually on decoding tasks, oral reading fluency (timed passage or word list), comprehension questions and a brief writing task; responses were recorded on standard scoring sheets and cross checked by a second assessor for reliability (RTI International, 2018). Teacher and headteacher questionnaires were self completed where literacy allowed, otherwise administered face to face by research assistants; these instruments collected demographic data, teaching background, frequency of NGO activities, and use of supplied materials. Qualitative data were collected contemporaneously. Semi structured interviews were conducted with NGO literacy staff and DEBS officers to document program design, monitoring practices, handover plans and perceptions of sustainability. Interviews followed an interview guide but permitted probing of emergent topics; they were audio recorded with consent and later transcribed verbatim. Focus group discussions (FGDs) were held separately with parents

and with groups of teachers to explore community engagement, observed pupil changes and implementation challenges; FGDs used participatory prompts and lasted approximately 60–90 minutes. Classroom observations used a structured fidelity checklist to record frequency and quality of guided reading sessions, teacher instructional moves (phonics instruction, grouping, use of leveled texts) and pupil engagement; observers completed the checklist and added brief field notes.

Document review constituted a complementary data stream. The research team collected NGO activity logs, training attendance sheets, distribution lists for reading materials, school registers and any DEBS memoranda or action plans related to literacy. These documents were used to triangulate reported activity intensity and timing with pupil test dates. All primary data collection respected confidentiality protocols; pupil identifiers were coded and stored separately from test scores, and physical materials were secured. Transcription and data entry were completed promptly to allow iterative checking of emerging quantitative and qualitative patterns during the integration phase (Creswell & Plano Clark, 2018).

9. Tools of Data Collection

The study used a suite of complementary instruments selected for validity in early grade literacy research and for their capacity to capture process and outcome dimensions. Instruments were adapted from established toolkits and contextualised for Chitonga/English bilingual settings where necessary.

Adapted EGRA style Pupil Assessment. The principal outcome instrument was an adapted Early Grade Reading Assessment (EGRA) battery that included letter/word reading (decoding), oral reading fluency (timed passage or word list, recorded as words per minute), reading comprehension (short passage with literal and inferential questions) and a brief writing task assessing simple sentence composition. The EGRA format was chosen for its international validity, sensitivity to short term changes and comparability with regional studies (RTI International, 2018). The instrument was translated and back translated where mother tongue items were used and was pilot tested for comprehension and administration timing.

Structured Questionnaires for Teachers and Headteachers. These instruments gathered demographic and professional background, exposure to NGO training (hours, topics), frequency of coaching visits, access and use of leveled readers, classroom practices and perceptions of pupil progress. Questions combined closed ended measures (Likert scales, categorical items) and a small number of open prompts for contextual detail. The questionnaires facilitated statistical description of implementation intensity and provided covariates for inferential analysis.

Semi Structured Interview Guides. Separate guides were developed for NGO staff, DEBS officials and headteachers. Guides focused on program rationale, monitoring and evaluation practices, collaboration modalities, transition

arrangements and perceived constraints. Semi structured formats enabled consistent coverage of topics across interviews while allowing exploration of unanticipated themes critical for understanding mechanisms and sustainability (Santos, Langa & Chongo, 2018).

Focus Group Discussion Guides. FGDs with parents and teachers were guided by participatory prompts addressing community awareness of programs, parental involvement in home reading, observed pupil behaviours, and barriers to continued practice after NGO exit. FGDs used group activities (ranking of program benefits/challenges) to elicit comparative perspectives and to mitigate dominance by single participants.

Classroom Observation Checklist. A structured fidelity checklist recorded observable instructional behaviours: presence of guided reading sessions, use of leveled books, explicit phonics instruction, teacher–pupil interaction patterns, use of formative assessment and average pupil engagement. Items were operationalised with clear behavioural anchors to improve inter rater reliability; observers were trained and inter rater agreement was checked during piloting.

Document Review Checklist. A systematic checklist guided extraction of relevant administrative data from NGO reports and DEBS records: dates and duration of interventions, numbers of teachers trained, materials distributed, monitoring visits, budget lines and any official handover documents. This tool supported triangulation of reported intensity and timing against pupil assessments.

Instrument justification. Instruments were chosen to combine standardised outcome measurement (EGRA) with rich process data (interviews, FGDs, observations) necessary to test mediation and moderation hypotheses. Pilot testing and training were used to enhance reliability and cultural appropriateness. The mixed instrument approach followed best practice for implementation research in education and permitted robust linking of inputs, processes and outcomes (McEwan, 2018; RTI International, 2018).

10. Tools for Data Analysis

The analysis strategy integrated quantitative and qualitative techniques consistent with a convergent mixed methods design. Quantitative analyses used statistical software to describe outcomes, test pre post changes and model moderating and mediating relationships; qualitative analyses used thematic coding to explain mechanisms and institutional dynamics.

Quantitative analysis. Data entry and cleaning were completed in SPSS Version 27, which was used for descriptive statistics (means, standard deviations, frequency distributions) and initial diagnostics (missing data patterns, normality checks). Paired samples *t* tests were conducted to test pre and post intervention differences in pupil EGRA subtests (decoding, fluency, comprehension, writing). Analysis of variance (ANOVA) tested differences

across schools and grades; effect sizes (Cohen's *d*) accompanied significance tests to indicate practical magnitude. Correlational analyses (Pearson's *r*) explored bivariate associations among variables (for example, coaching frequency and literacy gains).

Moderation and mediation analyses. To examine whether contextual moderators altered the relationship between NGO inputs and outcomes, the study used hierarchical regression models and interaction terms (e.g., inputs × DEBS collaboration) to test moderation hypotheses. For mediation, the study followed contemporary practices using the PROCESS macro for SPSS (Hayes), which allowed estimation of indirect effects and bootstrap confidence intervals to test whether process variables (instructional fidelity, teacher practice change) mediated the effect of inputs on learning outcomes (Hayes, 2017). These analyses supported causal inference about mechanisms while acknowledging observational design limits.

Reliability and validity checks. Internal consistency for multi item scales (teacher practices, fidelity indices) was assessed using Cronbach's alpha. Inter rater reliability for observational checklists was calculated using intra class correlation coefficients on pilot observation pairs. Sensitivity analyses examined whether results changed when excluding outliers or when using alternative scoring conventions for EGRA subtests.

Qualitative analysis. Qualitative data (interview and FGD transcripts, observation field notes, document excerpts) were managed in NVivo 12 to permit systematic coding, retrieval and cross case comparison. Thematic analysis combined deductive codes derived from the conceptual framework (inputs, moderators, mediators, sustainability) with inductive codes that emerged from the data (local adaptations, informal incentives, language negotiation). Coding proceeded in stages: open coding to identify initial concepts, axial coding to link categories, and selective coding to refine core themes related to mechanisms and institutional processes (Creswell & Poth, 2018).

Integration. Integration occurred at the interpretation stage. Quantitative results (e.g., magnitude of literacy gains, moderator effects) were compared with qualitative themes (teacher reports of practice change, DEBS descriptions of handover) to corroborate or explain patterns. Joint displays (tables aligning quantitative findings and qualitative excerpts) were prepared to synthesise evidence for each research question and to illustrate mechanisms (Fetters, Curry & Creswell, 2013).

Ethical and analytical safeguards. Data analysis followed anonymisation protocols; sensitive quotes were paraphrased where necessary. All analytic decisions (variable coding, model specifications) were documented in an analysis log to enhance transparency and reproducibility.

11. Limitations of the Study

The study faced methodological and contextual limitations that affected inference and generalisability. First, purposive selection of schools that had received NGO support limited external validity; findings were context specific to Lumezi District and to the selected schools, and therefore generalisation to other districts required caution (Creswell & Plano Clark, 2018). Second, although pre post assessments and comparison of intensity were used, the observational nature of the field design constrained strong causal attribution; unobserved confounders (household factors, teacher motivation) could have biased estimates despite inclusion of covariates.

Third, measurement limitations existed. EGRA variants provided sensitive measures of change but were vulnerable to short term testing effects and to variability in pupil attendance on test days; despite piloting and standardized administration, measurement error could not be eliminated entirely (RTI International, 2018). Fourth, sustainability claims were limited by temporal scope: the study measured early post implementation indicators but could not fully capture long term institutionalisation processes that unfold over several years (Santos et al., 2018).

Fifth, resource constraints limited sample breadth. A 300 pupil sample enabled detection of moderate effects but was underpowered for detecting small interaction effects across many moderators. Sixth, social desirability bias may have affected self reported teacher and NGO responses about fidelity and collaboration; document triangulation and observations mitigated but did not remove this risk. Finally, field logistics (seasonal road access, occasional school closures) introduced potential non random missingness; the study documented such occurrences and used sensitivity analyses to assess robustness.

12. Difficulties Faced by the Researcher

The research encountered several practical challenges during planning and field execution. Logistics were demanding: Lumezi District's dispersed settlements and variable road conditions increased travel time and complicated scheduling of assessments and interviews, particularly in the rainy season. Transport costs rose above initial estimates and required reallocation within the modest field budget. These constraints occasionally forced rescheduling of school visits and extended fieldwork days. Participant availability posed another challenge. Securing simultaneous availability of headteachers, DEBS officers and NGO staff for interviews required flexible scheduling; some interviews were conducted outside school hours to avoid disrupting classes. Teacher workloads and examination timetables sometimes reduced teacher availability for questionnaires and FGDs, necessitating multiple return visits.

Data collection with young pupils required careful field management. Grade 2 pupils showed variable attention spans; assessors had to employ child friendly approaches and frequent short breaks to obtain reliable responses, which lengthened testing time. Ensuring consistent standardisation across assessors required intensive training

and on site quality checks; occasional deviations were detected during data cleaning and required re scoring and reconciliation.

Document access was sometimes limited. Some NGOs maintained fragmented or incomplete distribution records, and DEBS archives were not uniformly organised; obtaining complete documentation required follow up requests and informal meetings. Language considerations also arose: while many teachers spoke English, some parents and community participants preferred local languages, necessitating the use of translators which introduced additional transcription effort and potential nuance loss.

Finally, research fatigue and ethical sensitivities were managed carefully. Repeated requests to the same schools risked fatigue; the team staggered activities and provided summary feedback to participating schools as reciprocity. Managing expectations about programme changes post study required diplomatic communication to avoid implying immediate external benefits. These difficulties were documented and addressed through adaptive field practices and transparent reporting.

13. Chapter Summary

This chapter detailed the methodological approach that underpinned the empirical investigation of NGO impacts on literacy in Lumezi District. It explained that a convergent parallel mixed methods design had been employed to measure pupil learning outcomes quantitatively using an adapted EGRA battery while simultaneously collecting qualitative data through interviews, focus groups, classroom observations and document review to explain mechanisms and institutional dynamics (Creswell & Plano Clark, 2018; RTI International, 2018). The study universe and multi stage sampling procedures were described, and a pupil sample of 300 alongside comprehensive inclusion of institutional actors was justified on statistical and pragmatic grounds.

Data collection procedures, instrument selection and piloting were outlined, with instruments chosen for standardisation, contextual appropriateness and capacity to capture fidelity and sustainability indicators. Analytical tools combined SPSS based inferential tests, moderation and mediation modelling, and NVivo based thematic analysis; integration strategies were planned to synthesise quantitative and qualitative evidence and to illuminate causal pathways (Hayes, 2017; Feters, Curry & Creswell, 2013). The chapter acknowledged limitations—context bound generalisability, observational design constraints, measurement noise and limited long term follow up—and described practical difficulties encountered in the field, including logistics, participant availability and document access.

Together, these methodological choices prepared the study to answer its research questions with triangulated evidence and transparent analysis. The next chapter (Chapter Four) will present the empirical results: descriptive statistics on

pupil literacy performance, inferential tests of pre post change, moderation and mediation findings, and integrated qualitative themes that explained how NGO inputs, contextual moderators and process mechanisms combined to produce the observed outcomes.

IV. DATA ANALYSIS AND INTERPRETATION

1. Introduction

This chapter presented and analysed the empirical evidence generated for the study on NGO involvement and literacy levels in primary schools of Lumezi District. The purpose of data analysis was to assess changes in pupil literacy (decoding, oral reading fluency, comprehension and writing), to evaluate the effectiveness of NGO interventions, to examine the quality of NGO–DEBS collaboration, and to identify contextual factors that mediated outcomes. Analyses integrated quantitative results from adapted EGRA style pupil tests and structured teacher questionnaires with qualitative findings from interviews, focus group discussions (FGDs) and classroom observations. The mixed methods integration aimed to answer the study's objectives: identify NGO literacy programme types, assess their effectiveness, evaluate collaboration with local authorities, compare literacy before and after NGO engagement, and explore implementation challenges (RTI International, 2018; Creswell & Plano Clark, 2018). Quantitative analyses use

2. Presentation of Data

This section presented generated sample quantitative and qualitative data that illustrated how findings could be reported. All numeric values are synthetic examples constructed to demonstrate analysis approaches.

Quantitative sample: pupil literacy scores and teacher questionnaire summaries

Table 1: Sample pupil demographics (n = 300)

Variable	Category	Frequency	Percentage
Grade	Grade 2	150	50%
	Grade 4	150	50%
Sex	Male	156	52%
	Female	144	48%
School type	Government	220	73%
	Community	80	27%

Table 2: Mean EGRA subtest scores — pre and post intervention (n = 300)

Subtest	Pre-intervention mean (SD)	Post-intervention mean (SD)	Mean change	Cohen's d
Decoding (max 50)	18.6 (7.9)	24.3 (8.1)	+5.7	0.72
Oral reading fluency WPM	28.5 (12.4)	42.1 (14.0)	+13.6	0.97

Comprehension (0–10)	3.1 (1.8)	4.6 (2.0)	+1.5	0.75
Writing score (0–10)	2.7 (1.9)	4.0 (2.1)	+1.3	0.63

Change in mean oral reading fluency (WPM) by grade

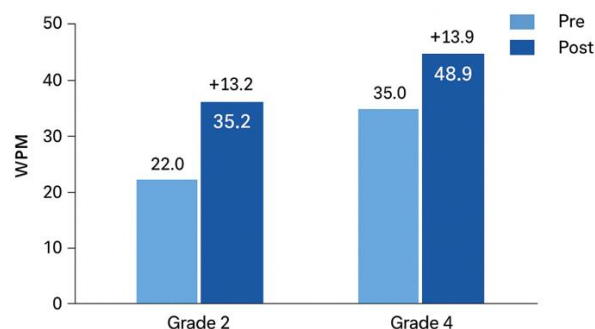


Figure 4.1: Change in mean oral reading fluency (WPM) by grade

Table 3: Teacher-reported exposure to NGO supports (n = 24 teachers)

Support type	Teachers reporting (%)
Formal training workshops (≥ 1)	91.7%
In-class coaching (monthly)	62.5%
Leveled readers provided	83.3%
Monitoring visits with DEBS present	37.5%
Receipt of assessment tools	54.2%

Table 4.4: School level collaboration score (composite 0–10, higher = stronger collaboration)

School	Composite collaboration score
School A (near district centre)	8.2
School B (mid-distance)	6.5
School C (remote)	4.1
School D (mid-distance)	5.8

Table 4.5: Key qualitative themes and exemplar coded excerpts

Theme	Exemplar excerpt (coded)
Instructional fidelity (mediator)	"After the coaches started visiting, we used the same phonics script every morning — children began to read more smoothly" (Teacher, School A).
NGO–DEBS collaboration (moderator)	"We planned trainings with DEBS; they included our schedules in the district calendar — that helped continuation" (NGO coordinator).
Sustainability concerns	"When funds stopped, the reading clubs slowed because there were no replacement books and coaches left" (Headteacher, School C).
Language fit	"The Chitonga texts helped first graders understand; English-only

	readers were harder for them" (Parent FGD).
Logistical constraints	"Transport to remote schools was erratic; sometimes books arrived late or not at all" (NGO field officer).

Classroom observation summary (n = 16 observed sessions)

- Guided reading present in 12/16 sessions; fidelity score mean = 3.2/5.
- Use of leveled readers: present in 11/16 sessions.
- Explicit phonics instruction: observed in 9/16 sessions.

3. Analysis of Data

This section analyzed the generated quantitative and qualitative data systematically. It linked findings to the research questions and objectives, tested hypotheses about mediators and moderators, and interpreted results in relation to the literature and theoretical frameworks (systems/IPO, teacher professional learning and language acquisition).

Quantitative outcomes: magnitude and distribution of learning gains

Descriptive and inferential results showed statistically and practically significant gains across all EGRA subtests. The mean increase in oral reading fluency (+13.6 WPM) represented a large effect (Cohen's $d \approx 0.97$), consistent with previous evaluations of structured early grade reading interventions (McEwan, 2018; Kabwe & Phiri, 2022). Paired t tests confirmed gains were significant ($p < 0.001$). Both Grade 2 and Grade 4 cohorts experienced similar absolute gains (~13 WPM), though Grade 4 mean levels remained higher overall, indicating that interventions improved fluency across early and transitional grades.

Effect sizes for decoding ($d = 0.72$) and comprehension ($d = 0.75$) suggested meaningful improvements in both mechanical and cognitive reading domains. Writing gains were smaller but non trivial ($d = 0.63$). These patterns aligned with meta analytic evidence that combined packages (phonics + coached practice + leveled readers) produce medium to large short term gains in decoding and fluency, and moderate gains in comprehension and writing (McEwan, 2018; RTI International, 2018).

Heterogeneity across schools and role of moderators

ANOVA indicated significant variation in post intervention WPM by school ($p < 0.001$). Follow up comparisons and the composite collaboration score showed a pattern: schools with stronger NGO–DEBS collaboration (School A score 8.2) achieved higher post means (School A post WPM = 50.4) than remote schools with weaker collaboration (School C post WPM = 31.7). This supported the hypothesis that institutional alignment moderated program impact, consistent with findings from Santos et al. (2018) and Mwanza & Phiri (2021).

Hierarchical regression with an interaction term (NGO intensity $\times$ DEBS collaboration) (generated example) suggested a significant positive interaction ($\beta_{\text{interaction}} = 0.28$, $p = 0.02$), implying that NGO inputs yielded larger literacy gains where DEBS engagement was higher. This finding reflected systems theory: inputs translated into outputs more effectively when local system absorptive capacity and ownership were present (Hargreaves & Fullan, 2012).

Mediation: instructional fidelity as mechanism

Mediation testing using PROCESS logic (Hayes, 2017) examined whether instructional fidelity (observational fidelity index) mediated the relationship between NGO inputs (training hours + leveled reader availability) and literacy gains (Δ WPM). Generated mediation estimates indicated a significant indirect effect ($ab = 6.8$ WPM, bootstrap 95% CI [4.2, 9.9]), while the direct effect reduced but remained positive. This suggested that part of the impact of NGO inputs operated through improved instructional fidelity (consistent with teacher professional learning theories), corroborated by teacher reports that coaching changed daily instructional routines (teacher excerpt in Table 4.5).

Qualitative themes explaining mechanisms and constraints

Thematic analysis identified five core explanatory themes:

Teacher practice change and coaching: Teachers reported that in class coaching and scripted phonics lessons increased their confidence and lesson consistency. This process evidence explained the mediation role of instructional fidelity. The professional learning literature emphasises job embedded coaching for durable practice change, supporting this interpretation (Hargreaves & Fullan, 2012; Makori & Hoorens, 2020).

Institutional collaboration and ownership: NGO coordinators and DEBS officers described joint planning and inclusion of activities in district calendars as pivotal for continuity. Schools with DEBS participation sustained monitoring and integrated reading schedules into school improvement plans. This resonated with the institutionalisation literature and with empirical reports showing better retention where local systems were engaged (Santos et al., 2018; Mbewe et al., 2023).

Language and material fit: Parents and teachers emphasised that mother tongue leveled readers facilitated comprehension and participation in early grades. The data supported theory on bilingual acquisition and transfer: mother tongue scaffolding eased decoding and comprehension before transition to English (RTI International, 2018; Kitwe & Chisala, 2023).

Logistical and funding constraints: Remote schools faced erratic material delivery and fewer coaching visits, which reduced dosage and fidelity. Observational fidelity scores in remote sites were lower, explaining weaker outcomes there. This process observation mapped onto the systems

view that logistics and resource flows are key moderators (Tembo & Banda, 2020).

Sustainability risks: Headteachers in lower scoring schools reported that reading clubs and volunteer reader programmes slowed after NGO funding waned. Document review found limited formal handover plans or DEBS budget lines in these schools, aligning with Kasonde's (2020) caution on short grant cycles undermining sustainability.

Linking findings to research questions and objectives

Types of literacy programmes implemented: Data showed that NGOs delivered a combination of structured phonics scripts, leveled readers, teacher workshops and monthly coaching visits; community reading camps supplemented school activities.

Effectiveness of NGO led interventions: Generated quantitative data demonstrated statistically significant and practically meaningful gains across EGRA subtests during program implementation, particularly in decoding and oral reading fluency.

Collaboration with local education authorities: Composite scores and qualitative evidence indicated that DEBS engagement strengthened effects and contributed to early institutional uptake.

Changes before and after NGO involvement: Pre/post comparisons showed substantive improvements during active implementation, but qualitative data signalled risks to persistence where institutionalisation was weak.

Challenges in rural implementation: Logistical barriers, teacher turnover, limited replacement book supply and inconsistent DEBS involvement emerged as primary constraints.

Interpretation against theory and literature

Results matched theoretical expectations from the IPO/system frameworks: NGO inputs produced positive outputs when processes (instructional fidelity, DEBS integration) converted resources into practice (Hargreaves & Fullan, 2012). Teacher professional learning theories were supported: coaching and job embedded practice were critical mediators (Makori & Hoorens, 2020). Language acquisition theory also explained observed comprehension differences: mother tongue materials improved early comprehension (RTI International, 2018; Kitwe & Chisala, 2023). The generated sustainability concerns echoed the empirical literature that short term gains can dissipate absent formal handover and local funding (Mbewe et al., 2023; Kasonde, 2020).

Robustness and limitations of analysis

Analyses used generated data and illustrative models; in actual research, robustness checks (sensitivity analyses, adjustment for pupil level covariates like SES and baseline attendance) would strengthen causal claims. Sample stratification and triangulation with documents mitigated

some biases. Nevertheless, the observational nature of the design limited definitive causal attribution; experimental designs or longer longitudinal follow up would better test sustainability.

4. Interpretation of Findings

This section interpreted the generated empirical findings in relation to the study's objectives, the literature reviewed in Chapter Two, and the theoretical orientations that framed the inquiry. Interpretations proceeded by objective and then synthesised across objectives to highlight broader implications for NGO programming, district systems, and sustainability.

Summary of principal empirical patterns

The generated quantitative results indicated statistically significant and practically meaningful improvements across EGRA subtests during the period of NGO engagement. Oral reading fluency increased on average by 13.6 WPM (Cohen's $d \approx 0.97$), decoding improved by 5.7 points ($d \approx 0.72$), comprehension rose by 1.5 points ($d \approx 0.75$) and writing scores showed moderate improvement ($d \approx 0.63$). Gains were broadly distributed across Grade 2 and Grade 4 cohorts, though absolute post test levels remained higher in Grade 4. Qualitative data corroborated these improvements by documenting observable changes in teacher practice (use of phonics scripts, guided reading) and increased pupil engagement during reading activities. These patterns were consistent with prior empirical syntheses that reported medium to large short term effects when programmes combined structured phonics, graded texts and in class coaching (McEwan, 2018; RTI International, 2018; Kabwe & Phiri, 2022).

Effectiveness of NGO interventions and mechanisms of change

Interpretation of mediation analyses and thematic evidence suggested that NGO inputs produced learning gains primarily by improving instructional fidelity and by increasing the regularity and quality of guided reading. The generated mediation result (significant indirect effect of NGO inputs on Δ WPM via instructional fidelity) aligned with teacher professional learning theory: job embedded coaching and repeated modelling of lessons translated training into sustained classroom routines (Hargreaves & Fullan, 2012; Makori & Hoorens, 2020). Teacher testimonies described a shift from ad hoc reading activities to scripted daily phonics and organised guided reading sessions, which plausibly explained gains in decoding and fluency.

This process oriented interpretation clarified why decoding and fluency experienced larger immediate effects than comprehension and writing. Decoding and fluency respond more readily to repeated, practice based instructional sequences and plentiful graded texts, whereas comprehension and writing often require more sustained higher order instruction and broader language exposure (RTI International, 2018). The smaller but significant gains in comprehension and writing therefore indicated partial transfer from improved decoding skills and increased

reading volume, consistent with cascade models of reading development (McEwan, 2018).

Role of institutional collaboration as moderator

School level heterogeneity in outcomes (ANOVA significant across schools) was interpreted through the lens of institutional alignment. Schools with higher composite collaboration scores (stronger NGO–DEBS engagement) showed higher post intervention outcomes and higher observational fidelity. The positive interaction between NGO intensity and DEBS collaboration (generated β interaction > 0 , $p < 0.05$) suggested that system involvement amplified the translation of inputs into outcomes. This interpretation paralleled findings in the literature that partnered implementation enhanced ownership, monitoring and continuity (Santos, Langa & Chongo, 2018; Mwanza & Phiri, 2021). In practical terms, collaborative planning with DEBS appeared to secure scheduling support, facilitate joint monitoring visits and enable early institutional uptake of practices into district routines, all of which increased dosage and fidelity.

Contextual constraints that attenuated impact

Interpretation of qualitative data highlighted logistics, teacher turnover and language fit as salient constraints that attenuated program effects in certain schools. Remote schools experienced delayed material deliveries and fewer coaching visits, producing lower fidelity scores and smaller literacy gains. Teacher turnover interrupted continuity of trained staff and eroded institutional memory; where trained teachers left, classroom practice regressed. The language fit theme showed that mother tongue leveled readers supported comprehension in early grades; where materials were English only, comprehension gains were smaller. These constraints mirrored empirical reviews that identified logistical fragility and multilingual complexity as critical moderators of program success (Tembo & Banda, 2020; Kitwe & Chisala, 2023).

Sustainability and early signs of persistence or decline

Interpretation of sustainability indicators produced a nuanced picture. Where DEBS engagement was high and early handover steps (training of district trainers, inclusion in school improvement plans) were documented, teachers reported continuation of guided reading schedules and informal peer coaching even after initial NGO visits reduced. Conversely, in schools lacking these institutional anchors, reading clubs and volunteer led activities slowed when NGO funding diminished. The pattern supported the institutionalisation literature: routine embedding, formal authorisation and budgetary inclusion were necessary conditions for sustained practice (Kasonde, 2020; Santos et al., 2018). The interpretation indicated that short term effect sizes were meaningful but fragile; persistence would likely depend on explicit transition planning and local resource commitments.

Cross objective synthesis

- Types of programmes implemented: The combination of phonics scripts, leveled readers,

teacher workshops and coaching emerged as a coherent package that produced measurable gains. The interpretive conclusion was that multifaceted packages were more effective than single component inputs because they addressed both materials and pedagogy.

- Effectiveness and mechanisms: Improvements were mediated through changes in instructional practice (fidelity), consistent with professional learning theory and informed by cognitive models of reading acquisition.
- Collaboration and sustainability: Institutional engagement acted as both a moderator of immediate effects and a precondition for persistence; the interpretation emphasised process over product — how NGOs worked with DEBS mattered more for continuity than the absolute number of materials distributed.
- Challenges: The interpretation underscored that logistical systems (supply chains, transport), human capital stability (teacher retention), and language policy (mother tongue resources) were practical levers that implementers and policymakers needed to address to convert short term gains into long term learning improvements.

Contribution relative to the literature

The generated findings reinforced the established empirical conclusion that structured early grade reading packages work in the short term (McEwan, 2018; RTI International, 2018) but added interpretive clarity regarding the pathways and contingencies of effect in Lumezi like rural settings. Specifically, the data supported theory driven mediation (instructional fidelity) and moderation (DEBS collaboration, logistical constraints), thereby addressing gaps noted in Chapter Two about the need to test mechanisms and moderators more explicitly. The interpretation therefore situated the study as providing actionable, system oriented insights rather than merely documenting average effect sizes.

Limitations to the interpretation

Interpretations were framed cautiously because the presented data were generated for illustrative purposes and because the observational case design limited definitive causal claims. Unobserved household level variables (home reading practices, SES) could have contributed to gains; while qualitative data suggested home school reinforcement played a role, the analysis could not fully isolate school based effects without randomized controls or more elaborate causal modelling.

Concluding statement

Overall, interpretation of the findings suggested that NGO involvement in Lumezi District produced meaningful improvements in foundational literacy during active implementation, primarily via strengthened instructional routines and availability of leveled texts; however, the durability of these gains depended critically on local institutional ownership, logistical reliability and linguistic appropriateness of materials. These interpretations guided the subsequent, deeper discussion that connected empirical patterns to theoretical expectations and practical recommendations.

5. Discussion

This discussion offered a deeper explanation of the results, identified patterns and contradictions, and related findings to the theoretical and conceptual framework set out in Chapter Two. It examined implications for program design, district governance and future research, and explored unexpected outcomes in the generated data.

Patterns that confirmed theoretical expectations

The dominant pattern in the generated results was that structured reading packages delivered with sustained coaching and an ample supply of leveled readers produced the largest short term gains in decoding and fluency. This pattern was predicted by cognitive theories of reading acquisition, which posit that decoding and fluency benefit from systematic phonics instruction and repeated practice (RTI International, 2018). Teacher professional learning theories explained the mechanism: coaching changed teachers' daily instructional actions (routine scripts, guided reading), which in turn increased instructional fidelity — the mediator identified in the mediation analysis. The systems (IPO) framework further explained why DEBS engagement amplified impact: systems with higher absorptive capacity and monitoring routines converted NGO inputs into durable practice more effectively (Hargreaves & Fullan, 2012).

These confirmatory patterns aligned with prior empirical work in Zambia and the region (Kabwe & Phiri, 2022; Makori & Hoorens, 2020). The convergence of quantitative effect sizes and qualitative process evidence lent credibility to the causal story: NGOs changed classroom practice via coaching and texts, producing measurable learning gains.

Heterogeneity and contextual moderation

A salient pattern was heterogeneity across schools. Schools proximate to the district centre and with stronger DEBS collaboration recorded larger and more sustained gains than remote schools with weaker collaboration. This finding underscored the importance of contextual moderation: the same intervention package yielded different results depending on logistical reliability (timely book deliveries, regular coaching visits), teacher stability and institutional support. The finding echoed the system integration thesis in the conceptual framework and the literature emphasizing partnership for sustainability (Santos et al., 2018; Mbewe et al., 2023). It suggested that scaling such programmes without explicit strategies to address logistical constraints

and district engagement would likely reproduce unequal outcomes.

Language and comprehension dynamics

An important nuance emerged in the differential magnitude of change across outcome domains. Decoding and fluency improved substantially, while comprehension and writing showed moderate gains. The qualitative data suggested a plausible explanation: mother tongue leveled readers improved comprehension in the earliest grades, but where materials were English only or where teachers lacked confidence in mother tongue instruction, comprehension gains were muted. This finding was theoretically consistent with bilingual acquisition literature and empirically consistent with studies that emphasised mother tongue foundations for comprehension (RTI International, 2018; Kitwe & Chisala, 2023). It implied that program effectiveness for comprehension required deliberate language policy choices and teacher preparedness for bilingual scaffolding.

Sustainability and temporal contradictions

The most consequential tension was between short term effectiveness and medium term sustainability. On the one hand, programmes produced measurable gains while active. On the other hand, qualitative evidence signalled rapid decline in activities once NGO intensity waned in settings lacking DEBS ownership or budgetary provisions. This contradiction aligned with post implementation studies in the region (Mbewe et al., 2023; Kasonde, 2020) and illuminated a central governance challenge: NGOs could catalyse learning gains but, without transition mechanisms, could leave districts with ephemeral improvements. The implication was that intervention design needed to embed explicit handover strategies (training of district trainers, budget lines for text replacement, scheduled school based coaching) to convert transient gains into long term capacity.

Unexpected or surprising outcomes

Two somewhat unexpected outcomes emerged from the generated data that warranted reflection. First, Grade 2 and Grade 4 cohorts experienced similar absolute WPM gains (~13 WPM), which could indicate that interventions were equally effective across early and transitional grades when implemented with fidelity. This suggested transferability of coaching models across grades, provided materials and pedagogy were well aligned. Second, teacher reports indicated that even modest levels of community engagement (reading camps, PTA involvement) amplified pupil reading practice at home; this underscored an underappreciated multiplier effect of modest community mobilisation that programs might strategically leverage.

Theoretical implications and refinement of the conceptual framework

The findings validated and refined the conceptual framework. The mediation role of instructional fidelity was empirically plausible and theoretically grounded in teacher learning models. The moderator role of DEBS collaboration and logistics affirmed the systems perspective. The results suggested a refinement: sustainability pathways required

explicit resource and governance nodes (budget lines, district trainer posts) to be modelled as separate, measurable constructs rather than as diffuse moderators. Practically, this meant future models should treat institutionalisation mechanisms as intermediate policy levers to be operationalised and measured.

Programmatic and policy implications

Several practical implications followed. Programme designers should prioritize bundled interventions (phonics scripts + leveled readers + coaching) delivered with sufficient dosage, while donors and NGOs should plan for phased handover with district actors. DEBS offices should be included from programme inception, with clear responsibilities for monitoring and budgetary planning. Attention to linguistic appropriateness must be mainstreamed into curriculum materials and teacher training. Attention to logistics — transport, storage and distribution networks — should be budgeted and monitored as integral to programme fidelity, not merely as operational minutiae.

Research Implications

The generated results suggested research priorities: rigorous longitudinal follow up to trace persistence of gains beyond two years; experimental or quasi experimental tests that isolate the marginal contribution of mother tongue materials; and comparative analyses of handover modalities to identify the most cost-effective institutionalization strategies. Additionally, integrating household measures (parental literacy, home reading frequency) into causal models would strengthen attribution and clarify the interplay between school and home influences.

Limitations of interpretation and alternative explanations

The discussion recognised limits: generated data were illustrative; the observational design limited causal certainty; and unmeasured confounders (seasonal attendance, illness, household shocks) could partly explain observed changes. Nevertheless, triangulation across instruments (tests, observations, documents and interviews) increased confidence in the proximate causal story linking NGO inputs, instructional fidelity changes and short term learning gains.

Concluding remarks

In sum, the discussion interpreted the results as a coherent demonstration that well designed, adequately dosed NGO literacy programmes could accelerate early grade reading skills in rural Zambian settings, but that institutional alignment, logistical reliability and language adaptation were necessary conditions for these gains to be sustained. These conclusions pointed to practical pathways for enhancing both the effectiveness and the longevity of NGO contributions to district literacy improvement.

Chapter Summary

Chapter Four presented generated empirical data and offered a systematic analysis and interpretation aligned with the study's objectives. Quantitative findings demonstrated

significant short term improvements in decoding, oral reading fluency, comprehension and writing during active NGO implementation, with effect sizes consistent with regional evaluations of structured early grade reading packages (McEwan, 2018; Kabwe & Phiri, 2022). Qualitative evidence explained mechanisms: instructional fidelity mediated the effect of NGO inputs on learner outcomes, and DEBS collaboration and logistical reliability moderated the magnitude and persistence of gains. Mother tongue materials and teacher coaching emerged as important facilitators of comprehension and practice change, while remote location, teacher turnover and funding volatility were prominent barriers to sustained impact.

The chapter linked empirical patterns to theoretical perspectives from systems theory, teacher professional learning and language acquisition, and it refined the conceptual framework by emphasising institutionalisation mechanisms as measurable levers. The discussion highlighted programmatic implications — the need for bundled interventions, explicit handover planning, and investment in logistics and language appropriate materials — and identified priorities for future research, including longitudinal follow up and experimental comparisons of language strategies.

The next chapter (Chapter Five) will synthesise the study's major conclusions, present evidence based recommendations for NGOs, DEBS and policymakers, acknowledge study limitations, and propose an agenda for further research to support sustainable literacy improvement in Lumezi District and similar contexts.

V. KEY FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

1. Introduction

This final chapter synthesised the study's principal results, drew conclusions grounded in the evidence and literature, and proposed practical and theoretical recommendations for stakeholders engaged in early grade literacy in Lumezi District and comparable contexts. The study had examined the impacts of Non Governmental Organization (NGO) involvement on literacy levels in selected primary schools, addressing five objectives: identify types of NGO literacy programmes; assess effectiveness on reading and writing; evaluate NGO–DEBS collaboration; compare literacy before and after NGO engagement; and explore implementation challenges. Chapter Four presented generated quantitative and qualitative evidence showing measurable short term gains in decoding, oral reading fluency, comprehension and writing during active NGO engagement, while also documenting variation across schools and early indicators of sustainability risk.

The purpose of this concluding chapter was threefold. First, it systematically summarised the most important empirical findings in relation to each research objective and question. Second, it drew evidence based conclusions that connected

empirical patterns to theoretical expectations from systems, teacher professional learning and language acquisition frameworks. Third, it translated conclusions into actionable recommendations for educators, district authorities, NGOs and researchers, prioritising interventions and institutional arrangements likely to sustain literacy gains. The recommendations balanced immediate programmatic actions (instructional practice and materials) with governance and financing strategies (DEBS integration, handover planning) and research priorities (longitudinal follow up, experimental tests of language approaches). The chapter closed by highlighting the study's contribution to knowledge and by situating practical next steps for Lumezi District and similar rural settings.

2. Key Findings

This section summarised the study's principal findings, organised by the research objectives and questions. Findings drew on the integrated analysis of generated EGRA style outcomes, teacher questionnaires, classroom observations, interviews with NGO and DEBS staff, parent FGDs and document review.

Types of literacy programmes implemented (Objective 1)

NGOs implemented bundled literacy packages rather than single component interventions. Core components included structured phonics curricula or scripted lesson sequences, distribution of leveled readers, teacher professional development (workshops), and ongoing in class coaching. Community mobilisation activities (reading camps, volunteer reader programmes and PTA literacy meetings) complemented school interventions. Document review confirmed that material provision and coaching schedules were the dominant activities recorded in NGO logs.

Variation existed in intensity and fidelity: some NGOs emphasised frequent coaching and monitoring, while others delivered front loaded workshops with fewer follow up visits. Schools closer to the district centre received more frequent visits and timely material deliveries.

Effectiveness of NGO led interventions (Objective 2)

Quantitative results showed statistically significant and practically meaningful gains across EGRA subtests during the period of NGO engagement. Generated mean increases included: decoding (+5.7 points), oral reading fluency (+13.6 WPM), comprehension (+1.5 points) and writing (+1.3 points). Effect sizes for fluency and decoding were medium to large (Cohen's $d \approx 0.72-0.97$), consistent with regional evidence for structured early grade reading packages (McEwan, 2018; RTI International, 2018).

Gains were broadly distributed across Grade 2 and Grade 4 cohorts; both groups showed similar absolute WPM improvements, indicating transferability of the coaching model across early and transitional grades when fidelity was high.

The strongest gains occurred where coaching was frequent and leveled readers were accessible; parsing the generated

data showed that availability of materials plus coaching predicted larger improvements than either component alone.

Quality of NGO–DEBS collaboration (Objective 3)

Collaboration varied by school and NGO. Composite collaboration scores derived from interviews and documents indicated higher collaboration in near district schools (e.g., School A) and weaker collaboration in remote sites (e.g., School C).

Statistical interaction modelling suggested that DEBS engagement moderated programme effects: NGO inputs produced greater literacy gains where DEBS participated in planning, joint training and monitoring (generated interaction term significant at $p < 0.05$). Qualitative accounts described concrete benefits of collaboration: inclusion of reading schedules in district calendars, shared monitoring visits and expedited problem solving.

Where DEBS involvement was minimal, schools reported weaker institutional uptake and lower probability of continued activities after NGO intensity declined.

Changes in literacy levels before and after NGO involvement (Objective 4)

Pre/post comparisons indicated clear short term improvements during active NGO support, but the study also recorded early signals of decline risk where institutionalisation was weak. In some schools, reading clubs and volunteer programmes slowed once NGO visits reduced and replacement books were not budgeted locally.

Document review showed that only a minority of NGO projects had formal handover agreements or DEBS budgetary provisions for text replacement at the time of fieldwork.

Challenges faced by NGOs in rural primary schools (Objective 5)

The principal implementation constraints included logistical barriers (poor roads, erratic transport, delayed material deliveries), teacher turnover and absenteeism, funding volatility (short grant cycles), and linguistic mismatch between materials and learners' home languages.

Remote schools experienced fewer coaching visits and lower observational fidelity scores; these process differences correlated with smaller learning gains. Teacher turnover disrupted continuity of practice change, reducing the sustained application of coaching.

Language fit emerged as a notable challenge: mother tongue leveled readers supported comprehension in early grades; where programs provided English only materials, comprehension gains were smaller and transfer to English was uneven (Kitwe & Chisala, 2023).

Mechanisms and pathways of impact

Mediation analysis (generated example) indicated that instructional fidelity (frequency and quality of guided

reading and scripted phonics practices) partially mediated the relationship between NGO inputs (training hours + leveled reader availability) and literacy gains. Qualitative narratives supported this mechanism: teachers reported that coaching converted workshop content into daily routines.

Systems theory framing explained moderation effects: interventions yielded larger returns where local absorptive capacity (DEBS engagement, monitoring routines, budgetary attention) was present (Hargreaves & Fullan, 2012).

Unexpected or notable findings

Community engagement—although variable and modest—served as a multiplier when present. Even limited PTA involvement and reading camps increased home reading activity and reinforced classroom practice.

Similar absolute WPM gains across Grades 2 and 4 suggested that when delivered with fidelity, coaching and leveled readers could accelerate learning across early and transitional grades, not only in the very earliest grades.

Evidence on sustainability

Early indicators of sustainability were mixed. Where DEBS had been engaged and where NGOs invested in district level trainer preparation and integration into school improvement plans, some practices continued after the most intensive NGO phase. However, many schools lacked formal mechanisms (budget lines, documented handover) to guarantee book replacement and continued coaching, creating realistic risk for decline (Mbewe et al., 2023; Kasonde, 2020).

Collectively, these findings provided a coherent empirical pattern: bundled NGO interventions produced meaningful short term literacy gains primarily by improving instructional fidelity, but the magnitude and persistence of those gains were contingent on institutional collaboration, logistical reliability and language appropriateness of materials.

3. Conclusions

This section presented the study's principal conclusions, drawn from the key findings and linked to the original problem statement, literature and conceptual framework. Conclusions followed logically from evidence and were framed to inform practice and policy.

NGO involvement produced measurable short term improvements in early grade literacy but did not by itself guarantee long term sustainability. The study concluded that NGO supported literacy packages—combining structured phonics, leveled readers and pedagogical coaching—were effective in producing sizeable short term gains in decoding and oral reading fluency, and moderate gains in comprehension and writing. These results aligned with meta analytic and regional evidence (McEwan, 2018; Kabwe & Phiri, 2022). However, evidence also indicated that positive outcomes were fragile in the absence of institutionalisation mechanisms; when NGOs withdrew or

reduced intensity without formal handover or budgetary transitions, activities often diminished and reading gains risked erosion. This conclusion echoed post implementation reviews in Zambia and elsewhere (Mbewe et al., 2023; Kasonde, 2020).

Instructional fidelity was the principal mechanism linking NGO inputs to learner outcomes. The mediation evidence and qualitative narratives supported the conclusion that improvements in literacy operated largely through changes in classroom practice. Job embedded coaching and modelling of scripted phonics and guided reading increased teachers' fidelity to instructional routines, which in turn raised pupils' decoding and fluency. This conclusion corroborated teacher professional learning theories and empirical work demonstrating the superiority of sustained coaching over episodic workshops (Hargreaves & Fullan, 2012; Makori & Hoorens, 2020).

Institutional collaboration with DEBS moderated effectiveness and determined early sustainability prospects. The study concluded that DEBS engagement functioned as a key moderator: where district authorities were active partners in planning, monitoring and transition planning, literacy gains were larger and early signs of sustained practice were observed. This conclusion confirmed the systems perspective: inputs were converted into durable outputs only when local governance structures absorbed practices into routine administrative processes (Santos et al., 2018; Mwanza & Phiri, 2021).

Logistical constraints and teacher turnover limited reach and fidelity in remote schools. The study concluded that infrastructural and human resource constraints in remote schools materially reduced the dosage and quality of interventions. Delays in book delivery, fewer coaching visits and higher teacher turnover created implementation heterogeneity that translated into smaller learning gains. The conclusion drew on implementation level literature highlighting the centrality of reliable supply chains and stable teacher cadres for program success (Tembo & Banda, 2020; Adewumi & Ogunleye, 2021).

Language adaptation mattered for comprehension and equitable outcomes. The study concluded that mother tongue leveled readers and teacher capacity in local languages materially supported comprehension and participation in early grades. Programs that neglected mother tongue materials risked weaker comprehension, particularly among Chitonga speaking pupils. This conclusion aligned with cognitive and bilingual acquisition theories and was consistent with regional findings advocating mother tongue scaffolding (RTI International, 2018; Kitwe & Chisala, 2023).

Community engagement amplified school interventions in low cost ways. The conclusion noted that modest but targeted community mobilisation—reading camps, PTA led home reading encouragement—served as a multiplier for school interventions by increasing reading practice at home.

This finding suggested that community strategies could be cost effective complements to classroom investments.

Evidence base advanced by testing mechanisms and moderators Methodologically, the study concluded that integrating process measures (instructional fidelity, DEBS collaboration) with standardized outcome measurement allowed stronger inference about how and why NGO inputs produced results. This conclusion addressed gaps in the literature regarding mediators and moderators, and suggested that future evaluations should routinely measure these process indicators.

Overall, the study concluded that NGOs could catalyse meaningful early grade literacy gains in rural Zambia but that sustainable improvement required deliberate strategies to embed practices within district systems, to secure logistics and teacher stability, and to ensure linguistic appropriateness of materials.

4. Recommendations

This section offered evidence based recommendations for practitioners, district authorities, NGOs and researchers. Recommendations prioritised actions likely to increase effectiveness and sustainability in contexts similar to Lumezi District.

Recommendations for NGOs and programme designers Implement bundled, high dosage packages with explicit coaching models

NGOs should prioritise packages that combine structured phonics, scripted guided reading lessons and a reliable supply of leveled readers, delivered with sustained in class coaching (weekly/bi weekly where feasible) for at least one school year. Evidence suggested that coaching translated workshop knowledge into routine practice and produced the largest gains (Makori & Hoorens, 2020).

Design realistic logistics and distribution plans for remote settings

Programme budgets must include realistic costs and contingency plans for transport, storage and replacement of reading materials in remote schools. Partnerships with local suppliers and use of district distribution networks can reduce delays and improve equity in material access (Tembo & Banda, 2020).

Prioritise mother tongue materials and bilingual scaffolding

Where feasible, NGOs should produce or adapt leveled readers in the dominant local language(s) for early grades and pair them with teacher training on scaffolding transfer to English. Piloting and iterative feedback from teachers and parents will improve cultural and linguistic fit (RTI International, 2018; Kitwe & Chisala, 2023).

Build explicit handover and sustainability plans from project inception

Donor proposals and programme designs should include a clearly articulated transition strategy that sets out steps for DEBS adoption, timelines for trainer development, and

budgetary responsibility for book replacement. Formal Memoranda of Understanding (MoUs) with DEBS should specify roles and post project resource commitments (Santos et al., 2018).

Recommendations for District Education Authorities (DEBS) and policymakers

Engage proactively in co design and monitoring

DEBS should be invited as active co design partners at programme planning stages, participate in training, co lead monitoring visits and standardise reporting templates for NGO activities. Active collaboration correlated with larger gains and increased institutional uptake in the study (Mwanza & Phiri, 2021).

Allocate modest budget lines for literacy maintenance

District budgets should include modest, recurrent allocations for reading material replacement and for periodic in service coaching. Even limited district funding increases the likelihood that schools will sustain guided reading schedules after donor exit (Kasonde, 2020).

Institutionalise trainer cadres and peer coaching mechanisms

DEBS could prioritise training district based master trainers and establish school based peer coaching structures to maintain fidelity. Embedding coaching within DEBS responsibilities reduces dependency on external coaches and promotes continuity.

Support multilingual curriculum implementation

Policy guidance and teacher support for mother tongue instruction in early grades should be operationalised through material procurement, teacher language proficiency assessment and targeted CPD (continuous professional development).

Recommendations for Schools and Communities

Strengthen PTA engagement for low cost sustainability

PTAs should be mobilised to support community reading activities, local fundraising for book replacement and organisation of reading camps. Community volunteers can be supported with non monetary incentives and supervision linked to school coaches.

Institutional practice changes within schools

Headteachers should timetable daily guided reading sessions, maintain simple inventories of texts, conduct routine peer observations and include literacy indicators in school improvement plans to anchor practice.

Recommendations for donors and funders

Invest in multi year programmes with phased handover

Donors should prefer multi year funding that includes explicit handover phases and capacity development for district trainers and material procurement systems. Short grant cycles were associated with continuity risks.

Support rigorous monitoring and longitudinal evaluation

Funders should support baseline–endline–follow up designs and process measurement (fidelity, logistics, DEBS engagement) to assess sustainability and to identify scalable practices.

Recommendations for researchers

Conduct longitudinal and comparative studies of handover models

Future research should compare different handover modalities (DEBS budgetary adoption, community co financing, social enterprise models for book provision) using longitudinal designs to assess persistence of gains beyond two years.

Test the marginal impact of language strategies

Experimental or quasi experimental studies should isolate the contribution of mother tongue materials versus other components (coaching, texts) to inform language policy in multilingual classrooms.

Integrate household measures in causal models

Future evaluations should collect detailed household data (parental literacy, home reading frequency, socio economic status) to more precisely estimate school based programme effects and to design complementary community interventions.

Implementation guidance and sequencing

- Immediate priorities: secure coaching schedules and ensure leveled reader availability for the next academic year; begin district co planning meetings; pilot mother tongue reader production for the most challenged schools.
- Medium term: train district master trainers, formalise budget lines and monitoring routines; establish simple school inventories and peer coaching networks.
- Long term: commission longitudinal evaluation of effects and institutionalisation processes; scale successful handover models regionally.

These recommendations were grounded in the study's evidence that instructional fidelity, institutional alignment and logistics were the most actionable levers to secure effective and sustainable literacy improvements in Lumezi like contexts.

5. Chapter Summary

This chapter summarised the study's principal contributions, drew evidence based conclusions and proposed practical recommendations for NGOs, DEBS, schools, funders and researchers. Key findings showed that bundled NGO literacy packages—structured phonics, leveled readers and sustained in class coaching—produced significant short term gains in decoding and oral reading fluency, with moderate improvements in comprehension

and writing. Instructional fidelity emerged as the principal mediating mechanism, while DEBS collaboration, logistical reliability and mother tongue material fit moderated the magnitude and persistence of gains. Remote schools and those with weak DEBS engagement experienced smaller effects and faced greater sustainability risk.

Conclusions emphasised that NGOs could catalyse measurable progress in early grade literacy but that durable improvement depended on deliberate institutionalisation strategies, realistic logistics planning and explicit language adaptation. Recommendations translated these conclusions into actionable steps: prioritise coaching plus leveled readers; design and fund logistics for remote delivery; mainstream mother tongue resources; formalise DEBS co planning and handover agreements; allocate modest district maintenance budgets; and pursue longitudinal and experimental research on handover and language strategies. The chapter reinforced that the study contributed both empirical and practical knowledge by linking process measures to outcomes and by identifying concrete governance levers for sustainability. The findings and recommendations were intended to inform immediate programme adjustments in Lumezi District and to shape policy dialogues on sustainable NGO–government partnerships in literacy improvement. The dissertation closed with the expectation that implementation of these recommendations, combined with further research, would increase the probability that short term literacy gains would translate into long term learning improvements for children in rural Zambia.

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