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Beyond Test Scores: Data-Informed Instructional Leadership in Low-Stakes Assessment Contexts

Ernest Ulemu Chagunda
Ministry of Education, Malawi, Chimutu CDSS

Bako Abdalla Hama Salih
Zhejiang Normal University, Institute of International and Comparative Education, Jinhua, China

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ABSTRACT

Objective: *This study proposes a conceptual framework that identifies how secondary school leaders in Malawi can utilize student voice and teacher reflection as formative evidence to inform instructional practice. It is an attempt to address the lack of applicability of data-informed leadership models developed largely in high-income, high-stakes accountability contexts to low-resource settings where assessment and evaluation processes are weak or where leaders receive little formal training.* ***Method:*** *This paper presents an overall conceptual analysis of current literature regarding educational leadership, formative assessment, student voice, and organizational learning. This paper also applies three theories (Sensemaking Theory, Distributed Leadership Theory, and Cultural-Historical Activity Theory) to examine how researchers utilize qualitative data at the secondary school level in Malawi. The study utilizes the author's prior research to highlight contextual challenges.* ***Results:*** *The study reveals that exam scores take too long to be available for teachers to make teaching decisions. Student perspectives and teacher reflections provide much faster and relevant information than examination results, but their use is limited by restrictive policies, little time, poor documentation, inadequate school-wide support from school leaders and no formal data-use systems. The integrated framework outlines how leaders' sense-making, sharing of data related activities and conflict within activity systems will impact on how much real evidence from formative assessments is used in instruction. The framework also provides the theoretical foundation for an evidence based research agenda. This involves three phases of research using a Participatory Change Laboratory-based intervention.* ***Novelty:*** *The research seeks to provide an appropriate synthesis of three theories which will inform data driven leadership practice in Malawi. An expanded literature base on using data has been developed beyond test based accountability frameworks and a framework for developing culturally responsive leadership interventions in low resource contexts was developed.*

INTRODUCTION

Background and Problem Statement

School leaders around the world are supposed to be responsible for improving student learning; however, the data they have access to — standardized test scores — are lagging indicators that offer little help to make day-to-day instructional decisions[1]. Furthermore, this problem is compounded by the fact that many countries in low-income, post-colonial settings such as Malawi lack strong assessment systems, class sizes are large, and leaders receive very little preparation in data use[2]. This becomes even more difficult when leaders implement complex pedagogical reforms, such as flipped learning, competency-based curricula, or practical science instruction, which can generate substantial qualitative data. Students often experience difficulties because of the novel

formats in which lessons are presented; teachers develop their own ways to adapt and circumvent barriers to lesson implementation; and, formative assessments identify areas of misconception. Yet prevailing leadership frameworks offer minimal guidance regarding how to collect systematic information from these qualitative data sources; interpret this information; and respond accordingly.

The author has previously provided empirical documentation of these gaps. In a study into factors that influence Physical Science practical lessons, the author identified large disconnections existed between what was intended in the physical science curriculum and the actual classroom reality, as school leaders had little idea about the particular issues teachers encountered. Similarly, the author's master's thesis on flipped learning in a Malawian Community Day Secondary School (CDSS) found that student struggles with pre-class work and teacher time management challenges were well-documented by teachers but never systematically collected or used by school leadership for instructional adjustment. This conceptual paper builds on that prior work by asking what it would mean for school leaders to use qualitative formative data, student voice, and teacher reflections as the primary basis for instructional decision-making in low-stakes assessment contexts and what theoretical frameworks and existing evidence can guide the empirical investigation of this question in Malawi.

Purpose and Scope

This study has three interconnected purposes. First, this paper synthesizes key literature related to educational leadership, assessment, and organizational theory to understand the role of data-informed leadership in low-stake contexts. Second, it develops a conceptual framework that draws upon sensemaking theory, distributed leadership, and Cultural Historical Activity Theory (CHAT) to be used in Malawian secondary schools. Third, it identifies specific areas of research that remain unexplored or undefined and outline an empirical plan that builds off the author's previous work with regards to implementation of flipped learning. Therefore, this article should be seen as a conceptual framework rather than systematic literature review. As such, the article will not draw upon all research on the topic of interest but will focus on seminal and recent empirical research which most accurately reflects the situation within Malawi. When there is a lack of literature on Malawi; this will be highlighted as a reason for further empirical research.

Connection to the Author's Prior Research

The following provides a shift from studying the curriculum to looking at education leadership. It has built from two previous research projects. These are "Factors Affecting the Implementation of Practical Lessons in Physical Science". This showed that there are a lack of resources, insufficient teacher training and a lack of consideration by school leaders were all significant barriers to delivering practical lessons. It also highlighted that school leaders did not know about most of these issues because there was no formal system in place to provide them with feedback on where they were succeeding or failing in their teaching methods. The second study, the author’s master’s thesis, “Investigating

the Perspectives, Challenges and Strategies of Flipped Learning: A Case Study of Chimutu CDSS in Malawi," demonstrated several obstacles related to flipped learning including, student resistance to complete pre-lesson tasks; teacher difficulty managing time; and technological issues such as internet connectivity and access to digital resources. Crucially, it showed that although teachers developed very detailed reflections detailing problems they encountered during the implementation process, none of those reflections were formally collected or utilized by school leaders in ways that would allow them to assess how well their school were implementing reforms.

Together, these studies clearly indicate a significant gap exists: Secondary school leaders in Malawi do not use qualitative formative data that has been collected by teachers and students during previous instructional reforms, and therefore, this current paper examines what factors are required to create systemic changes

Theoretical Framework

This section provides the theoretical background of the study. Three theoretical frameworks have been provided in sequence and are combined to show how they work together to provide an analysis of data driven leadership in low stakes settings.

Sensemaking Theory

Sensemaking theory, first outlined by Weick[3] and later applied to education by Spillane, Reiser, and Reimer[4], describes how individuals create meaning from the policies, data, and events using cognitive frameworks influenced by their experiences, the workplace environments, and the social networks they interact within. Therefore, sensemaking is viewed as an activity of creating meaning and not simply a neutral thought process. For school leaders, sensemaking theory clarifies several issues related to data use, starting with selective attention. Leaders will attend to certain of data and overlook others, based upon what they have learned about what is important through both their preparation and institutional expectations. In Malawi, where headteachers are promoted from teaching positions and receive no formal training in leadership, they tend to focus on administrative compliance data e.g. attendance records, lesson plans submitted, rather than on data concerning the instructional quality of the school.

In addition, sensemaking theory also emphasizes that interpretation is a socially constructed activity. Thus, school leaders do not create interpretations of data independently. Rather, they construct meanings of data through discussions with teachers, district officials, and other principals. Given the absence of structured professional learning communities in Malawian secondary schools around data interpretation, much of the social sensemaking does not occur. Consequently, school leaders in Malawi tend to either not interpret data or to make sense of data independent of the input from others. Third, sensemaking is retrospective; that is school leaders typically interpret data once the event has occurred. They then create narratives that provide coherence to those events. This retrospective nature implies that there may be little appreciation for real-time formative data (i.e. when students struggle and teachers

make adjustments) because they do not fit well into the retrospective narrative structure format that school leaders prefer.

Therefore, sensemaking theory provides insight into why many leaders in Malawi often neglect to examine qualitative formative data: they have not had exposure to viewing such data as legitimate evidence for decision making; nor have they had access to the opportunity to collaborate with peers to share insights regarding new ways of making sense of emerging forms of data.

Distributed Leadership Theory

A distributed perspective of leadership challenges the idea of leadership being held by those in specific roles within a school such as the principal/head teacher. A model of leadership is developed through everyday interactions and relationships between many people within a school setting[5][6]. This includes department heads, lead teachers, instructional coaches and most importantly for this paper, students.

Several essential ideas form the basis of the theory. First, distributed leadership means that leadership activities such as goal setting, monitoring, staff development and data analysis do not need to be carried out by one person. Second, leadership is viewed as a situated phenomenon, meaning that it is not a fixed trait but rather it is developed through interaction between people and organisation. Finally, leadership is seen as distributed across individuals and artefacts such as data protocols, meeting structures and examples of students' work.

Distributed leadership suggests that data led leadership can be shared with other members of the school. Heads of departments, teacher leaders and student representatives can play a key role, by carrying out specific tasks such as gathering student feedback, providing opportunities for reflection for teachers and feeding back findings. This isn't about encouraging individuals to become more data driven but ensuring there is a sustainable and culturally appropriate structure in place for sharing data across the school. In Malawi, head teachers manage very large schools without much administrative support, which limits one person's ability to collect, analyze and make decisions based on qualitative data. Distributed leadership provides a possible solution by building the capacity for using data amongst many different actors, rather than having all of this responsibility fall onto one leader.

Cultural Historical Activity Theory (CHAT)

Another theoretical perspective that can be used when analysing an activity is the Cultural Historical Activity Theory (CHAT) developed by Vygotsky and Leont'ev and further expanded by Engeström[7][8]. Human activity is understood by the theory as mediated by cultural artefacts and enacted within complex systems. An 'activity system' is the central unit of analysis with six components. The subject refers to the person(s) who are carrying out the activity such as head teachers, department heads or teachers. The object refers to what the activity is aimed to achieve for example improving instruction by using data. Tools are the mediating artefacts, including data protocols, meeting structures, and student surveys. Rules refer to norms, policies, and conventions, such as

cultural hierarchies that discourage students from critiquing their teachers. The community consists of others who share the same object, such as teachers, students, district officials, and parents. Finally, the division of labor describes how tasks are allocated, such as head teachers deciding and teachers carrying out those decisions.

CHAT's most significant contribution to this study is its notion of contradictions, historically accumulated tensions present within or between activity system components that drive change and innovation. Several contradictions are evident in data-informed leadership in Malawi. There is a tool–rule contradiction in which data collection tools, such as student surveys, conflict with the cultural rule that students should not evaluate teachers. There is a division of labor–object contradiction, in which the existing division of labor, where head teachers decide everything, is inconsistent with the object of using distributed data for collaborative improvement. There is also a community–subject contradiction in which the broader community of parents and district officials expects head teachers to exercise traditional authority, while data-informed leadership requires vulnerability and shared decision-making. CHAT also provides a methodology for formative intervention or the Change Laboratory[9] to work with practitioners to identify contradictions and develop new practices. Amadhila[10] demonstrated its applicability to Southern African contexts by applying it to a school located in Namibia. Worked collaboratively with teachers and student leaders over three workshops to create a new school vision and mission.

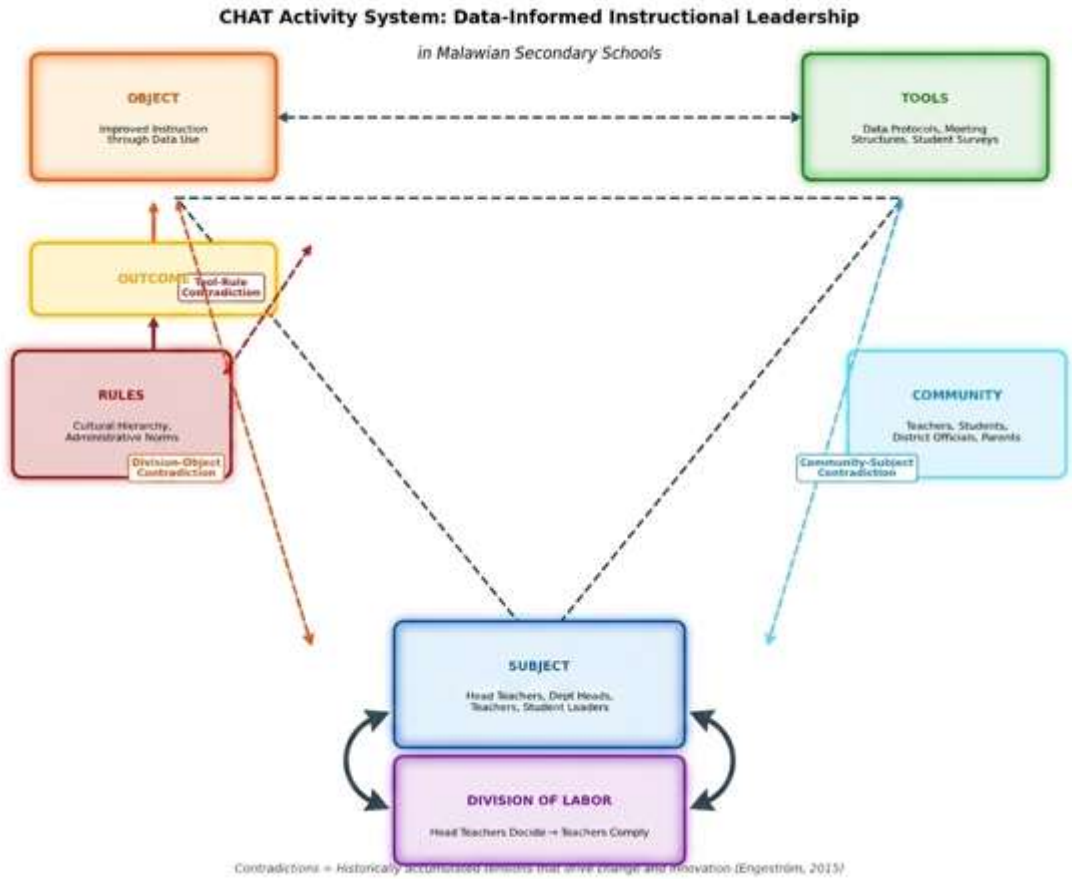


Figure 1. CHAT Activity System: Data-Informed Instructional Leadership in Malawian Secondary Schools

Integrating the Three Frameworks

These three theories are complementary, and collectively represent a solid base of theory for this study. Sensemaking theory provides the rationale for why leaders fail to recognize and use qualitative data because of the lack of socialization. It also identifies one possible way to change their interpretations through developing collaborative protocols. Distributed leadership theory addresses where leadership work takes place, showing how data-related tasks can be distributed among various actors rather than being the sole responsibility of the head teacher. Cultural-Historical Activity Theory (CHAT) offers tools for analysis, such as the concept of contradictions, and a specific type of intervention known as a Change Laboratory, to assist in the collaborative construction of new ways of practice.

Taken together, these frameworks inform a research design that (a) captures and examines how leaders currently make sense of what types of data they pay attention to and value, (b) maps the manner in which leadership related to instructional decision-making are currently being dispersed, and (c) uses a formative intervention based on CHAT to co-construct new data-use practices. The combination of all three frameworks guides the remaining sections of this study.

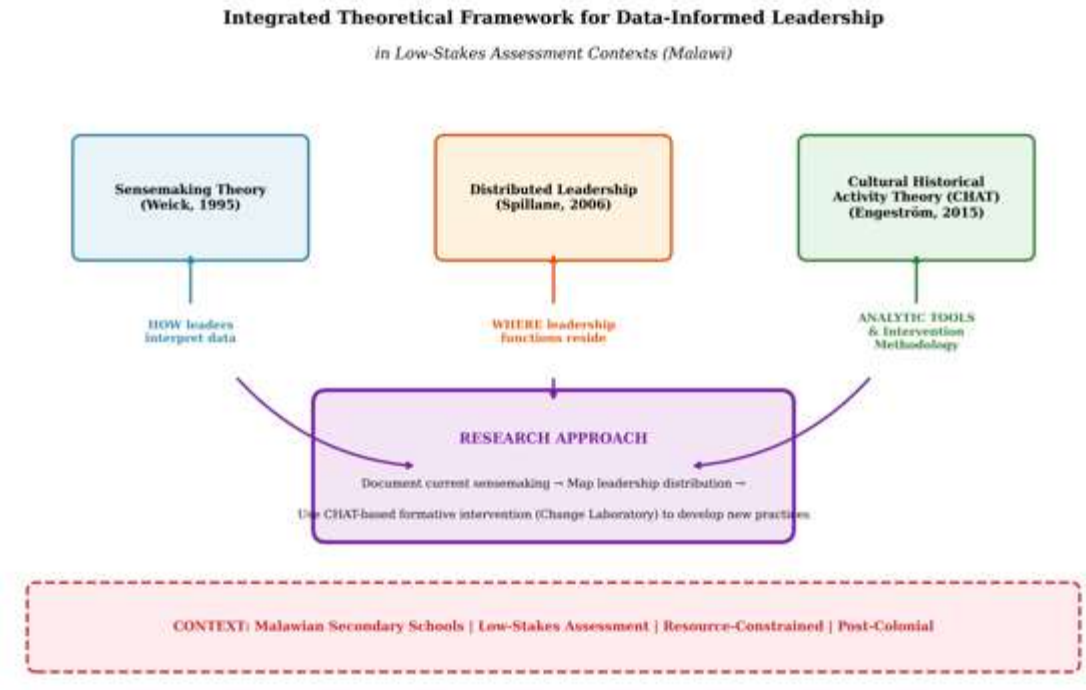


Figure 2. Integrated Theoretical Framework for Data-Informed Leadership in Low-Stakes Assessment Contexts (Malawi)

METHODOLOGY

Research Design

This research will utilize a conceptual design to conduct a critical review of literature on data driven leadership, formative assessment, student voice, teacher reflection and educational improvement. This will inform the development of a contextual framework to explore how secondary school leaders in Malawi can implement qualitative formative evidence in order to improve teaching and learning. This study does not involve any new data collection but has focused on identifying existing academic work and how appropriate theories apply to investigate the links between data driven leadership.

Literature Sources and Scope

The literature will focus on academic sources related to educational leadership, data driven decision making, formative assessment, student involvement, teacher professional development and organisational change. Research focused on secondary education and resource constrained environments will be investigated. In particular, research related to Malawi and the wider Southern African region will be explored. Contextual evidence from my previous research on pedagogy will be discussed. In addition, it covers flipped learning and practical based teaching in science. This will show how there are issues with teaching which can result in qualitative data being collected to improve schools.

The Limitations of Test-Centric Leadership

What Standardized Tests Measure and Do Not Measure

Standardized achievement tests provide a snapshot of how well students are learning based on a common set of items at one point in time. They can be used to compare different groups, help see if there are trends at the system level, and check whether schools meet minimum level of performance standards. However, the literature shows that this type of testing has limitations for instructional leadership[11]. Because they are considered as lagging indicators they do not provide much information for real-time decision making in teaching. They usually take many months to get results back and by the time the leaders have received the results the students will have moved onto different lessons so it is unlikely to be based on relevant lessons. Secondly, there is a strong correlation between students' achievement on standardised tests and their socio-economic status. Schools with higher affluence will generally have higher average scores in tests regardless of whether their teaching is effective whereas schools in low income communities tend to have low scores regardless of the quality of the teaching. When schools are judged on their test results those who work with the most marginalised students are disadvantaged such as the Malawian schools I work with.

Standardised testing causes the curriculum to narrow down[12]. If tests have high stakes, teachers tend to focus their lessons around the topics and types of questions that will be included in the test. In Malawi the MSCE has become a huge factor in students progressing through secondary and entering university. Practical science, art and

formative assessment are frequently ignored due to not being included in the exam. Even though leaders work harder to improve test scores, the overall quality of education might decline.

The Particular Case of Malawi

The constraints of test-centered leadership are greater in Malawi due to a variety of contextual factors. First, limited data infrastructure: most secondary schools do not have stable electrical power; they also do not have the Internet connectivity and devices for data collection and analysis. While test results will eventually become available, it may take months for them to be received in paper format and even then, they will not be grouped by grade, skill or subgroup. Second, the examination system does not produce diagnostic feedback. The MSCE and Junior Certificate of Education (JCE) only provide pass rates and subject-level scores, and therefore schools do not receive item-level analysis, knowledge about the specific skills that students have mastered, and comparisons beyond the school level.

Third, a significant gap exists with regards to the preparation of leaders. The majority of Malawi's headteachers transition into their role from positions of teacher and, consequently, have never had professional training regarding data analysis; designing assessments; and using formative data to guide instruction. Fourth, headteachers must respond to a multiplicity of stakeholders — district officials, parent associations, traditional leaders and CDSS committees — who place emphasis on different indicators such as attendance, pass rates, or community satisfaction. The result is conflicting expectations and limited direction regarding how to prioritize them. However, the weakness of test-based accountability provides room for innovation. In contrast to high-income systems constrained by high-stakes tests, Malawian leaders have little summative data and therefore will continue to either rely on intuition or tradition — as they currently do — or develop the ability to collect and use qualitative formative data. Since there is no entrenched testing infrastructure or strong political commitment to protect test scores as the primary measure of school quality, there is opportunity to develop new approaches of data practices—if leaders receive the tools, training, and resources necessary to make this happen.



Figure 3. Barriers to Data-Informed Instructional Leadership in Malawi: Systemic, Cultural, and Structural Constraints

Student Voice as a Data Source for Instructional Leadership

Defining Student Voice

Student voice is a term for the active and meaningful involvement of students in making educational decisions[13][14]. While simply consulting with students or having them as tokens may be seen as student voice, it can be described as genuine when students have a real impact on those decisions regarding their own learning, and when student perspectives are used to make future actions. Student voice can appear at different levels of student agency. At the lowest level, students are data sources who complete surveys or join focus groups, while adults interpret the information and decide what to do. At a medium level, students act as consultants through advisory committees, although adults still set the agenda. At a higher level, students work as researchers, collecting and analysing their own data and making recommendations. At the highest level, students serve as co-decision-makers on school improvement teams with voting power.

This study focuses mainly on medium- and high-level forms of student voice, including students helping to identify issues; collecting peer-generated data; and presenting results to school leaders. The lowest form of student voice, in which students are passive data sources, is already consistent with current relational dynamics of power but is underutilized in the context of Malawi. As a result, moving to medium and higher levels of student voice requires purposeful efforts by school leadership.

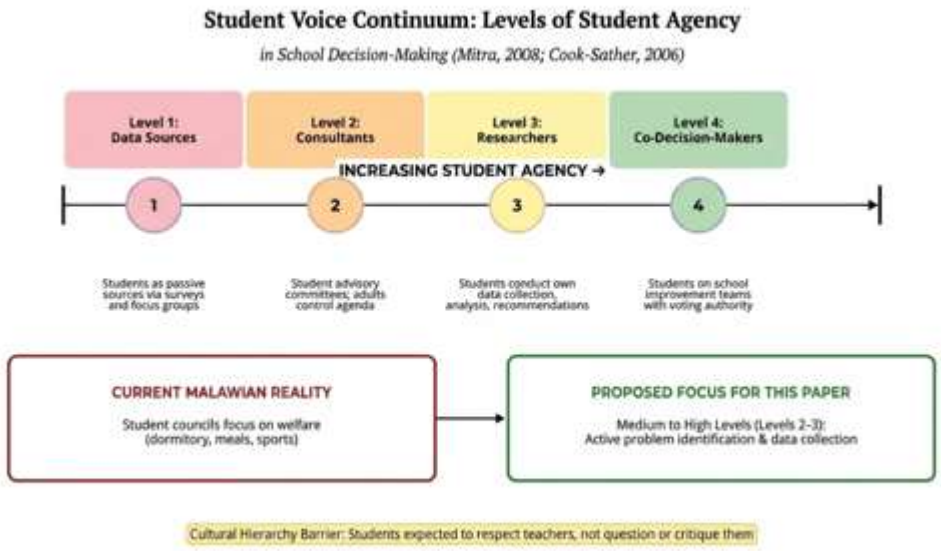


Figure 4. Student Voice Continuum: Levels of Student Agency in School Decision-Making

Theoretical Rationale for Student Voice

The idea behind using student voice as data can be explained by four interconnected assumptions.

First, students have an epistemic privilege. Because of this they have direct, continuous experience with how instruction is delivered in classrooms. This allows students to see parts of teaching and learning that are not always apparent to teachers, including peer dynamics, unexpressed confusions, and repeated off-task behavior, and students have experiential knowledge regarding their own learning processes that cannot be directly accessed by adults.

Second, student voice has high ecological validity. Studies show that, compared to adult reports of instruction and school climate, student reports are better at predicting academic outcomes and well-being. When adults and students report conflict over descriptions of school conditions, student views generally have higher accuracy than adults concerning the nature of students' experiences of learning and well-being.

Third, Student involvement in school decision making promotes positive growth benefits. Student involvement in school decision making builds sense of agency, increases their self-efficacy, and enhances their civic engagement. These are important educational outcomes, serving as more than just improving instruction.

Fourth, student voice supports democratic legitimacy. Schools are supposed to exist to serve young people, and thus have a democratic responsibility to allow students who are primary stakeholders in their education to participate in decisions about their education. Excluding students from such processes is therefore democratically unacceptable.

Empirical Evidence

There has been a vast growth in empirical research surrounding student voice initiatives in many countries such as North America and Europe. This literature supports that student voice initiatives have a positive impact on school culture, teacher practice and equity within schools. For instance, a large scale empirical study using over 200 secondary schools in the USA found that there was a strong positive correlation between student involvement and improved school culture, increased student engagement and improved teacher-student relationships[15]. The greatest increase in benefits was found when students had true decision making power. A further study found that the introduction of student voice in twelve high schools encouraged teachers to make changes to their practice including changing the pace of lessons, new ways of assessing students and altering homework policies[16]. Teachers found that feedback from students was much more detailed and informative than the usual feedback they would receive from other teachers. Research has shown that inquiry led by students can bring a number of issues to light that may not have been identified by adults completing need analysis within low income schools. This included issues such as social relationships, safety and culturally relevant teaching. This shows how student voice can act as a tool for equity.

There is growing evidence from studies within African contexts. Work undertaken by Amadhila within a school located in Namibia has provided critical evidence from the south of Africa. Using the Change Laboratory approach, this study engaged thirteen members of the Learner Representative Council and one teacher guardian in three workshops. Students were able to produce a new vision and mission statement for the school. This study shows that school management teams should see newly implemented school statuses as an opportunity for development and therefore involve Learner Representative Councils in the diverse areas of leadership roles. This demonstrates that student voice, when well planned, can be effective within Southern Africa. However, given the context of Malawi, there is likely to be a need to make significant adaptations to these initiatives.

Barriers to Student Voice in Malawian Contexts

Whilst there are strong theoretical and empirical reasons for student voicing, there are several barriers to implementing it within secondary schools within Malawi. First and foremost, cultural barriers are present. Like many countries in Sub-Saharan Africa, Malawi have a culture of age and authority. This means that students are required to respect the teachers and administrators and are not encouraged to ask questions or suggest alternative ways of teaching. If a student gives any comments about how they are being taught by an instructor this could be deemed as disrespectful. Within my thesis I found this to be the case. Secondly, there is not much structure. Student councils only deal with things like welfare, making sure they have good living conditions in their dorms. There is not much structure. Student councils only deal with things like welfare, making sure they have good living conditions in their dorms. This means there are no

formal structures in place to gain feedback from students regarding their teaching. Thirdly, head teachers often believe that students do not have the necessary qualifications to contribute to decisions relating to their teaching. This adult focused view is rarely challenged when training leaders. Finally, there are barriers relating to literacy. Often students will need to complete surveys, write answers or participate in group discussions in English to take part in student voicing. As English is the main language of instruction in all secondary schools within Malawi, students with lower levels of English are likely to be excluded from this.

Implications for Malawian Leadership Research

Despite challenges, student voice was a rich yet untapped resource for instructional leaders in Malawi. The findings in my thesis showed that students gave specific and tangible recommendations to improve the flipped learning model including making the videos shorter, using structured notes and having peer tutors. However it seems that these recommendations were not systematically requested by school leaders due to a lack of formal methods for obtaining student voice. Future research could look into what conditions would need to be met for Malawian secondary school leaders to utilise student voice mechanisms, what cultural shifts are needed to make these mechanisms effective and acceptable and what types of training could support leaders to effectively use student voice. This is discussed further in the Research Agenda section below.

Teacher Formative Data and Implementation Feedback

Defining Teacher Formative Data

Teacher formative data refers to information collected during teaching by teachers as they reflect on their teaching. This can include any issues that teachers identify when using new teaching methods (e.g. students didn't complete the pre-reading), changes made to the intended teaching (e.g. changing worksheets to include more examples), how the teacher feels students were engaged/understanding (e.g. noticing many students looked confused during an activity) and requests for support throughout the system (e.g. requesting more time for planning so can provide good pre-reading material). This differs to summative assessment data which is used in accountability systems. Teacher formative data is collected regularly within the classroom and is usually both quantitative and qualitative. As the data comes directly from the teachers' own practice it can be extremely useful to inform improvements to teaching.

The Research-Practice Gap

Although teacher formative data can provide valuable insight, there are several studies that show teachers and school leaders are failing to utilise the vast amounts of data available to them. A thorough literature search on using data to inform decisions showed that apart from summative assessment data, schools rarely make use of other forms of evidence. Data literacy and leadership were the most important factors that enabled or restricted using evidence. Many teachers also lack the skills to use any data they have to make changes to their teaching. One study showed that whilst most teachers could identify areas within students' work that needed improvement, the strategies they

created to improve these areas were very generic. This shows that data literacy is a spectrum. School leaders seem to suffer from this issue even more. Many will feel confident with interpreting numerical data from tests but are less likely to know how to gather, analyse and use qualitative teacher reflection data. Usually teachers' issues are only addressed individually rather than looking for patterns in the data to improve the whole school.

Leadership Mechanisms for Using Teacher Formative Data

The literature outlines several approaches through which leaders may gather and use teacher-generated formative data. Of these, professional learning communities (PLCs) are by far the most common mechanisms studied in terms of collaborative data use. According to DuFour[17], to be most effective, PLCs should focus on the data and adhere to a consistent process of planning, implementing, reflecting, and adjusting. In effective PLCs, data are used for collaborative problem-solving instead of being seen as the final goal. However, PLCs need planned time, skilled guidance, and a feeling of psychological safety—all of which are rare in Malawi secondary schools.

Instructional rounds, adapted from medical education, refer to groups of educators observing teaching practices in classrooms around a specific focus informed by data[18]. Studies indicate that instructional rounds have the potential to enhance professional learning contexts and provide a common language with which educators can discuss how well teaching practices reflect quality teaching. When the rounds focus on teacher's formative assessment issues they can be used as tools for collaborative sense making.

They can give you the opportunity to get structured data from informal conversations. Writing brief justifications for teaching decisions, such as why a particular assessment was chosen, can be analysed to support teacher cognition and ensure that they focus on future decisions.

Barriers in the Malawian Context

There are several barriers to the collection of teacher formative data within secondary schools in Malawi. Firstly, the time available. Malawian teachers will typically teach between 35-40 lessons per week. They will not have much time to prepare. There are no common planning or professional learning community times. To collect teacher formative data would require taking time away from the staff which they do not currently have. There are also issues around power. Teachers do not want to appear to have any difficulties as they might lose out on their appraisals or promotions. This will not happen in most Malawian schools due to an absence of psychological safety. Thirdly, there is no culture of recording. During my research for my thesis I noticed that teachers were able to create rich reflections during informal chats in the staff room and during break. However, none of these reflections were recorded. As there is an oral culture the data that is gathered would be lost. Fourthly, there is little focus on it from leadership. Even if teachers do share some of their challenges informally, head teachers may not focus on this data as they have not been trained to look at it as a valid piece of evidence. They will

typically see teacher complaints as an individual issue that needs to be solved on an individual basis.

Implications for Malawian Leadership Research

This is exemplified by my flipped learning thesis. Teachers reported consistent issues with students not completing pre-class videos due to lack of devices/data, difficulties connecting pre-class content and in-class activities by those students that had completed the videos, and managing time due to varying levels of student preparedness. These issues were discussed informally but were not recorded in a systematic way, shared with school leadership or to improve implementation. Future empirical research could consider how reflective tools could be adapted to fit within the Malawian context, what factors need to be in place to create a safe environment for teachers to report honestly and how school leaders could start seeing these issues reported by teachers as indicative of wider patterns.

Low-Stakes Assessment Contexts

Defining Low-Stakes Accountability

There is a continuum within educational accountability ranging from high stake to low stake systems. High-stakes and low-stakes accountability exist within education. High-stakes accountability involves students scoring highly on tests which results in extreme consequences for schools including schools closing, principals being removed and teachers being punished. n low-stakes accountability, data are utilized to support improvement in student outcomes, without directly tying staff remuneration or sanctions to results. This can be carried out using qualitative methods such as observing, interviewing and reviewing documents. Inspections are done by expert teachers rather than inspection companies. Feedback is given to improve learning and there is regular contact between schools and districts. This means they can include using multiple sources of evidence to assess performance (e.g. observations, interviews, documents), being carried out by expert teachers during inspections rather than external testing companies, providing feedback for improvement and providing continuous communication between schools and districts rather than annual reports.

Relevance to Malawi

Malawi is a mid-stakes context. There are a range of accountability measures in place within the country. However, they can be seen as high stakes for students due to the significant impact of the MSCE and JCE exams on individual progression and university entrance. However, they can also be viewed as low stakes for the schools due to minimal sanctions being applied. The lack of external pressure for formative assessment due to there being no consequences for schools having poor outcomes. This poses a challenge for leaders. Leaders are under pressure to increase pass rates for students, however there is no pressure to improve teaching standards or use data

formatively. As a result leaders will often focus on test practice and drilling to increase pass rates.



Figure 5. Malawi's Mixed Accountability Environment: High-Stakes for Students | Low-Stakes for Schools | No-Stakes for Formative Use

Opportunities and Challenges

There are many advantages to not having high stakes in schools. **No high stakes means that leaders can use many different approaches to data without any external authority enforcing a certain way**. There is no high stakes testing culture to break down as there would be in a country where high stakes testing has been used for many years. Leaders would also feel less pressure from external sources to gain good results in testing. However, there are disadvantages to having a low stakes environment. Leaders may feel comfortable using current methods meaning there will not be an external motivation to change how they use data. There may be no value placed on formative data by district officials meaning leaders may not get any immediate reward for taking time to collect qualitative data. Leaders may not get any immediate rewards for taking time to collect qualitative data.

The Low-Stakes Design Opportunity

The Malawian setting provides an ideal opportunity to explore data driven leadership interventions. There is enough autonomy to try out new approaches and there is no high stakes accountability which could lead to practices such as data inflation and teaching to the test. Therefore, this context would allow for an intervention study to be undertaken to explore whether leaders can learn to use qualitative formative data without any confounding variables. This is what the proposed empirical agenda will aim to address.

Research Gaps and Proposed Empirical Agenda

Summary of Identified Gaps

There are a number of gaps within the literature which are relevant to this research. Firstly, there are no empirical studies which have investigated data informed leadership practices using student voice or teacher formative data in secondary schools in Malawi. My previous work in Malawi can be used as a starting point to fill this gap. Secondly, it is not clear how qualitative data is translated into instructional change by leaders. My flipped learning case study can be used as a starting point to investigate this as I have baseline data on how the intervention was implemented. Thirdly, there is no research on how to increase data literacy of leaders in Malawi. so I can design an intervention to overcome this. Fourthly, there is no research on how to tailor student voice initiatives to fit Malawian cultural norms. However, my thesis identified some cultural barriers so this can be used as a starting point. Lastly, there are no interventions which have been trialled to support data informed leadership in low income post-colonial contexts. Therefore, I can adapt the Change Laboratory methodology to fit this context.

Proposed Research Questions

Taking into consideration the conceptual framework developed during this study and the identified gaps, the following research questions can be formulated for investigation in future research: Phase 1: Baseline Documentation What strategies do current Malawian secondary school leaders implement when making instructional decisions? What types of data are being utilised by Malawian secondary school leaders (explicitly or implicitly)? What mechanisms do current Malawian secondary schools have to encourage student voice? How is student voice being used to improve instruction? What types of teacher formative data are currently present within Malawian secondary schools? How are they being collected and utilised by leadership? Phase 2: Intervention development What changes would need to be made to current student voice models to ensure they fit Malawian secondary schools culturally. What reflection processes can be adapted to suit the time constraints and oral nature of Malawian secondary schools. What training and support would Malawian leaders require to effectively use qualitative formative data. In Phase 3, intervention testing, the research questions ask whether a CHAT-based formative intervention using the Change Laboratory methodology increases Malawian leaders' use of student voice and teacher formative data; whether increased use of qualitative formative data leads to changes in instructional practice as reported by teachers and observed by researchers; and whether increased use of qualitative formative data leads to improvements in student engagement, self-reported learning, or achievement.

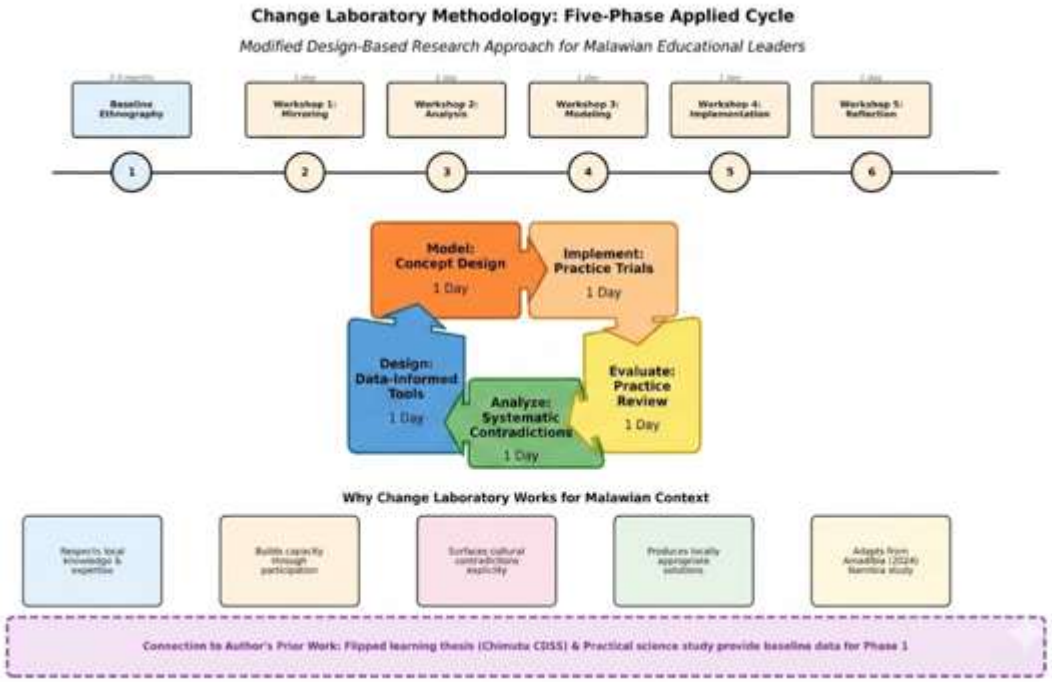


Figure 6. Change Laboratory Methodology: Seven-Phase Cycle for Data-Informed Leadership Intervention (Engeström, 2011)

Proposed Methodology

The integrated theoretical framework indicates the use of a design-based research approach, specifically employing the Change Laboratory methodology. A typical Change Laboratory cycle can be seen below. First, the researcher undertakes a baseline ethnography (2-3 months), observing what is currently happening within the organisation and identifying some contradictions. Next there is the first mirroring workshop (1 day). Here the baseline data is presented. The third phase is the second workshop focused on analysis, lasting one day, during which the root causes of contradictions are identified. The fourth phase is the third workshop, which focuses on modeling and lasts one day, during which new data-use practices are designed. The fifth phase consists of the fourth workshop, a one-day session centred on implementation in which new practices are tried out and data are collected. The sixth phase is the fifth workshop, also one day in length, devoted to reflection, during which results are reviewed and tensions or inconsistencies are surfaced. The seventh stage includes collecting follow-up information at between 3-6 months to determine whether the changes are sustainable. This approach has been applied effectively in African education settings and is particularly appropriate for Malawi because it honours local knowledge and expertise by recognising participants as experts in their own context, develops capacity through active participation as leaders learn by doing rather than through passive training, makes cultural contradictions visible instead of imposing external models, and generates contextually grounded solutions instead of importing generic best practices..

Connection to Author's Prior Work

This research proposal will benefit from my previous work. The flipped learning thesis has already given examples of issues and also data from teachers and students to use in phase 1. The practical science article identified issues with resources and teacher preparedness meaning an intervention in phase 2 can be developed using both the student voices and formative data. As a Malawian researcher I have good relationships with the schools which means I would have access and build up trust that an outside researcher would not. This would result in more in-depth and truthful data.

Future Comparative Directions

While this is beyond the scope of this conceptual paper, I am beginning to work with a colleague who specialises in educational leadership in Iraq. Comparing Malawi and Iraq could provide some interesting findings as they are both post conflict countries with limited resources. Both countries have experienced donor led curriculum reform and have little leadership development provision. They have similar issues related to a hierarchical culture, poor data systems and school leaders who have come through teaching. It would be necessary to conduct robust baseline studies in Malawi as there are none currently available.

RESULTS AND DISCUSSION

Limitations of Test-Centric Instructional Leadership

This analysis highlights limitations to using standardised test results as part of instructional leadership. Testing pupils gives an overall indication of how they are doing. However, they can quickly become out of date and do not give much understanding of any issues the students may be facing. This means that teachers and leaders may not have timely information on pupil performance to make changes to their teaching. This can also lead to a narrowed curriculum as there is too much focus on testing.

Teaching can focus on students memorising what they need to know for exams rather than practical science, creative elements and engaging the students along with formative assessment. This is an important point to consider in schools with limited resources. This study found that using standardised testing in conjunction with classroom and qualitative data can result in a more rounded approach.

The Malawian Context and Challenges of Data Use

The conceptual analysis demonstrated several challenges that can occur within secondary schools in Malawi relating to data driven instruction. They include lack of capacity for systematic data gathering, lack of leadership training regarding evidence driven decisions, large classes, limited resources and hierarchical school culture. This can make it challenging for school leaders to obtain, analyse and act upon the information obtained from classroom assessments and teacher reflection. It is important that school leaders have suitable systems, time, support and collaboration to analyse the evidence. A realistic approach should be taken when utilising data to drive instruction. Consideration

should be given to the resources available and how data can be used within the current institutional and cultural context.

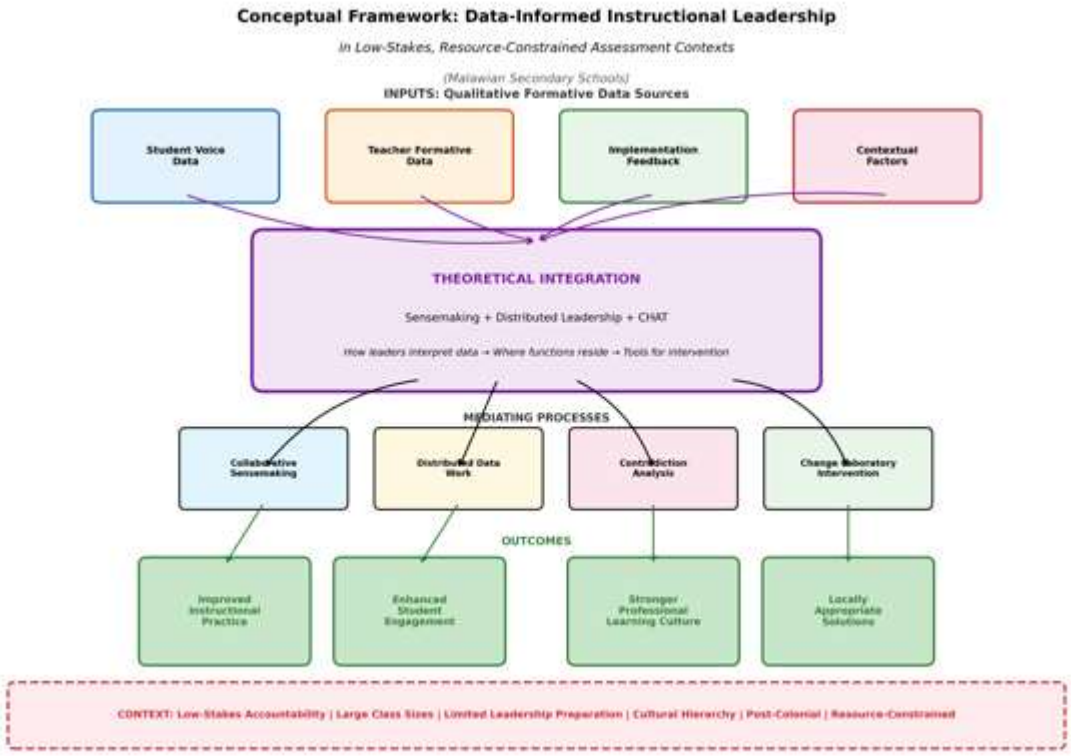


Figure 7. Conceptual Framework: Data-Informed Instructional Leadership in Low-Stakes, Resource-Constrained Assessment Contexts (Malawian Secondary Schools).

CONCLUSION

Fundamental Finding: This study provides a conceptual model to understand how school leaders in low-stakes and resource constrained environments, such as Malawian schools, can make use of qualitative formative data including student voice and teacher reflections to improve practice. This was informed by three theories. Sensemaking theory can help explain why school leaders often neglect qualitative data because they have not been socialised to see them as valid forms of data. Distributed leadership emphasises that data doesn't have to be solely led by the head teacher; department heads, teacher leaders and student councils can contribute. Cultural Historical Activity Theory can provide analytical frameworks for this through examining contradictions and a method for intervention through Change Laboratory. This can be used to co-create and test new practices. This study identifies several issues within the literature relating to secondary education in Malawi. There is currently a lack of empirical work on student voice or teacher use of formative data, limited examples of implemented interventions and minimal consideration of how practices should be culturally appropriate. **Implication**: The study therefore suggests an empirical three stage approach which looks at creating baseline data, designing interventions and piloting these using the Change Laboratory method. This utilises previous work undertaken by the author looking at flipped learning and practical science teaching. This will make use of existing relationships and

information but will highlight a clear trend towards researching Educational Leadership. Ultimately the goal of data driven leadership is to improve teaching and learning for each student in Malawian secondary schools. This can be done by allowing teachers to teach responsively to the needs of the students. **Limitation**: Although there is limited research into low stakes, formative data driven leadership within an African context, it may be the most effective way to achieve this goal. **Future Research**: Further empirical research is needed to determine how data driven leadership can be adapted to fit post-colonial schools with limited resources using this approach as a starting point.

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Ernest Ulemu Chagunda
Ministry of Education, Malawi, Chimutu CDSS
Chagundae22@gmail.com

Bako Abdalla Hama Salih
Zhejiang Normal University, Institute of International and Comparative Education, Jinhua, China