



EVIDENCE GAP MAP REPORT

FOUNDATIONAL LEARNING RESEARCH IN KENYA

Date of publication: June 2025

DOI: 10.53832/unlockingdata.1022

Authors: Karen Arisa and Charles Gachoki



www.unlockingdata.com

About this document

Recommended citation

Suggested Citation: Arisa, K. & Gachoki, C. 2025. *Evidence Gap Map Report: Foundational Learning Research in Kenya*. Unlocking Data. Available at <https://doi.org/10.53832/unlockingdata.1022>. Available at <https://docs.unlockingdata.africa/lib/G4EBJIQ5>.

Available under **Creative Commons Attribution 4.0 International**.

Reviewers

Late Lawson, Rashid Iwiire, and Nafisa Waziri

Licence

Creative Commons Attribution 4.0 International

<https://creativecommons.org/licenses/by/4.0/>

You're free to share and adapt this material, even for commercial use, as long as you credit Unlocking Data, link to the license, and note any changes. Do not imply endorsement from the original creators.

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.

To find out more about us, go to <https://unlockingdata.africa/>. Our evidence library can be found at <https://docs.unlockingdata.africa/lib/>

Contents

<i>List of figures and tables.....</i>	<i>3</i>
1. Introduction.....	4
1.1 About the unlocking data initiative.....	4
2. Methodology.....	5
2.1 Scope.....	5
2.2 The search strategy.....	7
2.3 Importing and screening of studies in EPPI-Reviewer.....	7
2.4 Data coding and extraction.....	8
2.5 Mapping the evidence.....	8
3. Findings.....	9
3.1 Evidence based on outcomes.....	9
3.2 Evidence based on interventions.....	10
3.3 Evidence based on methodology.....	10
4. Recommendations and conclusion.....	12
References.....	13

Figures and tables

Table 1. Description of interventions and outcomes.....	7
Figure 1. Extract from the Evidence Gap Map.....	11

1. Introduction

1.1 About the unlocking data initiative

The Unlocking Data Initiative aims to enhance evidence-informed decision-making for foundational learning in Africa by increasing the availability and use of data. We are achieving this by mapping and synthesising available data on foundational learning in low- and middle-income countries (LMICs) and by developing and scaling an approach to meet these goals. By supporting stakeholders in identifying evidence clusters, gaps, and priorities to improve educational outcomes, particularly in resource-constrained settings like Kenya, research and evidence can be targeted and useful in decision-making.

Our Situational Analysis of the Foundational Learning (FL) landscape in Kenya ([Gachoki & Arisa, 2025](#)) outlines the processes of data and knowledge production, as well as evidence flow across education sectors and among stakeholders. It has also revealed stakeholders' challenges not only in accessing data but also in converting it into actionable insights for evidence-based decision-making. This document leverages research outputs identified during the first stages of the process to showcase persisting knowledge or evidence gaps,

This Evidence Gap Map (EGM) report presents a systematic analysis of the evidence landscape on foundational learning in Kenya. The EGM uses data on interventions, outcomes, the gender of the first author, the focus of the study, and the language of publication to probe for evidence clusters. Doing so, it also highlights areas where evidence gaps persist, motivating future investigations into research priorities in foundational learning.

The remainder of the report is organised as follows: [Section 2](#) provides an overview of our methodology. [Section 3](#) presents key findings, while [Section 4](#) proposes some recommendations and concludes the report.

2. Methodology

In this section, the methodological approach adopted in developing the Evidence Gap Map on foundational learning in Kenya is outlined. The section includes the scope of the map, and the details of the steps followed to search, identify, screen, code, extract and finally the visualisation of the evidence included. A structured outline of every methodological step offers a transparent comprehension of the processes used to create the EGM, thereby guaranteeing the dependability and reproducibility of the results.

2.1 Scope

The identified research area of focus is foundational learning in Kenya, covering school-going children aged 4 to 10 years. The Map includes journal articles published in English. Interventions mapped include teacher professional development, structured pedagogy and teaching at the right level, language of instruction and multilingual education, remedial and accelerated learning, technology-enabled interventions, parental and community engagement, early childhood interventions, school feeding and health, built environment, policy and systems, social, emotional, and behavioural interventions. Outcomes mapped include literacy, numeracy, socio-emotional and behaviour, teacher knowledge and instructional practices, equity and inclusion, system and policy, engagement and classroom participation, enrolment, attendance, and retention. Evidence types included systematic reviews and meta-analyses, experimental and quasi-experimental studies, longitudinal and cohort studies, cross-sectional studies, expert opinion, and studies employing qualitative, quantitative, and mixed methods.

Table 1. Description of interventions and outcomes

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 programmes 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 programmes 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 the 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.
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.

2.2 The search strategy

The literature search was guided by the Unlocking Data Initiative framework ([↑Lawson & Heady, 2021](#)) and utilised a varied methodology that combined systematic reviews with opportunistic examination and stakeholder input. The evidence mapping included foundational learning studies through a Systematic Review conducted via EBSCOhost using PRISMA 2020 methodology, focusing on terms like "foundation skills", "literacy", "numeracy", and "learning outcomes with wildcards such as the (*) to expand the search results. The search yielded 549 studies from EBSCOhost. The EGM included published articles in journals and excluded other types of literature, such as postgraduate dissertations and grey literature found in government files. According to [↑Mulinge & Arasa \(2013\)](#), the bulk of the dissertations and manuscripts generated from them are generally of low quality, a case that reflects the scenario in other developing countries ([↑Ngulube & Kwanya, 2022](#)). In Kenya, Master's and doctoral students are generally expected to publish at least one (1) and two (2) journal articles, respectively, from their dissertations before they can be allowed to graduate ([↑Mukhwana et al., 2016](#)). This means the dissertations in university repositories were excluded from the search.

2.3 Importing and screening of studies in EPPI-Reviewer

The search results were uploaded into EPPI-Reviewer, a systematic review software, where the initial screening process was conducted. This included deduplicating records using EPPI-Reviewer's built-in deduplication tool to remove any duplicate studies retrieved from multiple databases. The screening process was carried out in two stages to ensure a thorough and systematic review of the literature. First, Title/Abstract Screening was performed to assess studies against predefined

inclusion and exclusion criteria, allowing researchers to quickly identify potentially relevant articles. Following this, Full-Text Screening was conducted, where the remaining studies were evaluated in greater detail to confirm their eligibility based on the study's objectives and criteria. This two-stage approach helped streamline the review process while maintaining rigour in study selection.

2.4 Data coding and extraction

A comprehensive coding framework was developed to systematically categorise and analyse the included studies, focusing on three key dimensions: interventions, outcomes, and study type. This framework facilitated a structured approach to data extraction and synthesis, ensuring consistency across the review process. To further streamline data collection, EPPI-Reviewer's built-in data extraction forms were utilised, allowing for the standardised recording of critical details such as the specific outcomes measured and the characteristics of the interventions examined. This methodological rigour enhanced the reliability and reproducibility of the findings, enabling a thorough evaluation of the evidence in alignment with the study's objectives.

2.5 Mapping the evidence

The studies were categorised into an intervention-outcome matrix and visualised using **bubble plots**. This is an Interactive matrix/chart with columns = outcomes, rows = interventions, colour-coded as:

- Blue bubbles = Evidence clusters with a female as first author
- Green bubbles = Evidence clusters with a male as first author
- Blank clear areas = No evidence available

The size of the bubble indicates evidence of strength in numbers.

The EGM has interactive features that enable users to navigate the evidence by applying filters and viewing study-level details.

1. Hover Effect: Hover over any bubble to see the Total studies and their breakdown in the cluster
2. Click Functionality: Click a bubble to:
 - a. View study titles, authors, and publication years in a pop-up window.
 - b. Access abstracts or direct links to full texts (if available).
3. Filter Options (Toolbar): Toggle by outcomes or interventions.

3. Findings

This section outlines the trend in evidence strength observed in the EGM of foundational learning research in Kenya. A country situational analysis in the foundational learning ecosystem in Kenya ↑[Gachoki & Arisa \(2025\)](#) showed that gender plays a crucial role in the knowledge developed in the foundational learning space; hence it was included as a default filter.

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

3.1 Evidence based on outcomes

The EGM shows a distinct focus on literacy and numeracy, with notable evidence of strength in almost all intervention clusters. Although research in both literacy and numeracy is observed, there is a significantly higher number of studies centred on literacy across interventions, suggesting a greater priority on reading skills and language outcomes.

Figure 1. Extract from the Evidence Gap Map



The available evidence supporting the effectiveness of interventions in key outcomes such as socio-emotional behaviour, equity and inclusion, system and policy-level changes, classroom engagement and participation, and enrolment, attendance, and retention outcomes remains limited and weak. This suggests that further rigorous research is needed to establish stronger empirical foundations in these domains. Strengthening the evidence base in these areas is critical for informing policy and practice, ensuring that interventions are both effective and equitable.

¹ See https://unlockingdata.africa/wp-content/uploads/2025/05/EGM_Kenya.html. Retrieved on 3 June 2025.

3.2 Evidence based on interventions

Several critical intervention areas remain understudied, with limited or inconclusive evidence on their effectiveness. These include remedial and accelerated learning programs, which aim to address learning gaps but lack robust empirical support regarding their long-term impact. Similarly, behavioural interventions, often designed to improve student engagement and classroom dynamics, have insufficient evidence to determine their scalability and sustainability across diverse educational settings. Additionally, technology-enabled learning, despite its growing popularity, lacks comprehensive research to validate its efficacy, particularly in low-resource environments where access and implementation challenges may hinder outcomes. The scarcity of rigorous studies in these areas highlights a pressing need for further investigation to ensure that such interventions are evidence-based, equitable, and capable of delivering meaningful results.

There is a striking lack of empirical evidence on several intervention areas, including school feeding and health programs, modifications to the built environment, and social-emotional learning (SEL) initiatives. Despite the widespread implementation of school feeding and health interventions in Kenya, particularly aimed at improving nutrition, attendance, and cognitive outcomes, there is insufficient rigorous data to confirm their long-term effectiveness. Similarly, while the built environment (e.g., classroom design, sanitation facilities, and school infrastructure) is theorised to influence learning outcomes, few studies provide conclusive evidence on its role in educational outcomes. Additionally, despite growing interest in SEL programs to foster interpersonal skills, the evidence remains fragmented, with limited longitudinal or scalable studies. These gaps underscore the urgent need for methodologically robust research to assess whether these interventions deliver meaningful, sustainable benefits, particularly in diverse and marginalised contexts. Without stronger evidence, policymakers risk investing in strategies that may lack proven efficacy.

3.3 Evidence based on methodology

The available evidence base is characterised by a heavy reliance on qualitative research methods, which dominate the literature, followed by quantitative studies and, to a lesser extent, mixed-methods approaches. Notably absent are studies employing behavioural or cross-sectional methodologies, suggesting a critical gap in research that captures real-time behavioural data or broader population-level trends. Furthermore, rigorous experimental and quasi-experimental designs, which are essential for establishing causality, are seldom utilised, while longitudinal studies, which track outcomes over time, remain rare. This methodological imbalance raises concerns about the robustness of the evidence, as the scarcity of experimental and longitudinal research limits the ability to draw definitive conclusions about

intervention effectiveness. Strengthening the use of diverse, high-quality methodologies will be crucial for generating more reliable and actionable insights in future studies.

4. Recommendations and conclusion

Evidence-based decision-making has become crucial in addressing the complex challenges that face education systems worldwide to ensure equitable access, quality learning, and sustainable learning outcomes. While research has contributed valuable insights into effective interventions, critical gaps remain in addressing understudied areas, adapting findings to diverse contexts, and ensuring that strong evidence informs policy and practice. To bridge these gaps, a concerted effort is needed to strengthen research methodologies, enhance collaboration among stakeholders, and improve the uptake of proven strategies. This section presents key recommendations aimed at advancing evidence-informed decision-making in education.

By prioritising rigorous research, fostering partnerships, and scaling successful interventions, policymakers, researchers, and practitioners can collectively drive meaningful progress. The following proposals outline actionable steps to:

1. Prioritise research in understudied areas
2. Strengthen the methodological rigour and testing of contextual adaptations of results
3. Enhance policy uptake of strong evidence by scaling proven interventions
4. Foster collaboration & capacity building by:
 - a. Strengthening partnerships and co-creation initiatives between universities, CSOs, and the Ministry of Education and its departments.
 - b. Developing open-access repositories to enable access to evidence and train local researchers in evidence synthesis.

This Evidence Gap Map reveals a concentrated focus of evidence in literacy and numeracy, with critical gaps in socio-emotional learning, equity, and systemic outcomes. While interventions like teacher training and structured pedagogy are well-supported, understudied areas (e.g., school feeding, technology) require urgent investment in rigorous research. Methodological diversity, particularly experimental and longitudinal designs, needs to be prioritised to strengthen the existing evidence. By translating evidence into policy action and fostering collaborative research networks, Kenya can address these gaps and advance equitable, evidence-based foundational learning reforms and implementation.

References

These references are available digitally in our evidence library at <https://docs.edtechhub.org/lib/G4EBJIQ5>

- Gachoki, C., & Arisa, K. (2025). *Exploring the Foundational Learning Data and Knowledge Ecosystem in Sub-Saharan Africa: Kenya's Situational Analysis*. Unlocking Data. <https://doi.org/10.53832/unlockingdata.1003>. Available at <https://docs.unlockingdata.africa/lib/THAJ93PC>. Available under Creative Commons Attribution 4.0 International. (details)
- Kwanya, T. (2022). Mixed methods and quality of postgraduate research: A kenyan perspective. In P. Ngulube (Ed.), *Advances in knowledge acquisition, transfer, and management* (pp. 147–172). IGI Global. <https://doi.org/10.4018/978-1-7998-8844-4.ch008>. Available from <http://services.igi-global.com/resolvedoi/resolve.aspx?doi=10.4018/978-1-7998-8844-4.ch008>. (details)
- Lawson, L., & Heady, L. (2021). *Mapping education data in sub-Saharan Africa*. https://essa-africa.org/sites/default/files/inline-files/Draft%20Mapping%20Methodology_Unlocking%20Data.pdf. (details)
- Mukhwana, E., Oure, S., Too, J., & Some, D. (2016). *State of Postgraduate Research Training in Kenya*. https://www.researchgate.net/publication/307906274_State_of_Post_Graduate_Research_and_Training_in_kenya. (details)
- Mulinge, M., & Arasa, J. (2013). Investigating the Quality of Postgraduate Research in African Universities Today: A Qualitative Analysis of External Examination Reports. *International Journal of Arts and Commerce*, 2. [732/2911/16.pdf?sequence=1&isAllowed=y#:~:text=Weaknesses%20Plaguing%20Dissertations%20and%20Theses,focused%20on%20by%20this%20study](https://www.ijarcs.in/index.php/ijarcs/article/view/732/2911/16.pdf?sequence=1&isAllowed=y#:~:text=Weaknesses%20Plaguing%20Dissertations%20and%20Theses,focused%20on%20by%20this%20study). (details)