

From locked storerooms to learning hubs: reimagining community libraries for self-directed learning in rural Uganda

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Fredrick Kiwuwa Lugya and Isaac Mukungu
Department of Library, Busitema University, Busitema, Uganda

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Abstract

Purpose – This study aims to explore how primary school learners in rural Uganda can be supported to engage in self-directed learning (SDL) within the competence-based curriculum (CBC), focusing on the potential of community libraries and low tech digital tools as enabling infrastructures.

Design/methodology/approach – A qualitative dominant mixed-methods design guided by Critical Incident Technique was used, using structured surveys ($n = 100$ pupils), semi-structured interviews (30 pupils, five teachers, five headteachers, one district education officer) and ten focus group discussions (three to five pupils each) across ten primary schools in Busia District, Uganda. Data were analysed using descriptive statistics and thematic analysis.

Findings – While 97% of pupils receive homework, only 37% have textbooks at home; digital tools are absent. Only 16% identify parents as homework helpers; and 29% fail to complete homework due to domestic labour demands. School “libraries” function as locked textbook storerooms – 82% of pupils have visited, but access is teacher mediated and transactional. No facilitative services, diverse collections or conducive learning spaces exist.

Research limitations/implications – Findings are context specific to one Ugandan district. Longitudinal and intervention research is needed to test the proposed library reconfiguration model and its impact on SDL competency development over time.

Practical implications – This study recommends a multilevel strategy: transforming school book storerooms into curated resource and guidance hubs; adopting a “low tech first” digital approach (solar audio players, offline digital libraries); training community facilitator networks; and integrating library-based SDL support into national curriculum and policy frameworks.

Originality – This research addresses a critical gap by centring rural learner perspectives and positioning community libraries as dynamic, facilitative hubs within SDL discourse in a low-resource Sub-Saharan African context. It extends SDL theory by demonstrating that in contexts of extreme scarcity, Garrison’s self-management dimension requires a “foundational” layer of basic resource provision.

Keywords Self-directed learning, Rural education, Community libraries, Competence-based curriculum, Digital tools, Uganda

Paper type Research paper

1. Introduction

Uganda’s education system is undergoing a significant transformation with the nationwide shift from a traditional, knowledge-based curriculum to a competence-based curriculum (CBC). Spearheaded by the National Curriculum Development Centre, this reform – a strategic pillar of Uganda Vision 2040 – aims to cultivate critical thinking, problem-solving and self-directed inquiry, envisioning a learner-centred model where students actively source information from diverse materials to become adaptable, lifelong learners [NPA (National Planning Authority), Uganda, 2015].



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However, implementation reveals a profound gap between this vision and the realities of rural educational contexts. In districts like Busia, systemic challenges – including severe teacher shortages, overcrowded classrooms (pupil-teacher ratios averaging 63:1), inadequate infrastructure and a critical lack of learning materials – undermine delivery [NPA (National Planning Authority), Uganda, 2015; Busia District Local Government, 2021]. These constraints are exacerbated by socio-economic factors: only 12.3% of households have electricity, adult illiteracy affects 32.3% of the population, and children face significant domestic labour demands that create acute time poverty (UBOS, 2016). Within this environment, fostering self-directed learning (SDL) – the capacity of learners to autonomously manage their own learning processes – emerges as a critical strategy for educational resilience and a compensatory mechanism for an overstretched formal system.

This study posits that community libraries represent a potent, yet underutilized, infrastructure to enable SDL in rural settings. Beyond their traditional role as book repositories, libraries can be re-imagined as dynamic community hubs providing access to curated resources, safe study spaces and facilitative guidance. While the literature documents successful models such as the Kitengesa Community Library (Dent and Goodman, 2015) and national level transformations through EIFL partnerships (EIFL, 2023), the majority of rural learners remain disconnected from such support. This study addresses this gap by centring rural learner perspectives and investigating how community libraries and appropriate digital tools can scaffold SDL within Uganda's competence-based framework.

The study is guided by one overarching research question: How can individual learners in rural Uganda be effectively supported to manage their own learning within the competence-based curriculum, and what role can community libraries play in this process? Three specific questions examine:

- (1) the current state of learner preparedness for SDL and primary barriers;
- (2) the existing and potential role of community libraries in scaffolding SDL; and
- (3) the key components of a context sensitive, hybrid framework integrating library support with appropriate digital tools.

2. The socio-ecological landscape of Busia District, Uganda

This study is situated in Busia District, Eastern Uganda, a region characterized by cross-border proximity to Kenya and a socio-economic profile representative of many rural Sub-Saharan African contexts. Drawing from the 2014 National Population and Housing Census (Uganda Bureau of Statistics, 2016) and the Busia District Statistical Abstract 2020 / 21 (Busia District Local Government, 2021), this profile establishes the contextual framework for investigating SDL interventions.

Demographic and educational structure: The district has an estimated population of 394,900, with 57.6% under 18 years. The primary school age cohort (6–12 years) numbers 82,140. While primary net enrolment is officially high, educational outcomes reveal systemic strain: only 3.54% of candidates achieved Division I in the 2020 Primary Leaving Examinations, and over 11% were ungraded or absent (Busia District Local Government, 2021). Adult illiteracy affects 32.3% of persons aged 18 and above, with pronounced gender disparity (40.4% of females vs 22.3% of males) (UBOS, 2016).

Infrastructure and ICT Constraints: Only 12.3% of households have access to electricity – the foundational enabler for digital tools. Evening study relies overwhelmingly on paraffin lamps (70% of households). Mobile phone ownership among persons aged 10 and above

stands at 35.9%, with internet usage at 6.1% (UBOS, 2016). These constraints fundamentally shape the feasibility of any digitally mediated learning interventions.

Socio-economic context: With 50% of the population living below the poverty line (rising to over 55% in sub-counties like Busime and Bulumbi), education competes with immediate survival needs. Subsistence agriculture engages 78.0% of the working age population, demanding labour from all family members including children (UBOS, 2016). Health burdens – malaria constituting 51% of outpatient visits, HIV prevalence at 4.3% – further impact school attendance and cognitive capacity available for independent study.

School typology: The district's 117 primary schools represent a spectrum of institutional capacity: approximately 7 high performing schools with stronger parental investment, 68 “modular” schools and the remainder facing significant resource challenges. Critically, Ugandan government policy does not mandate school libraries or librarian positions in primary education; libraries are established at individual school initiative, making them markers of institutional advancement rather than standard provision [ISER, 2017; NPA, 2015; Maratho, 2017; GoU (Government of Uganda); MOES (Ministry of Education and Sports, 2009; GoU (Government of Uganda), 2009; GoU (Government of Uganda), 1997]. This policy context underscores the potential value of community libraries as external, complementary learning infrastructures.

Implications for SDL design: This context dictates that effective SDL interventions must be:

- low tech and hybrid, strategically integrating resilient tools (radio, SMS) with targeted digital access;
- community embedded, leveraging existing village structures;
- gender intentional, proactively countering disparities in literacy and access; and
- contextually relevant, connecting to local livelihoods and languages.

3. Literature review

This review synthesizes scholarship on SDL to establish a theoretical and empirical foundation for investigating how rural Ugandan learners can be supported within the CBC. It begins by examining foundational SDL models and their applicability across contexts, then analyses the multi-dimensional barriers – access, motivation and guidance – that constrain SDL in low resource settings. The review subsequently explores two interrelated support infrastructures: community libraries, tracing their evolution from passive repositories to dynamic learning hubs within Uganda's policy context, and digital tools and open educational resources, assessing their potential and limitations in resource constrained environments. It concludes by identifying critical gaps in the literature regarding learner-centred approaches in Ugandan primary education.

3.1 Theoretical foundation of self-directed learning

SDL represents a foundational educational paradigm that shifts the *locus* of control from instructor to learner, emphasizing the development of autonomy, intrinsic motivation and lifelong learning competencies. While its roots are firmly planted in adult education theory, the concept has evolved to be recognized as a continuum applicable across the lifespan, including for younger learners in diverse and resource constrained contexts (Van Deur and Murray-Harvey, 2005).

The theoretical cornerstone of SDL was established by Malcolm Knowles (1975), who defined it as a process wherein individuals take primary initiative – with or without the assistance of others – in diagnosing their learning needs, formulating goals, identifying

human and material resources, selecting and implementing appropriate learning strategies and evaluating outcomes. This model fundamentally positions the learner as the principal agent of their educational journey, a philosophical alignment seen in modern educational shifts such as Uganda's move towards a CBC that champions active, problem-based learning (PBL).

It is crucial to distinguish SDL from related constructs. While SDL encompasses learner control over the entire learning process and environment, self-regulated learning (SRL) – stemming from cognitive psychology – focuses more narrowly on the metacognitive, motivational and behavioural strategies learners use within externally defined tasks (Robinson and Persky, 2020; Saks and Leijen, 2014). Self-paced learning, conversely, typically grants learners control only over the timing of instruction, not its overarching goals or content (Robinson and Persky, 2020). This distinction is vital for designing effective educational interventions, as SDL demands a broader, more holistic approach to fostering learner agency.

To capture the multifaceted nature of this agency, Garrison (1997) proposed a refined model comprising three dynamically interconnected dimensions: self-management (contextual control over resources and setting), self-monitoring (cognitive and metacognitive responsibility for learning) and motivation (both entering and task specific). This model underscores that SDL is not a purely independent endeavour but a collaborative process negotiated within a social and educational context, requiring external support and facilitation. This socio-constructivist perspective is reinforced by scholars who argue that SDL and SRL together cultivate learner autonomy by integrating cognitive, metacognitive and social dimensions within the learning environment (Kharroubi and ElMediouni, 2024; Garrison, 1997).

Implementing SDL, particularly with novice learners, necessitates intentional instructional scaffolding. Effective pedagogical strategies include flipped classrooms, PBL, inquiry-based learning (IBL) and learning contracts, which provide necessary structure while progressively ceding control to the learner (Charokar and Dulloo, 2022; Robinson and Persky, 2020). This shift redefines the educator's role from a "sage on the stage" to a facilitator or "guide on the side" (Robinson and Persky, 2020). However, this transition can be challenging; qualitative studies indicate that both teachers and students may perceive SDL as merely one instructional tactic among many rather than an overarching philosophy, a perception that can undermine its efficacy if not supported by a coherent institutional culture (Hewitt-Taylor, 2001; Van Deur and Murray-Harvey, 2005). Furthermore, the educator's own proficiency in SDL and ability to model self-regulatory behaviours are critical for nurturing these competencies in students (Geduld and Ehlers, 2023).

The broader learning ecosystem is a decisive factor in SDL success. Research indicates that students in school environments with a strong, sustained emphasis on inquiry demonstrate significantly greater gains in SDL knowledge and engagement following explicit instruction than those in less supportive contexts (Van Deur and Murray-Harvey, 2005). This highlights the necessity of an ecosystem that consistently champions inquiry, provides access to resources and legitimizes learner agency. In low resource settings like rural Uganda, this underscores the potential role of community institutions – such as libraries – and technology as critical nodes within this supportive ecosystem, offering facilitated access to information, guidance and material resources foundational to enabling the self-management, self-monitoring and motivation dimensions of SDL (Charokar and Dulloo, 2022).

3.2 Barriers to SDL in low income, rural contexts: access, motivation and guidance

The effective implementation of SDL in low income, rural contexts is significantly constrained by a complex interplay of barriers related to access, motivation and guidance.

These barriers starkly differentiate the application of SDL frameworks from idealized, resource-rich environments (Bhandari *et al.*, 2020). The challenges are systemic, intersecting and often mutually reinforcing, creating an ecosystem where the foundational conditions for SDL are severely lacking.

Access constraints: The most fundamental barrier is access to essential resources and infrastructure. This encompasses severe scarcity of physical learning materials, such as textbooks, and inadequate or non-existent school libraries with outdated collections, as noted in national policy analyses for Uganda (National Planning Authority, 2015). This scarcity directly impedes a learner's ability to identify and use material resources, a critical step in foundational SDL models (Knowles, 1975). Furthermore, the digital divide is pronounced. While digital tools and Open Educational Resources (OERs) offer transformative potential for scaling access, their integration in rural areas is hampered by unreliable electricity, limited internet connectivity and unaffordable devices (Sophonhiranrak, 2021; Miao *et al.*, 2019). Even when available, technological barriers such as small screen sizes, short battery life and lack of digital literacy skills further hinder engagement (Sophonhiranrak, 2021). Crucially, available content often lacks local relevance or is not in local languages, reducing its utility and comprehensibility (Mercado, 2024).

Motivational challenges: These access barriers are compounded by profound socio-economic challenges. Learners in subsistence agricultural communities frequently experience "time poverty", with competing demands from domestic chores and farm labour limiting opportunities for independent study. Socio-economic pressures can erode the intrinsic motivation essential for SDL. Motivation, a key dimension in Garrison's (1997) model, is undermined by lack of visible academic progression, absence of supportive learning communities and the immediate imperatives of poverty. High dropout rates attributed to a "lack of interest" (National Planning Authority, 2015) signal a systemic failure to cultivate and sustain the curiosity and self-efficacy necessary for self-directed endeavours (Song *et al.*, 2016).

Guidance deficit: SDL does not equate to learning in isolation; it requires scaffolding and guided facilitation to develop metacognitive skills for self-management and monitoring. In rural contexts, this guidance is often absent. High teacher pupil ratios and limited parental academic support (National Planning Authority, 2015) mean learners lack the necessary mentorship to set goals, navigate resources and self-assess progress. The shortage of trained facilitators or librarians who can model information literacy and research skills leaves learners, especially younger ones, ill equipped for the demands of self-direction (Bhandari *et al.*, 2020). Without this scaffolding, learners risk becoming demotivated or overwhelmed.

The literature reveals that barriers to SDL in contexts like rural Uganda are multidimensional: access constraints create the primary hurdle; motivational barriers, fuelled by socio-economic realities, weaken the drive to engage; and a guidance deficit prevents learners from acquiring the strategic and metacognitive competencies required to navigate learning independently. These barriers highlight that fostering SDL requires more than just providing resources; it necessitates a holistic support system that addresses these interconnected challenges. Community libraries and thoughtfully integrated digital tools are posited as potential institutional mechanisms to mitigate these barriers by providing equitable access, conducive physical and social space for learning and the facilitative guidance currently missing from the ecosystem (Ojala, 2013).

3.3 Libraries as learning infrastructure: from storerooms to catalytic hubs

The potential of libraries to support independent learning must be understood within the specific policy and resource context of Uganda. As documented in the contextual profile of Busia

District, school-based “libraries” often function merely as locked textbook storerooms – a condition that reflects systemic challenges evident across Uganda’s national library landscape. Understanding how to transform these spaces into catalysts for SDL requires a multi-level analysis of the policy challenges facing school libraries, the evolving role of public and community libraries within national development frameworks, and emergent evidence-based models of successful rural community libraries.

The state of school libraries: a policy vacuum: The findings from Busia are indicative of systemic issues rooted in national policy. Ugandan government policy for primary education does not mandate the establishment of school libraries or the position of a qualified librarian [ISER, 2017; NPA, 2015; Maractho, 2017; GoU (Government of Uganda); MOES (Ministry of Education and Sports, 2009; GoU (Government of Uganda), 2009; GoU (Government of Uganda), 1997]. This policy vacuum has resulted in a landscape where existing school libraries are often profoundly inadequate, characterized by “glaring inadequacies related to financial support, management, collections, space, training, and staff” (Dent, 2006b, p. 4; citing Banjo, 1998; Rosenberg, 1994). Magara and Nyumba (2004) argued that without clearly articulated goals and supportive policies, rural school libraries are often nothing more than “a room with boxes of books, or containers of unorganized materials set to the side”. The absence of a national school library policy means the sector operates in a “policy vacuum” (Kawalya, 2020), leaving libraries without mandated standards or dedicated funding.

The National Library Framework: Overseeing the development of public and community libraries is the National Library of Uganda (NLU), established by the National Library (Amendment) Act of 2024. The NLU is mandated to “collect, preserve and disseminate Uganda’s documented heritage and to oversee the development of public libraries in the country” [NLU (National Library of Uganda), 2020, p. 5]. Effective library services are central to the attainment of all the SDGs as reflected in Uganda’s Vision 2040 (Omona, 2020). However, the NLU’s ability to fulfil its mandate has been historically constrained by inadequate funding, policy coordination deficits and infrastructural gaps. Uganda has only 0.4 public or community libraries per 100,000 people, below the Sub-Saharan African average (Miao *et al.*, 2019; Kawalya, 2020).

Digital inclusion and partnership driven transformation: Despite these challenges, a remarkable transformation of public library services has occurred over the past decade, driven by strategic partnerships and a focus on digital inclusion. A pivotal shift began in 2010 when an EIFL funded study revealed that most Ugandans perceived libraries as passive storerooms (EIFL, 2024). In response, EIFL and the NLU embarked on a multi-pronged strategy combining service development, librarian capacity building and national advocacy. This effort led to the formal inclusion of public and community libraries in the ICT rollout programmes of the Uganda Communications Commission, with 39 libraries receiving comprehensive equipment packages by 2024 (EIFL, 2024). Through national projects like “Digital skills@your local library” (2021–2023), EIFL and the NLU trained librarians who subsequently provided digital literacy training to over 6,500 people, with nearly 1,500 completing online courses through facilitated “learning circles” (EIFL, 2023). Libraries like Nakaseke and Kawempe Youth Centre have become hubs of community development, with users applying new ICT skills to start small businesses and gain employment (Omona, 2020).

The emergent model: the rural community library as dynamic learning hub: Alongside this national transformation, a parallel network of community libraries has demonstrated a deeply rooted, dynamic model of library service. The most extensively documented example is the Kitengesa Community Library, subject of a longitudinal research programme spanning more than a decade (Dent, 2006a; Dent and Yannotta, 2005; Dent and Goodman, 2015). Designed to serve a dual role as both a community and school library, its development was

rooted in community participation, including a door-to-door needs assessment (Dent, 2006a). Analysed through Mostert's (1998) characteristics of a rural community library, Kitengesa demonstrates strong alignment with dimensions such as community establishment, participative governance and proactive aims (Dent, 2006a). Its key features include facilitative staffing by trusted community members who address the "guidance deficit"; a diverse collection in English and Luganda ensuring relevance; and a conducive physical space for study and extracurricular activities (Dent, 2006a; Dent, 2006b). Research has provided empirical evidence linking library use to positive educational outcomes, including a significant correlation between students' reading frequency and their overall grade average (Dent and Goodman, 2015).

Libraries as scaffolds for independent learning: The scholarly literature delineates a clear progression in the library's role, from foundational literacy provision to active cultivation of SDL within intentionally designed environments. The foundational layer is the library's historical mission to create literate environments through equitable access to information (Krolak, 2006). Building upon this, library praxis has transformed in response to pedagogical shifts towards student-centred learning, manifest in the design of integrated independent learning areas that blend traditional collections, ICT and social learning spaces (Jackson and Shenton, 2010). Crucially, effective SDL within these environments requires structured scaffolding. Research underscores the indispensable role of learning facilitators – librarians or advisors – who guide learners in developing core self-management skills like goal setting, strategic planning and self-evaluation (Mozzon-McPherson, 2007). This aligns with Hamilton's (2020) concept of "learning support literacy" (LSL), which posits mutual responsibility: libraries must provide support services that empower, while learners cultivate capabilities to use them effectively.

The juxtaposition of the dysfunctional school "storeroom" and the empirically validated model of libraries like Kitengesa is critical. The school library, constrained by a policy vacuum, is a passive repository. The successful community library, by contrast, is an active, multi-functional platform that systematically addresses the barriers to SDL – resource scarcity, guidance deficit and lack of conducive space – while contributing directly to national development goals. The challenge, as this study highlights, is that these successful models have not yet reached the vast majority of rural learners. The gap is not in the potential of the model, but in its scale and systematic integration into the national educational support structure.

3.4 Digital tools and OERs in facilitating self-learning

The advancement of SDL in the 21st century is inextricably linked to the proliferation of digital tools and open educational resources (OERs). Defined as freely accessible, openly licenced digital materials for teaching, learning and research, OERs are widely recognized for their potential to democratize education by widening access, reducing costs and improving learning outcomes (Hylan and Schuller, 2007; Affouneh and Khlaif, 2020). In resource constrained contexts, platforms like Khan Academy, Coursera and W3Schools serve as critical supplements to formal education, enabling learners to independently navigate structured learning cycles to scan, process and internalize knowledge (Affouneh and Khlaif, 2020; Ashrafuzzaman *et al.*, 2025). The efficacy of such resources is empirically supported; for instance, in mathematics education, the use of online educational videos and interactive platforms shows a significant positive correlation with enhanced academic performance (Oumelaid *et al.*, 2025).

Digital learning environments, encompassing both institutional learning management systems and open platforms, enhance self-learning through interactive, multimodal and adaptive content that accommodates diverse learning paces and styles (Alqurashi, 2016).

These tools promote deeper engagement, critical thinking and knowledge construction, particularly when they incorporate elements of personalization, gamification and immediate feedback (Dudar *et al.*, 2025). The strategic variety of digital tools in online learning is positively correlated with increased educational self-efficacy learners' belief in their capability to succeed, which subsequently improves academic achievement (Alqurashi, 2016).

Crucially, the success of these digital interventions is mediated by learner preparedness and technological accessibility. While motivation to use digital resources is often high, substantive barriers persist, including unreliable internet connectivity and limited access to computers or mobile devices (Ashrafuzzaman *et al.*, 2025). Similarly, research underscores that the effectiveness of online platforms is contingent upon robust technological infrastructure, teacher readiness and student digital literacy (Dudar *et al.*, 2025). Even where device access is available, challenges such as slow connectivity or cumbersome login processes can impede effective use of digitized resources (Oumelaid *et al.*, 2025; Silverajah and Govindaraj, 2017). In rural and disadvantaged regions, these barriers highlight the potential role of intermediary institutions, such as community libraries and learning centres, in providing curated access to OERs, digital tools and essential technical support (Ashrafuzzaman *et al.*, 2025).

Beyond individual learning, digital tools also amplify the social dimension of knowledge acquisition. Platforms facilitate peer interaction and collaborative knowledge refinement, reinforcing individual understanding and mediating deeper learning (Affouneh and Khlaif, 2020). This process aligns with Boisot's (1998) social learning cycle, where shared knowledge transforms personal insight into collective understanding. Tools such as ClassDojo, virtual badges and interactive video platforms help foster a sense of community and sustained engagement within virtual learning environments.

However, significant integration challenges remain. Beyond infrastructural and access issues, a key barrier is the frequent lack of educator training in selecting, adapting and pedagogically integrating digital resources (Dudar *et al.*, 2025). Teacher characteristics, including age, experience and educational background, significantly influence their frequency and comfort with using classroom technology (Oumelaid *et al.*, 2025). The risk of deploying poorly designed or contextually irrelevant digital materials can lead to learner disengagement. Therefore, successful implementation requires careful alignment of digital resources with specific learning objectives, learner contexts and cultural relevance.

For marginalized communities such as those in rural Uganda, community libraries are poised to play a pivotal role as access points and guidance hubs, curating localized OERs, facilitating digital literacy and fostering communities of practice that enhance both autonomous and collaborative learning. Realizing this potential necessitates a pedagogically sound, context aware approach supported by adequate infrastructure, comprehensive teacher training and clear alignment of technology with educational goals.

3.5 Gaps in literature regarding SDL in Ugandan primary education

A review of the literature on primary education in Uganda reveals a predominant focus on systemic, administrative and resource-based deficiencies, with insufficient attention paid to learner-centred pedagogical approaches such as SDL. While existing studies provide a robust diagnosis of structural weaknesses, including inadequate infrastructure, overcrowded classrooms, poorly motivated teachers and weak curriculum implementation, they largely frame these issues from a supply side perspective, emphasizing teacher performance, headteacher leadership and governmental oversight (Asemere *et al.*, 2024; Okia *et al.*, 2021).

This body of work consequently underexplores the demand side potential of learners and strategies to cultivate their autonomy and agency within constrained environments.

Several interconnected gaps emerge from this analysis. Firstly, instructional supervision and teacher support models are critiqued as ritualistic, irregular and focused on compliance rather than pedagogical innovation, with no evidence that they encourage teachers to foster SDL competencies such as inquiry, critical thinking or autonomous problem-solving (Okia *et al.*, 2021). Secondly, while severe resource deficits and high pupil-to-teacher ratios are well documented (Asemera *et al.*, 2024), the literature does not investigate how these constraints could be reframed to promote SDL through alternative strategies like peer-led learning or project-based activities. Thirdly, discussions of motivation remain externally oriented, focusing on teacher salaries and allowances or learner exam outcomes, with little consideration of how to inspire the intrinsic curiosity and mastery essential for SDL (Asemera *et al.*, 2024; Mujuni *et al.*, 2022).

Furthermore, the curriculum is described as rigid and poorly implemented, yet the possibility of adaptations for learner choice, pacing or interest-based projects remains unexplored (Okia *et al.*, 2021). Even research acknowledging the pedagogical value of local cultural resources focuses on teacher-directed, classroom-based practices without extending to how these assets could support autonomous learning (Abiria, 2011).

Crucially, the literature overlooks the potential of non-school learning environments and digital tools. Studies on community engagement focus on governance and resource challenges but not on how community-based spaces like libraries could facilitate SDL (Ocan, 2017; Nelson *et al.*, 2022). Similarly, while infrastructure gaps are noted, there is no discussion of how low cost or mobile digital tools could enable independent research, collaboration and self-paced learning in resource-constrained settings. The documented transformations in Uganda's public library system through EIFL partnerships (EIFL, 2023; Omona, 2020) and the successful model of the Kitengesa Community Library (Dent and Goodman, 2015) demonstrate the potential of library-based interventions, yet these remain isolated examples rather than systematically integrated into educational policy.

The current discourse provides a thorough analysis of systemic failures but offers few learner-centred solutions. A significant gap exists in understanding how SDL can be integrated into Ugandan primary education, particularly through leveraging community assets like libraries and appropriate digital technologies to support the development of self-directed, resilient learners in rural contexts. This study seeks to address this gap by exploring how such environments and resources can cultivate SDL competencies among primary school pupils in rural Uganda.

4. Methodology

This section outlines the methodological approach used to investigate how rural Ugandan learners can be supported to engage in SDL within the CBC. It describes the qualitative dominant mixed-methods design guided by the Critical Incident Technique, the study setting in Busia District, participant selection strategies and the three-phase data collection procedure involving surveys, interviews and focus group discussions. The section also details the analytical framework and concludes with the ethical protocols governing research with minor participants.

4.1 Research design

This study used a qualitatively driven mixed-methods design, where qualitative assumptions, questions and objectives formed the core of the inquiry, and quantitative data played a

supplementary role (Morse and Niehaus, 2009; Creswell and Plano Clark, 2018). The Critical Incident Technique (Flanagan, 1954) guided the design.

Three features made qualitative methods dominant. Firstly, the research questions were qualitative: how learners can be supported to manage their own learning, and what role community libraries might play. Secondly, primary data collection was qualitative, semi-structured interviews (30 pupils, five teachers, five headteachers, one District Education Officer) and focus groups (10 groups, three to five pupils each), capturing learners' accounts of critical homework incidents. Thirdly, the analysis was qualitatively driven, using thematic analysis (Braun and Clarke, 2006) with inductive, iterative coding.

The quantitative questionnaire served only a supplementary, descriptive function. It did not test hypotheses, establish causality or estimate population parameters. Its three limited purposes were: describing the sample, identifying areas for deeper inquiry and contextualizing qualitative findings. Quantitative data were never interpreted alone – only as scaffolding for richer qualitative insights.

4.2 Study setting

The research was conducted in Busia District, Eastern Uganda, a predominantly rural region whose socio-economic and educational characteristics are detailed in Section 2. Fieldwork engaged primary schools across the district, selected in consultation with the District Education Services Office to ensure diversity across key typologies: high-performing schools, modular schools, growing schools and those in remote village settings. The ten participating schools were: Busibembe (Buyanga Sub-county), Buhobe (Bulumbi Sub-county), Global Leadership School (Busia Municipality), Buyengo (Dabani Sub-county), Mawero Islamic (Buteba Sub-county), Tiira (Sikuda Sub-county), Busitema (Busitema Sub-county), Dabani Girls (Dabani Sub-county), Sibiyirise (Lumino Sub-county) and Lando Memorial (Majanji Sub-county). This selection provided a cross-section of geographic, administrative and performance contexts within the district.

4.3 Participant selection

A purposive sampling strategy was used to recruit participants who could provide deep insights into the daily realities of learning in this environment (Patton, 2014). A total of 111 participants were recruited across the ten schools, determined by the principle of data saturation whereby data collection ceased when no new themes emerged. Table 1 summarizes the distribution of participants across categories.

The structured questionnaire was completed only to the 100 pupil participants. The 11 education professionals (five teachers, five headteachers and one District Education Officer) did not complete the survey; they participated only in semi-structured interviews.

The inclusion of a relatively small number of teachers and administrators ($n = 11$) alongside a larger cohort of learners ($n = 100$) was a deliberate methodological choice. This structure allowed for focus group discussions among learners to capture a broad range of student experiences, while enabling semi-structured interviews with education professionals to gather deep qualitative data on structural and policy-related challenges (Krueger, 2014).

Because Ugandan policy does not mandate school libraries or librarians in primary education [ISER, 2017; NPA, 2015; Maractho, 2017; GoU (Government of Uganda); MOES (Ministry of Education and Sports, 2009; GoU (Government of Uganda), 2009; GoU (Government of Uganda), 1997], on site school libraries could not be assumed as a consistent variable. Participant selection therefore focused on the core agents within the formal schooling system, with community libraries examined as external, complementary support rather than integrated school resources.

Table 1. Participants distribution

Participant category	No.	Survey (structured questionnaire)	Semi-structured interviews	Focus group discussions	Selection criteria
Pupils	100	(<i>n</i> = 100)	(<i>n</i> = 30 subsets)	(<i>n</i> = 30 subset)	Enrolled in Primary 5–7; willing to participate with parental consent
Teachers	5	0	(<i>n</i> = 5)	0	Direct experience with literacy instruction in participating schools
Headteachers	5	0	(<i>n</i> = 5)	0	Leadership role in participating schools
District education officer	1	0	(<i>n</i> = 1)	0	Oversight of district level policy implementation

Source(s): Authors' own work

4.4 Data collection procedures

Data collection unfolded in three sequential phases over nine months, with each phase building upon insights from the previous one. [Table 2](#) below summarizes the purpose, participants and methods for each phase. Phase 1 (Survey): The structured, researcher-administered questionnaire was completed by all 100 pupil participants. It captured baseline data on socio-demographics, homework receipt, textbook access, help-seeking patterns, peer collaboration and library visits. The full questionnaire is provided in [Appendix 2](#). Phase 2 (Semi-structured interviews): Individual interviews (30–45 min for pupils, 45–60 min for teachers and headteachers, 60 min for the District Education Officer) elicited detailed critical incident narratives from 30 pupils (purposely sampled from the 100 survey respondents), five teachers, five headteachers and one District Education Officer. Phase 3 (Focus group discussions): Ten focus groups (three to five pupils each, total 30 pupils) were conducted across the ten schools (one per school). These explored collective dimensions of learning experiences, peer-supported strategies and community-based support.

Table 2. Data collection phases summary

Phase	Purpose	Participants	Method	Key focus
Phase 1	Map baseline context and identify potential areas for deeper inquiry	100 pupils	Researcher administered structured questionnaire	Socio-demographics; homework completion; resource access; help seeking patterns
Phase 2	Elicit detailed critical incident narratives	30 pupils (purposive sub sample); 5 teachers	Semi-structured individual interviews (30–45 min pupils; 45–60 min teachers)	Positive incidents (successful learning); negative incidents (barriers encountered)
Phase 3	Explore collective dimensions of learning experiences	30 pupils (3–5 per school across 10 FGDs)	Focus group discussions (45–60 min each)	Collaborative incident recall; peer-supported strategies; community-based support

Source(s): Authors' own work

All interviews and focus group discussions were audio recorded using Audacity software on password protected laptop computers, with verbal reaffirmation of consent obtained before recording. Recordings were transcribed *verbatim* by the research team following a standardized protocol, with a sample of transcripts cross-checked against original audio by a second team member to ensure accuracy.

4.5 Data analysis

The study generated two forms of data: quantitative data from the structured pupil questionnaires (Phase 1, $n = 100$ pupils) and qualitative data from semi-structured interviews (Phase 2) and focus group discussions (Phase 3).

Quantitative analysis: Data from the 100 pupil questionnaires were entered into Microsoft Excel and analysed using descriptive statistics. For each survey question, raw frequencies were counted, and percentages were calculated as simple proportions of the total sample. For example: 97 pupils responded “Yes” to receiving homework $\rightarrow (97 \div 100) \times 100 = 97\%$; 37 pupils reported having textbooks at home $\rightarrow (37 \div 100) \times 100 = 37\%$; and 16 pupils identified a parent as a homework helper $\rightarrow (16 \div 100) \times 100 = 16\%$.

No inferential statistical tests were conducted. The study did not calculate means, standard deviations, correlations, chi-square tests, regression models, significance tests or any measures of association. Percentages are presented solely to describe this sample, not generalized as population estimates. Full frequency tables for all questionnaire items are provided in [Appendix 4](#).

The quantitative data served three supplementary purposes only: (a) describing the sample (e.g. 97% receive homework, 37% have textbooks at home), (b) identifying areas for deeper qualitative inquiry (e.g. low parental help-seeking, near-zero digital access) and (c) contextualizing qualitative findings (e.g. stating that only 16% named parents as helpers before presenting pupil accounts of why parents do not help).

Qualitative analysis: Qualitative data from interviews and focus group discussions were analysed using thematic analysis, following the six phase framework outlined by [Braun and Clarke \(2006\)](#):

- (1) familiarization with the data through repeated reading of transcripts;
- (2) generating initial codes inductively from the data;
- (3) searching for themes by grouping codes into broader patterns;
- (4) reviewing themes to ensure coherence and accurate representation of the data set;
- (5) defining and naming themes; and
- (6) producing the final report.

Coding was performed using comment and highlighting functions in Microsoft Word. To enhance transparency, a detailed step by step illustration of how the theme “Lack of parental academic support” was developed is provided in [Appendix 5](#).

All interview and FGD excerpts presented in Section 4.0 (Findings) are attributed using pseudonyms and participant type (e.g. “Sarah, P6 pupil, Busibembe”) to protect confidentiality while allowing readers to contextualize responses.

4.6 Ethical considerations

The study protocol received full ethical approval from the Mildmay Uganda Research Ethics Committee (MUREC-2023–213) under the project: *Strengthening community libraries as*

the catalyst to self-learning in Uganda's rural and poor households: a case of the Busia District.

A dual layer consent procedure was implemented for all 100 pupil participants. Firstly, parental/guardian informed consent was obtained in writing, with oral translation into the local language (Luganda) for parents with limited literacy; parents who could not write provided a thumbprint in the presence of an impartial witness. Secondly, child assent was secured from each pupil using age appropriate language explaining the study's purpose, voluntary participation and freedom to withdraw without consequence. The child assent form used for all minor participants is provided in [Appendix 3](#).

To ensure interviews with minors (aged 9–14 years) were an “ethics risk free process”, all pupil interviews were conducted in semi-private but observable locations within school premises during school hours, with a trusted teacher present within visual range but outside auditory range. Interview duration was limited to 30–45 min to prevent fatigue, and interviewers were trained to be attentive to non-verbal cues indicating distress.

All data were anonymized, with pseudonyms replacing identifying information. Audio files and transcripts were stored on encrypted devices accessible only to the core research team, with a data management plan outlining secure storage and subsequent disposal one year post project. Participants received modest reimbursement for time and refreshments as stipulated in the approved protocol, without undue inducement.

5. Findings

This section presents empirical data from ten primary schools in Busia District, triangulating three sources: a structured questionnaire completed by 100 pupils (10 per school) (10 per school; see [Appendix 2](#) for the full questionnaire), semi-structured interviews with 30 pupils and five teachers (see [Appendix 4](#) for the interview guide) and 10 focus group discussions (three to five pupils each) (see [Appendix 1](#) for the focus group protocol). All pupil names are pseudonyms.

5.1 Learner preparedness for self-directed learning

The survey of 100 pupils revealed a learning ecosystem characterized by near universal task assignment but critically incomplete resource access. While 97% of pupils reported receiving homework assignments, the infrastructure to complete this work independently is severely constrained.

Access to basic stationery is widespread but not universal: 87% of pupils confirmed having pens, pencils and exercise books. However, access to core instructional resources is markedly lower. Only 37% of pupils reported having any textbooks at home, representing the most significant material gap in the learning environment. Digital tools are completely absent from the ecosystem – no pupil reported using computers, educational software or the internet for schoolwork.

Support structures for learning are fragmented. Only 16% of pupils identified a parent as a source of homework help. Collaborative peer learning is limited, with just 25% reporting ever working with peers on assignments. While 82% of pupils had visited their school's book storage room, only 13% had ever accessed a library outside their school premises.

These quantitative patterns are illuminated by qualitative accounts that reveal the lived experience behind the statistics. At Busibembe Public School, 70% of pupils reported completing homework entirely without assistance. “*My sister helps me spell words, but my parents are always busy*”, explained Akello, a Primary 6 pupil at Buhobe, illustrating the reliance on sibling rather than parental support. In contrast, at Global Leadership Private School, 80% reported receiving homework help from parents, with more academically

substantive support: *“My father explains the maths formulas before I try the questions”*, described Musa, a Primary 5 pupil.

The limited collaborative learning that does occur is often family facilitated. At Mawero Islamic School, where 50% of pupils reported peer collaboration – the highest in the sample – Nakato, a Primary 6 pupil, explained: *“We meet at my home; my mother allows us to study together and helps us when we argue”*. Conversely, at Busibembe, where only 9.5% engaged in peer study, such facilitation is absent.

The material strain is evident in pupils’ descriptions of resource acquisition. *“My father bought me a pen and an exercise book from the market, but I need a geometry set and a science textbook which he says are too expensive”*, reported Atim, a Primary 7 pupil at Dabani Girls. The complete absence of digital mediation was articulated by Ochen, a Primary 6 pupil at Sibiyirise: *“I only use books and pens. I have never used a computer for school”*.

5.2 Barriers to self-managed learning

Economic constraints and time poverty: Pupils come from large households averaging six to eight members, with shared resources and significant domestic responsibilities. In total, 29% of pupils admitted failing to complete homework due to competing duties. *“I have a lot of work at home, like digging in the evening. There is no time left for homework”*, reported Auma, a Primary 5 pupil at Buhobe. In some cases, economic survival directly competes with academic engagement: *“I was digging to get money to buy a pen”*, revealed Odongo, another Primary 6 pupil at Buhobe. Environmental factors further compound time poverty: *“When there is bad weather, I cannot meet friends to study”*, noted Okello, a Primary 7 pupil at Tiira, while focus group participants consistently cited *“housework”* and *“fetching water”* as primary impediments to both individual study and peer collaboration.

Lack of parental academic support: Despite physical presence, parents are largely absent as academic facilitators. The survey’s finding that only 16% of pupils identify parents as homework helpers is reflected in qualitative accounts describing support that is procedural rather than pedagogical. *“My mother gives me answers, but does not explain how she got them”*, described Apio, a Primary 6 pupil at Dabani Girls. Pupils consistently identify teachers as the most qualified academic guides. *“The right person to help me is my teacher, because she knows everything and can explain clearly”*, stated Kato, a Primary 5 pupil at Busibembe, revealing a clear guidance deficit within the home environment that positions the teacher as the singular pillar of academic authority.

Limited digital infrastructure: The absence of digital tools documented in Section 4.1 is underpinned by a complete lack of digital infrastructure and, consequently, digital literacy. No school reported any integration of digital resources into learning processes. The lack of electricity directly constrains study time. In focus group discussions, pupils in Buyengo identified *“lights switched off”*, *“power outages”* and *“no electricity”* as major hindrances to evening study. Their proposed solutions were analog compensations: *“They should buy for me light”*, *“I use a torch”* or *“installation of electricity”*. This fundamental infrastructure gap precludes any meaningful discussion of digital literacy, rendering the learning ecosystem entirely offline.

5.3 Enablers and adaptive strategies

Teachers as facilitators: In the absence of parental academic support and digital resources, teachers emerge as the indispensable enablers of learning. Their role extends beyond classroom instruction to serving as gatekeepers of physical resources. In the context of school book storage rooms, access is almost exclusively mediated by teachers. *“The teacher*

opens the store for us to take textbooks for revision", explained Opolot, a Primary 7 pupil at Buhobe. The concept of a librarian as a facilitative guide is virtually absent from the data; only in isolated instances, such as at Dabani Girls, was a "librarian" mentioned as a helper during a focus group discussion. This indicates that these spaces are managed as storerooms under teacher or administrative purview, not as service-oriented libraries with dedicated staff.

Peer learning and kinship networks: While formal peer networks are underdeveloped, informal kinship-based support networks provide a critical adaptive strategy. Pupils who engage in collaborative study typically do so through family coordination. *"My brother calls my friends to come and read together at home"*, described Nambi, a Primary 6 pupil at Mawero Islamic. However, these networks are fragile and easily disrupted by practical and social barriers. *"My parents refuse to allow me to go for group study because they say I will just play"*, shared Mukasa, a Primary 5 pupil at Buyengo. *"We have too much work at home, so we cannot meet"*, added Achieng, a Primary 6 pupil at Sibiyirise. The data suggests that while a latent community network exists – most pupils knew other learners in their village – it is not systematically harnessed to foster academic collaboration.

Absence of digital strategies: There is no evidence of pupils using mobile technology or offline digital resources as adaptive learning strategies. The single mention of the internet as an information source (at Global Leadership) and a few observational references to computers remain exceptional and non-institutional. All reported strategies are anchored in human interaction and analog materials.

5.4 The current state of community libraries

Usage patterns: The school-based book storage room is a near universal feature, with 82% of pupils having visited theirs. However, the pattern of use reveals its limited function. Visits are almost entirely transactional and teacher directed. Pupils reported going *"to get textbooks for revision"* (Otim, Primary 7, Busibembe), *"to take back books after class"* (Adokorach, Primary 6, Busitema) or *"to collect chalk and books for the teacher"* (Amongin, Primary 5, Buhobe). Access is consistently described as mediated, not independent. *"We ask the teacher for the keys to get books from the cupboard"*, described Ojok, a Primary 6 pupil at Tiira, an experience common to many. Experience with libraries outside the school is minimal, with only 13% having ever visited one – often a library at another school or a bookshop, not a functional community library.

Perceived value: Pupils associate academic success with two factors: access to core materials (especially textbooks) and access to explanatory guidance. Their expressed needs reflect this dual deficit. For material provision: *"They should buy me light"*, stated Alupo, a Primary 5 pupil at Buhobe. For academic scaffolding: *"Someone to read for me and explain the questions"*, expressed Okwir, a Primary 7 pupil at Busitema during a focus group discussion. The school book storage is perceived instrumentally as a source for textbooks, not intrinsically as a space for exploration, discovery or the development of independent research skills. Its potential to foster SDL is unrecognized by learners, as its current design and operation do not encourage such use.

Systemic gaps: Pupils' reported reasons for not using the space further illustrate barriers that are systemic rather than reflecting personal disinterest. *"Fear"*, admitted Aol, a Primary 6 pupil at Buhobe. *"I don't know how"*, confessed Ocen, a Primary 5 pupil at Tiira. *"The place is locked"*, noted Acio, a Primary 7 pupil at Buhobe. Across all ten schools, five systemic gaps emerge consistently.

Firstly, the space functions as storage, not service – there is no evidence of a service model encompassing lending systems, reader advisory, information literacy instruction or

facilitated learning activities. Secondly, collections are limited and static, predominantly composed of textbooks with a notable absence of supplementary readers, reference materials, periodicals or curriculum aligned learning kits that support IBL. Thirdly, the physical environment is non-conducive to learning – spaces are not described as inviting, well lit or furnished for study; they are places for item retrieval, not for dwelling and learning. Fourthly, there is a complete absence of digital access – no computers, offline digital resources or internet connectivity are available, maintaining a stark digital divide. Fifthly, there is a lack of proactive integration – no outreach to pupils or teachers, no alignment of resources with curriculum themes and no programming to address common homework challenges.

What is termed a “library” functions, in effect, as a secured book depot – a passive repository that addresses a fraction of the material gap but provides none of the facilitative services, diverse resources or conducive environments necessary to actively scaffold the competencies of autonomous, SDL.

6. Discussion

This study set out to explore how individual learners in rural Uganda could be supported to manage their own learning within the CBC framework, and the potential role of community libraries in this process. The findings from Busia District reveal a learning ecosystem where the ideals of SDL collide with the realities of systemic scarcity. This discussion interprets these findings through the theoretical lens established in the literature review, addressing each research question in turn.

6.1 *Learner preparedness and barriers to SDL*

The findings reveal that learner preparedness for SDL in rural Busia is severely constrained across all three dimensions of [Garrison's \(1997\)](#) model.

Self-management – contextual control over resources and settings – is fundamentally compromised. While 97% of pupils receive homework assignments, only 37% have access to textbooks at home, and digital tools are entirely absent. This scarcity directly impedes learners' ability to identify and use material resources, a foundational step in [Knowles' \(1975\)](#) SDL framework. Furthermore, access to school-based “libraries” is mediated entirely by teachers, with pupils describing a process of requesting keys to retrieve books from locked cupboards. This gatekeeping reflects [Magara and Nyumba's \(2004\)](#) observation that school libraries in Uganda function as storage depots rather than accessible learning spaces – a direct consequence of the policy vacuum identified in the literature.

Self-monitoring – the cognitive and metacognitive responsibility for learning – is underdeveloped due to a critical guidance deficit. Only 16% of pupils identified parents as homework helpers, and when provided, this support is procedural rather than pedagogical. Pupils consistently identified teachers as the most qualified academic authority. This reliance on teachers as the singular academic pillar, while necessary in an overstretched system, cannot foster the metacognitive skills – goal setting, strategy selection and self-evaluation – required for true learner autonomy ([Charokar and Dulloo, 2022](#)). The absence of facilitative guidance at home leaves a gap that the formal schooling system, with pupil teacher ratios averaging 63:1, is ill equipped to fill.

Motivation is challenged by the socio-economic context documented in the district profile. In total, 29% of pupils admitted failing to complete homework due to competing domestic and agrarian duties. In some cases, economic survival directly competes with academic engagement. These findings align with the literature on barriers in low resource contexts: time poverty erodes the intrinsic motivation essential for SDL ([Garrison, 1997](#);

[Song et al., 2016](#)), and the struggle to secure basic stationery transforms learning from an intrinsic pursuit into an economic burden.

Importantly, pupils demonstrate initiative and a desire to learn – but they operate within an ecosystem that denies them the foundational resources, guidance and time necessary to develop self-directed competencies. Preparedness for SDL in this context is not a matter of willingness but of structural enablement.

6.2 *The existing and potential role of community libraries*

The findings reveal a profound disconnect between the potential of community libraries articulated in the literature and their current dysfunctional reality in Busia District. Despite 82% of pupils having visited their school's book storage room, visits are transactional and teacher directed: pupils go to retrieve textbooks or return books, not to engage in independent exploration. This depiction aligns with [Dent's \(2006b\)](#) characterization of school libraries in Uganda as marked by “glaring inadequacies” in management, collections, space and staffing. The concept of a librarian as a facilitative guide – central to [Mozzon-McPherson's \(2007\)](#) notion of learning facilitators who develop learner self-management skills – is virtually absent. Only 13% of pupils had ever visited a library outside their school, indicating that community libraries, where they exist, are not reaching the majority of rural learners.

Despite their current state, learners' expressed needs illuminate the potential role libraries could play. Pupils associate academic success with two factors: access to core materials and access to explanatory guidance. These dual deficits map directly onto the four core functions of reconfigured community libraries identified in the literature: curated resource centres addressing material gaps ([Krolak, 2006](#)); facilitated learning spaces providing the “someone” to explain and guide ([Mozzon-McPherson, 2007](#)); bridges to the digital world addressing infrastructure absence ([Miao et al., 2019](#)); and community embedded programming creating structured academic support.

The Kitengesha Community Library model ([Dent and Goodman, 2015](#)) demonstrates that such transformation is possible: facilitative staffing by trusted community members addresses the guidance deficit; diverse collections in local languages ensure relevance; and conducive physical space enables both individual and collaborative study. The gap in Busia is not in recognizing the need – teachers and administrators interviewed recognized this potential – but in the resources and policy framework to act upon it. Community libraries currently exist in name only, functioning as locked textbook storerooms, but the expressed needs of learners point to a clear and urgent potential for these spaces to be reconfigured as dynamic, facilitative hubs that scaffold SDL.

6.3 *A context-sensitive framework for enabling SDL*

Drawing on triangulated data from pupils, teachers and administrators, a context sensitive framework for enabling SDL in rural Uganda must address the interconnected deficits of resources, guidance and infrastructure. The framework comprises four synergistic components aligned with the “low tech first” and community embedded principles derived from the contextual profile.

Component 1: Reconfigured community libraries as physical and social infrastructure. Learners' accounts of locked cupboards and mediated access underscore the need for fundamental reimaging of the school library. This requires:

- physical reconfiguration into inviting, well lit spaces conducive to study, addressing pupils' expressed need for light;

- collection diversification beyond textbooks to include supplementary readers, reference materials and low cost learning kits, addressing documented material scarcity; and
- dedicated facilitation through trained librarian-teachers or community volunteers who can provide the explanatory guidance that pupils currently seek from overburdened teachers.

This aligns with [Hamilton's \(2020\)](#) concept of “learning support literacy”, wherein libraries provide support services that empower learners to develop autonomy.

Component 2: A “Low tech first” digital strategy. Given the near zero digital penetration documented – no pupil reported using computers or the internet for schoolwork – a high tech approach is currently infeasible. The framework must strategically integrate resilient, accessible tools that function within existing infrastructure constraints. This includes: solar powered audio players with curriculum aligned lessons, overcoming both literacy barriers and electricity deficits; offline digital libraries on ruggedized tablets hosted at community libraries, delivering OERs without constant internet connectivity; and SMS-based quiz systems accessible via basic mobile phones, leveraging the 35.9% mobile phone ownership documented in the district profile. This “appropriate technology” approach ([Heeks, 2017](#)) prioritizes solutions that are sustainable, maintainable and contextually fitting.

Component 3: Teacher empowerment and community facilitator networks. The findings position teachers as indispensable linchpins of the current learning ecosystem, yet they are overstretched and lack resources to foster SDL systematically. A sustainable framework must: (a) empower teachers through targeted professional development reframing their role from knowledge providers to facilitators of inquiry and metacognition ([Robinson and Persky, 2020](#)); and (b) cultivate community facilitator networks by training trusted community members, youth volunteers and senior secondary students to provide basic homework support and library facilitation. This community embedded approach leverages existing social architecture, as demonstrated by Mawero Islamic pupils whose collaborative study was family facilitated. Such networks can mitigate the guidance deficit and create distributed learning support systems.

Component 4: Policy integration and systemic alignment. The framework cannot be sustained without supportive policy. The current policy vacuum – wherein school libraries are not mandated and librarians are not required positions [[ISER, 2017](#); [NPA, 2015](#); [Maratho, 2017](#); [GoU \(Government of Uganda\)](#). [MOES \(Ministry of Education and Sports, 2009](#); [GoU \(Government of Uganda\), 2009](#); [GoU \(Government of Uganda\), 1997](#)] – has directly resulted in the dysfunctional storerooms documented in this study. Effective implementation requires: national and district level mandates establishing minimum standards for school library space, collections and facilitation; integration of libraries into CBC implementation guidelines, explicitly identifying them as partners for PBL and independent research; and public community partnerships leveraging NGO and local government resources to strengthen community library networks, particularly in remote sub-counties with lowest enrolment and performance.

A context sensitive framework for SDL in rural Uganda must be hybrid, low tech first, community embedded and policy backed. It reimagines libraries not as passive repositories but as active learning hubs providing the resources, guidance and space currently missing from the ecosystem, while strategically layering appropriate technology to bridge the digital divide over time.

6.4 Implications of the study

Implications for research: This study extends SDL theory, predominantly developed in Western, resource-rich contexts by demonstrating its applicability and limitations in a low-

income, rural Sub-Saharan African setting. The findings affirm [Garrison's \(1997\)](#) three-dimensional model but reveal that in contexts of extreme scarcity, the self-management dimension is not merely about learner choice but about fundamental access to resources and infrastructure. This suggests a need for a “foundational” layer to SDL models when applied in such contexts, wherein basic resource provision is a prerequisite for, rather than a component of, learner autonomy. The study also addresses a critical gap identified in the literature, the predominant focus on supply-side challenges in Ugandan education ([Asemere et al., 2024](#); [Okia et al., 2021](#)), by centring the voices of 100 pupils and providing a rich demand-side perspective. Future research should include longitudinal studies tracing the development of SDL competency as interventions are introduced, intervention-based research prototyping the reconfigured library model, and political economy analyses examining governance constraints that perpetuate the policy vacuum.

Implications for practice: For teachers and school administrators, the findings suggest establishing peer-led study groups building on existing kinship-based networks, creating rotating class libraries that circulate books among pupils' homes and developing simple homework help rosters involving senior pupils or community volunteers. For librarians and library developers, priorities should include physical reconfiguration to create inviting, well lit spaces; collection diversification beyond textbooks; facilitator training to equip staff to provide homework support and model information-seeking behaviours; and community outreach that aligns library resources with school term themes. For development practitioners, the findings highlight the limitations of technology-centric interventions in contexts with minimal digital infrastructure, supporting a “low tech first” approach prioritizing solar-powered audio learning, offline digital libraries hosted at community hubs and capacity building for local facilitators as the primary intervention.

Implications for policy: The current policy that leaves school libraries to individual initiative has resulted in the dysfunctional storerooms documented in this study. National policy should mandate a functional learning resource centre in every primary school, defining minimum standards for space, collections and facilitation, accompanied by dedicated funding. The CBC framework should explicitly identify community and school libraries as key partners for PBL and independent research. District education offices should proactively partner with NGOs and development partners to establish and strengthen community library networks, with policy incentivizing outreach programmes connecting school pupils to community library resources. National ICT in Education policies should explicitly support low-tech, offline-first digital solutions appropriate for contexts with limited connectivity, extending the Uganda Communications Commission's inclusion of public libraries in ICT rollout programmes ([EIFL, 2024](#)) to school libraries.

Implications for society: By centring the voices of rural learners, this study highlights the stark urban-rural divide in educational opportunity. Implementing the proposed framework would contribute to Sustainable Development Goal 4 by ensuring that all learners, regardless of location, have access to resources and support necessary to develop SDL competencies. Evidence from Kitengesa ([Dent and Goodman, 2015](#)) and EIFL projects ([EIFL, 2023](#)) demonstrates that reconfigured libraries can have spillover effects beyond formal education, supporting adult literacy, agricultural information access, and small business development. For girls facing pronounced literacy disparities and domestic burdens, safe, well lit library spaces offer a protected environment for study and peer interaction that may not be available at home. By documenting pupils' voices, this study challenges the perception that educational outcomes are solely the responsibility of schools, illuminating the role that parents, communities and institutions play in shaping learning environments.

6.5 Limitations and future research

This study has several limitations. Firstly, the sample, though diverse across school typologies, was confined to one district in Eastern Uganda, limiting generalizability to other rural contexts with different socio-cultural dynamics and infrastructural conditions. Secondly, reliance on self-reported data is subject to recall and social desirability bias. Thirdly, the cross-sectional design provides a snapshot; longitudinal research is needed to trace SDL competency evolution and intervention impacts over time. Fourthly, the research focused on the demand side (learners and teachers) and existing library infrastructure; deeper investigation into supply side economics, district level governance constraints and the political economy of education funding would provide a more complete systemic picture. Finally, the study did not include direct observation of library usage or learning behaviours; future research should incorporate observational methods to triangulate self-reported data.

Despite these limitations, the study provides a robust empirical foundation for understanding constraints on SDL in rural Uganda and for designing context sensitive interventions. The proposed framework for reconfigured community libraries, low tech digital tools and facilitative support is grounded in the lived experiences of learners and educators and offers a viable pathway for bridging the gap between the aspirations of the CBC and the realities of resource-constrained rural education.

7. Conclusion

This study began with a question: How can individual learners in rural Uganda be supported to manage their own learning within the competence-based curriculum? The answer, grounded in the voices of 100 pupils, is simultaneously sobering and hopeful. The sobering truth is that the current ecosystem fails learners at every turn – denying them books, light, guidance and space. The hopeful truth is that the learners themselves demonstrate the very initiative the curriculum seeks to cultivate. They want to learn. They adapt with what little they have. They ask for someone to explain, for light to read by, for books to study from.

These are not unreasonable requests. They are the basic infrastructural prerequisites for SDL, prerequisites that successful community library models like Kitengesa have demonstrated are achievable even in resource-constrained settings. The gap in Busia is not a gap of possibility but of prioritization. Closing it requires not technological miracles or massive funding, but the political will to mandate school libraries, the resources to transform storerooms into learning spaces and the community wisdom to train local facilitators who can provide the guidance that overstretched teachers and busy parents cannot.

The CBC envisions learners who are critical thinkers, problem solvers and lifelong learners. This study suggests that such learners already exist in rural Uganda – they are simply waiting for the infrastructure that would allow their potential to flourish. Community libraries, reconceived as dynamic, facilitative hubs and supported by low-tech digital tools, offer a viable, evidence-based pathway to provide that infrastructure. The question now is whether policymakers, practitioners and communities will seize it.

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Appendix 1. Critical incident questioning protocol
Interviewer Instructions

This protocol guides the elicitation of critical incidents from pupils and teachers. Before each interview, remind participants that you are seeking descriptions of specific events they personally experienced, not general opinions or things they have heard about from others. Use iterative probing until each incident report includes sufficient detail about: (1) what led to the situation, (2) what exactly happened, (3) who was involved and what they did, (4) where and when it occurred, (5) what happened as a result, and (6) why the incident was meaningful to the participant.

At the conclusion of each incident report, summarise your understanding and invite the participant to correct, clarify, or elaborate.

Section A: Opening Protocol (All Participants)

"Thank you for agreeing to talk with me today. I am interested in learning about your real experiences with learning and homework, specific times when things went well, and specific times when you faced challenges. I will ask you to describe particular events that actually happened to you, not general things you think or believe. There are no right or wrong answers. You can skip any question, and we can stop at any time."

Section B: Pupil Interview Protocol

B.1 Positive Incident Elicitation

Introductory prompt: "Think of a specific time when you were able to complete your homework successfully, a time when it went well. Tell me about that time from beginning to end."

Follow-up probes:

Dimension	Probe Questions
Antecedent conditions	"What were you trying to do? What led to this situation? What was the homework about?"
Specific behaviours	"What exactly did you do? Walk me through it step by step. Who else was involved, and what did they do?"
Contextual factors	"Where were you? What time of day was it? What materials or resources did you have available?"
Outcomes	"What happened as a result? Did you complete the work? How did you know if it was correct?"
Significance	"Why was this time different from other times? What made it work well? How did you feel about this experience?"

Additional prompts if needed:

- "What made this time different from other times when homework was difficult?"
- "Who helped you, and what exactly did they do?"
- "What happened after you finished?"

(continued)

B.2 Negative Incident Elicitation

Introductory prompt: "Now think of a specific time when you wanted to study or had homework to do, but you could not, a time when something got in the way. Tell me about that time from beginning to end."

Follow-up probes:

Dimension	Probe Questions
Antecedent conditions	"What were you supposed to do? What happened first?"
Specific behaviours	"What did you do when you realised you could not study? Did you try anything to fix the situation?"
Contextual factors	"Where were you? Who else was there? What stopped you?"
Outcomes	"What happened in the end? Did you complete the homework later? What was the result?"
Significance	"How did this experience affect your learning or your feelings about school? What would have helped in that moment?"

Additional prompts if needed:

- "What was the main thing that stopped you from studying?"
- "Was there anyone who could have helped you in that moment?"
- "What would have made it possible for you to study that day?"
- "How did you feel when you realised you could not study?"

B.3 Library and Resource Access Probes

For pupils who have visited a school library/ book storage:

- "Tell me about the last time you went to the place where books are kept at your school. What happened from the moment you decided to go until you left?"
- "Who opened the door? What did you do inside? How long did you stay?"
- "What did you need that you could not find?"

For pupils who have not visited or rarely visit:

- "Think of a time when you thought about going to get a book but did not go. What happened? Why did you decide not to go?"
- "What would need to be different for you to use that space?"

For pupils who have visited an external library:

- "Tell me about the time you visited a library outside your school. How did you get there? What did you do there? What was different from your school?"

(continued)

Section C: Teacher Interview Protocol

C.1 Positive Incident Elicitation (Observed Student Success)

Introductory prompt: "Think of a specific pupil or group of pupils you have taught who managed to complete independent learning tasks successfully despite limited resources. Describe that specific situation."

Follow-up probes:

- "What made this incident stand out?"
- "What resources or support did the pupil access?"
- "What role did you or others play in this success?"
- "Where did the learning occur? Was the school library or any community space involved?"
- "What was the outcome, and why was this incident significant?"

C.2 Negative Incident Elicitation (Observed Student Struggle)

Introductory prompt: "Now think of a specific incident where a capable pupil failed to complete independent learning work due to barriers beyond their control. Describe exactly what happened."

Follow-up probes:

- "What barriers did you observe—resource scarcity, time constraints, lack of guidance?"
- "What did the pupil do when they encountered this barrier?"
- "Was there any support available that could have helped?"
- "What was the outcome, and how did it affect the pupil?"
- "What would have needed to be different for this incident to have a positive outcome?"

C.3 Library Perception Probes

- "Tell me about a specific time you directed a pupil to use the school book storage or library. What happened?"
- "Describe an incident where you wished a library space or resource existed to support a pupil's learning. What would that space have provided?"
- "Have you ever used any community library or external resource with your pupils? Describe that experience."

Section D: Focus Group Discussion Protocol

D.1 Opening and Group Guidelines

"Thank you for coming together. We will talk about your experiences with learning and homework. There are no wrong answers. I am interested in what you have actually experienced. Please listen to each other and let everyone speak. You do not have to agree, but please respect what others share."

D.2 Collaborative Incident Recall Prompts

Prompt 1 (Peer collaboration): "Think of a specific time when you studied or did homework with other pupils. Tell us about that time. Where did you meet? What did you do? How did it help or not help?"

Prompt 2 (Barriers): "Think of a time when you wanted to meet friends to study but could not. What happened? What stopped you?"

Prompt 3 (Community support): "Has there been a specific time when someone in your community, not a teacher or parent, helped you with learning? Tell us about that."

Prompt 4 (Shared strategies): "Think of a time when you figured out a way to learn or get work done even when you lacked something you needed. What did you do? Has anyone else done something similar?"

D.3 Group Comparison Probes

After individuals share, prompt comparison:

- "Has anyone else experienced something similar?"
- "What was different about your experience?"
- "Why do you think some of you can meet to study and others cannot?"

(continued)

Section E: Incident Closure and Verification

After each incident report:
"Let me make sure I understand what happened. [*Summarise key elements: what led to it, what happened, who was involved, what the result was, why it mattered*]. Is that correct? Is there anything you would add or change?"

Section F: Post-Incident Reflection

After collecting 2–3 incidents per participant:
"Thinking about all the experiences you have shared, if you could change one thing to make it easier for pupils in your community to study and learn on their own, what would that one thing be? Why?"

Protocol Fidelity Checklist

Interviewers should ensure each collected incident includes:

Element	Present?
Clear antecedent (what led to the situation)	☐
Specific behaviours (what participant and others did)	☐
Context (where, when, what resources were present)	☐
Outcome (what happened as a result)	☐
Significance (why it mattered to participant)	☐
First-person, experienced event (not hearsay)	☐

Appendix 2. Pupil questionnaire (Phase 1 data collection)

Title: Survey on Learning Practices and Resources for Primary School Pupils

Digital Library
Perspectives

Instructions for the Researcher: Read each question aloud to the pupil in a language they understand (English or translated into Luganda or Gisu). Circle or tick the pupil's response. Assure the pupil that there are no right or wrong answers and that their responses will be kept confidential.

Section A: Background Information

1. School Name: _____
2. Class (Grade): _____
3. Gender: Male ☐ Female ☐
4. How many people live in your home (including you)? _____
5. Does your home have electricity? Yes ☐ No ☐
6. What is the main source of light for studying at home?
 - o Electricity ☐
 - o Paraffin lamp / Tadoba ☐
 - o Solar lamp ☐
 - o Candle ☐
 - o Other (please specify): _____

Section B: Homework and Study Habits

7. Does your teacher usually give you homework? Yes ☐ No ☐
8. On average, how many days a week do you have homework?
 - o 1-2 days ☐
 - o 3-4 days ☐
 - o 5-7 days ☐
9. Where do you usually do your homework? (Tick the main place)
 - o At home ☐
 - o At school ☐
 - o At a friend's house ☐
 - o At a library ☐
 - o Other: _____
10. Have you ever failed to complete your homework because you had to do other work at home (like digging, fetching water, or caring for siblings)?
 - o Yes, often ☐
 - o Yes, sometimes ☐
 - o No, never ☐

(continued)

Section C: Access to Learning Materials

11. Do you have the following items for school? (Read list, tick all that apply)
- Pen/Pencil []
 - Exercise book []
 - Geometry set []
 - School bag []
12. Do you have any textbooks at home that you can use for studying?
- Yes [] (If yes, which subjects? _____)
 - No []
13. Where do you usually get the books or materials you need for school?
- My parents buy them []
 - School store/ library []
 - I borrow from a friend []
 - I do not have any materials []
 - Other: _____
14. Have you ever used a computer for your schoolwork?
- Yes []
 - No []
15. Do you have access to the internet? Yes [] No []

Section D: Sources of Help and Support

16. When you get stuck with your homework, who helps you? (Tick all that apply)
- No one, I try to do it myself []
 - Mother []
 - Father []
 - Brother/Sister []
 - Friend/Classmate []
 - Teacher []
 - Someone else in the village []
17. In your opinion, who is the best person to help you understand difficult homework?
- _____
18. Do you ever study together with your friends or classmates?
- Yes, often []
 - Yes, sometimes []
 - No, never []

Section E: Use of Libraries

19. Does your school have a place called a "library" or a "book room" or "book store"?
- Yes []
 - No []
 - I don't know []
20. Have you ever visited the library/book room at your school?
- Yes, many times []
 - Yes, once or twice []
 - No, never [] (If never, why not? _____)
21. The last time you went to the school library/book room, what did you go there to do?
- _____
22. Have you ever visited a library that is NOT at your school (e.g., a community library)?
- Yes [] (Where? _____)
 - No []

Thank you for your participation!

Appendix 3. Child assent form (for pupils aged 9–14 years)

(To be read aloud to the child in the presence of a witness, in a language they understand)

Title of Study: Adapting Individual Learners for Self-Directed Learning in Rural Uganda: The Role of Community Libraries and Digital Tools

Principal Investigator: Name of PI

1. Introduction

Hello. My name is _____. I am from Busitema University. We are doing a study to learn more about how you do your schoolwork and what help you get when you are not in class. We want to learn about how children like you study at home and if places like libraries help you. I would like to ask you to be in this study. Before you decide, I want to tell you a little bit about it.

2. Why are we doing this study?

We are doing this study because we want to understand how to make it easier for children in Busia to learn, even when they are not in school. Your answers will help us think of ways to help other children like you.

3. What will happen if you agree to be in the study?

If you agree to be in the study:

- You will answer some questions in a survey (like a short test, but not a real test).
- You might be asked to talk to me in a private chat for about 30 to 45 minutes. I will ask you questions about your homework, where you study, and who helps you.
- If you are in the private chat, I will record your voice with a computer so I can remember what you said. I will not share your voice with anyone else.
- Your teacher will be nearby while we talk, so you feel safe.

4. Will the study hurt or help you?

- **Will it hurt?** No, being in this study will not hurt you. You do not have to answer any question you do not want to. If you feel tired or sad, we can stop and take a break, or we can stop forever.
- **Will it help?** This study might not help you right now, but what we learn might help other children in your community in the future.

5. Will people know what you said?

We will keep your answers a secret. We will not use your real name on our papers. We will use a made-up name instead. Only the research team will listen to the recordings, and they will be kept in a safe, locked computer.

6. Do you have to be in the study?

No, you do not have to be in this study. It is up to you. No one will be angry or upset if you say no. It will not change your grades or how your teacher treats you. You can say yes now and change your mind later. You can skip any question you do not want to answer.

7. Questions?

You can ask me questions now, or you can ask your teacher to contact us later.

8. Assent (Agreement)

Do you understand what we have talked about? [] Yes [] No

Do you have any questions? [] Yes [] No (If yes, answer them now)

Do you agree to be in this study and to have our chat recorded? [] Yes [] No

If the child says YES:

Name of Child: _____
 Signature or Mark (Thumbprint) of Child: _____
 Date: _____
 Name of Person Obtaining Assent: _____
 Signature: _____
 Date: _____
 Name of Witness (if thumbprint used): _____
 Signature: _____

Appendix 4. Semi-structured interview guide (for pupils)

Title: Exploring Learning Experiences and Critical Incidents

Interviewer Instructions:

- Build rapport before starting.
- Remind the participant of the assent/consent and their right to stop or skip questions.
- Use probes (e.g., "Can you tell me more about that?", "What happened next?", "What did you do?") to encourage detailed storytelling.
- The questions are guides; follow the participant's narrative.

Section A: Establishing Context (5 minutes)

1. Can you tell me a little about your favorite subject in school? Why do you like it?
2. What does a normal day look like for you, from waking up to going to bed?

Section B: Positive Incident Elicitation (Homework Success)

I'd like you to think of a specific time when you completed your homework successfully and felt good about it.

- **What happened?** Can you walk me through that day from the beginning? (Where were you? What time of day was it?)
- **What helped you?** Did you use any books? Did anyone help you? What exactly did they do?
- **How was this time different** from times when homework is difficult?

Section C: Negative Incident Elicitation (Homework Difficulty)

Now, think of a specific time when you wanted to study or do your homework, but you just couldn't.

- **What happened exactly?** Tell me the whole story. (Where were you? What was the problem?)
- **What stopped you?** Was it a person, a chore, no light, no book, or something else?
- **What did you do when you realized you could not study?** Did you ask anyone for help? If not, why not?
- **What would have helped** you in that moment?

Section D: Sources of Support and Resources

1. You mentioned [sibling/parent/friend/teacher helps you]. Can you describe a specific time they helped you? What did they do or say?
2. If you have a very difficult question in your homework, who is the one person you wish you could ask? Why that person?
3. Let's talk about books. Where do you usually get the books you need for your studies? (Probe: home, school store, friend, library). Tell me about the last time you got a book.

Section E: Libraries and Future Hopes

1. Tell me about your school's "book room" or "library." What does it look like? When was the last time you went there?
2. If you could change one thing about your school to make studying easier, what would it be?
3. Is there anything else about learning or studying that you think is important for me to know?

Appendix 5. An illustration of the application of the six-phase thematic analysis framework to data analysis

To illustrate the application of Braun and Clarke's (2006) six-phase framework to this study, the development of the theme "**Lack of Parental Academic Support**" (under 4.2 *Barriers to Self-Managed Learning*) is traced below.

Phase 1: Familiarization

The researcher repeatedly read through the 10 school transcripts and reviewed the open-ended survey responses. Immersion in the data revealed frequent, unprompted mentions of who helps - or does not help - with homework. Notes highlighted phrases like "*my parents are always busy*," "*my sister helps me*," and "*the teacher is the right person*." This phase sensitized the analyst to the apparent gap between parental presence and academic involvement.

Phase 2: Initial Coding

From the raw data, specific segments were assigned initial descriptive codes. Examples from the findings include:

- "*Only 38 out of 100 pupils (38%) identified a parent as a source of homework help.*" → **Code: Low parental help frequency**
- "*My mother gives me answers, but does not explain how she got them.*" (Dabani Girls) → **Code: Parental help is procedural, not pedagogical**
- "*The right person to help me is my teacher, because she knows everything.*" (Busibembe) → **Code: Teacher preferred over parent for explanations**

Phase 3: Searching for Themes

Related codes were collated to form candidate themes. Codes such as *Low parental help frequency*, *Siblings as primary helpers*, *Parental help is procedural*, and *Teacher preferred over parent* were grouped. This cluster pointed to a broader pattern of **inadequate parental academic scaffolding**, which was tentatively named "Absence of Parental Academic Guidance."

Phase 4: Reviewing Themes

The candidate theme was checked against the entire dataset to ensure it accurately reflected the data. For instance, the review confirmed consistency: across all 10 schools, parental help was minimal and often superficial. Disconfirming evidence was also considered; for example, Global Leadership Private School showed higher parental involvement, which refined the theme to acknowledge variability between public and private contexts. The theme was thus revised to "**Lack of Parental Academic Support**," recognizing it as a prevalent barrier, not an absolute absence.

Phase 5: Defining and Naming Themes

The essence of the theme was precisely articulated: *This theme captures the minimal and often non-instructional role of parents in pupils' homework support, despite their physical presence. It highlights a reliance on siblings and a strong pupil preference for teachers as academic guides,*

Corresponding author

Fredrick Kiwuwa Lugya can be contacted at: flugya@gmail.com