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EXPLORING THE FOUNDATIONAL LEARNING DATA AND KNOWLEDGE ECOSYSTEM IN SUB-SAHARAN AFRICA

Malawi's Situational Analysis

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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 eBase Africa, EdTech Hub, Education Sub-Saharan Africa and the 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

Figures and tables

Abbreviations and acronyms

BEFIT	Building Education Foundations through Innovations and Technology
CAMFED	Campaign for Female Education
CSO	Civil society organisation
EMIS	Education management information system
ECE	Early childhood education
FLN	Foundational literacy and numeracy
MoGCDSW	Ministry of Gender, Community Development and Social Welfare
MERP	Malawi Education Reform Programme
MoE	Ministry of Education
NGO	Non-governmental organisation
NSO	National Statistics Office

Executive summary

This report is a situational analysis which includes a comprehensive mapping of foundational learning in Malawi. It covers, among other aspects, existing initiatives on foundation learning in Malawi, the focus of available foundational learning knowledge, policies, stakeholders, and the flow of evidence that facilitates and supports foundational learning. The mapping exercise mainly seeks to identify gaps, challenges and needs, similar data initiatives, and the existing direction of the evidence flow of data access and sharing. The mapping exercise has five primary objectives:

i. To identify policies in the foundational learning ecosystem;
ii. To identify data and data systems in the foundational learning ecosystem;
iii. To identify key stakeholders with the potential to influence the use of evidence in foundational learning policies;
iv. To assess the relative importance and engagement of key stakeholders in using evidence in decision-making for education policy and budgeting. This exercise aims to help us identify the key champions of evidence use;
v. Understanding how 'evidence' flows between key stakeholders.

The mapping exercise relied heavily on a systematic literature review on foundational learning in Malawi.

On foundational literacy and numeracy (FLN) data sources, Malawi's FLN data is primarily derived from administrative data, national household surveys, projects, and programmes. The Ministry of Education (MoE) collects administrative data through an annual school census and cohort tracking. International organisations also collect and store other relevant data.

A critical observation on data accessibility is that FLN data held by the MoE and its departments remains somewhat restricted. For some departments, like the National Statistics Office (NSO), most of its survey data (e.g., the Malawi Demographic and Health Survey and the Integrated Household Survey) are readily accessible. Data on FLN held by international organisations is mostly subject to restricted access.

A trend analysis of research outputs shows that between 2010 and 2014, there was a significant contribution to the body of knowledge on FLN. During the 2015 to 2019 period, there was a decline. However, research outputs surged from 2020 to 2024.

Most studies on foundational learning in Malawi have focused on literacy, followed by numeracy. They also tend to sideline socio-emotional skills. Regarding policy focus areas, most studies on foundational learning are oriented towards quality and relevance.

The results reveal varying focus on knowledge generation related to foundational learning across different grade levels. Most research concentrates on foundational

learning grades, with 46.7% of knowledge generation addressing Grades 1–4. A significant portion of research (32%) focuses on Grades 1–8, indicating some attention to the entire primary spectrum. Overall, the results suggest that relatively less research attention is paid to pre-school.

Considering the question of who produces knowledge on FLN, results reveal that men slightly dominated knowledge generation on foundational learning in Malawi between 2010 and 2024, representing 61.5% of researchers compared to 38.5% of women. Furthermore, regarding the gender of the study populations, the preliminary analysis shows that most studies focus on both boys and girls. However, only a few studies provide segregated results by gender.

In Malawi, the network of stakeholders involved in FLN data collection, processing, and storage operates at both national and subnational levels. Primary stakeholders, such as government ministries (including the Ministry of Education, National Statistics Office [NSO], and Ministry of Gender, Community Development and Social Welfare [MGCDSW]), and bilateral and multilateral donors such as UNICEF, the World Bank, Save the Children, the Campaign for Female Education (CAMFED), Human Capital Africa (HCA), and USAID. Although identifying the stakeholders in the FLN ecosystem was straightforward, finding evidence derived from the data they collected proved challenging. Many researchers do not provide full access to their data, and national stakeholders like the MoE restrict data access, limiting the data's potential for informed decision-making. Despite these challenges, several policies have been developed based on the available FLN data, including the following:

- Education Sector Implementation Plan (ESIP) II
- National Education Policy

Related situational analyses from the Unlocking Data Initiative

The Unlocking Data Initiative has published two further situational analysis reports from Cameroon (↑Pambe et al., 2025) and Kenya (↑Gachoki & Arisa, 2025), as well as a political economy analysis on all three countries (↑Moustafa et al., 2025). Full bibliographic details are included at the end of this report. Clicking the in-text citations included here will take you directly to the Unlocking Data Evidence Library, where all the reports are accessible.

1. Introduction

This situational analysis of Malawi is part of the Unlocking Data Initiative, a comprehensive effort aimed at improving access to and use of data to drive evidence-based decision-making in education. As the first phase of this initiative, the situational analysis seeks to understand the current state of evidence and data within the sector, including key challenges, opportunities, and gaps. By assessing the existing landscape, this report provides a foundational understanding that will inform subsequent phases of the initiative, ensuring that data systems are better aligned to meet the needs of stakeholders and support improved educational outcomes.

1.1. Background

Foundational learning in Malawi constitutes the largest sector of the education system, as nearly two-thirds of primary enrolment is concentrated in the foundational years, especially Grades 1 to 4 (↑Asim & Gera, 2024; ↑Kadzamira & Rose, 2003). Despite this, the sector continues to face critical challenges such as restricted access to early childhood education (ECE) and low internal efficiency (high repetition and dropout rates) at the primary level. At the ECE level, according to the 2024 Education Sector Performance Report, only 54% of eligible learners are enrolled in ECE (↑Ministry of Education, 2024). One reason for the low enrolment rate is that government support for this sub-sector has been grossly inadequate and accounted for only 0.02% of the national budget in 2024 (↑Ministry of Education, 2024). At the primary education level, the low internal efficiency disproportionately affects the foundational years (Standards 1–4). For example, in 2023–2024, the highest repetition rate was in Standard 1 at 37% compared to 18% in Standard 8 (↑Ministry of Education, 2024). In addition to these challenges, learning poverty also remains persistent in the foundational learning sector. Numerous learning assessment surveys, such as the Multiple Indicators Cluster Survey and the Malawi Longitudinal School Survey, have shown respectively that only about 19% of learners demonstrated foundational learning skills and that 78% of students could not read a simple word with any understanding.

Several policies and plans govern foundational learning in Malawi. Key among these include the Education Act 2013, National Education Sector Investment Plan (NESIP, 2020-2030), National Early Childhood Development Policy (NECDP), and National Education Policy (NEP). The Education Act conceptualises education as a fundamental human right, and provides free and compulsory basic education. At the implementation level, the various education policies and plans set out the policy direction and strategies necessary for actualising this fundamental human right.

Malawi's foundational learning data is primarily sourced from administrative records, national household surveys, and various projects and programmes. The Ministry of Education (MoE) gathers administrative data through annual school censuses and cohort tracking. Additionally, the MoE periodically collects data on learning outcomes via

the Southern and Eastern Africa Consortium for Monitoring Education Quality and Monitoring Learning Assessment survey. Other foundational-learning-related data, such as information obtained from supervision and inspection activities or programme implementation, is collected and stored within the respective directorates and departments of the MoE. At the local council level, zonal standardised assessments are done termly and annually for literacy. In some educational districts, standardised numeracy assessments are also administered termly or annually at the zonal or district level.

Against this brief backdrop, this report provides a baseline situational analysis of the foundational learning data ecosystem by reviewing available data, knowledge, and evidence on foundational learning in Malawi, highlighting the major barriers to accessing information and proposing ways to strengthen data collection and utilisation efforts. In addition to examining data challenges, this report also explores the initiatives undertaken by the government, non-governmental organisations (NGOs), and international organisations to improve foundational learning in Malawi. By mapping these efforts and understanding their impact in a way that creates an evidence ecosystem map, stakeholders collaborate better and develop more targeted strategies for advancing early learning in Malawi. More importantly, policymakers who, in most cases, cite a lack of evidence to inform policy directives can have evidence at their disposal.

The findings and recommendations presented in this report aim to contribute to a more evidence-based approach to education policy, planning, and practice in Malawi, especially regarding foundational learning.

1.2. Research questions and objectives

The main purpose of the mapping and situational analysis presented in this report is to obtain a comprehensive picture of data generation, management, sharing, and utilisation of education data related to foundational learning in Malawi. Specifically, the mapping exercise aims to:

i. Map data and data sources on foundational learning in Malawi;
ii. Map literature generated around foundational learning since 2010;
iii. Identify gaps, challenges, and needs that exist in the data, data systems, and literature;
iv. Identify stakeholders involved in foundational learning data and evidence generation at national and subnational levels;
v. Identify similar initiatives and existing policies and guidelines on data access and sharing.

1.3. Report structure

This report is structured into five main sections. Section 1 introduces the context of foundational learning in Malawi and highlights the objectives and structure of this situational analysis. Section 2 outlines the methodology, including the approaches used for literature review, stakeholder consultations, and data mapping. Section 3 presents the key findings, organised into thematic analyses of foundational learning, data systems, and knowledge distribution. Section 4 explores stakeholder mapping, evidence flow, and challenges in the evidence ecosystem. Finally, Section 5 concludes the report with recommendations for improving data systems and evidence use to support foundational learning in Malawi.

1.4. Related situational analyses from the Unlocking Data Initiative

The Unlocking Data Initiative has published two further situational analysis reports from Cameroon (↑Pambe et al., 2025) and Kenya (↑Gachoki & Arisa, 2025), as well as a political economy analysis on all three countries (↑Moustafa et al., 2025). Full bibliographic details are included at the end of this report. Clicking the in-text citations included here will take you directly to the Unlocking Data Evidence Library, where all the reports are accessible.

2. Methodology

This study employed a multifaceted methodology to map knowledge and data on foundational learning in Malawi, integrating systematic and opportunistic review approaches along with stakeholder consultations. This methodological framework, adapted from the Unlocking Data Initiative (Heady, 2021; ↟Lawson & ↟Selwaness et al., 2022), proved effective in Malawi, where data systems and the evidence base are often fragmented. A systematic review was conducted to consolidate knowledge on literacy, numeracy, quality, equity, relevance, and access for children aged 4–10. This involved defining the scope, conducting extensive literature searches through academic databases, and synthesising findings. Due to limited digital repositories in Malawian universities, physical mapping of resources in libraries and consultations with individual authors were undertaken. Research assistants reviewed Master's and PhD theses and locally published materials, complemented by opportunistic mapping that incorporated emerging studies. The methodology also involved stakeholder consultations through workshops to validate findings and gather recommendations.

The data landscape mapping exercise aimed to document Malawi's foundational literacy and numeracy (FLN) data landscape by identifying and analysing datasets from government agencies, NGOs, and international organisations to support educational planning and policy. Key activities included sourcing datasets from entities like the Malawi National Statistical Office (NSO), World Bank, UNICEF, and UNESCO, and capturing metadata from NGO platforms. Additionally, administrative data mapping leveraged insights from the 2019 Malawi Open Data for Education Systems Analysis stakeholders' workshop, enriching the analysis with detailed data from the Ministry of Education (MoE) and NSO.

2.1. Literature review

A. Systematic review

A systematic review of both primary and secondary literature sources was conducted to consolidate existing knowledge and map the data landscape on foundational learning, particularly for children aged 4 to 10 (ECE to Grade 5). The review was structured around five key themes: literacy, numeracy, quality, equity, relevance, and access.

The first step in the systematic review was to determine the scope and areas of focus. A review template capturing the information presented in Figure 1 below was created.

Figure 1. *Components of the template used to define the systematic review scope*

The team then conducted an extensive literature search using databases and academic sources, including Taylor and Francis, Sage Journals, ERIC, Google Scholar, Academia, and ResearchGate. The search was filtered through pre-defined inclusion and exclusion criteria to select relevant studies. Once identified, the studies were thoroughly reviewed to extract critical information, themes, and findings. The final step was to synthesise the findings and compile the review report.

Following the initial search, the mapping effort shifted to university repositories. Our findings revealed that only two of the six public universities had web-based repositories, and only one contained relevant literature. None of the private universities had online repositories. As a result, we conducted a physical search to map the available literature across the remaining universities. Mapping of administrative data benefited from a similar mapping exercise carried out in 2019 under the Malawi Open Data for Educational Systems Analysis project. The detailed data landscape of the MoE and NSO were obtained and incorporated into the data landscape. In addition, consultations with stakeholders in foundational learning proved critical in compiling databases and evidence. Some stakeholders were able to suggest some additional datasets and evidence sources that were missed during our initial online searches.

B. Opportunistic mapping

In this approach, the team leveraged materials, studies, and findings as they naturally arose or were encountered in the course of the ongoing mapping exercise. We incorporated new studies and findings on a rolling basis, allowing ourselves to capture emerging trends, innovative ideas, or unexpected insights relevant to the mapping exercise.

2.1.1. 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 to record decisions and ensure transparency.

2.2. Stakeholder consultations and primary data

Our stakeholder consultation workshop included officials from key stakeholders in foundational learning in Malawi. Participants were drawn from the MoE, the Ministry of Gender, Community Development and Social Welfare (MGCDSW), Development Partners, Academia (e.g., University of Malawi [UNIMA], Malawi Assemblies of God University [MAGU], and Mzuzu University [MZUNI]), and NGOs with a stake in education.

The objectives of the stakeholder workshop were to

A. Give an overview of the GPE / KIX Unlocking Data Project, detailing its background, scope, objectives, outcomes and key activities as it relates to foundational learning in Malawi.

B. Identify gaps and barriers to generating, accessing, disseminating, and using data on foundational learning and assess their impact on policy and practice.

C. Understand the current practices, systems, and arrangements guiding the generation, dissemination, and use of data on foundational learning in Malawi, as well as the roles of different stakeholders.

D. Gather insights on practical strategies and measures that could be used to make data on foundational learning in Malawi more openly and easily accessible to stakeholders.

Table 1. *Workshop participants and key informants*

Activity type	Stakeholder group	Number of participants (male)	Number of participants (female)	Total number of participants
Workshop 1	Ministry of Education	3	2	5
	Other government ministries, departments, and agencies	2	1	3
	Academia	4	4	8
	NGO / donor / CSO	3	1	4
Workshop 2	Ministry of Education	2	2	4
	Other government ministries, departments, and agencies	3	0	3
	Academia	5	5	10
	NGO / donor / CSO	4	3	7
Key informant interviews	Ministry of Education	1	1	2
	Other government ministries, departments, and agencies	1	0	1
	Academia	1	1	2
	Donor / NGO	1	1	2
Total number of participants		**30**	**21**	**51**

Table 1 above summarises stakeholder consultations by activity type (workshops and key informant interviews) and gender balance. Across all activities, there were 51 participants in total, with 30 males and 21 females, showing a slight male predominance (59% male, 41% female). Gender balance varied across groups and activities, with some sectors having more male participation, while others, like academia and NGOs, had more gender parity.

2.3. Limitations

There are a number of challenges that limit the scope of the mapped articles and datasets. The articles and datasets identified for analysis may represent only a fraction of the available data and research. As a result, a significant number of relevant datasets and literature could remain unmapped, resulting in potential gaps in understanding the foundational learning space. Below are the major limitations:

- Fragmented literature: The literature is scattered across various sources and is not consolidated into a single, easily accessible location. This fragmentation poses challenges for researchers in accessing and synthesising comprehensive evidence.
- Lack of institutional repositories: Many institutions lack centralised repositories for research work and datasets. This lack of infrastructure makes it difficult to access valuable data and knowledge systematically.
- Unwillingness or resistance by researchers to share their data and research: Some researchers were hesitant to share their datasets and research outputs, often stating that these were part of their personal work and, therefore, cannot be shared. This limited the scope of data synthesis.

3. Key findings: Thematic analysis

This section presents the key findings of the knowledge and data mapping exercise. We first provide an overview of foundational learning in Malawi and then present the status of foundational learning in Malawi with reference to data and data systems, knowledge production, stakeholder mapping, and evidence flow.

3.1. Foundational learning in Malawi

Foundational learning in Malawi is offered through two ministries: the Ministry of Gender, Community Development and Social Welfare (MoGCDSW, which oversees ECE provision (for 3–5-year-olds) and the Ministry of Education (MoE) through primary education covering Standards 1 to 4. Plans are underway under the current primary curriculum review to introduce a preparatory class for 5-year-olds.

The foundational learning landscape in Malawi has witnessed several interventions. All these interventions have mainly aimed to boost the early grade learners' acquisition of literacy and numeracy skills. Key among these interventions are the National Reading Programme, the National Numeracy Programme, Next Generation, Literacy Boost, and Building Education Foundations through Innovations and Technology (BEFIT).

Foundational learning is housed in two Ministries: The Ministry of Education and the Ministry of Gender, Community Development and Social Welfare, with little collaboration between the two ministries.

3.2. Data and data systems

We evaluated current data and data systems in the foundational learning ecosystem based on whether they were open access, restricted access (data available upon formal request and approval), or inaccessible.

Sources of foundational literacy and numeracy (FLN) data

Malawi's foundational learning data is primarily derived from administrative data, national household surveys, projects, and programmes. The MoE collects administrative data on primary education through the annual school census and cohort tracking, while MoGCDSW has recently started collecting administrative data on ECE. In addition, MoE collects periodic data on learning outcomes through the Monitoring Learning Assessment survey and zonal and district assessments. Other data on foundational learning collected by the MoE (for example, from supervision and inspection activities and from programme implementation) is stored in respective directorates and

departments. Most of the data on foundational learning is collected and stored by the MoE, at the national, district and zonal levels. While the education management information system (EMIS) centrally stores a good proportion of administrative data collected by the MoE, significant amounts of data are not part of the EMIS. These include cohort tracking data and data on assessments conducted periodically at national, district, and zonal levels, as well as all other data captured outside the Directorate of Planning responsible for the EMIS. Multilateral and bilateral development partners collect and store data emanating from the programmes they support (UNESCO, World Bank, UNICEF, USAID, FCDO, Action Aid, Save the Children, and CAMFED). Other local NGOs that collect and store foundational learning data include the Creative Centre for Community Mobilisation (CRECCOM) and Sub-Saharan Africa Family Enrichment (SAFE).

Key datasets on foundational learning

The mapping exercise revealed the existence of a number of national and international datasets on foundational learning. The largest dataset on foundational learning is held by the MoE in the EMIS. Within the EMIS, the annual school census collects data on school characteristics, including enrolment, repetition, and dropout rates (by age, gender, and standard) and on teaching and learning materials and school facilities by standard. Cohort tracking data, another key component of the EMIS, collects data at pupil level, including year and age at school entry, date of birth, gender, grade transition (including information on dropout, transfers, and repetition). Table 2 presents a summary of the national and international datasets and their accessibility status.

Table 2. *Key foundational learning datasets and their accessibility*

Institutions	Dataset	Description	Accessibility
Ministry of Education (MoE) EMIS	Annual School Census (ASC)	Collects data on school characteristics	Restricted access
	Real-Time Monitoring		Restricted access
	Cohort tracking – District / Zone	Individualised pupil information	Restricted access
	Census Mapping – Central	GIS coordinates for schools	Restricted access

Institutions	Dataset	Description	Accessibility
	Comprehensive Sexuality Education & Nutrition		Restricted access
Ministry of Education (MoE) – Other Data Outside EMIS	Monitoring Learning and Assessment	Assessments conducted in standards 2, 4 and 7	Restricted access
	Zonal / District Assessments	Zone / District-based assessments	Restricted access
	Supervision / Inspection reports	School-based observations	Restricted access
	Malawi Education Reform Programme (MERP) data	Project implementation monitoring and evaluation data	Restricted access
Ministry of Gender, Community Development & Social Welfare (MGCDSW)	Early Childhood Development Management Information System (ECDMIS) (currently in progress)	Management Information System for early childhood development	Restricted access
	Baseline studies and evaluation reports in Protecting early childhood development project 2012, midline survey 2014	Project Evaluation Data	Restricted access
	Investing in Early Years Project (Baseline and Midline Surveys assessing the functionality of Community-Based Childcare Centres 2019	Project Evaluation Data	Restricted access
	2020 Malawi Development Assessment Tool (MDAT)	Cognitive Development Data	Restricted access

Institutions	Dataset	Description	Accessibility
National Statistical Office (NSO)	Multiple Indicators Cluster Surveys (MICS)	Collects data on children, including on their education	Restricted
	Integrated Household Survey	Collects data on education	Open
	Malawi Demographic and Health Surveys (MDHS)	Collects data on variables including education	Restricted
	Welfare Monitoring Survey (WMS)	Collects data on variables including education	Restricted
	Child Labour Survey	Collects data on children's involvement in labour	Restricted
Development Partners	Malawi Longitudinal Survey dataset (World Bank / FCDO / MoE)	Survey of schools, teachers and students in Malawi	Restricted access
	National Numeracy Programme (NNP) — Baseline and Endline	Project data assessing the impact of mathematics learning in foundational learning	Open
	National Reading Programme (NRP)	Project evaluation data on literacy in foundational learning	Open

Institutions	Dataset	Description	Accessibility
	Next Generation (NEXT GEN) — School / district assessments	Programme evaluation data on literacy	Open
	BEFIT (Baseline, endline and impact evaluation data)	Programme evaluation data on technology use in literacy	Restricted access
	STEP (Strengthening Teacher Education and Practice) project — baseline and other surveys.	Programme evaluation data	Restricted access
	Action Aid (Early Childhood Development)	Project data on ECE	Open access
	Save the Children	Project evaluation data	Restricted access
	Link Community Development – Malawi Baseline, Midline and Endline TEAM Girl Malawi project	Project evaluation data	Restricted access
	Early Grade Reading Assessments (EGRA)	Project evaluation data	Not accessible
	Human Capital Africa (dashboards)	Project evaluation data	Open
International Databases	World Bank EdStats	Provides data and analysis on education topics such as access, quality, and learning outcomes.	Open

Institutions	Dataset	Description	Accessibility
	World Bank Microdata Library	Contains datasets produced by the World Bank	Open
	UNICEF's Foundational Learning Action Tracker	Traces progress made on foundational learning	Open
	UNESCO Institute of Statistics Database	Collects and disseminates global education statistics	Open
	IIEP UNESCO—SEACMEQ 5 (International Institute for Educational Planning — Southern and Eastern Africa Consortium for Monitoring Educational Quality	Collects data on learning outcomes	Restricted access

At a national level, foundational learning datasets are mainly held by MoE, MGCDSW, and NSO. Several development partners also have data on foundational learning from programmes they support. International databases, such as those of the World Bank and UNESCO, also collect education data from countries.

Some FLN data has been and continues to be used for policymaking. For example, the Malawi Education Reform Programme (MERP) uses the data collected through the Malawi Longitudinal School Survey (MLSS) to inform programming and policy choices, while schools and communities rely on feedback from MERP report cards to make necessary adjustments. However, in general, data on foundational learning is often underutilised due to its reliance on aggregated elements, which prevents policies from effectively addressing specific issues.

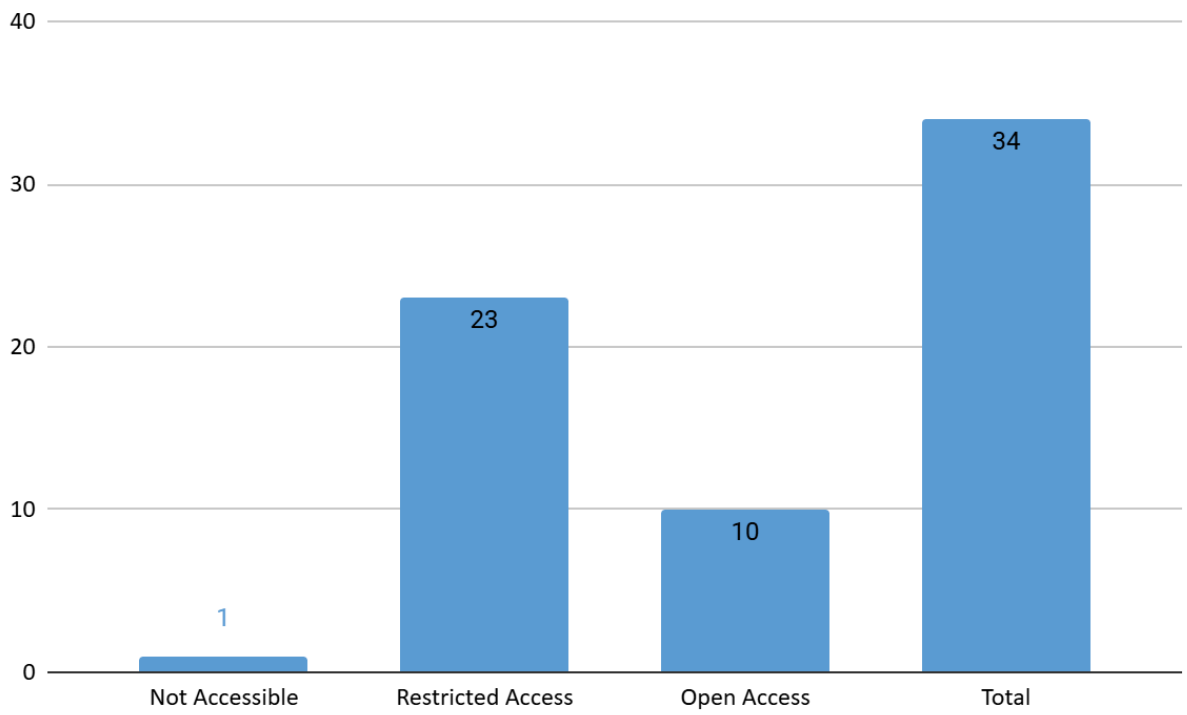
Access to foundational learning data

Most notably, data on foundational learning held by the MoE and its departments has restricted access, even though the NSO is working on an open-source platform for all its datasets and has recently done so for the Integrated Household Survey. Sometimes, delays in granting access and sharing data, especially when multiple data sets are

requested or when different sections hold the data requested, often lead to significant delays in its utilisation. By the time access is granted, researchers may have already resorted to using alternative data sources.

Due to these restrictions, very few academics and postgraduate students can use foundational learning data for their research, limiting potential insights and contributions from local scholars. Moreover, many scholars and students are not aware of the availability of these datasets. The data access procedures have also not been shared with the wider education community. Some raw datasets are, however, available through open-source platforms provided primarily by international organisations such as the World Bank, UNICEF, UNESCO, and USAID, which offer valuable alternatives for researchers who face challenges accessing government-held data.

Figure 2. *Foundational data accessibility in Malawi*



Challenges

Accessing FLN data in Malawi encounters several challenges, including a lengthy bureaucratic process guided by an old data-sharing act. The act does not provide for open access to all data collected by the government, and the absence of a robust data management framework to regulate access limits the availability of centralised information. Limited resources (often arising from lack of government ownership and investment in early childhood education) for conducting surveys to feed into the Early Childhood Development Management Information System means that very little data on early childhood education is available. Additionally, there is also a lack of clarity

regarding data ownership, with organisations often collecting data for their exclusive use. The absence of repositories within universities with much of the data stored in physical locations or local computers rather than on servers or cloud-based systems, make it less accessible. An additional challenge is the lack of awareness of administrative data by users, including those from academic institutions. During the first stakeholder workshop, one government participant said that he was surprised to see postgraduate students collecting data already available in the EMIS.

Still further, there is no established data dissemination framework to ensure data reaches end-users. Weak collaboration and coordination, coupled with differing interests among NGOs, lead to parallel assessments and fragmented data efforts. Collectively, these challenges hinder the effective use and sharing of FLN data in Malawi. Inaccessibility of data may limit data usage in responding to policy questions.

3.3. Knowledge generation in foundational learning

This section presents the key findings from the analysis of knowledge production in various dimensions. It begins by outlining the evolution of knowledge production over the years. The section then delves into knowledge generation across policy focus areas, foundational learning areas, and specific educational grades.

3.3.1. Knowledge generation

A total of 131 studies were mapped across various types of academic and research outputs. Figure 3 below presents the distribution of articles by type.

Figure 3. *Number of articles on foundational learning reviewed, by type*

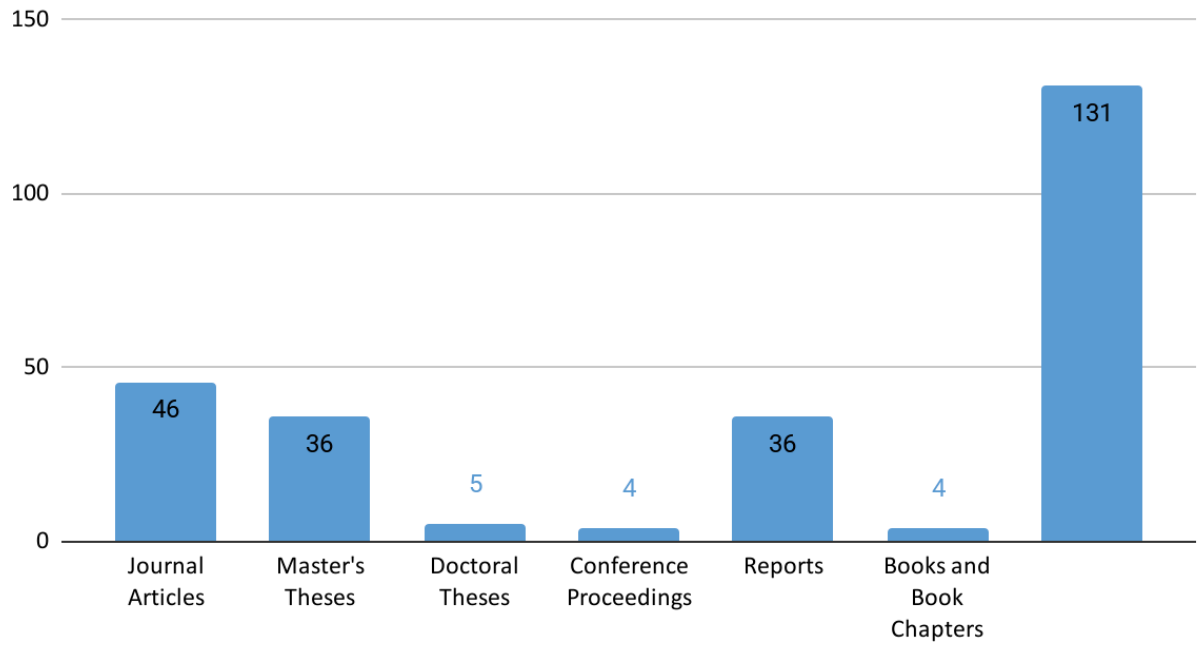


Figure 3 shows that 46 journal articles were reviewed, including 36 reports, 36 Master's theses, 5 doctoral theses, 4 conference proceedings, and 4 books or book chapters. These studies span from 2010 to 2024, as shown in Figure 4 below.

Figure 4. *Distribution of articles on foundational learning between 2010 and 2024*

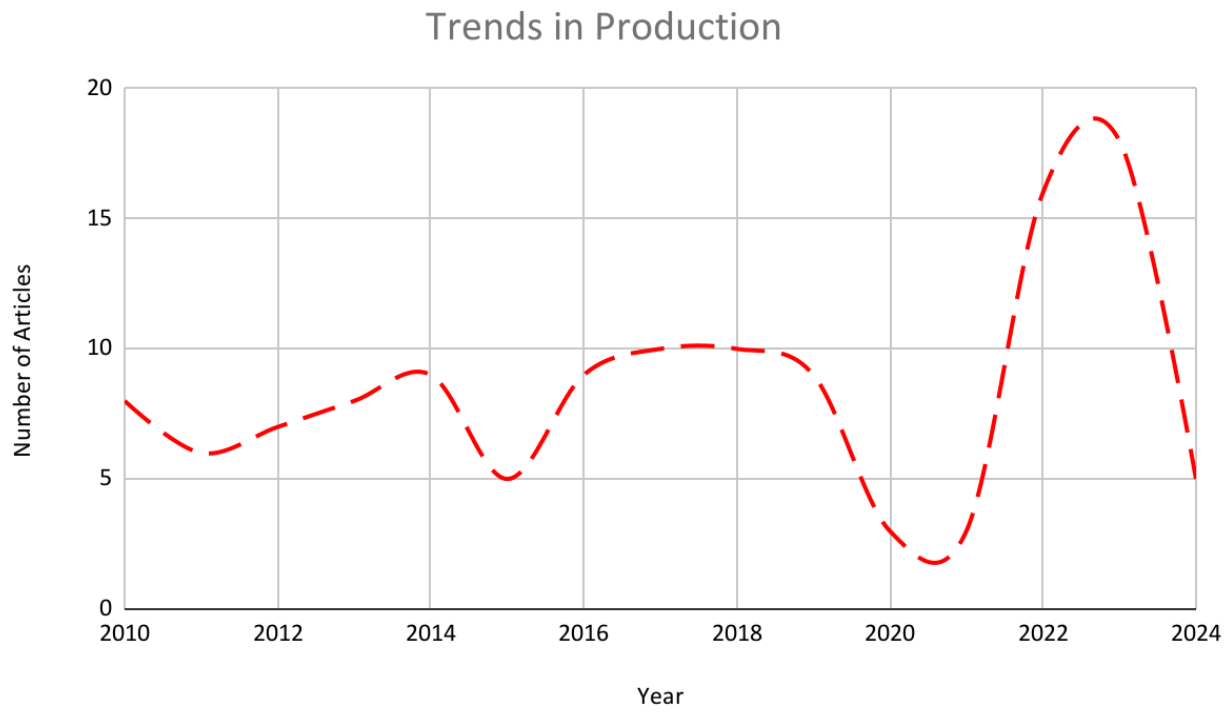


Figure 4 shows that during the initial years, the number of articles published annually was moderately high and relatively stable, fluctuating between seven and nine articles per year, except for a slight dip to six articles in 2011. This period reflects a consistent effort in knowledge production, with no major disruptions or surges.

The number of articles declined slightly in 2015, with production dropping to five articles in 2015 and fluctuating between nine and 10 articles per year from 2016 to 2018. Production significantly declined between 2019 and 2021, with 2020 and 2021 having the lowest number of articles (three each year). Possible explanations for this decline include the Covid-19 pandemic, which significantly disrupted global research activities. Universities, labs, and other research institutions experienced closures, resource shortages, and restrictions on fieldwork. Researchers faced competing priorities, such as shifting to online teaching or addressing immediate public health needs, which reduced time and resources for foundational research (↑Chandra, 2024; ↑Korbel & Stegle, 2020). Additionally, funding may have been redirected toward pandemic-related research, leaving foundational knowledge projects underfunded.

Another contributing factor is fragmented knowledge repositories. The absence of centralised repositories or accessible online systems for foundational knowledge has led to silos in the literature. Consequently, some existing research may not have been adequately mapped, likely contributing to the lower figures during this period.

A notable surge occurred in 2022 and 2023, with 16 and 18 articles published each year, respectively — the highest annual outputs in the dataset. These two years accounted for 27% of the total output, reflecting a renewed interest and effort in foundational learning research in recent years.

The information presented in Figure 4 highlights evolving research trends, with recent years showing increased engagement, particularly in producing journal articles and Master's theses. The steady growth in the number of studies in the most recent period suggests an ongoing commitment to addressing foundational learning challenges and improving education outcomes, particularly post Covid-19

3.3.2. Knowledge production by foundational learning areas

Key foundational learning areas, often referred to as core competencies or basic skills, are essential for students to build upon as they progress through their education. Critical among these key foundational areas are numeracy, literacy, and social skills. These areas serve as the foundation for further learning and development. An examination of studies on foundational learning in Malawi between 2010 and 2024 shows that the focus has varied across these three areas.

Table 3. *Distribution of studies across key foundational areas in Malawi (2010–2024)*

Foundational learning area	***Percentage***
Literacy	41%
Numeracy	27%
Literacy and numeracy	13%
Social Skills	8%
Literacy, numeracy, and social skills	8%
Cognitive	2%
Literacy and social skills	1%

Table 3 shows that the majority of studies on foundational learning in Malawi have tended to focus on literacy (41%), followed by those focusing on numeracy (27%). The focus on literacy reflects the fact that, over the past decade, literacy programmes have

received more funding. This may have been influenced by the conventional wisdom among key foundational learning stakeholders that focusing on literacy would improve outcomes in other foundational learning areas. The area of social skills is largely sidelined in most studies. In cases where studies cover multiple focus areas, they usually combine literacy and numeracy. For example, 13% of the studies under review focused on both literacy and numeracy.

3.3.2. Knowledge generation by focus area

Over the years, education planners in Malawi have identified three priority areas in their education plans and strategies. The first priority area focuses on quality and relevance to improve the overall educational outcomes and align education with society's and the economy's needs. The second priority area addresses access and equity. The focus is on ensuring that all individuals have the opportunity to participate in education regardless of their background, socio-economic status, or geographical location. The third priority area concentrates on governance and management to ensure effective and efficient administration of the education sector. It is concerned with the structures, policies, and practices that ensure that educational institutions are well-managed and that education policies are implemented effectively. Table 4 classifies the distribution of studies on foundational learning in Malawi by policy focus areas.

Table 4. *Distribution of studies across policy focus areas (2010–2024)*

Policy focus area	Percentage
Quality	79%
Equity	21%
Access	17%
Relevance	8%
Management	3%

Note. Some papers target more than one policy area. As a result, the sum of the percentages exceeds 100.

According to Table 4, 79% of the studies on foundational learning we analysed focused on quality, compared to 21% on equity and 17% on access. A relatively small share (8%) of studies focused on relevance. Management and leadership issues have received minimal research attention.

Although the theme of quality has received considerable research attention, some dimensions of quality have nevertheless not been adequately explored. For example, even though high repetition rates, a critical element of educational quality, remain a

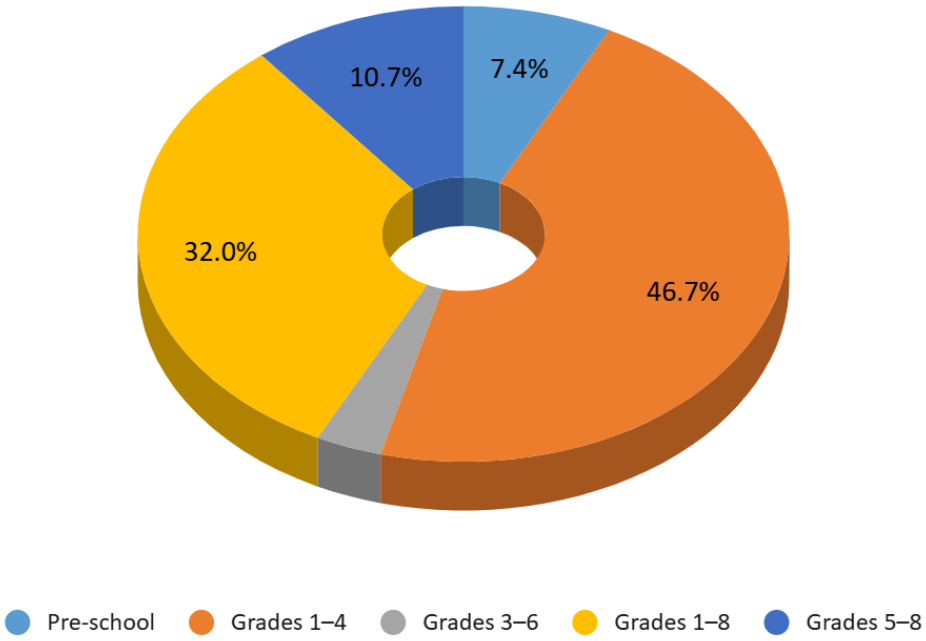
persistent problem affecting learning outcomes in foundational years, there has been little focus on this issue in the literature.

3.3.3. Knowledge generation by grade level

The Unlocking Data initiative aims to bridge the knowledge gap among policymakers and researchers on how to effectively scale up the use of existing education data, particularly concerning foundational learning for primary school-aged children (ages 4–10).

Figure 5 below presents the results of the analysis of knowledge generation by grade. The studies on foundational learning reviewed were categorised by grade.

Figure 5. *Foundational learning knowledge generation by grade in Malawi (2010–2024)*



The statistics reveal a varying focus on knowledge generation related to foundational learning across different grade levels. The majority of research is concentrated on foundational learning grades, with 46.7% of knowledge generation addressing Grades 1–4. A significant portion of research (32%) focuses on Grades 1–8, indicating some attention to the entire primary spectrum. However, only 7.4% of studies concentrate on pre-school education. This limited focus suggests that the foundational learning sub-sector has received relatively little attention from evidence generators, potentially reflecting the insufficient support provided to this critical area by the government.

Regarding the gender of the study populations, our analysis shows that most studies (88%) focus on both boys and girls. However, only a small percentage (6%) of studies report gender-disaggregated results.

3.3.4. Knowledge production by gender

This report examines knowledge generation by gender based on the gender of the first author. The results of the analysis are presented in Figure 6.

Figure 6. *Foundational learning knowledge generation by gender in Malawi (2010–2024)*

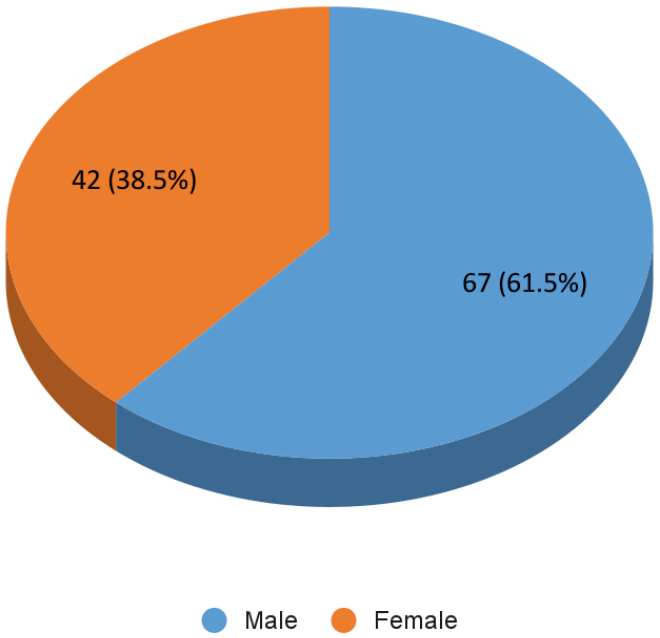
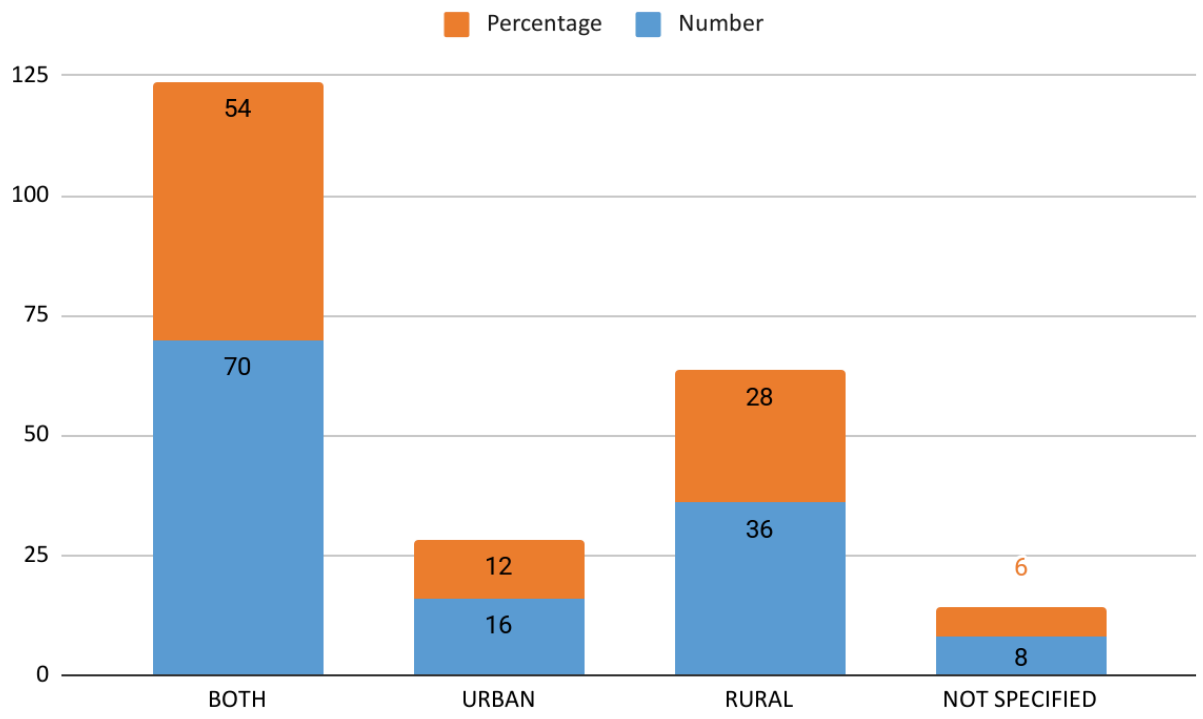


Figure 6 reveals that men dominated the production of knowledge on foundational learning in Malawi between 2010 and 2024, representing 61.5% of researchers compared to 38.5% who are women.

3.3.5. Knowledge production by region covered by foundational learning research

Understanding how knowledge on foundational learning is generated through a rural–urban classification is crucial for tailoring educational strategies and policies. This classification is important as it highlights the varying educational needs and challenges faced by different regions. Rural areas may encounter unique obstacles, such as limited access to resources and infrastructure, while urban areas might face different issues, like overcrowded classrooms. Figure 7 below presents the results of the spread of knowledge generation across the rural–urban spectrum in Malawi.

Figure 7. *Foundational learning knowledge generation by location in Malawi (2001–2024)*



The results in Figure 7 show that in Malawi, the majority (54%) of foundational learning studies encompass both rural and urban areas, while 28% focus specifically on rural contexts and 12% on urban settings.

4. Stakeholder mapping and evidence flow

Foundational learning, the cornerstone of educational development, is vital for equipping young learners with the skills needed for lifelong learning and productivity. In Malawi, effective decision-making in this domain relies on generating, disseminating, and utilising robust evidence. However, the interconnected network of stakeholders, the evidence ecosystem, and the pathways through which evidence flows present both opportunities and challenges. This section delves into stakeholder mapping and the evidence flow in foundational learning in Malawi. It examines the evidence ecosystem, exploring how data and research findings are generated, shared, and utilised to inform decisions. The discussion also highlights the flow of evidence, focusing on how it travels through various channels, reaches diverse stakeholders, and is applied to policy and practice. Furthermore, it unpacks the lived experiences of stakeholders — policymakers, educators, researchers, and community members — while shedding light on the systemic challenges that hinder effective evidence use.

4.1. The evidence ecosystem

The evidence ecosystem in foundational learning in Malawi involves multiple stakeholders who interact to share data, insights, and mechanisms that drive improvements in education. The Ministry of Education (MoE) occupies a central place in the evidence ecosystem on foundational learning. It collects administrative data which feeds into the EMIS which is primarily used as a source of data for both government and donor-funded programmes. On the other hand, donors usually provide funding and technical expertise to generate evidence on foundational learning. This evidence flows into the MoE, which serves as a central hub for policymaking and coordination. Civil society organisations (CSOs) also play a role in the evidence ecosystem by collecting data on foundational learning through their interventions. They also advocate for evidence-based policies based on data from the EMIS and ensure that community voices are represented. Malawi's academia contributes to this ecosystem by conducting research that informs both policy and practice, offering critical insights into the effectiveness of interventions. However, most of the data and evidence collected by academia is not shared. The lack of repositories in most public universities limits the impact of their research on foundational learning.

There are some challenges associated with the evidence ecosystem. For example, much of the administrative data (for example, the annual school census, cohort tracking, and inspection) is not analysed and therefore fails to feed into the evidence ecosystem. In addition, if analysis is done, it is hardly linked to foundational learning. Some datasets are not fully owned by or embedded in government, even though the data is collected as part of government programmes. These include the Malawi Longitudinal School Survey, the National Reading Assessment and Southern and Eastern Africa Consortium for Monitoring Educational Quality. Moreover, government data and data systems are siloed and sit with various departments. Despite efforts like the Malawi Open Data for

Education Systems Analysis to connect such data and data systems, a lot remains to be done.

Overall, challenges such as gaps in data accessibility, resource constraints, and limited cross-stakeholder collaboration, also impede the efficiency of this flow. Additionally, strengthening these mechanisms and fostering partnerships among stakeholders are key to achieving sustainable improvements in foundational learning.

4.2. Use of evidence in decision-making

The data generated by stakeholders in foundational learning is used to inform decision-making. Data generated through the annual school census is analysed and presented in an annual statistical bulletin. The evidence produced in this case is the one used by the MoE and development partners to inform policymaking. Apart from the annual school census, other initiatives such as the Longitudinal School Survey, which collects data on schools, learners, and learning outcomes of 10-year-olds have also been instrumental in informing programming. For example, the Malawi Education Reform Programme for primary education has used data generated by the Malawi Longitudinal School Survey, which was funded by the Royal Norwegian Embassy and FCDO with technical support from the Word Bank. Several policies such as the Education Sector Implementation Plan (ESIP) II and National Education have also been developed based on the available FLN data.

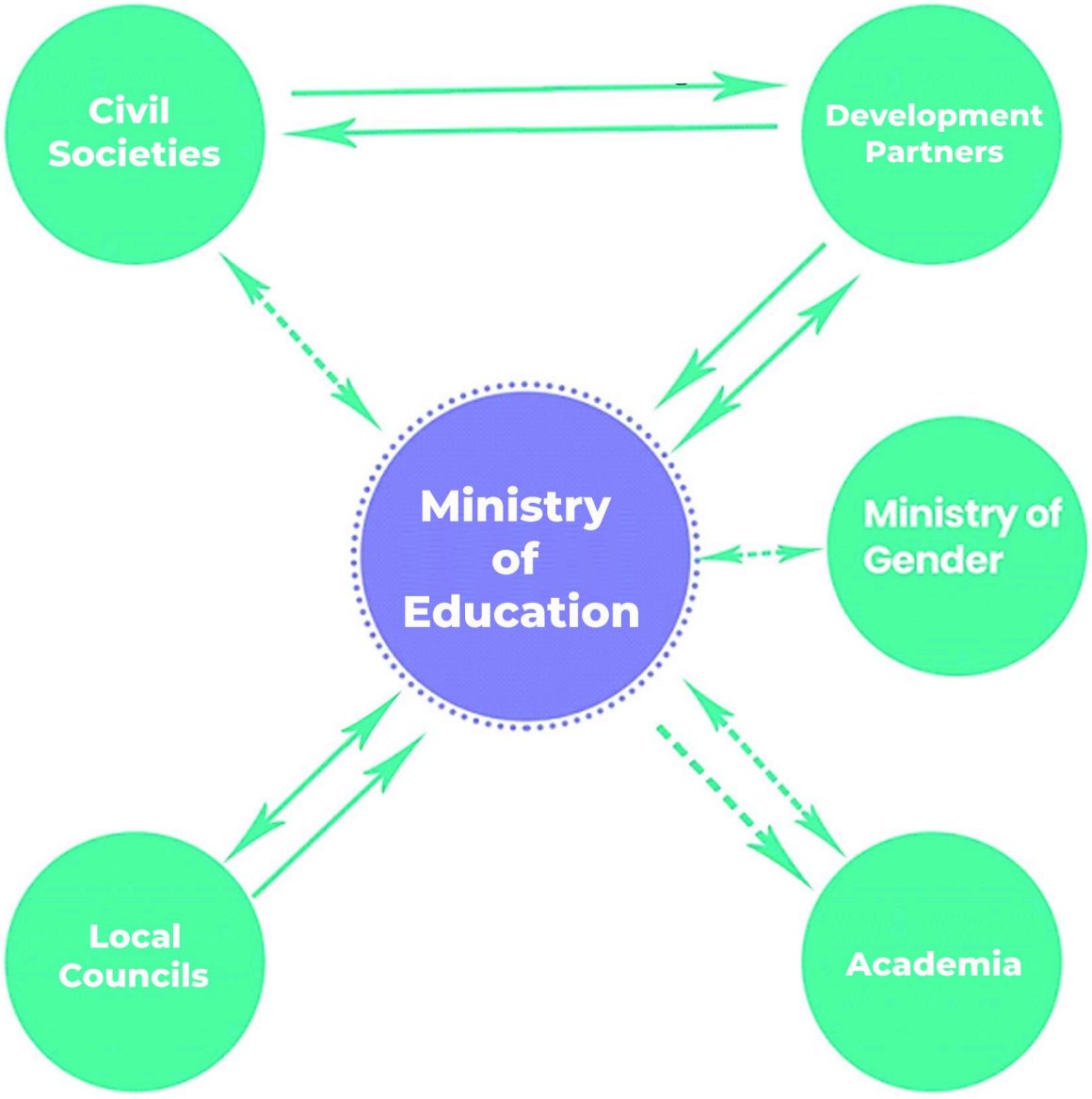
4.3. Flow of evidence and stakeholder experiences

Figure 8 below shows results obtained from our stakeholder consultations, revealing interesting findings regarding the flow of evidence among key stakeholders in the foundational learning ecosystem:

- Most of the evidence flows from the MoE to local councils and donors, as depicted by the solid arrows. There is also some flow of evidence from the MoE to civil society and academia, though this is weak, as indicated by the broken arrows. Interviews with key informants from the MoE revealed that data flows easily from development partners to the government.
- There is a weak link in evidence flow between the MoE and the Ministry of Gender, Community Development and Social Welfare (MoGCDSW). The two ministries collect data on ECE and the data is not linked, making it frustratingly challenging for holistic decision-making for ECE.
- There is a weak link in evidence flow between academia and the MoE. Much of the data generated by the MoE is hard to access due to bureaucratic bottlenecks. Similarly, evidence generated by academia is rarely shared with the MoE.

- There is a weak link in evidence flow between CSOs and the MoE, but a strong link between them and donors because most of their programmes are funded by donors.

Figure 8. *Flow of evidence on foundational learning between key stakeholders in Malawi*



The flow of evidence on foundational learning is not without its own challenges. Critical among these is data accessibility. There is a lack of a culture of data sharing among key stakeholders in foundational learning. The current government data sharing policy is restrictive, but is under review so as to remove restrictions on data sharing. Implementing effective data-sharing protocols, and creating accessible data-sharing

platforms could significantly improve foundational learning data accessibility and foundational learning evidence flow among stakeholders, thereby fostering evidence-based planning and programming in foundational learning.

4.4. System challenges

4.4.1. Funding mechanisms

Funding for foundational learning data and research continues to be challenging because a large percentage of the education budget goes to teacher salaries. For instance, in the 2023/24 financial year, 93% of recurrent resources allocated to basic education were spent on teacher salaries, leaving very little for quality inputs (↑Ministry of Education, 2024). As a result, the MoE does not have adequate funds for EMIS operations. . Furthermore, foundational learning data on student learning is fragmented as its collection and management relies heavily on donor funding, who seem to fund data collection efforts tied to projects that they are supporting (↑Asim & Gera, 2024). This reliance creates inconsistencies in ownership and accessibility, as data generated under donor projects may not be fully integrated into national systems. Limited government funding exacerbates these issues, constraining the ability to maintain comprehensive and sustainable data systems.

4.4.2. Technical / capacity constraints

A lack of digital literacy and technical expertise among education stakeholders hinders the capacity to manage and analyse foundational learning data. Research capacity development is often inconsistent, with few opportunities for professional growth in data analysis and evidence use. For example, EMIS collects vast amounts of data but only a small fraction, as reflected in the EMIS annual Statistical Bulletin, is analysed due to capacity constraints. Additionally, most schools do not have the capacity to analyse and use the data in decision-making. Ultimately, technical and capacity constraints undermine the effective utilisation of available data for informed policy and decision-making.

4.4.3. Limited infrastructure

Infrastructure limitations, including inadequate ICT resources and unreliable internet connectivity, further impede data accessibility and sharing. The absence of centralised, online repositories and data storage facilities (servers) leaves many datasets stored in physical locations or individual computers and in separate spaces or departments, making them inaccessible to the broader research community.

4.4.4. Data privacy considerations

Concerns around data privacy and ownership pose additional challenges. Stakeholders often hesitate to share data due to unclear confidentiality and intellectual property

policies. These issues are compounded by outdated data-sharing agreements that fail to address current open and secure data access needs.

5. Conclusion and recommendations

The report highlights significant gaps and challenges in Malawi's foundational learning ecosystem, particularly regarding data accessibility, limited technical capacity and weak stakeholder coordination. Despite the progress made, foundational learning remains hampered by limited infrastructure, fragmented data systems, and inequitable research focus. Data inaccessibility due to bureaucratic restrictions, outdated sharing policies, and a lack of centralised repositories continues to obstruct evidence-informed decision-making and policy implementation. Addressing these barriers is crucial to leveraging data and evidence effectively to support Malawi's education goals and ensure every child receives a strong educational foundation.

Based on the findings of the report, below are four recommendations for improving the foundational learning knowledge and data ecosystem in Malawi.

1. Strengthen data accessibility and sharing frameworks

There is a lack of a culture of data sharing among key stakeholders in foundational learning. In order to address this problem, there is a need to develop and implement a robust national data-sharing framework to address restrictions on access to foundational learning data. This could include clear policies on data ownership, simplified bureaucratic processes for access, and secure data portals / platforms for data sharing. Establishing centralised online repositories and data platforms or portals will enhance accessibility for policymakers, researchers, and other stakeholders.

2. Enhance collaboration among key stakeholders

Weak collaboration among key stakeholders in foundational learning also emerged as a critical challenge. There is a need to foster the sharing of foundational learning data and increase data accessibility through the co-creation of data portals / platforms to address this challenge.

3. Invest in technical and human capacity development

There is a lack of capacity to manage and analyse foundational learning data. To address this challenge, stakeholders need training on data analysis, interpretation, and utilisation to improve their capacity to manage and use existing foundational learning data effectively. Communities of practice should also be created to build the capacity of data users and generators in advanced statistical techniques in analysing metadata for data-driven decision-making.

4. Increase funding for foundational learning data systems

There is inadequate funding for foundational learning data collection and management. To address this challenge, there is a need to invest in cost-effective ways of collecting and managing data, for example, using web-based data collection systems. Improving

ICT infrastructure and internet connectivity is important to support efficient data collection, storage, and dissemination processes.

In summary, strengthening institutional capacity, fostering collaboration among stakeholders, and increasing investment in foundational learning data systems are pivotal. By addressing systemic challenges and promoting equity in research and resource allocation, Malawi can establish a more inclusive and effective education ecosystem. Emphasising the generation and utilisation of accessible, high-quality data will empower stakeholders to design targeted, evidence-based interventions that improve learning outcomes and contribute to national development. Through such efforts, foundational learning can become a cornerstone for sustainable educational transformation in Malawi.

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