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DESIGN-BASED IMPLEMENTATION RESEARCH REPORT: CYCLE 1

INCREASING FOUNDATIONAL LEARNING DATA ACCESS BY POLICYMAKERS: A FOCUS ON SUB-NATIONAL LEVELS

Date of publication: October 2025

DOI: https://doi.org/10.53832/unlockingdata.1028

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Recommended citation

Gachoki, C., Arisa, K., & Maurice, M. (2025). *Design-Based Implementation Research Report: Cycle 1. Increasing foundational learning data access by policymakers: A focus on sub-national levels in Kenya* [Collaborative Evaluation]. Unlocking data. https://doi.org/10.53832/unlockingdata.1028. Available at https://docs.unlockingdata.africa/lib/8CHWSNXQ.

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.

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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 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 and acronyms

CSOs	Civil Society Organisations
DBIR	Design-Based Implementation Research
ECDE	Early Childhood Development Education
FBOs	Faith-Based Organisations
FGM	Female Genital Mutilation
FL	Foundational Learning
GAM	Global Acute Malnutrition
LMICs	Low- and Middle-Income Countries
MNFE	Mobile Non-Formal Education
MoE	Ministry of Education
NGOs	Non-Governmental Organisations
SSA	Sub-Saharan Africa
UDI	Unlocking Data Initiative
WFP	World Food Programme
ZAF	Zizi Afrique Foundation

Contents

Executive summary

This report summarises the findings, insights, and key lessons from the first cycle of Design-Based Implementation Research (DBIR) conducted under the Unlocking Data Initiative (UDI) in Kenya.

The UDI utilised a DBIR approach to enhance the foundational learning data framework in Kenya. Concentrating on six varied counties (Nairobi, Kajiado, Machakos, Kisumu, Kirinyaga, and Marsabit), Cycle 1 uncovered significant challenges:

- local officers primarily gather data for compliance rather than for informed decision-making;
- various organisations employ incompatible tools, leading to data fragmentation; and
- the available data is underused, despite its potential to enhance foundational learning outcomes.

Despite these challenges, notable accomplishments from this cycle include:

- the formation of Communities of Learning at the grassroots level;
- the creation of prototype data dashboards; and
- the development of officer capabilities.

Key insights gained underscore the necessity for standardised tools, essential data skills training, and tailored data products for different categories of users.

Looking ahead, UDI's second cycle plans involve piloting and scaling the dashboard prototypes, establishing a Data Academy, and creating an Education Evidence Hub. This endeavour illustrates how collaborative and iterative methods can revolutionise data utilisation in educational systems, ultimately bettering learning outcomes across Kenya. The initiative serves as a model that can be replicated to connect data collection with its practical application in various contexts.

1. Introduction

This report presents the first cycle findings from design-based implementation research (DBIR) focused on the collection and utilisation of data for decision-making at the subnational level within the Ministry of Education in Kenya. The objective of the research is to enhance the use of education data at the subnational level to foster improvements in teaching and learning. This research aims to evaluate the effectiveness of simple dashboards in data management and provide recommendations to enhance the use of data for improving learning outcomes.

The research group consisted of members from the Zizi Afrique Foundation and PhD graduate associates from the University of Embu. This report outlines the results and suggestions arising from the initial data collection phase, which followed a facilitated workshop in March 2025 in Marsabit County involving the education officials in the County. The results are being utilised to guide the creation and execution of a prototype dashboard and were instrumental in pinpointing crucial areas for testing and exploration in the DBIR Cycle 2. The next cycle will compare Marsabit County with other pilot counties that do not have the dashboard implemented.

This DBIR Cycle 1 report is structured in the following sections:

Section 1 provides an introduction to the DBIR context. Section 2 presents the background on education in Kenya, with a particular focus on Marsabit County. It examines education progression, identifies key barriers to education, explores potential solutions to these challenges and discusses the resulting outcomes. Section 3 describes the methodological framework. Section 4 outlines the findings, while Section 5 encapsulates lessons learned during the first cycle and outlines the expected next steps in the DBIR Cycle 2.

2. Background on education progression in Kenya

Foundational learning is in crisis globally, particularly in low- and middle-income countries (LMICs). As of 2022, approximately 70 per cent of 10-year-olds in LMICs were unable to read and understand an age-appropriate text. The COVID-19 pandemic exacerbated this crisis, with international reading scores declining by more than a year of schooling between 2016 and 2021 (↑World Bank, 2022).

In Sub-Saharan Africa (SSA), despite notable progress in access to education, learning outcomes remain critically low. By 2021, approximately 90 per cent of children in the region had not achieved basic reading and numeracy skills by age 10 (↑World Bank, 2022). The crisis is attributed to the focus on expanding access to education without a corresponding emphasis on quality. While global initiatives, such as the Commitment to Action on Foundational Learning, have emerged to address these challenges, the implementation remains a challenge, particularly for the most marginalised children (↑FCDO & Girls' Education Challenge, 2023).

Kenya has made significant policy commitments to foundational learning, aligning with Sustainable Development Goal 4 (SDG 4) to ensure inclusive and equitable quality education for all by 2030 (↑Lawson et al., 2024). The Basic Education Act (2013) and the Constitution (2010) preserve education as a right, and the government offers free and compulsory basic education (early childhood development education (ECDE), primary, junior secondary and senior secondary)[1]. Similar to SSA, increased access has not been in line with the learning outcomes, which remain low, with over 40 per cent of children in Kenya unable to attain basic reading skills by age 10 (↑Uwezo, 2021).

2.1 Education progression in Marsabit County

Marsabit County faces many challenges in education, mainly due to its arid and semi-arid climate, the nomadic lifestyle of many residents, and a high poverty rate. In 2023, Marsabit County ranked 4th from the bottom with an enrolment of 79,178 in primary and junior school compared to Nairobi, which had the highest enrolment of 424,891 (↑KNBS, 2024). Over the past decade, there has been some progress, but the county still struggles to catch up with the rest of the country in terms of literacy and school completion rates. Between 2014 and 2023, access to education showed gradual improvement, with school enrolment in both primary and secondary schools increasing by approximately 44.5%. However, many learners face barriers that make it difficult to stay in school and achieve the learning outcomes. For instance, the traditional school

[1] In the new Curriculum Based Education system, the education system has been reorganised as: 2 years of ECDE, primary Grade 1-5, Junior (secondary) school Grades 6-9, and senior (Secondary) school Grades 10-12.

systems and curricula are ill-suited to their nomadic lifestyle. In 2023, only 26 per cent of the population in Marsabit was considered literate, which is much lower than the national literacy rate of 83 per cent (↑World Bank, 2025). This means Marsabit's literacy rate is less than one-third of the national average, highlighting regional disparities in foundational learning and education attainment. In terms of enrolment, the Gross Enrolment Rate (GER) 53 per cent and the Net Enrolment Rate (NER) 38.9 per cent are lower when compared with the national averages of 97.5% and 79.3 per cent, respectively (↑Republic of Kenya, 2020). This shows that 61% of children in the county are not accessing education at the official primary school-going age (↑Kalla, 2025). Table 1 presents changes in key education indicators in Marsabit county in 2014, 2019, 2020, and 2023.

Table 1: Education Indicators in Marsabit County

Indicator	2014	2019	2020	2023
ECDE enrolment	12,580	18,200	14,368	21,296
Primary school enrolment	49,386	50,900	42,646	61,887
Secondary school enrolment	5,133	6,783	6,783	12,417
Number of primary schools	169	181	185	229
Number of secondary schools	31	46	46	48
Number of ECDE centers	175	212	212	362
Number of Teachers	1,872	1993	1912	1,912
Pupil to teacher ratio in ECDE	47:1	54:1	61:1	unspecified
Pupil-to-Classroom ratio in public ECDEs	39:1	40:1	85:1	Unspecified but probably still high

Sources: , (↑Commision for Revenue Allocation, 2023; ↑Republic of Kenya, 2014; ↑Republic of Kenya, 2015; ↑Republic of Kenya, 2019, ↑Republic of Kenya, 2020; ↑Republic of Kenya, 2025)

Between 2014 and 2023, ECDE enrolment in Marsabit County increased by 69%, from 12,580 to 21,296 children. This growth outpaces the national ECDE enrolment growth rate of approximately 35% over a similar period, reflecting increased community awareness and county-level investments in early learning. However, the sharp increase in enrolment is not matched by a proportional rise in infrastructure or workforce. Public ECDE pupil-to-classroom ratio surged from 39:1 in 2014 to a concerning 85:1 by 2020, suggesting classroom congestion that could undermine learning outcomes. The pupil-to-teacher ratio in ECDE also worsened from 47:1 in 2014 to 61:1 in 2020, far exceeding the recommended national average of 30:1.

Primary school enrolment grew from 49,386 in 2014 to 50,900 in 2019, then dipped to 42,646 in 2020, likely due to school closures during the COVID-19 pandemic. Encouragingly, by 2023, enrolment surged to 61,887, a 44% increase from 2014, suggesting strong post-pandemic recovery efforts.

The number of primary schools grew from 169 to 229 (a 36% increase) between 2014 and 2023, while ECDE centers more than doubled from 175 to 362 during the same period. This infrastructure expansion is commendable and critical for improving access in a county characterised by vast distances and nomadic communities. However, the growth in secondary schools has been minimal, only increasing from 31 in 2014 to 48 in 2023, raising concerns about bottlenecks in the transition from primary to secondary levels. Furthermore, the static number of classrooms per ECDE center suggests that expansion may have prioritised school registration over comprehensive facilities.

The total number of teachers remained nearly unchanged from 1,872 in 2014 to 1,912 in 2023. This stagnation, amidst rising enrolments and school numbers, has contributed to high pupil-teacher ratios, especially in ECDE. Nationally, efforts have been made to employ more teachers through the Teachers Service Commission and county support, but Marsabit's data indicates a shortfall in both recruitment and equitable distribution of educators, especially in marginalised or remote areas.

2.2 Barriers to education in Marsabit County

While Kenya has made significant progress in expanding educational access, many children in marginalised and pastoralist areas like Marsabit County continue to be left behind as they face significant and complex barriers to education (↑Kalla, 2025). The main challenges include:

1. **Weak data systems and capacity for education monitoring in Marsabit County**

There is widespread dissatisfaction with the quality, accessibility, and reliability of education data in Marsabit County. A mapping study (↑Development Gateway, 2024) shows that while stakeholders may be motivated to use data in decision-making, they often lack access due to limited dissemination and data-sharing mechanisms. Furthermore, trust in data is low because of conflicting and overlapping indicators, such as enrolment and learning outcomes, and the absence of harmonised reporting frameworks, sometimes exacerbated by instances of misuse. This issue is not unique to Marsabit but reflects broader structural weaknesses in Kenya's education data systems (↑Gachoki & Arisa, 2025), particularly in marginalised counties. Available data is often fragmented, outdated, or aggregated at high administrative levels, making it difficult to identify localised gaps and tailor context-specific interventions.

The limited appreciation of data as a strategic planning and accountability tool further compounds the problem. In Marsabit, many education officers lack adequate training in data collection, digital systems, and analytics. Stakeholders may also underestimate the role of high-quality data in shaping policy, informing budgets, and designing education programmes. As a result, transparency is diminished, and efforts to monitor progress or improve equity in foundational learning are significantly hindered.

Addressing these barriers requires a multi-faceted strategy. First, targeted capacity-building initiatives should be implemented to train education officers, particularly at sub-county and school levels, in digital literacy, data collection, and use of Education Management Information Systems (EMIS). Second, the subnational level of government, in collaboration with national agencies such as the Kenya National Bureau of Statistics (KNBS) and the Ministry of Education, should develop or strengthen open-access data portals. These platforms can enable timely access to disaggregated education statistics, supporting researchers, policymakers, and development partners in designing evidence-based interventions, tracking trends, and promoting accountability across the sector (↑Gachoki & Arisa, 2025).

2. Poor infrastructure and undersupported teachers

Marsabit County covers a surface area of 66,923.1 square kilometres (sq km), making it the second largest county by size in Kenya after Turkana County, which has an area of 71,597.8 sq km. Poor infrastructure remains a significant barrier to education in Marsabit County, making quality education inaccessible for many children. Many areas lack sufficient schools, forcing children to travel long distances, sometimes more than 10 kilometers to reach the nearest classroom. This is particularly discouraging for young children and girls, who face safety concerns on these journeys. Many schools do not have enough toilets or proper sanitation, especially for girls. This leads to absenteeism and dropouts, particularly during menstruation, and poses health risks for all students.

Existing schools are often overcrowded, with multiple grades sharing a single classroom or even learning outdoors. This overcrowding diminishes the quality of instruction and limits individual attention for students. Marsabit consistently faces a shortage of qualified teachers, as many educators are reluctant to take up posts in remote, hardship areas. In 2020, the shortage was demonstrated by the pupil-teacher ratio, which stood at 61 in ECDE compared to the national average of 52 in public schools. In primary schools, Marsabit was ranked at the national average of 41, which is still high compared to the UNESCO recommended average of 25 pupils per qualified teacher (↑Republic of Kenya, 2020). Lastly, a significant number of schools lack electricity and internet connectivity, hindering the integration of digital learning and limiting access to modern educational resources. In 2020, only 3.4% of ECDE centres in Marsabit had internet connectivity compared to the national average of 14.9%. This digital divide leaves Marsabit's students at a disadvantage compared to their peers in better-served regions.

Innovative approaches such as Mobile Non-Formal Education (MNFE) centres have been introduced. These centres follow pastoralist migration routes, bringing education to children in remote grazing areas. Flexible schedules and community-based teachers make learning accessible and relevant, even for nomadic families (↑Adeso, 2014).

3. Socio-economic challenges in Marsabit County

There is a high correlation between poverty and educational marginalisation. 66.1% of the population in Marsabit lives below the poverty line (↑Republic of Kenya, 2025). Children from poor homes in the county are unlikely to be enrolled in school due to the costs associated with schooling. Even though education in public schools is free, there are still associated costs, such as school uniforms. Many school-aged children are drawn into income-generating activities for their families, such as herding, domestic labour, and small-scale trading, contributing to high dropout rates and low retention rates in school (↑Plan International, 2022). County-funded scholarships (1,300 bursary beneficiaries in 2022) and national programs like the Presidential Secondary School Bursary for Orphans have reduced dropout rates by easing the burden of school fees and materials. Additionally, direct cash transfers to vulnerable households (e.g., older persons, disabled individuals) stabilise incomes, enabling families to prioritise education over child labour.

Marsabit experiences chronic food insecurity, exacerbated by recurrent droughts and poor agricultural productivity. According to the National Drought Management Authority, a quarter of a million people in the county require food aid due to multiple failed rainy seasons. Food scarcity not only affects children's health, leading to malnutrition, stunted growth, and loss of weight, but also their ability to attend and concentrate in school. North Horr sub-county exhibited deteriorating nutritional status, as evidenced by an increase in the Global Acute Malnutrition rate (GAM) from 22.6% in July 2021 to 29.5% in July 2022 (↑Plan International, 2022). The high enrolment of learners at the primary level was attributed to the in-kind school meals program provided by the Ministry of Education. Most parents send their children to school not just for learning but for feeding as well. Expanded school meal initiatives, supported by the World Food Programme (WFP) and county governments, increased Early Childhood Development Education (ECDE) enrolment by 23% (17,778 to 21,793) between 2022 and 2023. These programs reduce absenteeism and improve concentration by addressing food insecurity (↑Republic of Kenya, 2023).

4. Social Cultural Barriers

Marsabit's pastoralist communities face deep-rooted sociocultural norms that hinder educational participation, particularly among girls. A survey in North Horr Sub-County identified early marriage, female genital mutilation (FGM), cultural rites, and pastoral livelihoods as key determinants of low school retention (↑Malelu et al., 2020). Cultural expectations assign girls domestic responsibilities like fetching water, cooking, caring for siblings, which often take precedence over schooling, especially when families are mobile or during droughts (↑Jansen & Mahat, 2024). In addition, patriarchal norms

devalue girls' education. Studies in Maasai and pastoralist communities show that girls are perceived as economic assets through dowry, not long-term contributors, leading to low enrollment and high dropout rates. FGM and early marriage further reinforce this, as they trigger school exit for girls once initiated or married.

Local mentorship initiatives run by the Diocese of Marsabit train girls on rights, FGM, and early marriage prevention, leveraging community elders and female role models. Community-led dialogues that involve elders, religious leaders, and parents can shift entrenched norms. Evidence from Narok and Kajiado suggests educational outcomes improve when interventions acknowledge and integrate cultural values. Engaging custodians of tradition, such as elders and spiritual leaders, can legitimise girls' schooling and align it with cultural identity (↑Parsitau, 2017). Lastly, Schools in Marsabit Central Sub-County have seen better attendance and focus by fostering peer counselling, cultural events, and mentoring networks to support students from nomadic backgrounds (↑Ojwang et al., 2024).

3. Methodology

This section outlines the methodological framework. The UDI adopted a DBIR approach to strengthen Kenya's foundational learning (FL) data ecosystem. DBIR has emerged as a model at the intersection of policy, research, and practice by applying design-based perspectives and methods to address and study problems of implementation. The DBIR model emphasises iterative cycles of design and testing, design-based research, a process that makes it particularly well-suited to making evidence-based improvements to innovations, where evidence from both implementation and outcomes informs changes that design teams make for continuous learning (↑Fishman et al., 2013). The approach was chosen to address systemic challenges in data accessibility, usability, and equity by fostering collaborative, iterative, and context-driven solutions involving both government and non-state actors.

The approach aimed to promote collaboration among multiple stakeholders, improve data-informed decision-making, and yield actionable insights to enhance FL outcomes in Kenya as a whole. The methodology was built upon the four fundamental guiding principles, based on ↑Fishman et al., (2013):

- A focus on persistent problems of practice from multiple stakeholders' perspectives;
- A commitment to iterative, collaborative design;
- A concern with developing theory and knowledge related to both classroom learning and implementation through systematic inquiry;
- A concern with developing capacity for sustaining change in systems.

UDI applied a DBIR methodology to Kenya's FL ecosystem with a clear scope aimed at improving the production, accessibility, and use of data for decision-making. The DBIR approach involves iterative, collaborative, and contextually grounded engagement with national and sub-national stakeholders to co-design data-use solutions, address systemic inequities, and build capacity across the ecosystem.

The UDI's DBIR methodology aimed at:

1. Co-designing data-use interventions with stakeholders at the sub-national level.
2. Enhancing capacity for evidence-based policymaking.
3. Addressing inequities in data production, use and access.
4. Piloting scalable solutions in selected counties.

3.1 Scope of the DBIR

Kenya's FL sector faces notable issues such as fragmented data systems, multiple and inconsistent policy implementation, and weak linkages between evidence generation and decision-making (↑Gachoki & Arisa, 2025). In response to these identified limitations in data and data use in the FL ecosystem at the decentralised level, the Zizi Afrique

Foundation (ZAF) has purposely chosen Marsabit county out of six pilot counties—Nairobi, Kajiado, Machakos, Kisumu, and Kirinyaga counties. counties were selected based on:

- Geographic and demographic differences – Ensuring representation of urban (Nairobi), peri-urban (Kajiado, Machakos), rural (Kirinyaga, Kisumu), and marginalised (Marsabit) environments.
- Current engagement readiness – Marsabit had previously shown interest in data utilisation, while Nairobi serves as the centre of policymaking authority.
- Equity considerations – The selection of Marsabit addresses the inequities faced by nomadic and ASAL (Arid and Semi-Arid Lands) communities that are frequently left out of education data frameworks.

Marsabit was chosen out of the six counties as a prototype location to create and evaluate a localised data-sharing dashboard for FL indicators. Marsabit has a comparable small number of schools, ZAF has previous collaboration opportunities, and its unique characteristics as a rural and nomadic county, offering key lessons. These lessons learned will then be applied when engaging with the other 5 pilot counties.

3.2 Design of the DBIR

The DBIR Cycle 1 objectives in Kenya were:

1. To understand barriers and enablers of evidence use in Marsabit County. This objective aimed to identify the factors hindering or supporting the application of data in decision-making within the specific local context.
2. To build collaborative relationships with the sub-national education actors. Recognising the importance of co-creation, this objective focused on establishing strong partnerships with stakeholders at the county level.
3. To initiate pilot designs for data sharing and analysis tools at the county level. This objective aimed to begin the process of developing practical, contextually adapted solutions for improving access to and use of FL data.

The DBIR Cycle 1 focused on the following activities:

1. Identification of key education stakeholders in Marsabit County;
2. Identification of all the data indicators used by all stakeholders, based on data requests;
3. Harmonisation of data collection tools; and
4. Populating the harmonised tools with real-time data.

This cycle was grounded in a co-design ethos, incorporating joint situational analysis, workshops, and reflections with iterative adaptations throughout the process.

3.4. Data collection methods

The following primary and secondary data collection methods were used in DBIR Cycle 1:

1. **Desk review to profile the pilot county (Marsabit):** A desk review was conducted for Marsabit County, which served as the initial entry point for the DBIR in Kenya. The desk review assisted in understanding the context and challenges specific to this marginalised region
2. **Gathering stakeholder views through workshops:** Views were gathered from various stakeholders through workshop breakout groups that made presentations and sticky notes. The presentations and sticky notes were documented and analysed in thematic areas. The DBIR methodology supports ongoing co-creation involving county education officials, head teachers, and CSOs through workshops to outline data requirements and usability challenges. This aligns with the co-creation principle, which involves a range of stakeholders, including MoE officials, subnational-level education leaders, school administrators, in identifying problems and designing solutions.
3. **Data from schools:** Infrastructure, school feeding, learners enrolment, staffing and resources data was collected from schools using pre-designed templates. The first step involved harmonisation of the data collection tools into three sets (learners enrolment and staffing, infrastructure and school feeding) and populating them with data. The pilot efforts aimed to collect data that could potentially inform localised decision-making, addressing the identified deficiency where officers primarily collect data for compliance rather than for informed decision-making.

3.5 Data analysis

The data collected was analysed through thematic coding, where we strived to identify, analyse, and report patterns of meaning (themes) within qualitative data received from workshops and meetings. This qualitative analysis followed six steps in thematic analysis proposed (↑Braun & Clarke, 2008) as used by (↑Jnanathapaswi, 2021): 1. familiarisation with data, 2. generating initial codes, 3. searching for themes, 4. reviewing themes, 5. defining and naming themes, and 6. writing the report. Each stage systematically aids in generating valuable insights while enabling the researcher to stay actively involved with the data during the entire process. Thematic analysis is among the most commonly used approaches for examining qualitative data, providing an organised but adaptable framework for recognising, evaluating, and explaining patterns of significance within datasets. When compared to more rigid methodologies like grounded theory, interpretative phenomenological analysis (IPA), and content analysis, thematic analysis stands out as a versatile approach that focuses on interpretive depth and researcher reflexivity. This enables both descriptive and in-depth conceptual analysis across a range of topics (↑Ahmed et al., 2025).

Figure 1. Six steps in thematic analysis

	PHASES	DESCRIPTION OF THE ANALYSIS PROCESS
1	**Familiarising Data**	1. Narrative preparation, i.e. transcribing data 2. Rereading the data and noting down initial ideas
2	**Generating Codes**	1. Coding interesting features of the data systematically cross entire data set 2. Collating data relevant to each code
3	**Searching Themes**	1. Collating codes into potential themes 2. Gathering all data relevant to each potential theme
4	**Reviewing Themes**	1. Checking if themes work in relation to the coded extracts 2. Checking if themes work in relation to the entire data set 3. Reviewing data to search for additional themes 4. Generating a thematic "map" of the analysis
05	**Defining & Naming Themes**	1. On-going analysis to refine the specifics of each theme and the overall story of the analysis. 2. Generating clear definitions and names for each theme
6	**Producing Report**	1. Selection of vivid, compelling extract examples 2. Final analysis of selected extracts 3. Relating the analysis back to the research question, objectives and previous literature reviewed

Source: (↑Jnanathapaswi, 2021)

4. Key findings from DBIR Cycle 1

This section presents key findings from the first cycle of DBIR. These insights highlight crucial aspects of the current foundational learning data ecosystem.

The key insights from DBIR Cycle 1 included:

1. **Lack of data demand from subnational officers:** A significant finding was that while subnational officers serve as the primary contact point with schools, there is no apparent data demand originating from them. Consequently, the subnational officers in Marsabit primarily collect data only when it is explicitly requested by the Ministry of Education. This indicates that data collection is largely driven by compliance requirements (national) rather than a local need to inform decision-making. Without a structured demand for data at the county level, Marsabit's education officers lack the incentive to analyse trends. Even when data is collated in the NEMIS it masks Marsabit's contextual challenges, such as nomadic populations, drought and perennial cross-border conflict, as local officers rarely use data to advocate for tailored solutions.

2. **Growing appetite to use available data:** Despite the lack of proactive demand for collection, the research revealed a growing appetite among subnational officials in Marsabit to actually use the vast amounts of data they already collect. This collected data spans various areas, including enrolment figures, infrastructure details, and school feeding information. This suggests a potential for leveraging existing data if systems and capacities for its use are improved.

3. **Evidence-to-practice disjoint:** Raw education data, including assessment results and attendance records, is not consistently analysed, synthesised, or converted into actionable insights. Even when evidence is produced, it does not effectively reach or impact key practitioners (teachers and administrators) due to structural and behavioural barriers. The County Director of Education indicated the need to know which schools have teacher shortages and excesses, disaggregated by subject, to enable efficient allocation.

   > *"A dashboard would help me at a glance where I have teacher imbalances to ensure equity", TSC County Director of Education, Marsabit County*

4. **Proliferation and fragmentation of data collection tools:** The initiative found that there are many data collection tools used by the various data users in the County. Various entities, including Faith-Based Organisations (FBOs), local administration, and Non-Governmental Organisations (NGOs), collect data from the same schools at different times using diverse and often incompatible tools. This leads to the collection of the same data multiple times, burdens schools with repetitive requests, results in unreliable data, and makes it difficult for decision-makers to compare datasets.

5. **Significant capacity gaps:** A critical finding was the presence of substantial capacity gaps within the system. The County Director of Education's (CDE) office does not have a dedicated statistical officer to collate or clean collected data. As a result, the CDE relies on officers at a lower level who lack the necessary capacity to handle data. Furthermore, the education offices in Marsabit lack basic infrastructure such as computers, and where they are available (in Sololo Sub-county, the computers were donated by Zizi Afrique Foundation), officers lack basic skills needed for fundamental data management, such as simple analysis using excel spreadsheets. This situation contributes to poor-quality data, which erodes trust and undermines its usability for policymaking.

> *" The data skills my team has are the only ones acquired at university, and only if the course involved data analysis." County Director of Education, Marsabit County*

5. Lessons learned and next steps

5.1 Lesson learned

The DBIR Cycle 1 process yielded several valuable insights and lessons for future iterations and the broader goal of improving FL data access and use:

1. There is great potential in harmonising countywide data into a portal that is accessible to the stakeholders. This suggests that consolidating disparate data sources into a single, accessible platform could significantly improve data usability.
2. The subnational officers only need basic data management skills. This indicates that extensive, complex training may not be necessary initially; focusing on fundamental skills could be an effective starting point for capacity building.
3. To address the needs of various stakeholders, the sub-county officers require basic products generated from data tailored to those needs of a specific constituency, such as parents, local leadership, school management, teachers, as well as their own needs. This highlights the importance of creating simplified, relevant data summaries or dashboards for different user groups to make data actionable.
4. There is a need to regularise data collection activities to ensure predictability by school heads and to inculcate a culture of maintaining data sets that build on each other. Establishing consistent data collection schedules and practices would reduce the burden on schools and improve the quality and comparability of data over time.

These lessons directly inform the understanding of challenges and potential solutions within the sub-national education data ecosystem in Kenya, guiding subsequent steps in the DBIR process.

5.2 Next Steps: DBIR Cycle 2

Following the insights and lessons learned during the first cycle, UDI will proceed with the second cycle of the DBIR. The DBIR Cycle 2 will build upon the initial phase and further enhance the FL data ecosystem at the sub-national level through an iterative process of research-learning-implementation and scaling.

The key components and activities for the DBIR Cycle 2 are outlined as follows:

- **Conduct research for scaling** to guarantee that the data use innovation is broadened and successfully implemented to have a greater impact.
- **Continued awareness and targeted capacity building on data usage:** The initiative will continue efforts to raise awareness regarding the importance of data and will implement targeted capacity building initiatives focusing specifically on

data usage among relevant stakeholders. This addresses the insights from Cycle 1 regarding capacity gaps and the need for basic data management skills.

- **Finalisation of the county-level dashboard:** A significant activity in the second cycle will be to finalise the prototype county-level dashboard that was conceptualised during the first cycle. The development and finalisation of this dashboard aligns with the potential seen in harmonising countywide data into an accessible portal.
- **Rollout and training using the Marsabit cohort:** The second cycle plans to leverage the experience and potentially the stakeholders from the Marsabit pilot county cohort to train another two (2) pilot counties selected for the initiative. This reflects the iterative nature of the DBIR process, building lessons from the initial entry point in Marsabit. The other pilot counties include Nairobi, Kajiado, Machakos, Kisumu, and Kirinyaga, representing diverse geographic and demographic contexts.

These steps in the second cycle aim to further refine and scale the solutions developed in the first phase, moving towards more effective utilisation of education data for improved foundational learning outcomes.

References

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