



EVIDENCE GAP MAP REPORT

FOUNDATIONAL LEARNING RESEARCH IN MALAWI

Date of publication: May 2025

DOI: <https://doi.org/10.53832/unlockingdata.1026>

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About this document

Recommended citation

Saddick, L., Twabi, H., Chiwaya, P., & Kadzamira, E. (2025). Evidence Gap Map Report: Foundational learning research in Malawi [Evidence Review]. Unlocking Data. <https://doi.org/10.53832/unlockingdata.1026>. Available at <https://docs.unlockingdata.africa/lib/S2M867K7>.

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Reviewers

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Notes

This work was carried out with the aid of a grant from the International Development Research Centre, Ottawa, Canada (IDRC). The views expressed herein do not necessarily represent those of IDRC or its Board of Governors.

About the Unlocking Data Initiative

The Unlocking Data Initiative is a community of practice that connects African scholars, NGOs, national statistics offices and policymakers for the purpose of improving access to and use of education data. The **Unlocking Data: Scaling Uses and Users of Education Data** project is a collaborative work led by Zizi Afrique Foundation and supported by Education Sub-Saharan Africa, eBase Africa, University of Malawi's Centre for Education Research and Training (CERT). The latter project, which is being implemented in Cameroon, Kenya and Malawi, aims to scale up uses and users of data to address the knowledge gap of how to adaptively scale up the effective use of existing education data by policymakers and researchers in Africa.

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Abbreviations

EGM	Evidence Gap Map
IDRC	International Development Research Centre
UDI	Unlocking Data Initiative
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNICEF	United Nations Children’s Fund

1. Introduction

Foundational learning, which encompasses basic literacy, numeracy, and socio-emotional skills acquired in early childhood and primary education, is increasingly recognised as a critical determinant of lifelong educational success and economic productivity ([UNESCO & UNICEF, 2014](#); [Duncan & Magnuson, 2013](#)). Yet in many low-income countries, including Malawi, learning poverty remains pervasive, with a significant proportion of children unable to read or perform basic arithmetic by age ten ([Kadzamira et al., 2025](#); [Asim & Gera, 2024](#)). This challenge persists despite a series of policy reforms, including the Education Act (2013), the National Education Sector Investment Plan (NESIP, 2020–2030), the National Early Childhood Development Policy (NECDP), and the National Education Policy (NEP), as well as substantial donor-supported programs and pedagogical innovations aimed at enhancing learning outcomes. Addressing this crisis requires not only targeted interventions, but also a robust and contextually grounded evidence base to inform policy and practice.

This study presents an Evidence Gap Map (EGM) that systematically reviews and synthesises empirical research on foundational learning interventions in Malawi. Developed as part of the Unlocking Data Initiative, the EGM identifies where evidence exists and where critical gaps remain in relation to interventions and outcomes. In addition, the EGM segments the evidence base by the gender of the lead researcher. It therefore seeks to illuminate patterns in the production of evidence, including gender dynamics in research leadership and the alignment between research focus and national learning priorities. By offering a comprehensive visual synthesis of available studies, the EGM aims to guide policymakers, donors, and researchers toward more equitable, evidence-informed decision-making in foundational learning.

2. The Scope of interventions and outcomes

This section outlines the range of interventions and learning outcomes covered in the Evidence Gap Map. The classification draws from global and local education frameworks and reflects the diversity of strategies implemented to improve foundational learning in Malawi. The intervention categories capture both instructional and systemic approaches, while the outcome categories encompass academic, social, and institutional measures of learning and educational impact. Together, they form the matrix structure used to map and analyse the existing evidence base.

2.1. Description of interventions

In this report, an intervention is defined as a purposeful strategy or action, whether pedagogical, technological, behavioural, or systemic, implemented to enhance foundational learning outcomes among children aged 4 to 10. A comprehensive review of global and national education frameworks informed the classification of interventions presented herein. The selection process included a structured analysis of peer-reviewed literature, grey literature, and institutional reports. This approach ensured that the listed interventions reflect evidence-based practices and maintain contextual relevance to Malawi's foundational learning landscape.

Table 1. Categories and descriptions of interventions used in the EGM

Intervention	Description
Teachers Professional Development	In-service training, mentoring, coaching, and pre-service teacher education programs.
Structured Pedagogy and Teaching at the Right Level	Curriculum reforms, scripted lesson plans, and age-appropriate teaching strategies.
Language of Instruction and Multilingual Education	Use of mother tongue vs. official language in early grades
Remedial and accelerated learning programs	Catch-up programs for struggling learners, including tutoring and accelerated learning.
Technology-enabled learning	Digital tools, mobile learning, and radio/TV-based education for foundational skills.

Parental engagement and community involvement	School-based and home-based interventions to increase parental participation in education.
Early Childhood Intervention	Pre-primary school readiness programs that enhance cognitive and language skills
School feeding and health interventions	Impact of school feeding, deworming, and health interventions on learning outcomes
Built environment	Availability of textbooks, classroom resources, and impact of class sizes.
Policy and system-level interventions	Education governance, teacher recruitment policies, and large-scale curriculum reforms.
Social and Emotional Learning Intervention	Programs that teach children emotional regulation, conflict resolution, and interpersonal skills that support learning
Behavioural interventions	Psychological and behavioural interventions, such as positive reinforcement, text message reminders, and goal-setting strategies
Others	Includes any additional or cross-cutting interventions not captured in the above categories.

2.2. Description of outcomes

Outcomes refer to the measurable domains of change or impact that foundational learning interventions seek to influence. The categorisation of outcomes was guided by established international frameworks, such as those advanced by UNESCO and UNICEF, as well as by national policy priorities outlined in Malawi's education sector plans. These include the Global Report on Early Childhood Care and Education ([UNESCO & UNICEF, 2014](#)), Every Child Learns UNICEF Education Strategy 2019-2030 ([UNICEF, 2019](#)), the National Education Policy ([Ministry of Education, 2016](#)), and the Malawi National Education Sector Investment Plan 2020-2030 ([Ministry of Education, 2020](#)). These outcomes were further refined through a synthesis of empirical studies identified during the evidence mapping process. Emphasis was placed on capturing a broad spectrum of dimensions—including cognitive, affective, behavioural, and systemic domains—to provide a holistic understanding of foundational learning. The inclusion of both academic and non-academic

outcomes reflects an effort to align the Evidence Gap Map with contemporary discourses on inclusive and equitable education, ensuring that the mapped evidence adequately captures the multifaceted nature of learning among early-grade learners in Malawi.

Table 2. Categories and descriptions of outcomes used in the EGM

Outcome	Description
Literacy Skills (Reading & Writing)	Measures improvements in reading fluency, comprehension, phonemic awareness, spelling, and writing skills.
Numeracy Skills	Covers basic number recognition, arithmetic, problem-solving, and mathematical reasoning.
Socio-Emotional & Behavioural Outcomes	Includes motivation, self-confidence, social skills, and perseverance in learning.
Teacher Knowledge & Instructional Practices	Evaluates improvements in teacher pedagogy, lesson planning, and instructional techniques.
Parental & Community Engagement	Measures changes in parental support for learning, home literacy environment, and community involvement in education.
Equity & Inclusion	Assesses improvements in learning outcomes for marginalised groups, including gender, disability, and rural/urban disparities.
System-Level Outcomes & Policy Outcomes	Captures improvements in curriculum effectiveness, teacher training policies, and education governance at the system level
Engagement and classroom participation	Measures how actively students participate in class activities, discussions, and group work.
Enrolment, attendance, and retention	Tracks access to education by measuring how many students enrol, attend regularly, and stay in school over time.
Others	Includes any additional or cross-cutting outcomes not captured in the above categories.

3. Methodology

This section outlines the methodological approach adopted in the development of the Evidence Gap Map on foundational learning in Malawi. It details the processes followed to identify, screen, and analyse relevant empirical studies. Specifically, it describes the literature search strategy, inclusion and exclusion criteria, and the tools and procedures used for data coding and visualisation. A systematic presentation of each methodological stage in this section provides a clear understanding of the procedures involved in generating the EGM, ensuring the reliability and replicability of the findings.

3.1. The literature search strategy

The literature search underpinning the EGM was informed by the Unlocking Data Initiative framework ([↑Selwaness et al., 2022](#); [↑Lawson & Heady, 2021](#)) and employed a multifaceted methodology that combined systematic and opportunistic review strategies with stakeholder engagement. The evidence mapping involved comprehensive searches across academic databases including Taylor and Francis, Sage Journals, ERIC, Google Scholar, Academia, and ResearchGate, physical reviews of postgraduate theses and institutional repositories, and consultations with local researchers to retrieve grey and unpublished literature. In light of Malawi's fragmented and often inaccessible nature of research and data systems on foundational learning ([↑Kadzamira et al., 2025](#)), opportunistic mapping was critical in capturing emerging and context-specific studies. Stakeholder consultations, conducted through validation workshops, further enhanced the robustness of the mapping process by identifying additional sources and refining the interpretation of findings.

3.2. Screening and eligibility criteria

The literature review adopted predefined screening and eligibility criteria to ensure the inclusion of relevant and high-quality studies. The inclusion criteria encompassed:

- Studies focused on foundational learning (literacy, numeracy, and social skills).
- Research conducted within Malawi or offering comparative insights relevant to the Malawian context.
- Publications in English from 2010 to 2024.

A three-stage screening process was used: title and abstract review, full-text assessment, and final eligibility determination. A screening matrix was developed and used to record all decisions made and ensure transparency.

3.3. Analysis and reporting

This sub-section outlines the systematic process used to organise, code, and visualise the body of evidence on foundational learning in Malawi. The analysis proceeded in three interconnected steps: managing and preparing bibliographic data using Zotero; coding and classifying studies within EPPI-Reviewer; and finally, converting the structured dataset into an interactive Evidence Gap Map (EGM) using EPPI-Mapper. Together, these steps ensured a rigorous, transparent, and user-friendly synthesis of the research landscape to support evidence-informed decision-making.

Step 1: Study management and organisation using Zotero

Once the final list of eligible studies was compiled, we used Zotero, a reference management tool, to organise and manage the bibliographic data. Studies were imported into Zotero using its Google Chrome extension, which streamlined the transfer of metadata such as study titles, author names, publication years, abstracts, and source details.

Zotero provided a centralised platform to systematically review, tag, and categorise studies before moving to the next stage of analysis. Once all records were verified and cleaned for consistency, the complete dataset was exported in RIS (Reference Information System) format. This standardised file ensured compatibility with subsequent coding and visualisation tools such as EPPI-Reviewer and EPPI-Mapper.

Step 2: Study coding, classification, and data export in EPPI-Reviewer

The RIS file from Zotero was then uploaded into EPPI-Reviewer, where a concise coding framework classified each study across essential dimensions—lead author gender, study focus (literacy, numeracy, socio-emotional, etc.), language, source type, methodology, learning outcomes, and intervention type. Two researchers manually coded all records, with a subset double-coded to verify consistency; any discrepancies were reconciled through discussion or senior review. Once coding was complete, the dataset (with all category assignments) was exported directly from EPPI-Reviewer as a JSON (JavaScript Object Notation) file, preserving the structured relationships among studies and their coded attributes, and metadata for seamless visualisation in the next stage.

Step 3: Interactive map generation and evidence synthesis

The final JSON file generated from EPPI-Reviewer was uploaded into EPPI-Mapper, a web-based tool designed for creating interactive Evidence Gap Maps. EPPI-Mapper processed the structured data and mapped the studies onto a matrix format, allowing for intuitive visualisation and exploration. The system retained all coded attributes—such as

intervention type, learning outcome, study design, and lead author gender—ensuring that the visualisation accurately reflected the underlying evidence.

The EGM matrix was configured with intervention types on the vertical axis and learning outcomes for children aged 4–10 on the horizontal axis. EPPI-Mapper automatically populated the grid based on study classifications, while enabling the integration of interactive filters to support user-driven exploration by specific criteria like study type, article accessibility, article type, and gender of the first author.

The resulting Evidence Gap Map (EGM) visually synthesises the landscape of foundational learning research in Malawi. Each circle in the matrix corresponds to a specific intervention–outcome pairing, with its size representing the volume of evidence available and its colour denoting the gender of the lead author (● male; ● female).

This interactive visualisation provides a clear, accessible, and rigorous overview of where research efforts have been concentrated and where gaps remain. It equips stakeholders, such as policymakers, researchers, and donors, with a strategic tool to identify priorities for future research, allocate resources effectively, and drive evidence-informed decision-making in foundational learning.

4. Findings

This section summarises key patterns and gaps identified through the EGM of foundational learning research in Malawi. The analysis highlights which intervention–outcome combinations are most heavily studied, where underexplored areas exist, and how gender dynamics shape research leadership. Findings are organised thematically to reflect both the density and diversity of the existing evidence base.

The interactive version of the EGM, which allows users to explore the evidence by applying filters and viewing study-level details, is available on the Unlocking Data website.¹

4.1. Dominance of academic skill-focused research

- The EGM reveals a clear concentration of research on core academic skills, particularly literacy and numeracy. Almost every intervention cluster contains sizable evidence nodes under these outcomes. While both literacy and numeracy receive considerable attention, literacy-focused studies are slightly more represented across interventions, indicating a stronger emphasis on reading and language-related outcomes.
- Substantial attention is also directed toward teacher knowledge and instructional practices, especially in studies categorised under teacher professional development and structured pedagogy.

¹ See <https://unlockingdata.africa/wp-content/uploads/2025/05/Malawi-EGM-on-FLN.html>. Retrieved on 29 May 2025.

Figure 1. An extract from the EGM on foundational learning in Malawi



Figure 1 shows larger circles concentrated on literacy, numeracy, and teacher knowledge and instructional practices, which indeed shows that these are the most studied outcomes on foundational learning in Malawi.

4.2. Underrepresented outcomes

The analysis indicates significant gaps in the evidence base concerning certain foundational learning outcomes

- Outcomes related to socio-emotional development, parental and community engagement, and equity and inclusion are markedly underrepresented, highlighting a critical evidence gap in research that connects classroom instruction with broader psychosocial and equity-related domains.
- Similarly, enrolment, attendance, and retention, as well as classroom engagement, remain marginal in the existing evidence base.

4.3. Disparate coverage of intervention types

The EGM also highlights which intervention types are most frequently studied and which are less explored

- The most frequently studied interventions include: teacher professional development, structured pedagogy and teaching at the right level, and policy and

system-level interventions. These interventions predominantly focus on literacy, numeracy, and teacher-related outcomes.

- Conversely, early childhood development, parental engagement, and school feeding and health interventions are associated with smaller evidence volumes, signalling an opportunity to expand research in these areas, particularly on their long-term effects on foundational learning.
- Social and emotional learning and behavioural interventions remain emergent and underexplored within the Malawian context.

4.4. Gender representation in research

The EGM analysis includes an examination of gender dynamics among lead researchers. The interactive EGM map uses colour coding (● male; ● female) to denote the gender of the lead author. We assume in this study that the first author leads the research work.

4.4.1. Male-dominated research leadership

- The majority of studies across most intervention–outcome pairings are led by male researchers. This dominance is especially pronounced in research related to system-level outcomes, teacher practices, and academic skills.

4.4.2. Female-led contributions and gaps

- Female researchers are relatively more active in areas such as structured pedagogy, remedial and accelerated learning, and technology-enabled learning, with a focus on literacy, numeracy, and, to a lesser extent, socio-emotional outcomes.
- However, female-led studies are notably scarce in domains such as policy and system-level interventions, enrolment and retention, and the built environment.

5. Gaps and opportunities

The comprehensive analysis conducted through the evidence gap map has illuminated several key areas where research on foundational learning in Malawi is sparse or lacking, presenting significant opportunities for future study and investment. These gaps highlight the need for a more holistic and integrated understanding of the factors influencing foundational learning outcomes.

The principal gaps and corresponding opportunities identified include:

- **Socio-emotional and equity-related outcomes**

There is limited empirical evidence linking instructional interventions to important non-academic outcomes, specifically learners' socio-emotional development or equity outcomes (e.g., gender, disability, or geographic disparities).

- **Early childhood foundations**

The EGM reveals few rigorous evaluations that explore how pre-primary education or parenting programs influence subsequent foundational learning outcomes in literacy and numeracy once children enter primary school. This signals an opportunity for greater investment in longitudinal research that examines the long-term contributions of early childhood interventions to foundational skills.

- **System-level reforms and learning linkages**

While several studies focus on policy-level reforms, these are rarely connected back to observed changes in classroom practices or student-level foundational learning, revealing a disjuncture between systemic change and learning outcomes. Strengthening cross-level research designs that trace the trajectory from policy to practice to student results is a key opportunity.

- **Under-researched interventions**

Interventions involving social and emotional learning, behavioural nudges, improvements to the physical learning environment, and community-based parental engagement are nascent and warrant further exploration through targeted research.

6. Conclusion and recommendations

Drawing directly from the patterns and gaps revealed by the evidence gap map, these recommendations aim to address the identified limitations in the current evidence base and foster a more comprehensive understanding of how to improve foundational learning for all children in Malawi.

- **Broaden the scope of outcomes:** Encourage and fund studies that integrate academic, psychosocial, and equity outcomes to reflect a more holistic conception of foundational learning.
- **Promote gender-inclusive research leadership:** Prioritise funding for female-led research, particularly in underrepresented areas such as policy, systemic reform, and learner engagement.
- **Strengthen cross-level integration:** Design research that traces the trajectory of policy and systemic reforms through classroom practices to student-level learning and retention outcomes.
- **Address early childhood evidence gaps:** Invest in longitudinal research examining how early childhood interventions, including parenting and pre-primary education, contribute to foundational skills in primary school.

This EGM of foundational learning research in Malawi provides a critical synthesis of the existing evidence base in literacy, numeracy, and teacher development, with a majority of studies led by male researchers. Nonetheless, critical gaps persist in areas such as socio-emotional learning, equity and inclusion, early childhood foundations, and the linkage between system-level reforms and learner outcomes. Addressing these gaps through gender-balanced research and broader outcome integration will be essential to strengthening the evidence base required to achieve inclusive and equitable learning for all Malawian children.

In conclusion, while evidence exists in core areas, achieving inclusive and equitable foundational learning for all Malawian children necessitates strategically addressing the identified gaps. This requires a concerted effort to support gender-balanced research, integrate a broader range of outcomes, strengthen the linkages between different levels of the education system in research, and invest in evaluating under-explored interventions and the crucial foundations laid in early childhood. By focusing future research and funding on these areas, stakeholders can build the comprehensive evidence base required to inform effective policy and practice.

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