

HELPDESK RESPONSE 175

Sierra Leone Digital Learning Landscape Analysis

Developing the National Digital Learning Strategy

Date January 2025

Authors Nafisa Waziri
Abdal Mufti
Sharanya Ramesh Vasudevan
Iman Beoku-Betts
Oluwatomisin Oyedele

DOI 10.53832/edtechhub.1053



**UK International
Development**

Partnership | Progress | Prosperity



THE WORLD BANK

unicef

for every child

About this document

Recommended citation Waziri, N., Mufti, A., Ramesh Vasudevan, S., Beoku-Betts, I., & Oyedele, O. (2025). *Sierra Leone Digital Learning Landscape Analysis: Developing the National Digital Learning Strategy*. (Helpdesk Response No. 175). EdTech Hub. <https://doi.org/10.53832/edtechhub.1053>

Available at <https://docs.edtechhub.org/lib/66FH97GN>. Available under [Creative Commons Attribution 4.0 International](#).

Licence

Creative Commons Attribution 4.0 International

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

This licence means you are free to share and adapt for any purpose, even commercially, as long as you give appropriate credit, provide a link to the licence, and indicate if changes were made. You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use. Please refer to the link for more details.



Reviewers

Arjun Upadhyay, Laila Friese, World Bank Sierra Leone, UNICEF Sierra Leone, and FCDO Sierra Leone

Acknowledgement

This report was commissioned by the Sierra Leone Ministry of Basic and Senior Secondary Education and the Teaching Service Commission. It was produced in partnership with the World Bank Sierra Leone, UNICEF Sierra Leone, and the UK Government's Foreign Commonwealth and Development Office (FCDO) Sierra Leone. Technical guidance and support were provided by the National Digital Learning Strategy Steering Committee led by Dr Yatta Kanu, Mrs Adama Momoh, and Mr Lans Keifala and under the guidance of Minister Conrad Sackey.

About EdTech Hub

EdTech Hub is a global research partnership. Our goal is to empower people by giving them the evidence they need to make decisions about technology in education. Our [evidence library](#) is a repository of our latest research, findings and wider literature on EdTech. As a global partnership, we seek to make our evidence available and accessible to those who are looking for EdTech solutions worldwide.

EdTech Hub is supported by UKAid, Bill & Melinda Gates Foundation, World Bank, and UNICEF. The views in this document do not necessarily reflect the views of these organisations. To find out more about us, go to edtechhub.org/. Our evidence library can be found at docs.edtechhub.org/lib/.

EdTech Hub Helpdesk

The Helpdesk is the Hub's rapid response service, available to FCDO advisers and World Bank staff in 70 low- and lower-middle-income countries (LMICs) and UNICEF regional and country offices. It delivers just-in-time services to support education technology planning and decision-making. We respond to most requests in 1–15 business days. Given the rapid nature of requests, we aim to produce comprehensive and evidence-based quality outputs, while acknowledging that our work is by no means exhaustive. For more information, please visit <https://edtechhub.org/edtech-hub-helpdesk>.

Contents

<i>List of figures, tables, and boxes</i>	4
<i>List of abbreviations and acronyms</i>	5
1. Introduction	6
1.1 Sierra Leone's National Digital Learning Strategy	6
1.2 Purpose and methodology of the landscape analysis	7
1.3 Report outline	8
2. The education context in Sierra Leone	10
2.1 Education landscape overview	10
3. EdTech governance in Sierra Leone	16
3.1 National EdTech policies, strategies, and plans	16
3.2 Growing regional focus on EdTech	26
4. Snapshot of ICT infrastructure in Sierra Leone	27
4.1 Connectivity	27
4.2 Computers and devices	28
4.3 Capabilities	29
4.4 Content	29
5. Student profiles in Sierra Leone	31
5.1 Girl students	31
5.2 Students from low-income households	32
5.3 Students living in rural locations	33
5.4 Students with special educational needs and disabilities (SEND)	34
5.5 Findings from student focus group discussions	35
6. Teacher and school leader voices	40
6.1 Digital readiness	40
6.2 Context for digital learning	43
7. EdTech actors and interventions in Sierra Leone	51
7.1 Government and non-governmental actors in Sierra Leone	51
7.2 EdTech interventions in Sierra Leone	59
8. MBSSE and TSC EdTech focus areas	66
8.1 EdTech focus areas	66
9. EdTech challenges and opportunities in Sierra Leone	70
9.1 Challenges and opportunities	70
9.2 Next steps	74
References	75
Annex 1. KII participant profiles	83
Annex 2. Student FGD information	84
Annex 3. Teacher and school leader survey	85
Annex 4. Detailed KII findings	85

Figures

Figure 1. NDLS development phases, indicating where the current landscape analysis sits in the process	7
Figure 2. Key steps to conduct the landscape analysis	8
Figure 3. Basic and senior secondary education structure in Sierra Leone	10
Figure 4. Survey responses on basic digital knowledge and abilities	40
Figure 5. Survey responses on searching for content online	41
Figure 6. Survey responses on range of digital skills	42
Figure 7. Survey responses related to online safety	43
Figure 8. Use of EdTech in school	43
Figure 9. Frequency of use of EdTech	44
Figure 10. Survey responses on the use of EdTech	45
Figure 11. Survey responses on support for the use of EdTech	46
Figure 12. Survey responses on capacity development support	47
Figure 13. Other CPD activities with digital technologies	48
Figure 14. Survey responses on quality of CPD experience	49
Figure 15. Teacher confidence in using EdTech	40
Figure 16. EdTech priorities of respondents	50

Tables

Table 1. Education expenditure in Sierra Leone	11
Table 2: Public and private schools: Distribution by level	13
Table 3: Percentage of teachers paid by the government by school level	13
Table 4: Pupil-to-teacher ratio (PTR) and pupil-to-qualified-teacher ratio (PTQR) by school level	14
Table 5. GER across all levels	14
Table 6. School enrolment data by school level as reported by †MBSSE (2023)	15
Table 7. National EdTech policies, strategies, and plans in Sierra Leone	16
Table 8. Key government stakeholders in EdTech in Sierra Leone	51
Table 9. Key non-governmental stakeholders in EdTech in Sierra Leone	54
Table 10. Key EdTech interventions by development and private sector partners	59
Table 1A. Key informant interview participants	83

Boxes

Box 1. Free Quality School Education Program (†MBSSE, 2018)	12
Box 2: Review of EdTech in Rwanda	26
Box 3. Educational Technology Readiness Index	70

Abbreviations and acronyms

DSTI	Directorate of Science, Technology and Innovation
EMIS	Education Management Information Systems
GER	Gross Enrolment Rate
GoSL	Government of Sierra Leone
GPE	Global Partnership for Education
ICT	Information and communication technology
ITU	International Telecommunication Union
JSS	Junior Secondary School
KII	Key Informant Interviews
LEG	Local Education Group
MBSSE	Ministry of Basic and Senior Secondary Education
MEYS	Ministry of Education, Youth, and Sports
MTHE	Ministry of Technical and Higher Education
NDLS	National Digital Learning Strategy
PQTR	Pupil-to-qualified-teacher ratio
PTR	Pupil-to-teacher ratio
RTP	Radio Teaching Program
SEND	Students with Special Education Needs and Disabilities
SQAO	School Quality Assurance Officers
SSEIP	Sierra Leone Secondary Education Improvement Program
SSS	Senior Secondary School
TSC	Teaching Service Commission
TVET	Technical and Vocational Education and Training

1. Introduction

At the time of writing, EdTech Hub is supporting the Sierra Leone Ministry of Basic and Senior Secondary Education (MBSSE) and the Teaching Service Commission (TSC) with the development of the National Digital Learning Strategy (NDLS). This was a request submitted by the World Bank, Sierra Leone. EdTech Hub is leading the development process, which was initiated with the creation of a steering committee, an inception phase outlining the pathway for the creation of the NDLS, and the creation of this landscape analysis combining primary and secondary research. See [Figure 1](#) below for an illustration of the different phases in developing the NDLS. The landscape analysis will pave the way for the development of the NDLS by using an evidence-based approach to determine key areas of focus for the MBSSE and TSC for the next five years.

This section provides an overview of the digital landscape and the landscape analysis, including background, context, purpose, methodology, and an outline of this report.

1.1 Sierra Leone's National Digital Learning Strategy

In the last two decades, Sierra Leone has made significant progress in expanding access to education despite experiencing multiple challenges, including an Ebola crisis and, more recently, the Covid-19 pandemic, which have hindered the delivery of education services. Consequently, the MBSSE and TSC have continued to explore ways to leverage technology to address the teaching and learning crisis in the country and deliver inclusive, quality education for all learners ([Sengeh, 2021](#)). With this aim in mind, the MBSSE and TSC are focused on developing a National Digital Learning Strategy (NDLS) that will address how technology-supported interventions can be leveraged to meet and respond to the needs of stakeholders across the nation ([Sengeh, 2021](#)). The MBSSE and TSC are collaborating with the World Bank and EdTech Hub to create the NDLS with support from UNICEF and the UK Foreign, Commonwealth and Development Office (FCDO). The strategy will ensure that student learning is at the centre, highlighting key ways EdTech can be used to promote higher equity and access to learning services in Sierra Leone.

The NDLS will focus on learners in the first 15 years of their education, comprising three years of pre-primary education, six years of primary education, three years of junior secondary education and three years of senior secondary education ([GoSL, 2023](#)). However, it is important to

mention that the systematic and governance level improvements brought about in the system as a result of the operationalisation of the strategy will possibly also impact areas of higher and non-formal education.

Furthermore, aligning the NDLS with other national policies and education sector plans is also central, ensuring that EdTech is implemented while keeping other education sector goals and strategic priorities in mind.

1.2 Purpose and methodology of the landscape analysis

Figure 1. NDLS development phases, indicating where the current landscape analysis sits in the process



The first phase of the development of the NDLS was the inception phase. During this stage, EdTech Hub facilitated the creation of a steering committee composed of key members from the MBSSE, TSC, and other government entities and development partners such as the World Bank, FCDO, and UNICEF. EdTech Hub developed an inception plan that outlined key deadlines and deliverables and drafted a pathway for the creation of the NDLS. This inception report was presented during the first steering committee meeting, during which steps for creating the landscape analysis were discussed and finalised.

The inception phase was completed in March 2024, with a final plan outlining the pathway for all future phases. To ensure sector-wide support of key stakeholders and alignment of the strategy with other key initiatives, a steering committee was established with the core purpose of overseeing the development and finalisation of the NDLS.¹

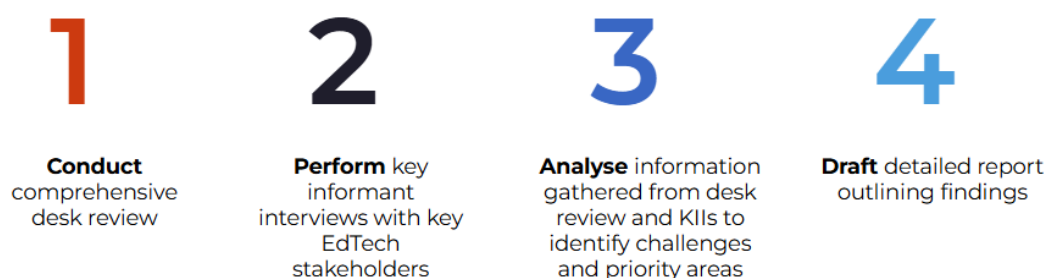
¹ The steering committee comprises representatives from MBSSE, TSC, Presidential Delivery Unit, Ministry of Technical and Higher Education (MTHE) UNICEF, World Bank, FCDO, and EdTech Hub.

This digital learning landscape analysis seeks to identify the achievements and progress made over the past decade, as well as key challenges and priority areas, with the goal of informing the development of the NDLS. To achieve these objectives, EdTech Hub used both primary and secondary data collection methods, including key informant interviews (KIIs), surveys, focus group discussions (FGDs), and a comprehensive desk review of existing policy documents. We also reviewed education sector analysis reports, intervention websites, and other relevant sources. This was done to gain insight into existing EdTech initiatives, interventions, and challenges within the country.

Overall, 12 stakeholders were interviewed for this study, representing national, international, district, and school-level actors in the education sector. In addition, FGDs were conducted with 30 students from schools in Freetown to better understand their perspectives on the use of technology for learning. Data was collected through KIIs and FGDs from July to October 2024. A purposive sampling strategy was adopted for this phase with targeted organisations and positions within agencies.

[Figure 2](#) below outlines the key steps undertaken to complete the landscape analysis. Additional participant information for the KIIs and the FGDs can be found in [Annex 1](#).

Figure 2. *Key steps to conduct the landscape analysis*



1.3 Report outline

The report is organised as follows:

[Section 1](#) provides the background and context of this digital learning landscape analysis, highlighting the purpose, methodology, and report outline.

[Section 2](#) includes an overview of the education sector in Sierra Leone, outlining the structure, key education sector initiatives, and data regarding schools, teachers, and students in Sierra Leone.

[Section 3](#) gives an overview of key policies, plans, and strategies that govern the digital learning landscape in Sierra Leone.

[Section 4](#) provides a snapshot of the information and communication technology (ICT) infrastructure in Sierra Leone, focusing on household ownership of key information and communication technology (ICT) infrastructure and access to EdTech in schools.

[Section 5](#) gives a broad overview of:

- The student profiles of marginalised learners in Sierra Leone, including girls, particularly those who are or have been pregnant and are parent learners, children with disabilities, children from low-income families, and children from rural and underserved communities.
- Findings from the FGDs with 30 learners in Sierra Leone. This section aims to highlight the challenges these learners face in accessing education more generally, as well as EdTech.

[Section 6](#) provides an overview of the findings from a set of surveys where the participants included teachers, head teachers, principals, and School Quality Assurance Officers (SQAOs) representing nine districts.

[Section 7](#) highlights key government and non-governmental actors in Sierra Leone and a non-exhaustive summary of notable EdTech interventions launched by the country's government, development partners, non-governmental organisations, and private sector partners.

[Section 8](#) provides an overview of key EdTech focus areas for the MBSSE and TSC, which were determined by areas of focus in government and donor-funded EdTech programmes.

[Section 9](#) highlights key challenges that exist within the digital learning landscape in Sierra Leone.

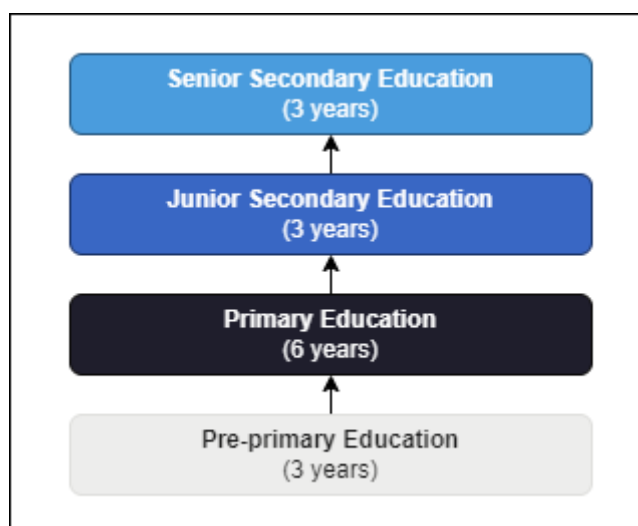
2. The education context in Sierra Leone

This section provides an overview of Sierra Leone's education sector. The summary covers key data about education policies, basic infrastructure, and teachers and learners in Sierra Leone.

2.1 Education landscape overview

Sierra Leone's basic education system is organised into 12 years of schooling: three years of pre-primary education, six years of primary education, and three years of junior secondary education (JSS) ([GoSL, 2023](#)). This is then followed by three years of senior secondary education (SSS), which can be either general education or technical and vocational education and training (TVET). Tertiary education includes teacher education and courses at universities, polytechnics, and professional colleges. Participation in basic education is compulsory, with the Education Act mandating that the government support one year of free compulsory pre-school education ([Mullan & Taddese, 2020](#)).

Figure 3. Basic and senior secondary education structure in Sierra Leone



The responsibility for Sierra Leone's education system is shared between the MBSSE, the Ministry of Technical and Higher Education (MTHE), and the Tertiary Education Commission (TEC). Additionally, the Ministry of Social Welfare, Gender, and Children's Affairs collaborates with education ministries to support marginalised groups ([TSC, 2020](#)).

The MBSSE in Sierra Leone formulates and implements education policies, ensuring access to quality education for all. It promotes free and inclusive

education, especially through initiatives like the Free Quality School Education Program. The ministry also oversees curriculum development and teacher training ([↑GoSL, 2023](#)). The TSC,² which falls within the MBSSE, focuses on improving teacher management and performance. The commission plays a critical role in managing the education workforce. It oversees teacher recruitment, deployment, and professional development, ensuring fair and transparent processes. Additionally, the TSC establishes teacher performance and accountability standards to improve education quality nationwide.

The Government of Sierra Leone's expenditure on education increased from 19% in 2019 to 20% in 2022. [Table 1](#) shows the country's actual and committed education budgets from 2019 to 2022 ([↑Ministry of Finance, 2023](#)). This aligns with the Global Partnership for Education (GPE), which recommends that governments commit 20% of the national budget to education ([↑GPE, 2018](#)).

Table 1. *Education expenditure in Sierra Leone*

	2019		2020		2021		2022	
	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual
Total public expenditure	21%	19%	22%	20%	22%	18%	21%	20%
% of GDP	3%	4%	3%	4%	3%	3%	3%	3%

While this increase in expenditure is positive, the Government of Sierra Leone's education spending as a percentage of Gross Domestic Product (GDP) remains slightly lower than the Incheon Declaration recommendation for countries ([↑UNESCO, 2015](#)). This declaration recommends that countries allocate at least 4%–6% of their GDP to education. The commitment has remained largely stagnant at 3% from 2019 to 2022 ([↑Ministry of Finance, 2023](#)). In August 2018, the government launched the Free Quality School Education Program to make pre-primary, primary, and secondary education free for all students in government-approved schools ([↑MBSSE, 2018](#)).

² See <https://tsc.gov.sl/>. Retrieved 15 January 2025.

Box 1. *Free Quality School Education Program* ([↑MBSSE, 2018](#))

The introduction of the Free Quality School Education Program in 2018 has been a cornerstone policy, aiming to provide free and compulsory education at both primary and secondary levels. The policy underscores the government's commitment to increasing enrolment rates, as mentioned in Table 3 and Table 4 and improving the quality of education across the country. Despite these efforts, the education sector faces significant challenges, including inadequate infrastructure, a shortage of trained teachers, and limited access to learning materials, particularly in rural areas.

2.1.1 Schools in Sierra Leone

In Sierra Leone, schools are owned by the Government of Sierra Leone (central or local) or other non-state entities, as indicated in [Table 2](#) below. Out of 12,466 schools captured in the 2022 census, the majority of 10,393 (83%) are public schools, while 2,073 (17%) are run by private individuals and entities. Public schools include those receiving financial and/or material support from the Government of Sierra Leone and are known as government-assisted schools. Public schools are either government-owned or government-assisted. Government schools are those constructed and owned by either the central government or local councils. In contrast, government-assisted schools are public schools owned by faith-based organisations, communities, or other institutions or organisations supported by the Government of Sierra Leone. Schools that do not receive either financial or material support from the government are categorised as non-supported schools. In 2022, the number of public schools receiving government support increased by 11.2%, from 6,829 in 2021 to 7,600 in 2022 ([↑MBSSE, 2021c](#)). The government has been working to ensure that unapproved schools meet the set minimum standards or close them if alternative provisions are available ([↑MBSSE, 2021c](#)).

Table 2: *Public and private schools: Distribution by level* (↑MBSSE, 2023, p. 14)

School level	Public	Private	Grand total
Pre-primary	1,262	737	1,999
Primary	6,701	757	7,458
Junior secondary	1,697	382	2,079
Senior secondary	733	197	930
Total	10,393	2,073	12,466

2.1.2 Teachers

The Annual School Census of 2022 data shows that there are 91,858 teachers in total across both public and private schools in Sierra Leone, of which 26,758 are female and 65,140 are male. Public schools account for most teachers in Sierra Leone, with 78,832 teachers. The remaining 13,026 teachers, representing around 14% of the teaching population, work in private schools. The latest MBSSE data shows that 62% of all teachers are qualified for the levels they are teaching (a drop from 67% in 2021) and that 17.5% of teachers are first-time teachers (↑MBSSE, 2023, p. 41).³

According to the 2022 Census, 40% of the teachers in Sierra Leone receive a government salary (↑MBSSE, 2023, p. 44). These teachers are known as ‘pin-coded teachers’. All other teachers are either volunteer teachers or paid by other sources. Table 3 below provides a breakdown of teachers’ salary sources.

Table 3: *Percentage of teachers paid by the government by school level* (↑MBSSE, 2023, p. 43)

Level	Teachers on government payroll (%)
Pre-primary	17
Primary	41
Junior secondary	40
Senior secondary	43
Total	40

³ The criterion for being a qualified teacher is having a basic high school degree (↑MBSSE, 2023, p. 43).

In 2022, the average pupil-to-teacher ratio (PTR) was recorded at 36:1 for all school levels, compared to 39:1 in 2021 ([↑MBSSE, 2023](#), p. 42). However, the PTR varies significantly from district to district, with Bonthe Municipal having the lowest PTR (25:1) and Kono District having the highest (49:1) ([↑MBSSE, 2023](#), p. 43).⁴

Table 4: *Pupil-to-teacher ratio (PTR) and pupil-to-qualified-teacher ratio (PTQR) by school level* ([↑MBSSE, 2023](#), pp. 46–47)

Level	PTR	PQTR
Pre-primary	26:1	43:1
Primary	42:1	63:1
Junior secondary	27:1	42:1
Senior secondary	36:1	89:1
Total	36:1	59:1

2.1.3 Students

As of 2022, 3,343,470 students were enrolled in schools across Sierra Leone. Enrolment increased from 3,131,440 in 2021 to 3,343,470 in 2022, highlighting an increase of 7%. Of these students, 1,635,050 (49%) were boys, and 1,708,420 (51%) were girls ([↑MBSSE, 2023](#), p. 32). There have been improvements in the Gross Enrolment Rate (GER) at the primary level in Sierra Leone over the last five years. The GER improved from 110% in 2018 to 153% in 2023. The rates for the last five years are presented below in [Table 5](#).

Table 5. *GER across all levels* ([↑MBSSE, 2023](#))

	2018	2019	2020	2021	2022
Pre-primary	12%	14%	19%	21%	25%
Primary	110%	140.37%	137.54%	151.73%	156.80%
Secondary	42%	41.57%	58.95%	60.24%	70.73%

⁴ The PQTR is calculated by excluding untrained teachers and trained teachers who are not qualified for the level they teach from the total number of teachers. Across all schooling levels, PQTRs are significantly higher than PTRs, with an overall PQTR of 59:1 compared to a PTR of 36:1. The overall PQTR remained nearly the same in 2021 and 2022, at 58:1 and 59:1 respectively ([↑MBSSE, 2023](#), p. 47). However, the PQTR at the senior secondary level dropped from 94:1 in 2021 to 89:1 in 2022.

Table 6 below gives the total enrolment in the country across different levels.

Table 6. *School enrolment data by school level as reported by [MBSSE \(2023\)](#)*

Education	Details	Total enrolment
Pre-primary	Total	170,985
	Male	82,085
	Female	88,900
Primary	Total	2,045,379
	Male	1,001,747
	Female	1,043,632
Secondary	Total	638,218
	Male	311,487
	Female	326,731

3. EdTech governance in Sierra Leone

This section provides an overview of the digital learning landscape in Sierra Leone, mapping the work and interventions of key stakeholders.

3.1 National EdTech policies, strategies, and plans

Although Sierra Leone has yet to establish a dedicated EdTech or ICT in Education policy, several pieces of government legislation, policies, and plans outline strategies for integrating technology into education, including those listed in [Table 7](#). In addition, the Directorate of Science, Technology and Innovation (DSTI) has also developed a National Innovation and Digital Strategy with a 10-year plan to develop the infrastructure and capacity of the human resources needed to capitalise on available and newer technologies ([DSTI, 2019](#)).

Table 7. *National EdTech policies, strategies, and plans in Sierra Leone*

National policy/strategy	Ministry/agency involved	Description
Basic and Senior Secondary Education Act (2023)	Ministry of Basic and Senior Secondary Education (MBSSE)	Purpose/objectives: In 2023, Sierra Leone’s parliament passed the revised Basic and Senior Secondary Education Act into law. The 2023 Act aims to reform the Basic and Senior Secondary Education system, making it free, accessible, compulsory, all-inclusive and rights-based (GSL, 2023).

National policy/strategy	Ministry/agency involved	Description
		Sector: Education Key EdTech components: The Act includes several technology-related provisions, such as expanding access to internet technology resources and equipment to enhance teaching and learning in schools (Article 67), encouraging and pursuing innovation and technology application in teaching and learning, including hands-on learning and project-based instruction (Article 84), and providing distance and remedial learning through radio, television, and other technologies during emergencies (Article 91) (↑GoSL, 2023); (↑UNESCO, 2023).
National ICT Policy of Sierra Leone (2009)	Ministry of Information & Communications	Purpose/objectives: The National ICT Policy, established in 2009, recognises the importance of ICT for social and economic development and details the government's preferred ICT solutions to development challenges in Sierra Leone (↑Ministry of Information and Communications, 2009). Sector: Information and communications Key components: The main EdTech objectives and interventions outlined in the policy document are:

National policy/strategy	Ministry/agency involved	Description
		■ Training teachers to use ICT as a tool for teaching, education planning and administration by integrating ICT courses into teacher training curricula and refresher training programmes; ■ Incorporating ICT into the school curricula at all levels; ■ Providing free ICT distance learning opportunities via various channels and establishing education services and online ICT modules accessible to all learners; ■ Equipping multipurpose and adult literacy centres with e-learning kiosks and ensuring ICT tools are available in educational institutions; ■ Establishing access points nationwide to support training and capacity building for these marginalised groups (Ministry of Information and Communications, 2009).
National Education Policy (2010)	Ministry of Education, Youth, and Sports (MEYS) ⁵	Purpose/objectives: The 2010 National Education Policy seeks to ensure equitable access and opportunities to learning for all children and young

⁵ The Ministry of Education, Youth, and Sports was first renamed as the Ministry of Education, Science, and Technology (MEST), and then, in 2018, it split into two separate ministries: the Ministry of Basic and Senior Secondary Education (MBSSE) and the Ministry of Technical and Higher Education (MTHE).

National policy/strategy	Ministry/agency involved	Description
		people in Sierra Leone. To that end, it recognises ICT as a crucial tool for enhancing access to education and improving the management and operations of the education system (↑MEYS, 2010). Sector: Education Key components: The main strategies for integrating ICT in education align with the National ICT policy. These strategies include: ■ Introducing ICT education across all educational institutions; ■ Developing specialised ICT training programmes for marginalised learners such as out-of-school youths, people with special needs, and learners in non-formal centres; ■ ICT training for teachers and all staff of the MEYS to enhance teaching and learning and improve educational planning and management (↑MEYS, 2010).
National Policy on Radical Inclusion in Schools (2021)	Ministry of Basic and Senior Secondary Education (MBSSE)	Purpose/objectives: The policy aims to ensure that all schools are accessible to and inclusive of all children, particularly the most marginalised. The policy focuses specifically on four marginalised groups, namely girls (especially girls who are pregnant and in school or are parent learners), children from low-income families,

National policy/strategy	Ministry/agency involved	Description
		children with disabilities, and children from rural and underserved areas (↑MBSSE, 2021b). Sector: Education Key components: To support education delivery to these harder-to-reach children, the policy outlines several EdTech strategies, including: ■ Deploying EdTech to enhance teacher training and mentoring in remote areas; ■ Exploring blended learning approaches in underserved regions; ■ Developing innovative learning options for hard-to-reach groups through the use of EdTech, radio teaching programmes, blending learning approaches, and print materials (↑MBSSE, 2021b). A 2021–2026 Implementation Plan was also finalised and validated in March 2022(↑MBSSE, 2022a). The implementation plan details strategies and corresponding activities to realise the policy’s goals. Regarding policy implementation, the MBSSE has introduced SMS-based solutions for accessing learning materials, exam resources, and exam results (↑Sengeh,

National policy/strategy	Ministry/agency involved	Description
		2022). The ministry has also undertaken work to expand radio teaching (↑Sengeh, 2022).
National Innovation and Digital Strategy (NIDS) (2019–2029)	Directorate of Science, Technology and Innovation (DSTI)	Purpose/objectives: The key initiatives to integrate technology in education service delivery draw from the overarching vision set by the government in the 10-year plan set through the NIDS. The strategy is a comprehensive plan aimed at fostering digital transformation and innovation across the country. The strategy's vision is transforming Sierra Leone into an inclusive, innovative, and digitally advanced society. Its objectives are to enhance digital infrastructure, promote digital literacy, encourage innovation, and leverage digital solutions for socio-economic development (↑DSTI, 2019). Sector: Information and communication Key components/interventions: Key components of the strategy include improving digital infrastructure, such as enhancing internet accessibility, particularly in rural areas, establishing reliable data centres to support digital services, and implementing robust cybersecurity measures to protect digital assets (↑DSTI, 2019). In terms

National policy/strategy	Ministry/agency involved	Description
		of digital governance, the plan includes digitalising government services to improve efficiency and transparency and introducing a national digital ID system to streamline service delivery. Digital skills and education are prioritised through nationwide digital literacy programmes, integrating ICT into the education system to prepare students for the digital economy, and providing ongoing training for the workforce to adapt to technological changes (DSTI, 2019).
Sierra Leone Education Sector Plan (ESP) (2022–2026)	Ministry of Basic and Senior Secondary Education (MBSSE) Ministry of Technical and Higher Education (MTHE)	Purpose/objectives: The 2022–2026 Education Sector Plan outlines the major priorities of the MBSSE and MTHE, which aim to improve learning outcomes for all children and young people in Sierra Leone. This ESP also reflects the increased focus on using technology to support learning. Sector: Education Key components: The ESP outlines several strategies for using technology to enhance learning and education delivery. These include developing and disseminating digital learning materials, such as e-books, educational videos, and interactive content tailored to the national

National policy/strategy	Ministry/agency involved	Description
		curriculum to support both teachers and students (↑MBSSE & MTHE, 2022). The plan also emphasises using technology to provide ongoing professional development for teachers through: ■ Online courses, webinars, and digital communities of practice; ■ Equipping schools with reliable internet access, computers, and other essential digital devices and implementing an education management information system (EMIS) to collect, analyse, and use data for informed decision-making at all levels of the education sector (↑MBSSE & MTHE, 2022). Strategy implementation is already underway. The Teaching Service Commission is contracting private sector partners CGA Technologies and Fab Inc. to develop a teacher management information system to strengthen teacher management and enhance transparency and accountability in the teaching service (↑CGA Technologies, no date).

National policy/strategy	Ministry/agency involved	Description
		The plan includes provisions for expanding distance learning opportunities to address challenges such as school closures and access issues through radio, television, and online platforms, allowing lessons to reach students unable to attend school physically (↑MBSSE & MTHE, 2022). The plan outlines the use of assistive products and technologies, such as glasses, braille computers, hearing aids, and wheelchairs, to support students with disabilities, ensuring that all students have access to quality education through equipment, tools, and software designed to accommodate various learning needs and disabilities (↑MBSSE & MTHE, 2022).
National Strategy for Out-of-School Children in Sierra Leone (2022)	Ministry of Basic and Senior Secondary Education	Purpose/objectives: The National Strategy for Out-Of-School Children (OOSC) outlines the government's approach to improving access to education for all students in Sierra Leone, especially the most marginalised. It is informed by and builds on findings from the national study of OOSC conducted by the MBSSE (↑GoSL et al., 2021). The strategy

National policy/strategy	Ministry/agency involved	Description
		complements the National Policy on Radical Inclusion in Schools (↑MBSSE, 2022b). Sector: Education Key components: The key EdTech approach outlined in the strategy document focuses on integrating and recording data on OOSC and other marginalised learners into the EMIS to target vulnerable learners better, increase their access to schools, and reduce dropout rates (↑MBSSE, 2022b). The OOSC strategy also emphasises the importance of ensuring data security by implementing strong access controls and encrypted databases, while also limiting the collection of children’s biometrics (↑MBSSE, 2022b).

While these policies are a positive sign, further evidence is required on how to create additional synergies between the policies. The lack of co-ordination between education policies in Sierra Leone poses a significant challenge to the effectiveness and equity of the education system. Despite numerous reforms and initiatives to improve access, quality, and inclusivity, the absence of a coherent, unified approach can lead to fragmented implementation and overlapping efforts. Various stakeholders, including the government, non-governmental organisations, and international partners, sometimes work in silos, resulting in inconsistent priorities and resource allocation. Effective co-ordination and alignment of policies are crucial to ensuring that interventions are complementary, address systemic issues holistically, and contribute to a cohesive education strategy that benefits all learners.

3.2 Growing regional focus on EdTech

In addition to EdTech policies and plans within Sierra Leone, there is an increased regional focus on EdTech. The African Union's Digital Education Strategy is designed to leverage digital technologies to revolutionise education across the continent ([↑African Union, 2022](#)). It aims to embody a comprehensive approach to transforming education through digital technologies, focusing on infrastructure development, curriculum and content enhancement, teacher training, equity and inclusion, policy and governance, and public-private partnerships. This provides a guiding framework for Sierra Leone to use in shaping its approach to using EdTech to improve learning outcomes.

There are also specific country-level examples of approaches to EdTech and digital learning that can be looked at as examples. The example of Rwanda summarised below provides insights into developing a comprehensive approach to digital learning

Box 2: *Review of EdTech in Rwanda* ([↑Kimenyi et al., 2020](#))

Rwanda's digital learning landscape is rapidly evolving, driven by its commitment to becoming a knowledge-based economy, as outlined in its Vision 2020 and Vision 2050 strategies. Government initiatives such as the Smart Rwanda Master Plan and the One Laptop Per Child (OLPC) programme highlight the integration of ICT in education, aiming to enhance digital literacy and provide students with 21st-century skills. Key programmes like the Digital Ambassador Program and the Smart Classrooms Initiative focus on equipping classrooms with technology, training teachers, and developing e-content aligned with the national curriculum. Innovation hubs like kLab and FabLab support young innovators and EdTech startups, fostering collaboration and the development of tailored educational solutions. Partnerships with global tech companies, non-governmental organisations, and educational institutions further strengthen Rwanda's EdTech ecosystem. Public-private collaborations, university programmes, and incorporating digital skills in TVET courses are central to advancing educational technology. However, challenges such as infrastructure gaps, including limited internet access, erratic electricity supply in rural areas, and the need for continuous teacher training and sustainable funding, remain significant. Despite these challenges, ongoing investments and a growing number of EdTech startups signal a promising future for Rwanda's education sector, with successful pilot programmes expected to scale and reach more students nationwide.

4. Snapshot of ICT infrastructure in Sierra Leone

This section provides an overview of key factors highlighted under the '4C's': **Connectivity, Computers (and devices), Capabilities, and Content**. These are key EdTech necessities that facilitate students' access to digital learning opportunities and are critical to developing and implementing EdTech interventions in Sierra Leone.

4.1 Connectivity

Access to electricity and reliable internet services remains a significant challenge in Sierra Leone. Only 21.1% of Sierra Leone households have access to electricity via the national grid (20.5%), or mini-grids (0.6%), and 14.7% have off-grid access, with significant disparities in access between rural and urban areas ([↑Kemp, 2023](#)). Off-grid sources predominantly include solar products such as solar lanterns, solar home systems, and solar lighting systems, and off-grid use is largely limited to rural areas ([↑ITU, 2022](#)).

This challenge extends to educational institutions, where 75% of schools do not have access to electricity, including 61% of pre-primary schools, 85% of primary schools, 62% of JSS, and 48% of SSS ([↑MBSSE, 2023](#)). The majority of schools in Sierra Leone do not have access to national grid electricity, and only a tiny percentage can rely on alternative sources such as generators (5%) or solar power (3%) to meet their electricity needs ([↑MBSSE, 2023](#)). This unreliable power supply makes it challenging to use digital devices for educational purposes effectively.

In 2023, 21.2% of people in Sierra Leone had internet access, meaning that most people do not have internet access, and those who do are primarily located in urban areas with better infrastructure ([↑Komminoth, 2023](#)). Furthermore, most pupils attend schools without available internet for teaching and learning purposes ([↑MBSSE, 2023](#)). For instance, 99% of public pre-primary and primary school students do not have internet access. Likewise, 95% of students in JSS and 91% of students in SSS also have no internet access ([↑MBSSE, 2023](#)). According to a study conducted by the GIGA⁶ initiative on school connectivity, only 205 out of 11,200 schools had

⁶ GIGA is a joint initiative between UNICEF and the International Telecommunication Union (ITU) to connect all schools worldwide to the internet by 2030.

internet connectivity, although 80% of schools are within 3G or 4G coverage areas ([↑GIGA & UNICEF, 2023](#)).

Furthermore, factors such as the high cost of internet services continue to make it unaffordable for many families and schools. On average, in 2023, one gigabyte of mobile internet in Sierra Leone cost USD 0.67. Out of 33 data plans measured in the country, the lowest price observed was USD 0.64 per gigabyte for 30 days ([↑Galal, 2024](#)). While several initiatives are underway to improve digital connectivity in Sierra Leone, much more needs to be done to ensure affordable access to electricity and internet services that will allow teachers and students to leverage technology to improve learning.

4.2 Computers and devices

Access to computers and other technological devices is necessary to integrate technology to support teaching and learning in Sierra Leone. However, many households and schools lack the requisite hardware.

- **Television:** Only 15% of households own a television, reflecting limited access to visual media, especially in rural areas ([↑Kemp, 2023](#)).
- **Mobile phones:** About 75% of households have at least one mobile phone, which has become the primary means of communication in both urban and rural areas ([↑Kemp, 2023](#)). However, recent reports highlight that around 52% of adults in Sierra Leone own basic phones without features such as the internet. A recent UNICEF report highlights that while designing interventions, the use of SMS, calls and voice-based services will be more impactful and have a higher reach, especially for marginalised groups ([↑Data-Pop Alliance et al., 2023](#)).
- **Computers:** Only about 5.7% of households own a computer (11.6% in urban areas and 0.8% in rural areas) ([↑Statistics Sierra Leone, 2018](#)), highlighting significant barriers to accessing information technology and digital literacy. Additionally, the 2022 Annual School Census showed that 90% of students attended schools in 2022 without any computer to facilitate teaching or student learning ([↑MBSSE, 2023](#), p. 28). The number of computers available at the school level is higher in private schools than in public schools, as 88% of public senior secondary schools do not have a computer as compared to 75% of private senior secondary schools ([↑MBSSE, 2023](#)).

4.3 Capabilities

Many teachers in Sierra Leone have not received adequate training on using digital tools and integrating EdTech into their teaching practices, and some educators may resist adopting new technologies due to a lack of familiarity or confidence ([↑World Bank, 2023](#)). Based on the World Bank Educational Technology Readiness Index, only 4% of surveyed teachers reported that their initial training included learning how to use EdTech. The Educational Technology Readiness Index indicates that very few teachers (approximately 5% across different types of usage) are confident in their ability to use ICT. Regarding policies, 27% of teachers believe there are guiding documents defining digital competencies for teachers, but only 17% of teachers surveyed find those guiding documents useful ([↑World Bank, 2023](#)). Furthermore, students often have limited exposure to digital technologies, resulting in low levels of digital literacy, which can hinder the effective use of EdTech resources ([↑World Bank, 2023](#)).

4.4 Content

There have been increasing efforts to provide students in basic and senior secondary schools with quality digital learning content tailored to the national curriculum. These initiatives, such as the Sierra Leone Learning Passport, offer personalised learning pathways that meet the needs of each student and serve as teaching, learning, and exam preparation tools ([↑DSTI, no date b](#)). During the FGDs (see [Annex 2](#) for a comprehensive analysis), students also mentioned using other applications, such as YouTube and ChatGPT, to conduct research and find simplified explanations for unclear concepts.

“Yeah, I do use my phone at home for me to do more research on ChatGPT. Like for example, I have some of my teachers that normally give me a topic for me to go and read ahead. So I do use chat GPT for me to do more research on it. And chat GPT will break it down to my level for me to understand the basic concept of the rules of what I am reading. So that helps me to do more research towards my academic work.” (Student participant in FGD).

“If we read some of this content in the app, then we didn’t understand. Some of us go to YouTube, you have a lot of channels there. Then you can listen to somebody that will be teaching you.” (Student participant in FGD)

While digital learning content is important, teachers have emphasised the need to prioritise improved internet connectivity in schools, stable electricity supply, and increased availability of user-friendly devices (see [Section 6.2](#)).

5. Student profiles in Sierra Leone

This section provides an overview of profiles of marginalised learners in Sierra Leone and their access to EdTech, as well as findings from FGDs held with 30 students from government schools in Freetown, Sierra Leone, on the use of EdTech for teaching and learning.⁷

In 2021, the MBSSE developed the National Policy on Radical Inclusion in Schools to ensure that all marginalised learners, traditionally excluded from formal education, were effectively integrated into the system. The policy targets four key groups of learners, namely girls, including girls who are or have been pregnant and are parent learners, children with disabilities, children from low-income families, and children from rural and underserved areas. This section includes a profile for each of these groups and examines their access to technology. It is important to note that marginalised learners often do not operate in silos, and there are often overlapping profiles that exacerbate inequalities.

5.1 Girl students

5.1.1. Access to education for girls

Gross enrolment and completion rates tend to be higher for girls than for boys in Sierra Leone. For instance, in 2022, the gross completion rate (GCR) was 104% for girls versus 97% for boys at the primary level, 98% for girls versus 91% for boys at the JSS level, and 106% for girls compared to 99% for boys at the SSS level ([MBSSE, 2023](#)).⁸ However, despite these figures, there are still significant barriers that disproportionately affect girls' schooling experiences in Sierra Leone, including an increased likelihood of pregnancy during adolescence, early and forced marriages, and sexual and gender-based violence in and around schools.

⁷ This section refers to a number of different data sources from within different departments of the Government of Sierra Leone. The different time periods of these datasets may account for some inconsistencies in the data. However, in the absence of more recent data, we have referred to what exists. Updated or qualitative data collection will provide a more accurate representation of the current situation.

⁸ The GCRs that are above 100% are due to the high number of students outside the official age for completing the levels ([MBSSE, 2023](#)).

5.1.2. Girls' access to technology

Girls in Sierra Leone have limited access to digital learning and remain underrepresented in the creation and use of technology ([↑Abakah & Mason, 2023](#)). A significant barrier to their participation has been the lack of access to the various devices that facilitate digital literacy and learning. A 2017 MICS report found that 64.8% of men aged 15–49 in Sierra Leone own a mobile phone, compared to only 45.2% of women in the same age group ([↑Statistics Sierra Leone, 2018](#)). Additionally, only 8.9% of women in this age range have ever used the internet compared to 22.8% of men ([↑Statistics Sierra Leone, 2018](#)). The cost of these devices, along with the high data price, prevents girls from accessing these technologies. Additionally, barriers to accessing technology go beyond affordability to include inequalities in education and digital skills between men and women, sociocultural norms and restrictive gender roles that prevent women and girls from being online, and concerns about privacy, safety, and security (as women and girls are more likely to face online harassment and violence) ([↑Abakah & Mason, 2023](#); [↑Data-Pop Alliance et al., 2023](#); [↑Forna, 2024](#)). Without deliberate efforts to ensure that girls have equal access to technology, digital skills, and online safety, the gender digital divide will continue exacerbating existing inequalities and denying women and girls the benefits of digital technology ([↑Abakah & Mason, 2023](#); [↑Forna, 2024](#)).

5.2 Students from low-income households

5.2.1. Access to education for students from low-income families

Evidence shows that children from the poorest wealth quintiles are significantly more likely to be out of school than those from wealthier backgrounds ([↑Statistics Sierra Leone, 2018](#); [↑GoSL et al., 2021](#)). In 2017, 34.3% of out-of-school children in Sierra Leone came from the poorest wealth quintiles, while only 6.7% came from the wealthiest quintile ([↑Statistics Sierra Leone, 2018](#)). While the Free Quality School Education Program has alleviated some financial barriers to attending schools by removing school fees and allowing more children from poorer households to attend, low-income families still struggle with indirect educational expenses, such as food, school supplies (e.g., exercise books, pens, bags, and shoes), transport costs and uniforms, which can prevent children from enrolling or staying in school ([↑GoSL et al., 2021](#)).

5.2.2. Access to technology for students from low-income families

Low-income families have significantly less access to devices supporting technology-enabled teaching and learning. [↑Statistics Sierra Leone \(2018\)](#) found the following disparities by household wealth in Sierra Leone:

- 23.2% of the poorest households owned a radio, compared to 75.9% of the wealthiest households;
- None of the poorest households owned a television, while 78.8% of the richest households did;
- Mobile phone ownership was 29.9% among the poorest households, whereas it was 98.8% among the wealthiest;
- Only 0.1% of the poorest households had internet access at home, compared to 40.4% of the richest households.

5.3 Students living in rural locations

5.3.1. Access to education for rural students

Children living in rural areas face lower access to education and lower completion rates at all education levels compared to their counterparts living in urban areas, with the disparity significantly increasing as they progress through their schooling ([↑Republic of Sierra Leone et al., 2020](#)). For instance, the *Education Sector Analysis* ([↑Republic of Sierra Leone et al., 2020](#)) estimates that children in urban areas have a 96% likelihood of attending primary school, compared to 82% for those in rural areas. Similarly, the probability of completing primary school stands at 89% for children in urban areas, while it drops to 56% for their rural counterparts. Despite a notable increase in JSS enrolment following the introduction of the Free Quality School Education Program (43% between 2018 and 2019), many children in rural areas remain at risk of not benefitting from this initiative due to their remote locations, where there may be too few schools. School supply is lower in rural areas and some schools are unapproved by the government and therefore do not qualify for the Free Quality School Education program ([↑GoSL et al., 2021](#); [↑UNICEF, no date](#)).

5.3.2. Students living in rural areas and technology

Rural households in Sierra Leone have significantly less access to devices that facilitate remote and distance learning for children in harder-to-reach areas. [↑Statistics Sierra Leone \(2018\)](#) found disparities in access to technology by area of residence in Sierra Leone:

- 66.9% of households in urban areas have access to radios, compared to 44.8% in rural areas;
- 38.7% of households in urban areas have access to televisions, compared to only 1.5% in rural areas;
- 93.5% of households in urban areas have access to mobile phones, whereas, in rural areas, this figure is 54.4% of households;
- Additionally, only 3.7% of rural households have access to the internet at home, compared to 26.3% in urban areas of the population living in areas without grid coverage and the majority of rural households (92.6%) report that the national grid is too far from their households.

5.4 Students with special educational needs and disabilities (SEND)

5.4.1. Access to education for students with SEND

The national OOSC study reports that children with disabilities in Sierra Leone are among the most likely to be out of school compared to other groups of children ([↑GoSL et al., 2021](#)). The 2018 Sierra Leone Integrated Household Survey reported that among the disabled population, two-thirds of people with disabilities had never been to school and less than 10% had completed their senior secondary education ([↑Statistics Sierra Leone \(2018\)](#)). Additionally, among 5–17-year-olds attending school, 22% have at least one functional difficulty and among those who do not attend school, 28% have at least one functional difficulty ([↑Statistics Sierra Leone \(2018\)](#)). Children with disabilities face significant barriers to attending and completing school, including inadequate infrastructure, a lack of inclusive attitudes, limited access to specialised assessments, and teaching practices not being sufficiently adapted to the needs of children with disabilities ([↑GoSL et al., 2021](#)).

5.4.2. Technology for students with SEND

There is a significant gap in accessibility to digital devices and learning resources for students with SEND. For instance, only a limited number of students with SEND have access to assistive devices needed to successfully navigate the school environment and participate more fully in learning activities ([↑Coflan & Kaye, 2020](#); [↑GoSL et al., 2021](#)).

According to the World Bank's Educational Technology Readiness Index:

- Only 2% of school principals report having digital devices in schools adapted for use by students with disabilities;
- Only 7% of school principals believe that there are sufficient digital learning resources tailored to the needs of students with disabilities.

Barriers affecting access to assistive technology and digital learning resources tailored to the needs of students with SEND include limited awareness of assistive technology products and services and their benefits, poor supporting infrastructure, and high costs ([↑Coflan & Kaye, 2020](#)). While EdTech interventions offer significant opportunities to enhance learning and instruction for students with SEND (and other vulnerable learners), the limited access to and insufficient adaptation of these technologies to adequately cater to the needs of these students hinder the readiness of the education system to leverage technology to improve the teaching and learning experiences of these students in Sierra Leone.

5.5 Findings from student focus group discussions

This section summarises the findings from FGDs conducted by the team with students from government schools in the Western Area Urban district (Freetown). A total of 30 students, aged between 11 and 20, participated, and demographic data on these students can be found in [Annex 2](#). The findings from the FGDs are categorised into four areas:

1. Use of EdTech
2. Impact on learning
3. Engaging and interacting online
4. Access to equipment.

Different schools reported a mix of accessibility and use of devices in school and at home. Overall, a majority (three out of the four FGD groups,

i.e., 73%) of students regularly use devices to supplement learning, with EdTech integrated into their lessons or homework to varying degrees.

5.5.1. Access to devices and digital literacy

For students **with access to devices in school or at home** (about 75% of participants), teachers use computers and projectors to explain concepts in class. Students often use devices at home to do research and assignments. They also participate in learning programmes at home such as Google Classroom or after-school lessons online. They use these devices and apps to learn new skills and languages. Students also showed a high level of awareness about the opportunities offered by technology (AI in particular), which has also made their learning easier (e.g., ChatGPT).

Many students demonstrated an appreciation of the value of **digital literacy**, and how to use technology to actively solve problems they encountered (beyond their academic learning). Students were able to use multiple devices for different, complementary purposes to maximise use. For example, they would use phones to search for information, and computers to type up assignments. Students also highlighted schools as a place for them to acquire skills, as teachers have the knowledge needed to teach them how to use devices. They gave examples of how teachers have helped them understand their devices better:

“[Teachers] can teach you to operate anything. Even if you have problem with your phone, you can just take it to the computer teacher and he will help you to put it back to where you want it.”
(Student participant in FGD)

Students with **limited access to devices in school or at home** reported different experiences and perceptions of devices to their counterparts. They described a few instances where a teacher would sometimes use their phone to look up subject materials. In these cases, students had negative perceptions because the information the teachers found online contradicted the information in textbooks. They also highlighted the teaching quality and effectiveness of the teacher as a major factor in their experience of using technology in school. Students discussed the **challenges of connectivity and power** at length.

“Sometimes I have important presentations and assignments to do, and I go home hoping that I’ll see light and there will be no lights. And maybe my phone is just 24% and my phone at 20%, it has a low battery, and when it is 20%, it’s reduced. So when there is no light, it is difficult for me because I can’t guarantee I’ll do my

assignment completely because some of these things, some of the times I put my own ideas there, but not everything that I think about is correct. So I have to research to know if it is correct.
(Student participant in FGD)

They expressed their frustration at the lack of digital devices in school, mentioning that this poses a hindrance to their learning if they cannot interact with computers and visualise what they learn. In addition, the lack of access to devices resulted in students relying on each other more, and sharing or borrowing textbooks from classmates when they were unable to get support from family members at home.

“Because you cannot be teaching me and I don’t have the facility to practice what you are teaching me or to see those things.”
(Student participant in FGDs)

5.5.2. Impact on the quality of learning

Students (with access to devices) highlighted how technology has improved the learning process, **empowered them, and given them autonomy with their learning**. They provided past examples of how they were reliant on support from parents or siblings for help with homework, and if this was unavailable, they had no alternative source for support. These devices also give students access to other online teachers and resources, which mitigates against absent or late teachers. Students recognised this as particularly important because it meant they could study, stay on top of the syllabus, and prepare for general examinations even when their teachers were not available.

Students highlighted how EdTech has **helped them understand concepts**, not just “theoretically” but through practical demonstrations. It has also enhanced their experience of learning in classrooms. The use of projectors in classrooms was highlighted as especially useful for subjects like economics and science.

“It’s the best thing when they use the projector, we understand more than when they explain some things to us because our teachers, like, they’re so gentle, so they know how to teach. So when they use the projector it will be more simpler and easy for us.” (Student participant in FGDs)

In contrast, the responses from students with limited access to devices highlight the **juxtaposition of old and new learning systems, i.e.**, a grading process with heavy emphasis on textbook responses, which may not recognise or accept answers outside the established framing. In

contrast to other schools, students with limited access to devices did not feel like online materials could help them keep up with their syllabus because they felt that the information available online, compared to their textbooks, was different. As a result, students believe that they may be penalised academically if they do not provide responses that align with or reflect the textbooks.

“One day my teacher told me that and more especially for English and literature, we should not depend on this AI app or Apex because they don’t. WAEC [West African Examinations Council] does not take questions from them. They only focus on the textbook [...] WAEC will not take those answers.”
(Student participant in FGDs)

The distractions brought about by phones were also highlighted as a challenge to academic performance and physical and mental well-being. These observations provide some insight into how students perceive the benefits and costs of these devices. Students also gave examples of strategies they used to mitigate some of these pitfalls (restricting permissions on the app, disabling notifications, and so on).

“Some students can be on their phones 24 hours daily. They cannot even focus academically. They are just focusing on some social apps and it is very bad. And these apps have some types of videos that are bad for them mentally.”
(Student participant in FGDs)

5.5.3. Engaging and interacting online

Students also **navigate privacy and safety issues when they are online**. They discussed first-hand and anecdotal experiences of a wide range of risks in personal and professional activities, including cyberbullying and exposure to explicit or harmful content. Many students recognise the need for privacy and data protection. In some schools, they have been taught to understand the wide range of risks, including hacking, scamming, extortion, data breaching, threats, and blackmail and are also aware of surveillance and tracking practices. However, in one school, school guidance seems to be focused on software/hardware maintenance and less on personal safety while online.

Students are **aware that they could be viewing inaccurate information** on the internet and interacting with fake news and misinformation. Many students related incidents when they came across information they knew

to be factually incorrect. They often use AI,⁹ teachers and other tools on the internet to verify or fact-check the information. Students with access to devices in particular highlighted that their teachers have given them tools, i.e., antivirus software, to protect them from engaging with harmful and inappropriate content. They are also aware of tools and apps that keep them safe, e.g., defragment, an app preinstalled on devices. The app flags harmful applications and viruses. However, some students also shared that teachers do not always provide direct intervention regarding how to find the most accurate information online. Instead, teachers encourage them to research further and present findings that align with the teachers' expectations.

The findings from the discussions with students show that they are all keen to acquire digital literacy skills to enhance their learning and holistic development. However, there is also a striking contrast across learners; those with access to the technology had greater positive perceptions of the opportunities provided by devices, and those with limited access were more likely to discuss the risks associated with devices. The most common emerging themes, which also offer an entry point for designing and scaling a digital learning strategy, are summarised below:

- Familiarity with technology builds students' confidence and encourages them to be proactive and self-directed in their education and interests.
- There is a need for alignment between curricula and online resources (i.e., there is further scope to curate online materials). Contradictory information and teachers' preferences or biases about online content shape students' experiences and create uncertainties that hinder their learning.
- Students benefit from and appreciate the guidance and support of digitally literate teachers who can instruct them on online safe practices.

⁹ Students did not seem aware that AI could also be unreliable.

6. Teacher and school leader voices

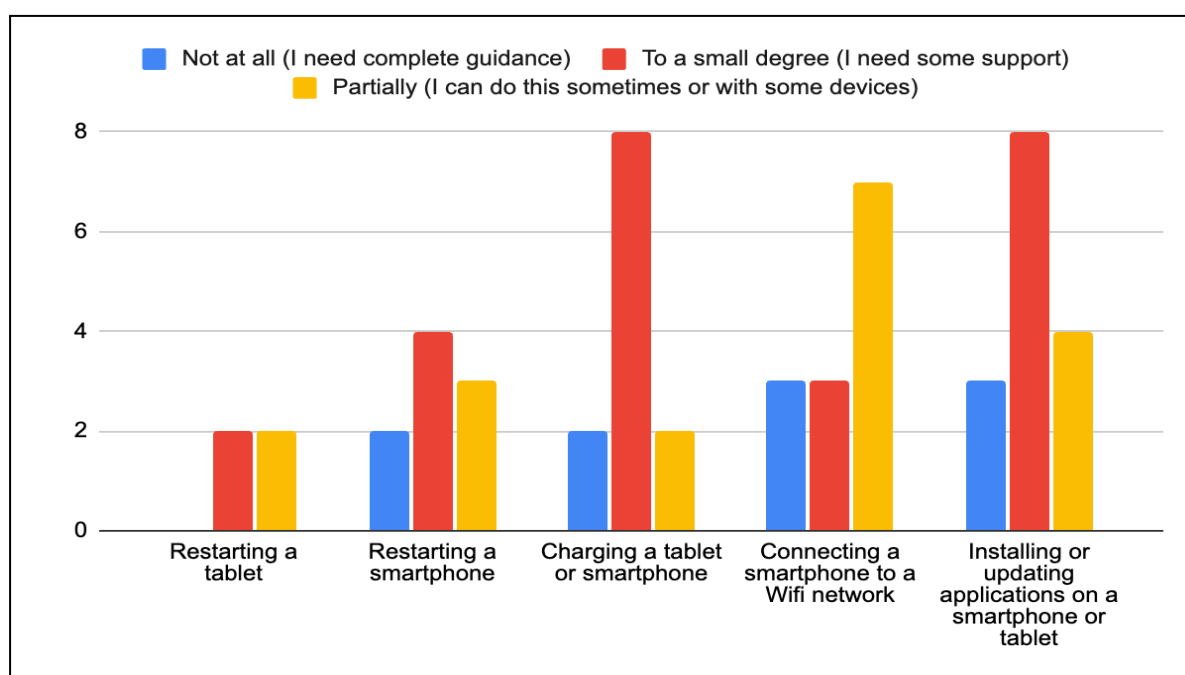
This section provides an overview of the findings from a set of surveys where the participants included teachers, head teachers, principals, and SQAOs, with representation across nine districts. Additional demographic data can be found in [Annex 3](#).

6.1 Digital readiness

A digital survey aiming to better understand how teachers and school leaders interact with and understand EdTech was circulated to SQAOs in all 16 districts in Sierra Leone. SQAOs were tasked with speaking to at least one teacher or school leader in their district. The following are the results from 23 respondents.

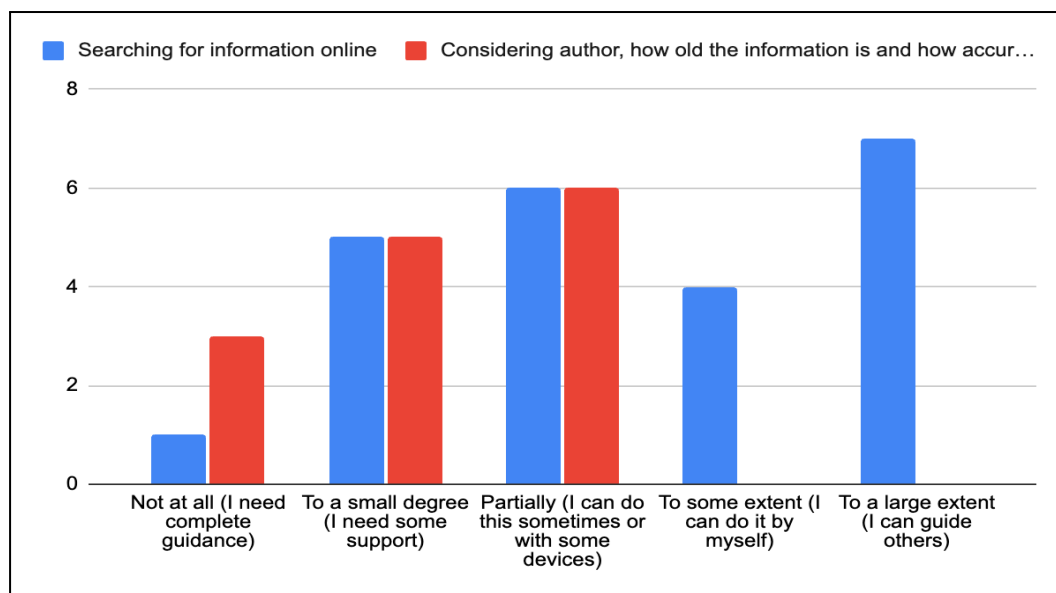
When asked about their basic understanding of how to start or restart various EdTech devices (see [Figure 4](#)), all participants responded that they felt comfortable with this task. However, none of the participants responded with the highest capability option provided, i.e. “to a large extent (I can guide others).” Thirteen per cent of respondents cannot manage important operations on devices, such as connecting to a Wi-Fi network or installing or updating an application.

Figure 4. Survey responses on basic digital knowledge and abilities



As shown in [Figure 5](#), most respondents reported that they know how to search for information online confidently (they can do it themselves or guide others); however, fewer reported that they understand how to consider the quality of information.

Figure 5. Survey responses on searching for content online



Furthermore, when considering a more diverse range of digital skills (see [Figure 6](#)), very few know how to create user accounts, create or edit a document, send text or WhatsApp messages or emails, or enter a Zoom meeting. This has significant implications for implementing a digital learning strategy, which places great emphasis on supporting and developing the capacity of school-level stakeholders.

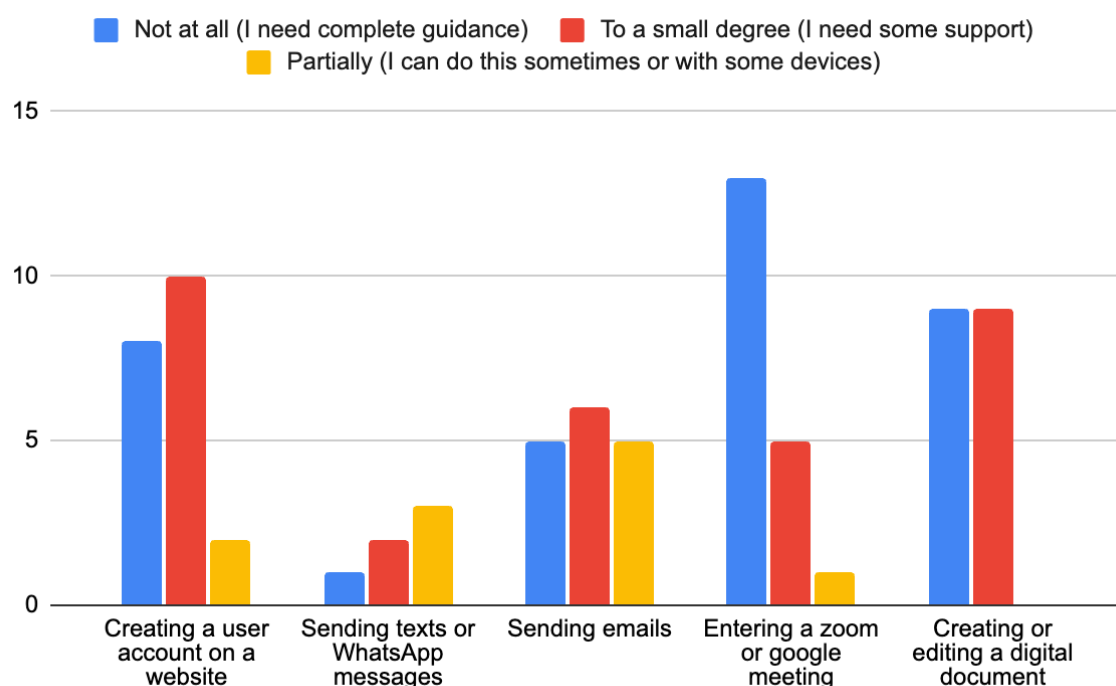
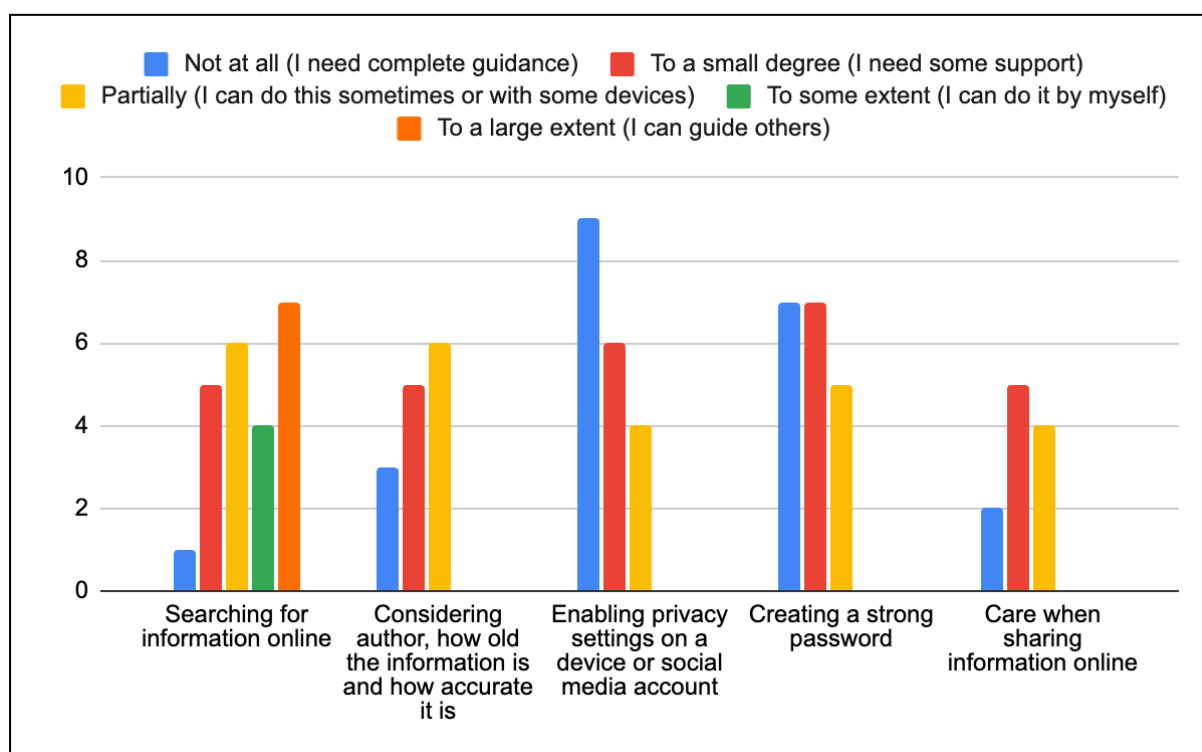
Figure 6. Survey responses on range of digital skills

Figure 7 below presents responses related to online safety, which show that competencies sit on the lower end of the scale across a variety of metrics. Forty per cent of respondents need complete guidance to enable privacy settings on social media or device accounts, and only 20% can set a strong password on **some** devices. Overall, these responses contrast with most of the students' feedback (students with access to devices), i.e., that they receive support and advice from teachers on being safe online.¹⁰

However, when considering the responses of students with limited access to devices, the data is consistent with the claim that they are only taught about safety in theory, not practice. These questions enquire about respondents' knowledge and technical skills to take actions that promote online safety. Although there may be some contradictions across some student groups, it is reasonable to assume that teachers may advise students on sound and safe online practices but may not teach them the technical skills to meet this goal.

¹⁰ This may be a sampling issue, as the spread for the survey might be more random and representative than the focus group discussions.

Figure 7. Survey responses related to online safety

6.2 Context for digital learning

Results from the survey show that respondents use technology sparingly in most cases. [Figure 8](#) shows that only 43% of respondents use technology in school. Of this group, most estimated their use of technology at 10% or less in the last three months (see [Figure 9](#)). The second-highest frequency/intensity of use was at 50% to 75% in the three-month period.

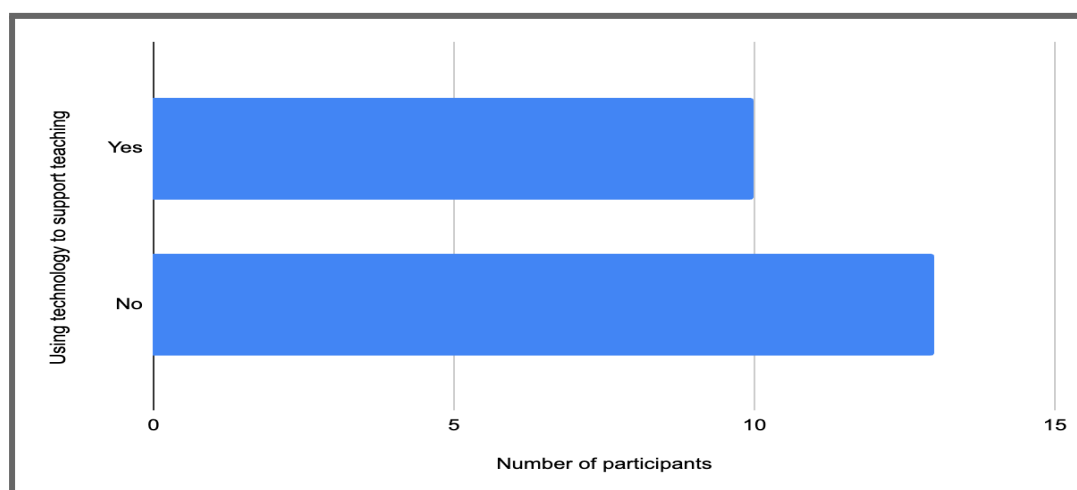
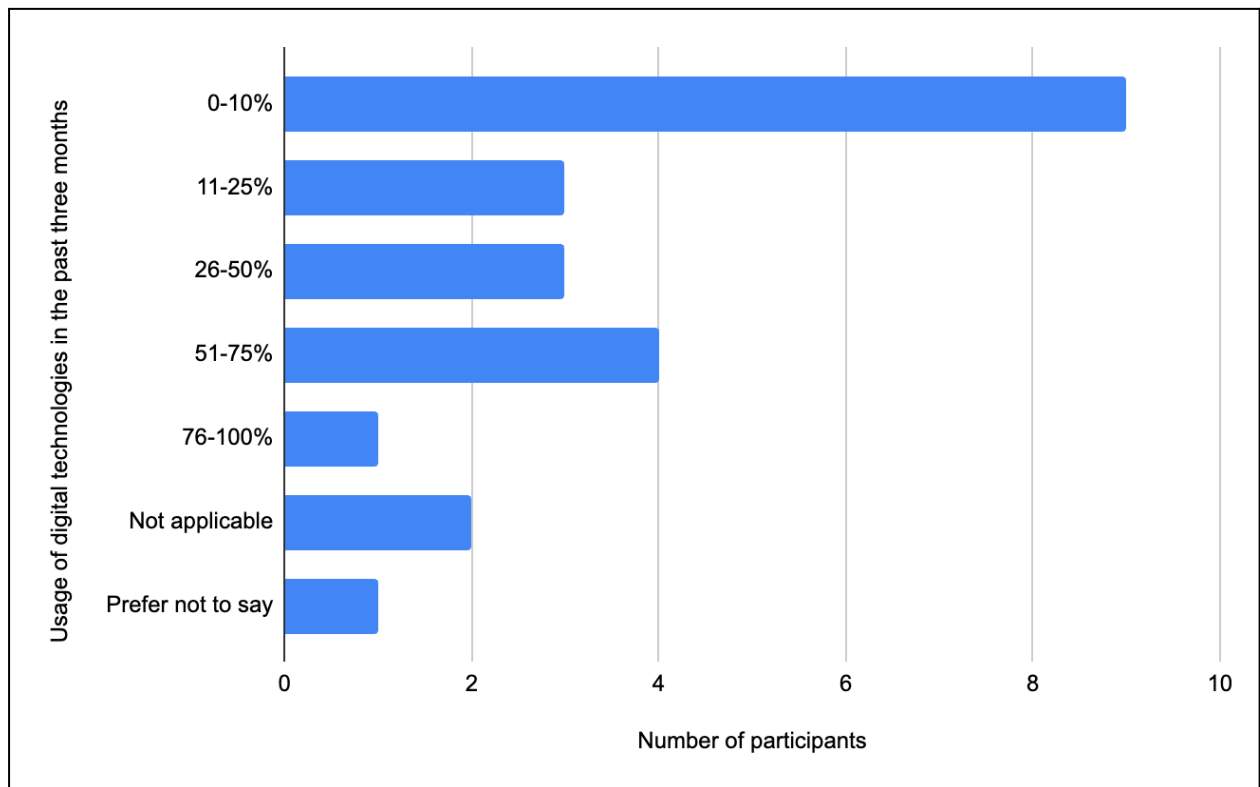
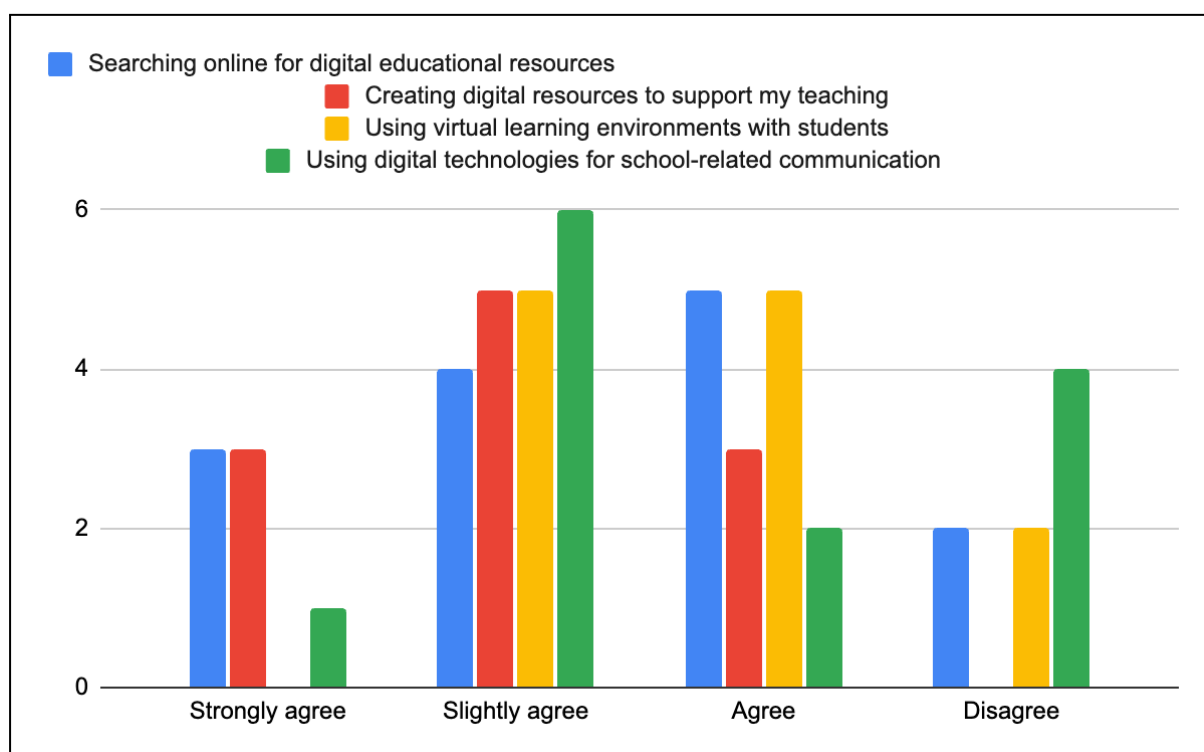
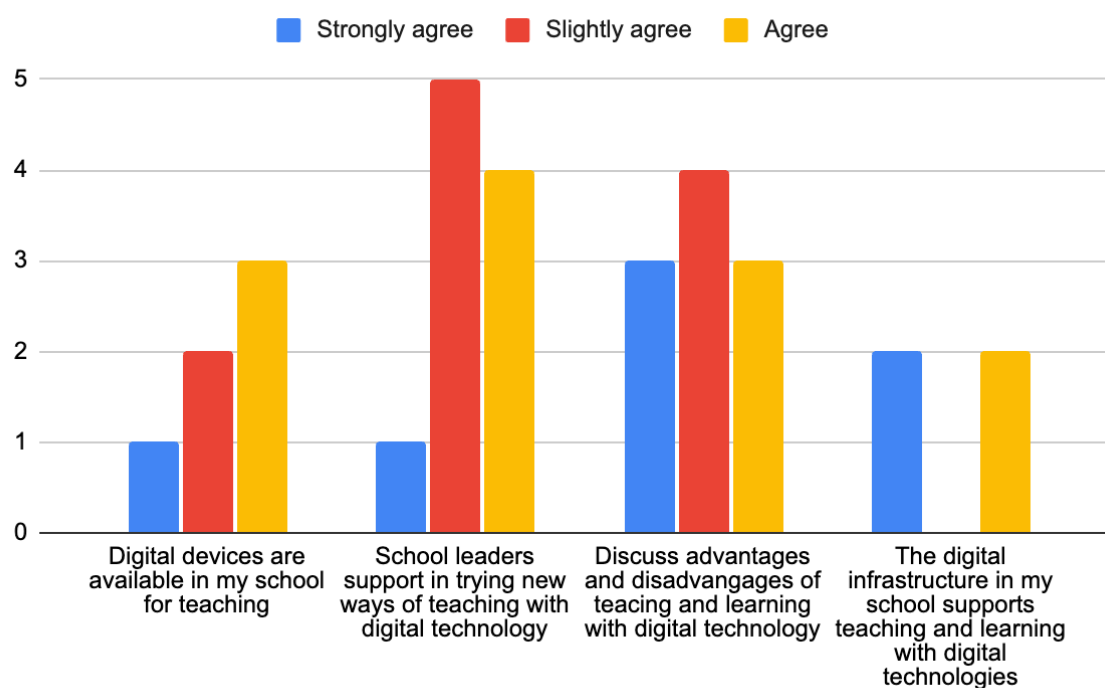
Figure 8. Use of EdTech in school

Figure 9. *Frequency of use of EdTech*

In [Figure 10](#), the most common use case for technology was ‘searching online for digital education resources’, with ~57% selecting ‘strongly agree’, ‘slightly agree’, or ‘agree’ to this use. Only 35% selected ‘strongly agree’, ‘slightly agree’, or ‘agree’ to using virtual learning environments, 40% to using technology for school-related communications, and 47% to using technology to create digital resources to support students.

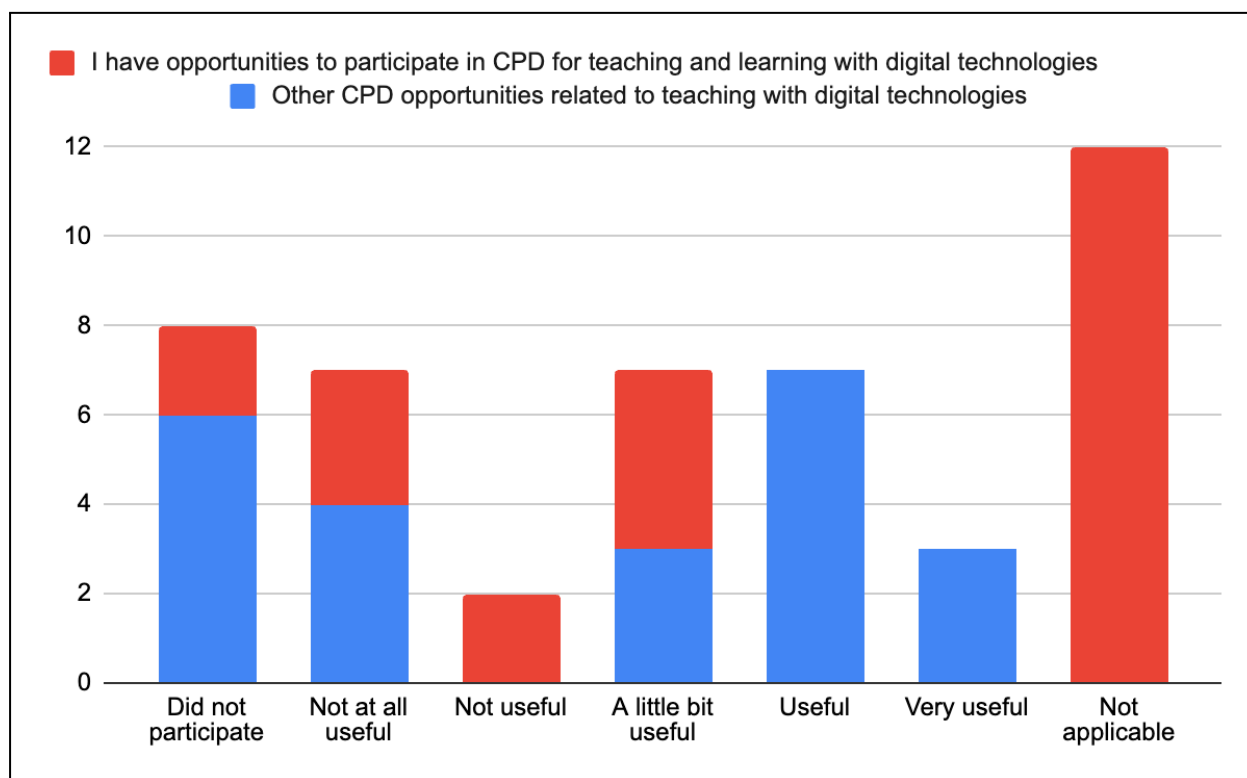
Figure 10. Survey responses on the use of EdTech

There were strong positive responses from participants when asked if school leaders supported finding ways of integrating EdTech into teaching activities, as shown in [Figure 11](#) below. Participants also indicated that they discussed the advantages and disadvantages of this approach. However, when considering these responses, it is worth noting that less than half of participants (~43%) have access to technology in schools (see [Figures 8](#) and [9](#)), and even fewer agreed that schools had the digital infrastructure to support EdTech. In this context, the support for EdTech is constrained by a fundamental lack of availability and limited interaction with technology.

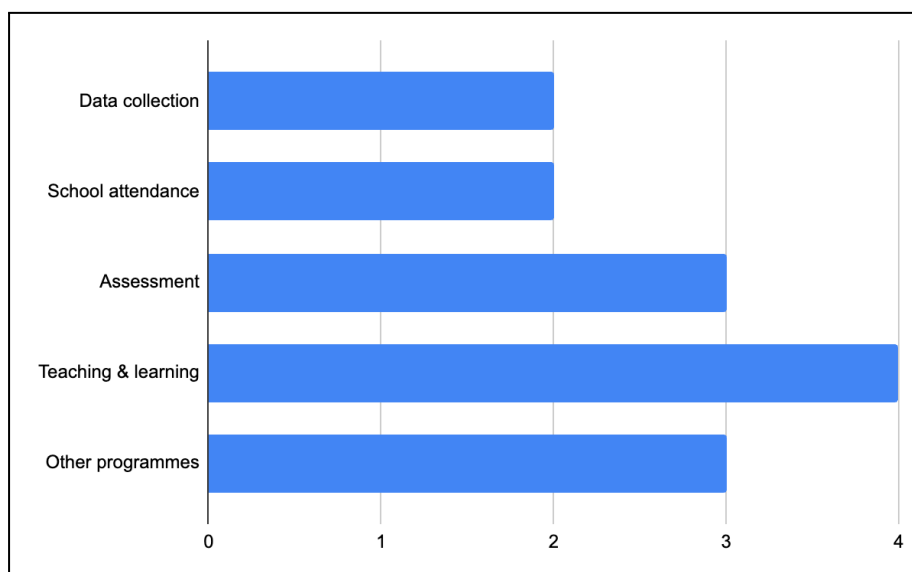
Figure 11. Survey responses on support for the use of EdTech¹¹

Half of the respondents (~52%) highlighted that they do not have opportunities to participate in capacity development activities for using EdTech (i.e., routine training provided by schools or districts) (see [Figure 12](#)). Of those who participated, only ~17% (4 participants) found those sessions to be 'a little bit useful' (as measured against a five-point scale of 'not at all useful' to 'very useful').

¹¹ Both teachers and school leaders were asked if "School leaders support in trying new ways of teaching with digital technology." As this question refers to school leaders and asks them to answer, there may be some bias towards school leaders selecting 'strongly agree'.

Figure 12. Survey responses on capacity development support

When asked about their experience of participating in alternative continuous professional development (CPD) programmes that included digital technology training (see [Figure 13](#) below), ~9% highlighted participating in data collection activities with technology (e.g., Kobocollect), and ~13% referenced programmes such as Leh Wi Lan. A few (~9%) mentioned attending training where technology was used to deliver the session, but they were not trained to integrate technology into their own teaching and learning.

Figure 13. *Other CPD activities with digital technologies*

In contrast to regular training, participants responded more positively to ad hoc training sessions. A third highlighted those programmes as 'useful', and ~13% found them to be 'very useful'. This indicates that there is scope for adapting the current training programmes to meet teachers' needs better.

When examining the format of the training programmes being provided (see [Figure 14](#) below), most responses were positive (selecting 'very useful') to capacity development delivered through peer-to-peer learning programmes with other teachers (~40%), training provided by SQAOs (~35%), and mentorship or coaching provided by the school leadership (with ~43% selecting 'useful').

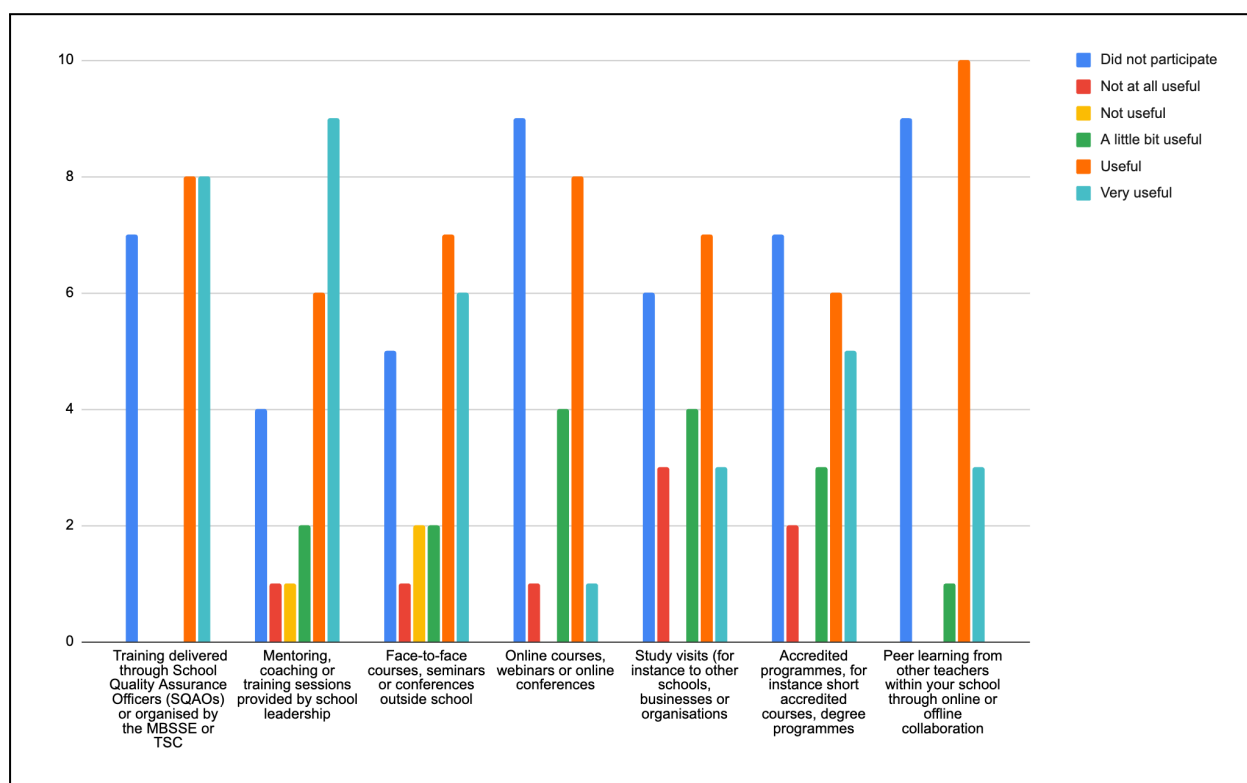
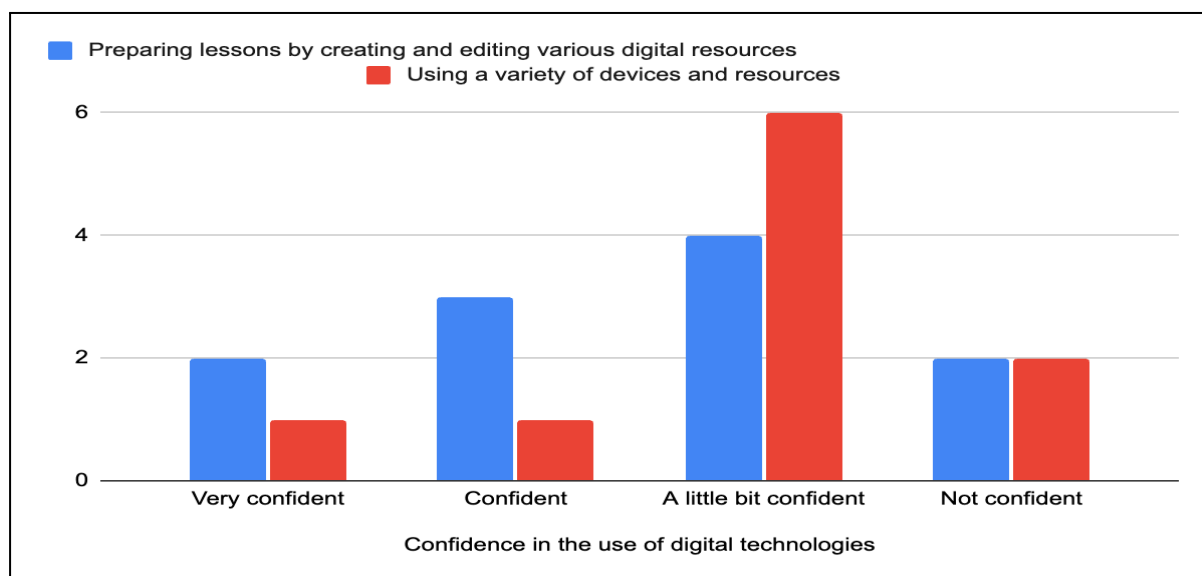
Figure 14. Survey responses on quality of CPD experience

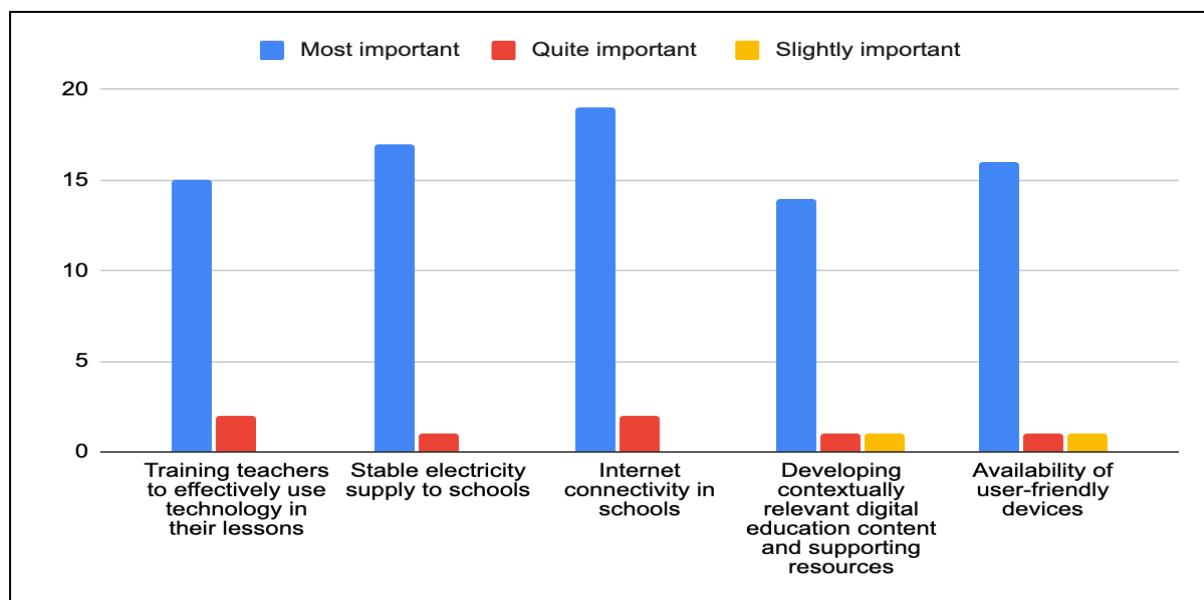
Figure 15 below highlights participants' confidence levels in using EdTech. In line with the responses on basic knowledge, skills, and experiences with EdTech (see Figure 4 above), very few respondents reported feeling confident in their ability to use EdTech. Only ~26% felt 'a little bit confident'.

Figure 15. Teacher confidence in using EdTech

Finally, when asked to rate their priorities (based on the options provided above), most respondents ranked internet connectivity in schools as the

highest (~83%), closely followed by a stable electricity supply (74%) and the availability of user-friendly devices (70%) (see [Figure 16](#) below). These responses show that the environment and resources necessary for EdTech to operate in schools are considered fundamental to the skills needed to use technology or digital content.

Figure 16. *EdTech priorities of respondents*



The responses provided by teachers and school leaders in this section provide a valuable counterpoint to students' experiences as set out in [Section 5.5](#). Most teachers have minimal access to technology and have only acquired basic knowledge and skills to operate devices. Moreover, only half of the respondents had access to the training opportunities provided, and those programmes were perceived to offer little utility.

The benefits highlighted by students who were supported by their teachers underscore the importance of improved capacity development opportunities and the provision of appropriate technology for teachers and school leaders. A significant number of respondents reported a lack of or limited confidence with EdTech. This observation aligns with the experiences of low-income students who reported being discouraged from using online resources by teachers. The discomfort or unfamiliarity of teachers or school leaders in their ability to use EdTech will likely impact how they teach students to interact or utilise technology. Therefore, a critical entry point for the Digital Learning Strategy will be providing ongoing support at the school level to integrate technology and build sustainable, appropriate CPD systems.

7. EdTech actors and interventions in Sierra Leone

This section provides an overview of the key government and non-governmental actors in Sierra Leone, along with a summary of EdTech interventions in the country. While this list is not exhaustive, it is a first step towards mapping key donors, implementers and focus areas to work towards a more cohesive approach towards funding and implementing EdTech in Sierra Leone. A stakeholder workshop and secondary research informed the mapping exercise.

7.1 Government and non-governmental actors in Sierra Leone

Table 8. *Key government stakeholders in EdTech in Sierra Leone*

Ministry/agency	Roles and responsibilities
Ministry of Basic and Senior Secondary Education (MBSSE)	The MBSSE oversees the basic and senior secondary education system in Sierra Leone to improve equitable access to quality and relevant education and strengthen education service delivery (↑MBSSE, 2024). The MBSSE is responsible for integrating ICT in schools. The ministry is committed to leveraging technology to enhance learning and service delivery, as evidenced by its focus on ICT in education in its policy and strategic documents.
Teaching Service Commission (TSC)	The TSC is a semi-autonomous commission within the MBSSE that oversees the management and development of the teacher workforce in Sierra Leone to improve the quality of teaching and learning (↑TSC, 2020). The TSC is also responsible for licensing, recruiting, posting, and

Ministry/agency	Roles and responsibilities
	inducting teachers in government and government-supported schools(↑Mullan & Taddese, 2020).
Ministry of Information and Communications (MICS)	The MICS is responsible for formulating policies and laws and implementing services related to information and communication technology (↑Mullan & Taddese, 2020). The ministry promotes the use of ICT across all sectors, including the education sector (↑Mullan & Taddese, 2020).
Ministry of Communication, Technology, and Innovation (MoCTI)	The MoCTI is responsible for formulating policies and regulations for the communication, technology, and innovation sector, aiming to advance socio-economic growth and development (↑MOCTI, 2024).
Ministry of Technical and Higher Education (MTHE)	The MTHE is responsible for formulating policies and legislation to promote access to quality tertiary and vocational education and capacity-building opportunities to meet the country's socio-economic needs. The MTHE is committed to leveraging technology to improve learning outcomes and education service delivery. Its main focus is equipping higher education institutions and technical and vocational training institutions with ICT infrastructure, such as computers and internet access (↑MBSSE & MTHE, 2022).
Directorate of Science, Technology and Innovation (DSTI)	The DSTI leverages science, technology, and innovation to support the Government of Sierra Leone in effectively delivering its national development plan (↑Mullan & Taddese, 2020). The DSTI collaborates

Ministry/agency	Roles and responsibilities
	with other governmental and non-governmental agencies to address complex issues across different sectors, including education([↑]DSTI, 2023). The directorate works collaboratively with the MBSSE to support the integration of technology across the education sector ([↑]UNESCO, 2023).

Table 9. *Key non-governmental stakeholders in EdTech in Sierra Leone*

Development partner/NGO/private sector	Description
World Bank ¹²	The World Bank is currently supporting the Free Education Project (2020–2027), which focuses on improving the quality of education by enhancing teacher training, upgrading school infrastructure, and implementing comprehensive monitoring and evaluation systems (World Bank, 2021). With a strong emphasis on inclusivity and equity, the Free Education project aims to increase enrolment, reduce dropout rates, and improve overall educational outcomes, thereby laying a solid foundation for the future development and prosperity of Sierra Leone.
Foreign, Commonwealth and Development Office (FCDO) ¹³	FCDO is currently supporting the Sierra Leone Secondary Education Improvement Programme Phase 2 (SSEIP II), also known as Leh Wi Lan, which is being implemented by Mott McDonald and the Education Development Trust.
UNICEF ¹⁴	UNICEF supports the Learning Passport Initiative and the GIGA initiative, which work to ensure connectivity for schools across the

¹² See <https://projects.worldbank.org/en/projects-operations/project-detail/P167897>. Retrieved 16 January 2025.

¹³ See <https://devtracker.fcdo.gov.uk/programme/GB-GOV-1-300767/summary>. Retrieved 17 January 2025.

¹⁴ See <https://www.unicef.org/sierraleone/>. Retrieved 17 January 2025.

Development partner / NGO / private sector	Description
	country. UNICEF also led the development of the GPE-supported Education Sector Plan for Sierra Leone and is the grant agent for the GPE-supported education programme in the country (↑UNICEF, 2022).
Global Partnership for Education (GPE) ¹⁵	With GPE support, Sierra Leone is expanding access to pre-primary education, ensuring more students are ready to learn when they enter primary school. GPE provides financial support to the education sector through a USD 2.6 million system capacity grant and a USD 42.3 million system transformation and multiplier grant (↑GPE, 2007).
Rising Academies ¹⁶	By leveraging technology and innovative teaching practices, Rising Academies aims to bridge the educational gap and create lasting positive impacts on students' academic achievements and future opportunities in Sierra Leone (↑Rising Academy Network, 2022). Rising Academy is currently partnering with various organisations to develop synergies in their delivery. Key partners include the MBSSE, TSC, Imagine WorldWide, and Save the Children. It is also working closely with other key implementing organisations such as EducAid to better deliver education through the use of technology (↑Rising Academy Network, no date).

¹⁵ See <https://www.globalpartnership.org/where-we-work/sierra-leone>. Retrieved 17 January 2025.

¹⁶ See <https://www.risingacademies.com/our-partners>. Retrieved 17 January 2025.

Development partner / NGO / private sector	Description
Imagine Worldwide ¹⁷	Imagine Worldwide is actively working in Sierra Leone to enhance educational outcomes through technology-enabled learning. The organisation collaborates with local partners such as EducAid and the Rising Academy Network to implement its programmes (↑Imagine Worldwide, no date). As part of the programme, children drive their own learning, at their own pace, using software that provides a complete, research-based curriculum and pedagogy. Adults play a supportive, facilitative role. The software is delivered to the learner on a tablet, without connectivity, and charged by solar power or other appropriate energy sources. Building on the success of the pilot programmes, in 2023, Imagine Worldwide signed a formal Service-Level Agreement with the Ministry of Education. The organisation is on track to serve 150,000 students across 750 schools in the next three years (↑Imagine Worldwide, no date).
Save the Children	Save the Children with support from EducAid and Rising Academies, is implementing the Sierra Leone Education Innovation Challenge (SLEIC), a three-year project aiming to improve learning outcomes for both boys and girls in 65 primary schools by building teacher capacity in literacy and numeracy, increasing children's access to reading and maths materials at school and at home, and creating

¹⁷ See <https://www.imagineworldwide.org/our-work/sierra-leone/>. Retrieved 17 January 2025.

Development partner / NGO / private sector	Description
	community-supported supplementary learning as well as parental support that promotes children practising maths and reading at home (↑Save the Children, 2024).
CGA Technologies	CGA Technologies specialises in developing practical management systems for governments and partner organisations to enhance the delivery of basic services using disaggregated and near-real-time data for accountability, transparency, and results. In Sierra Leone, the TSC has engaged CGA Technologies to design, pilot, and monitor a national school-based attendance monitoring system for teachers and pupils as part of the One Tablet Per School initiative (↑CGA Technologies, 2023). The system will integrate with other relevant systems, including the TSC Teacher Records Management (TRM) system developed by CGA in 2019, which holds and analyses teacher payroll data and scanned teacher personnel records.
EducAid	EducAid runs an educational network of free schools, school improvement and research projects, working to serve the diverse needs of communities and teachers to improve education quality, social inclusion, gender equality, and community resilience (↑EducAid, 2023). In Sierra Leone, EducAid's work has impacted 60,000 students, 320+ schools and 2,000+ teachers (↑EducAid, 2023). Further, during the Covid-19 pandemic, EducAid supported a radio-based remote learning

Development partner / NGO / private sector	Description
	programme in collaboration with the MBSSE by developing and implementing 300 recorded lessons that reached approximately 1.4 million students (↑EducAid, 2023).
Fab Inc.	Fab Inc. has conducted a review of the current AI programmes being implemented in the country, the mapping is available at ai-for-education . ¹⁸ Furthermore, Fab Inc. has developed an AI chatbot to support teachers. The chatbot, Teacher.AI, has been piloted with the support of EducAid. The AI-driven chatbot serves as a 24/7 digital assistant for teachers, offering real-time responses and educational insights. It uses two Large Language Models: the first extracts key points from the teacher's input, while the second formulates a helpful response by cross-referencing with a knowledge database. This ensures fast, accurate, and relevant support, providing targeted assistance to teachers worldwide. Fab Inc. is also working with Leh Wi Lan to develop a chatbot for SQAOs that they can use to answer potential questions from teachers and provide them guidance on teaching practices.

¹⁸ See <https://ai-for-education.org/ai-products/>. Retrieved 15 January 2025.

7.2 EdTech interventions in Sierra Leone

Key development partners, NGOs, and private sector partners are making significant efforts to improve the overall landscape of education in Sierra Leone. Some partners are leveraging technology in several education initiatives. [Table 10](#) below lists some of the notable EdTech initiatives and organisations in Sierra Leone.

Table 10. *Key EdTech interventions by development and private sector partners*

EdTech initiative	Description
Sierra Leone Learning Passport ¹⁹	Overview: The Sierra Leone Learning Passport is an e-learning initiative developed to provide local, contextualised educational content aligned with the national curriculum to students in basic and senior secondary schools in Sierra Leone (↑Mason, 2022). The platform has both online and offline capabilities and serves as a teaching, learning, and exam-preparation tool (↑Mason, 2022). Additionally, the initiative aims to support the government in improving digital literacy by introducing students to the use of computers and the internet through one of the UNICEF-supported labs (↑Mason, 2022). Implementation year and status: 2022—Ongoing. Target group: Learners, teachers, and parents/caregivers in Sierra Leone. Reach/scale: As of 2024, 100+ students have been enrolled in the Learning Passport programme (↑DSTI, no date c). Implementing ministries/organisations: MBSSE, DSTI, and UNICEF Sierra Leone.

¹⁹ See <https://mbsse-dsti.learningpassport.org/>. Retrieved 15 January 2025.

EdTech initiative	Description
GIGA ²⁰	Overview: GIGA aims to support the Government of Sierra Leone in connecting every school to the internet and every young person to information, opportunity, and choice by providing meaningful connectivity (↑DSTI, no date a). GIGA has collaborated with the government to map the distance from communities to schools and to connectivity; it has also mapped OOSC and is focused on identifying factors that impact learning outcomes the most, such as the availability of infrastructure in schools, learning materials, and teacher training (↑UNICEF Office of Innovation, no date). Implementation year and status: 2019—Ongoing Target group: School authorities, teachers, and students. Reach/impact: 42 schools have been connected to the internet free of charge and connectivity is being monitored in real time. Implementing agencies/organisations: DSTI, UNICEF, and the International Telecommunication Union (ITU).
Sierra Leone Free Education Project	Overview: The Free Education Project for Sierra Leone aims to improve the management of the education system in Sierra Leone, as well as teaching practices and learning conditions (↑World Bank, 2021). Key EdTech components of the project are the development of a comprehensive and integrated teacher management information system (TMIS), the provision of solar-powered tablets or appropriate digital devices to every primary and secondary head teacher and to

²⁰ See <https://www.dsti.gov.sl/giga/>. Retrieved 15 January 2025.

EdTech initiative	Description
	district offices, and supporting cluster- and school-based CPD through information and communication technology (↑World Bank, 2021). Implementation year and status: 2019—Ongoing (expected to end in 2027). Target group: Education agencies, school authorities, and teachers. Reach/impact: Countrywide. Implementing agencies/organisations: TSC, MBSSE, and World Bank (co-financing from the UK Department for International Development (now FCDO), Irish Aid, and the European Development Fund).
Leh Wi Lan (LWL)/Sierra Leone Secondary Education Improvement Programme (SSEIP) II²¹	Overview: LWL and EdTech Hub have been working on various initiatives, including conducting research on what factors affect variability in the activity levels of SQAOs and the level of engagement with digital tools by school principals. In addition, LWL and EdTech Hub are working on formalising the remote support and supervision options, especially for remote clusters, as well as an evaluation of remote supervision. LWL has been extended for another five years and is categorised as the Phase 2 of the Sierra Leone Secondary Education Improvement Programme (SSEIP). SSEIP II aims to improve access to quality education, learning, safety, and health outcomes for children in Sierra Leone. The two main EdTech components of this intervention are (1) further developing models of technology-assisted school and classroom monitoring and (2) supporting advocacy and donor co-ordination to improve the resourcing for and availability of assistive

²¹ See <https://devtracker.fcdo.gov.uk/programme/GB-GOV-1-300767/summary>. Retrieved 15 January 2025.

EdTech initiative	Description
	devices. Implementation year and status: 2016–2021. Phase 2: 2023 —Ongoing (expected to end by 2028). Target group: Students, with a specific focus on adolescent girls and students with special education needs and disabilities. Reach/impact: Phase 1: The programme aims to improve primary and secondary schooling for 1.5 million children in Sierra Leone; improve maths and English results for 400,000 students, and make school safer for 150,000 girls. Phase 2: Target group: School Quality Assurance Officers (SQAOs), teachers, school leaders, girls, learners and learners with disabilities, and organisations of persons with disability. Implementing agencies/organisations: MBSSE, TSC, FCDO (funding organisation), Mott MacDonald Limited, Education Development Trust and Ark. Reach and Impact: Impacting the level of school leadership across all elementary schools in the country. Partner ministries/organisations: TSC, Fab Inc., Education Development Trust (EDT), Free Education Project for Sierra Leone (FEPS), DHA Communications, Focus1000, Purposeful, and Sightsavers.

EdTech initiative	Description
Rising on Air ²²	Overview: Rising on Air is a distance learning initiative that aims to provide quality teaching and learning resources to OOSC as a response to the Covid-19 pandemic (↑Rising Academies, no date). The initiative provides lesson scripts and pre-recorded audio materials designed specifically for radio (↑Mullan & Taddese, 2020). Radio content is supplemented by complementary SMS content directed at parents, as well as phone calls directed at both parents and students (↑Mullan & Taddese, 2020). Implementation year and status: 2020—Ongoing. Target group: Parents and students. Reach/impact: International, with materials uploaded online and free to re-use and adapt (↑Mullan & Taddese, 2020). Implementing ministries/organisations: Rising Academies, MBSSE, and local radio stations.
Teacher.AI ²³	The Teacher.AI is an AI-driven chatbot that offers 24/7 support to teachers, using machine learning to cater to diverse educational needs. It leverages WhatsApp’s global reach for easy accessibility, enhancing pedagogical skills and fostering continuous professional development. The AI Lesson Planning Tool helps teachers in Sierra Leone by consolidating lesson plans from the MBSSE Knowledge Portal into a searchable database. It simplifies lesson planning, offers automated test

²² See <https://www.risingacademies.com/rising-onair>. Retrieved 15 January 2025.

²³ See <https://www.fabdata.io/theteacher-ai/>. Retrieved 15 January 2025.

EdTech initiative	Description
	generation, and reduces manual effort. This tool saves time, allowing teachers to focus more on their classroom practices. Implementation year and status: 2010—Ongoing. Target group: Teachers, students, school leaders. Reach/impact: Facilitate teachers in lesson delivery in functional ICT labs within EducAid model schools. Implementing ministries/organisations: EducAid, Fab Inc./FabData, MBSSE, and TSC.
IMAGINE—Tablet-Based Instruction²⁴	Overview: In collaboration with Rising Academy Network and government partners, Imagine Worldwide launched an initiative to provide tablet-based instruction that supports a centre-based learning programme aimed at delivering maths and literacy instruction to students in government primary schools. Implementation status: Ongoing. Target group: Students in government primary schools. Reach/impact: Project aims to serve 250,000 students across 750 schools by the end of 2026 (Imagine Worldwide, 2024). Implementing ministries/organisations: Imagine Worldwide, Rising Academy Network, MBSSE, and the Office of the Mayor of Freetown.
One Tablet per School/Wi De	Overview: Wi De Ya is an app-based national attendance and

²⁴ See <https://www.imagineworldwide.org/our-work/sierra-leone/>. Retrieved 15 January 2025.

EdTech initiative	Description
Ya ²⁵	enrolment monitoring system for teachers and pupils in government and government-assisted schools. The programme looks to support the TSC and MBSSE in making improvements to education service delivery through the collection of near real-time pupil, teacher, and school data, by providing one tablet per school to support data collection and management at the school level. Implementation status: Ongoing. Target group: Teachers, students, and school leaders. Reach/impact: Project aims to serve all government and government-assisted primary schools across the country. Implementing ministries/organisations: TSC, MBSSE, CGA Technologies, and funded by the Multi Donor Trust Fund (World Bank, GPE, EU, Irish Aid, and FCDO).

²⁵ See <https://wideya.org/en>. Retrieved 15 January 2025.

8. MBSSE and TSC EdTech focus areas

This section summarises key EdTech focus areas for the MBSSE and TSC. These focus areas are shortlisted based on thematic areas where the MBSSE and TSC are implementing both government and donor-funded EdTech programmes.

8.1 EdTech focus areas

Sierra Leone's digital learning programmes are part of the country's broader efforts to integrate technology into education to enhance learning outcomes, increase access to quality education, and prepare students for a digital future. By fostering digital literacy, the programmes equip students and teachers with the necessary digital skills for the 21st century and support continuous learning outside the traditional classroom environment, particularly during disruptions like the Covid-19 pandemic. The current efforts to improve EdTech in the country focus on the key areas outlined below.

Use of EdTech for data-based decision-making

Efforts have been made to ensure access to technology to improve decision-making practices. One key initiative in this regard is the provision of android tablets to 179 SQAOs and 1,197 school principals through the Secondary School Education Improvement Programme (SSEIP). Training and peer support were provided to utilise dashboards through the tablets to effectively collect data and strengthen accountability and data collection practices at district and national levels. Currently, 75% of SQAOs meet the target of eight documented school visits per month, and users have found Tangerine to be a valuable tool for performance improvement beyond just data collection ([↑FCDO, 2024](#)). Another example is the World Bank's One Tablet per School Initiative (Wi De Ya), which seeks to ensure that each government and government-assisted primary school in the country has a tablet ([↑CGA Technologies, 2023](#)).

Improving access to the Internet

The Government of Sierra Leone aims to connect all schools to the internet, significantly enhancing educational opportunities and bridging the digital divide. The UNICEF-ITU initiative, GIGA, launched by the DSTI in collaboration with the MBSSE is an example of an initiative working

towards this goal. Currently, the project is targeting 11,200 schools across the country ([↑GIGA & UNICEF, 2023](#)). The initial mapping of the schools has been conducted. GIGA is now working with Sierra Leone Cable Limited (SALCAB) to pilot Project One Access and extend the implementation to 1,000 schools, and mobilise support to reach all 10,995 schools ([↑GIGA & UNICEF, 2023](#)). The country is also taking steps to improve internet availability across the country. In 2023, the Government of Sierra Leone granted a licence to StarLink, a satellite internet service provider, to ensure wider connectivity nationally ([↑Komminoth, 2023](#)).

Digital learning resources

There has been a focus on developing and distributing digital learning materials such as e-books, educational videos and interactive content to support both learners and teachers. Programmes such as the World-Bank-supported Free Education Project and the FCDO-supported SSEIP programme emphasise the development and distribution of digital learning materials, such as e-books, educational videos, and interactive content. These resources are aligned with the national curriculum and aim to enhance teaching and learning. Another key initiative with support from UNICEF is the Learning Passport, which supports students nationwide. The Learning Passport is a digital education platform designed to provide students access to quality learning resources, especially in remote and underserved areas. Launched as a collaboration between UNICEF, the MBSSE, and other partners, the platform offers a wide range of educational content aligned with the national curriculum ([↑DSTI, no date](#) b). Finally, Sierra Leone also successfully implemented the Radio Teaching Programme (RTP) during the 2014 Ebola outbreak and 2020 Covid-19 pandemic ([↑World Bank, 2021](#)). The government aims to continue the RTP and strengthen the lessons delivered through the programme.

Teacher professional development and management

There is an increased focus on using technology to support teachers. The Free Education Project and SSEIP II aim to develop digitised content that includes online courses, webinars, and virtual communities of practice to help teachers improve their pedagogical skills and stay updated with modern teaching methods ([↑World Bank, 2021](#)). Further, classroom observation tools have been developed for both primary and secondary classes to digitise data collection processes and improve data-informed decision-making in the classroom. SSEIP II has already digitised a

classroom observation tool for secondary grade teachers using the Tangerine platform, and an Android-based coaching application has been developed for primary grade teachers.

To ensure better management and gather teacher data, the Sierra Leone TSC has implemented the TMIS to enhance digital information management across its departments and the broader education sector. Developed by CGA Technologies and funded by the multi-donor Free Education Project, TMIS aims to streamline teacher engagement processes, improve communication between teachers and the TSC, and facilitate advanced data-driven decision-making by the government ([↑MBSSE, 2021a](#)).

Annual School Census, data systems, and EMIS

The use of technology for data-based decision-making is a key focus area. The implementation of the EMIS supports the collection, analysis, and utilisation of data to inform policy decisions and improve education management ([↑MBSSE, 2023](#), p. 17). Further, the MBSSE conducts an Annual School Census, where the data collection is fully digitised and carried out using Android tablets and web-based systems. There have also been efforts to consolidate different systems. The education sector has had several potentially duplicative information technology initiatives in monitoring, supervision, and data collection. With support from Fab Inc., the SSEIP has worked with MBSSE and partners to improve data integration and harmonisation. Internal capacity has been developed in the MBSSE to update Tangerine instruments.

It is also important to mention that significant efforts have been made in the past to develop more sophisticated data systems for the education sector in the country. The Data Hub was developed by DSTI in collaboration with the MBSSE. This hub was developed to standardise data collection, ensure data privacy, and support data-driven decision-making by providing insights into educational outcomes, resource allocation, and policy development. Key features include interactive dashboards for stakeholders, public access to certain datasets for transparency, and regular government reporting ([↑Freiermuth et al., 2020](#)). However, the Data Hub has not been used very frequently as it is not user-friendly and current data visualisation tools and graphs are difficult for users to decipher, even for advanced users with data analytics skills ([↑Freiermuth et al., 2020](#)). The MBSSE has also worked with key partners to develop more comprehensive policies on data architecture. In this context, the Directorate of Planning and Policy (DPP) in the MBSSE worked with Fab Inc. to develop a new policy on school

infrastructure and catchment area planning, as well as guidelines to implement the policy and a data-driven online tool ([↑Momoh & Atherton, 2022](#)).

9. EdTech challenges and opportunities in Sierra Leone

This section highlights key challenges that exist within the digital learning landscape in Sierra Leone. This section is informed by the World Bank's research using the instrument known as the Educational Technology Readiness Index and by the KIIs conducted as part of the primary research for the landscape analysis. [Annex 4](#) includes additional information on the KII findings.

9.1 Challenges and opportunities

While significant efforts to improve the education system by using technology are ongoing, there are still significant challenges in the digital learning landscape, as highlighted in earlier sections of this report. As per the Educational Technology Readiness Index survey conducted by the World Bank in 2022, Sierra Leone is rated low in terms of the readiness of the educational system to leverage educational technology for enhancing teaching and learning experiences ([↑World Bank, 2023](#)). [Box 3](#) below provides an overview of the EdTech Readiness Index and its results in Sierra Leone.

Box 3. *Educational Technology Readiness Index* ([↑World Bank, 2023](#))

The Educational Technology Readiness Index was created to monitor and support EdTech policies and practices globally. The tool aids cross-country analysis and serves as an actionable instrument to collect valuable information, which can motivate actions and signal a country's level of EdTech readiness to high-level policymakers. The Educational Technology Readiness Index is structured into six pillars: school management, teachers, students, devices, connectivity, and digital resources. Answers to the survey are aggregated into indicators and sub-indicators and rated on a 5-point scale, with one being the lowest and five the highest.

In Sierra Leone, the Educational Technology Readiness Index survey, which gathered data from 300 primary schools across the four provinces and Western Area, found that the readiness of the education system for leveraging EdTech to improve teaching and learning experiences rated as low, for both the practice and policy levels, across all the six pillars of the Index. The results highlight the need for a more coherent approach towards EdTech in the country.

The results of the Educational Technology Readiness Index and review of other indicators and findings from the KII highlight some key challenges that need consideration before devising a coherent strategic framework for digital learning in the country. These challenges are highlighted below.

Absence of a coherent policy to integrate and use technology in supporting education service delivery.

Sierra Leone does not have an overarching EdTech policy or a strategy on using technology to support education service delivery, which makes a comprehensive approach to integrating technology to support learning. There is a need to create a multi-year strategy that has specific benchmarks and deliverables across focus areas. Alongside the strategy, it will be necessary to identify sufficient funding sources upfront to execute it successfully.

EdTech infrastructure in Sierra Leone is limited and a challenge that must be addressed.

The challenge of accessing and effectively using the technology is interwoven with the limited digital capabilities of stakeholders in the system: As highlighted by one government stakeholder, it combines “a lack of devices, lack of adequate power, a lack of training, and the need for exposure.” As mentioned throughout this report, access to devices, electricity, and the internet is a challenge in Sierra Leone. Not only are students and teachers not used to using devices, but many parts of the country also have limited access to the internet. As the MBSSE and TSC work towards creating a digital strategy that affects both teachers and students, they will need to emphasise improving the digital infrastructure in Sierra Leone.

Digital capacity for teachers and learners

Digital capacity in Sierra Leone is being strengthened through various initiatives to enhance access to technology and digital skills. Teachers are being trained in digital literacy, equipping them with the knowledge to integrate technology into their teaching practices. For students, programmes focus on improving access to digital tools, such as tablets and the internet, to support their learning experience. This review highlights key initiatives undertaken by various partners and the MBSSE and TSC to increase the digital capacity of both teachers and learners. The sustainability of these efforts is the key to developing the capacity of

teachers and learners to use digital sources to support learning in the classroom and beyond.

Government and donor co-ordination

Government and donor co-ordination is a challenge. This report has highlighted several examples of various donor-funded EdTech initiatives in Sierra Leone. However, programmes and strategic partners lack co-ordination with each other. In KIIs, stakeholder responses indicate that donor focus areas and intervention priorities are guided by a combination of the policies and the primary issues presented by the government, as well as its alignment with development partners' organisational mandates and areas of expertise. Resource constraints often shape the shifts in priorities, and both stakeholder groups highlighted instances where priorities had changed to support or accommodate a broader group of parties. This is predominantly manifested through a combination of government capacity or preferences, and donor expertise. For example, government officials expressed the multiple and shifting stresses they have to navigate, including stalled projects, sustaining the scaling of interventions, and a high turnover of consultants.

While donor co-ordination groups such as the Local Education Group (LEG) exist, they mainly focus on specific programmes they are mandated to co-ordinate instead of playing a broader co-ordination role. Additionally, the LEG focuses on all education programmes, not specifically on EdTech programmes. It might be essential to consider whether a co-ordinating mechanism focusing on EdTech interventions might be useful. This co-ordinating mechanism could bring together different ministries, government institutions, and development partners, particularly MBSSE, TSC, DSTI, and MoCTI. Another key stakeholder in this planning is the Ministry of Finance, which can ensure sustained financial resources available to continue key and impactful initiatives. The lack of co-ordination at different levels (national and regional/local levels) results in duplication of efforts. Also, it acts as a significant missed opportunity to achieve synergies and compound the impact of individual and institutional efforts.

"We know schools better. So it's good [we] take a pivotal role in that and see how best we facilitate process(es). Even for the sake of ownership and continuity for the near future, it would be good for the ministry to be in the driver's seat and allow the passengers on board." (MBSSE KII, 2024).

Content and curriculum development

This is another area that requires attention. There is a need for more digital educational content that is specifically tailored to the local context and aligned with the national curriculum. Additionally, creating content in local languages and dialects is crucial to ensure accessibility and understanding for all students. Equally vital is digitising the content to integrate it with programmes that use technology to support efforts to promote learning. Sierra Leone also lacks a central repository of government-owned validated content that is aligned with the national curriculum and developed by MBSSE (combining both Open Educational Resources and publisher-provided content). A digitised central repository can ensure better sharing and less duplication of efforts among programmes. Given the lack of internet connectivity across the country, it is also important to prioritise offline-first digital learning resources and platforms.

“In terms of content relevance, digital learning, content often needs to be more localised and relevant to the Sierra Leone context to ensure cultural and contextual appropriateness.” (Donor KII, 2024).

Access and equity issues

These issues also hinder the effective implementation of EdTech. Socio-economic disparities mean that students from low-income families often lack access to digital devices and reliable internet connections. Gender disparities also exist, with girls having less access to digital tools and resources than boys. Cultural and social factors contribute to resistance to adopting EdTech. Some communities may prefer traditional teaching methods and have limited awareness about the benefits of EdTech, affecting its acceptance and utilisation among students, parents, and educators.

“[Digital literacy is] not only the kids, even the parents, the education stakeholders, the ministry officials have to have awareness of digital [literacy]. (Presidential Delivery Unit, 2024).

During KIIs, stakeholders discussed their experiences with EdTech during the Ebola and Covid crises over the years and how these lessons can continue to help learners in rural communities who struggle to access education services. While this goal was highlighted, the challenge of realising it without adaptable and low-tech options was also acknowledged. Stakeholders also identified opportunities to operationalise

existing policies and priorities (such as the Radical Inclusion Policy). Many highlighted the lack of technologies to support children with special needs.

Technical support and maintenance

Provision of technical support and maintenance poses additional challenges. There is often a lack of local technical support to assist schools in setting up, maintaining, and troubleshooting digital technologies. Ensuring the maintenance and repair of digital devices can be particularly difficult in remote areas. Monitoring and evaluation are critical but challenging aspects of EdTech implementation. Collecting accurate data to assess the impact of EdTech initiatives is often difficult, limiting the ability to measure success and make informed decisions. Implementing effective feedback mechanisms to continuously improve EdTech programmes based on user experiences and outcomes is essential but frequently overlooked. According to the Educational Technology Readiness Index, only 4% of school principals agree that there is sufficient technical support to maintain ICT resources so that they are fully functional. A multifaceted approach involving the government, private sector, and international partners is necessary to address these challenges. Only by addressing these challenges can Sierra Leone create a more effective and inclusive EdTech ecosystem that enhances educational outcomes and prepares students for a digital future.

9.2 Next steps

While the challenges presented above are not comprehensive, these issues can be considered as the MBSSE and the TSC begin developing the National Digital Learning Strategy. The results from the primary research are direct inputs from important stakeholders within the educational technology landscape in Sierra Leone, so it will be essential to ensure that the digital strategy reflects their input.

The MBSSE and the TSC will begin to co-create the NDLS. During these co-creation sessions, these considerations can be used as a basis to form the foundation of the strategy.

References

These references are available digitally in our evidence library at

<https://docs.edtechhub.org/lib/66FH97GN>

Abakah, J., & Mason, H. (2023, May 22). *Building the Next Generation of Girls (and Boys) in Technology in Sierra Leone*. UNICEF Sierra Leone. <https://www.unicef.org/sierraleone/stories/building-next-generation-girls-and-boys-technology-sierra-leone>. (details)

African Union. (2022). *Digital Education Strategy Fact Sheet*. https://au.int/sites/default/files/newsevents/workingdocuments/42431-wd-AU_Digital_Education_Strategy_FA_web.pdf. (details)

CGA Technologies. (n.d.). *Sierra Leone Teacher Management Information System (TMIS)*. CGA Technologies. Retrieved August 30, 2024, from <https://cgatechnologies.org.uk/projects/sierra-leone-teacher-management-information-system-tmis>. (details)

CGA Technologies. (2023). *Wi De Ya, One Tablet Per School, Sierra Leone*. <https://cgatechnologies.org.uk/projects/wi-de-ya-one-tablet-school-sierra-leone>. (details)

Coflan, C. M., & Kaye, T. (2020). *Using Education Technology to Support Students with Special Educational Needs and Disabilities in Low- and Middle-Income Countries* (EdTech Hub Helpdesk Response No. 4). EdTech Hub. <https://doi.org/10.53832/edtechhub.0021>. Available from <https://docs.edtechhub.org/lib/2WY8H4WW>. Available under Creative Commons Attribution 4.0 International. (details)

Data-Pop Alliance, United Nations Population Fund, & UNICEF. (2023). *Sierra Leone Case Study: Review of Technology-Based Interventions to Address Child Marriage and Female Genital Mutilation*. <https://www.unicef.org/media/137606/file/Tech-based-Interventions-Address-Harmful-Practices-2023-Sierra-Leone-v2.pdf>. (details)

Directorate of Science, Technology & Innovation. (n.d. a). *Giga—DSTI*. Directorate of Science, Technology & Innovation, Government of Sierra Leone. Retrieved September 17, 2024, from <https://www.dsti.gov.sl/giga/>. (details)

- Directorate of Science, Technology & Innovation. (n.d. b). *Sierra Leone Learning Passport*. Directorate of Science, Technology & Innovation, Government of Sierra Leone. Retrieved September 17, 2024, from <https://lp.dsti.gov.sl/>. (details)
- Directorate of Science, Technology and Innovation. (n.d. c). *Sierra Leone Learning Passport*. Directorate of Science, Technology & Innovation, Government of Sierra Leone. Retrieved September 17, 2024, from <https://lp.dsti.gov.sl/about-us/>. (details)
- Directorate of Science, Technology & Innovation. (2019). *Sierra Leone National Innovation and Digital Strategy (2019–2029). Digitization for all: Identity, Economy, and Governance*. Government of Sierra Leone. <https://www.dsti.gov.sl/wp-content/uploads/2019/11/Sierra-Leone-National-Innovation-and-Digital-Strategy.pdf>. (details)
- Directorate of Science, Technology & Innovation. (2023). *Flagship Projects*. Directorate of Science, Technology & Innovation, Government of Sierra Leone. <https://www.dsti.gov.sl/flagship-projects/>. (details)
- EducAid. (2023). *What we do – EducAid*. <https://www.educaid.org.uk/what-we-do/>. (details)
- Foreign, Commonwealth Development Office. (2024). *Leh Wi Learn — Sierra Leone Secondary Education Improvement Programme*. GOV.UK. <https://devtracker.fcdo.gov.uk/programme/GB-1-205234/documents>. (details)
- Forna, M. (2024, March 20). ‘Digital Her’ conference calls time on the gender-gap in Sierra Leone’s digital boom [Online post]. <https://www.linkedin.com/pulse/digital-her-conference-calls-time-gender-gap-sierra-leones-forna-6wqse>. (details)
- Freiermuth, S., Bedoui, C., Middleton, E., & Taddese, A. (2020). *Government of Sierra Leone Education Data Hub: A User Research Report*. EdTech Hub. <https://doi.org/10.53832/edtechhub.0027>. Available from <https://docs.edtechhub.org/lib/8CB5PTUQ>. Available under Creative Commons Attribution 4.0. (details)
- Galal, S. (2024). *Sierra Leone: Price for 1GB mobile data 2023*. Statista. <https://www.statista.com/statistics/1272846/price-for-mobile-data-in-sierra-leone/>. (details)

GIGA, & UNICEF. (2023). *Sierra Leone — Giga*.

<https://giga.global/sierra-leone/>. (details)

Global Partnership for Education. (2007, January 1). *Education in Sierra Leone | Where We Work | Global Partnership for Education*.

<https://www.globalpartnership.org/where-we-work/sierra-leone>. (details)

Global Partnership for Education. (2018). *GPE's Engagement on Domestic Financing for Education*. Available from

<https://r4d.sharepoint.com/:w:/r/sites/IntegratingECDintoPHC/Shared%20Documents/In%20Progress%20Documents/4.%20Country%20Action%20Planning/3.%20Kenya/Subaward%20Statement%20of%20Work.docx?d=wa5633d5768964cc3be312c78400dca50&csf=1&web=1&e=LI71uj>. (details)

Government of Sierra Leone, Irish Aid, & UNICEF. (2021). *Out-Of-School Children Study Sierra Leone*.

<https://www.unicef.org/sierraleone/media/1186/file/Out-Of-School%20Children%20Study%20Sierra%20Leone.pdf>. (details)

Government of Sierra Leone. Basic and Senior Secondary Education Act, 2023 (2023).

<https://mbsse.gov.sl/wp-content/uploads/2023/06/Basic-and-Senior-Secondary-Education-Act-2023-.pdf>. (details)

Harris, D., & Conteh, F. M. (2020). Government–donor relations in Sierra Leone: Who is in the driving seat? *The Journal of Modern African Studies*, 58(1), 45–65. <https://doi.org/10.1017/S0022278X19000569>.

Available from

<https://www.cambridge.org/core/journals/journal-of-modern-african-studies/article/abs/governmentdonor-relations-in-sierra-leone-who-is-in-the-driving-seat/C6B5BA168B22AD2D1D290E97092A52BA>. (details)

Harris, J. (2023). Exploring donor-driven skills development as a channel of continued aid dependency. *Third World Quarterly*, 44(6), 1249–1268.

<https://doi.org/10.1080/01436597.2023.2178889>. Available from <https://www.tandfonline.com/doi/full/10.1080/01436597.2023.2178889>. (details)

Imagine Worldwide. (n.d.). *Sierra Leone*. Imagine Worldwide. Retrieved September 17, 2024, from

<https://www.imagineworldwide.org/our-work/sierra-leone/>. (details)

- Imagine Worldwide. (2024, September 24). Imagine Worldwide Launches Commitment to Action at CGI 2024. *Imagine Worldwide*. <https://www.imagineworldwide.org/updates/imagine-worldwide-launches-commitment-to-action-at-cgi-2024/>. (details)
- International Telecommunication Union. (2022). *Individuals using the Internet (% of population)*—Sierra Leone. World Bank Open Data. Available from <https://data.worldbank.org/indicator/IT.NET.USER.ZS?locations=SL>. (details)
- Kanyako, V. (2016). Donor policies in post-war Sierra Leone. *Journal of Peacebuilding & Development*, 11(1), 26–39. <https://doi.org/10.1080/15423166.2016.1146035>. (details)
- Kemp, S. (2023). *Digital 2023: Sierra Leone*. DataReportal—Global Digital Insights. <https://datareportal.com/reports/digital-2023-sierra-leone>. (details)
- Kimenyi, E., Chuang, R., & Taddese, A. (2020). *EdTech in Rwanda: A Rapid Scan* (Country Scan No. 11). EdTech Hub. <https://doi.org/10.53832/edtechhub.0036>. Available from <https://docs.edtechhub.org/lib/TYBTWI8K>. Available under Creative Commons Attribution 4.0 International, Open Access. (details)
- Komminoth, L. (2023, June 12). Sierra Leone joins Elon Musk’s Starlink satellite service. *African Business*. <https://african.business/2023/06/technology-information/sierra-leone-joins-elon-musks-starlink-satellite-service>. (details)
- Mason, H. (2022, May 5). *Making strides to make digital literacy facilities accessible to children across Sierra Leone*. UNICEF Sierra Leone. <https://www.unicef.org/sierraleone/stories/making-strides-make-digital-literacy-facilities-accessible-children-across-sierra-leone>. (details)
- Ministry of Basic and Senior Secondary Education Sierra Leone. (2018). *FQSE—Free Quality School Education*. Ministry of Basic and Senior Secondary Education Sierra Leone, Government of Sierra Leone. <https://mbsse.gov.sl/fqse/>. (details)
- Ministry of Basic and Senior Secondary Education. (2021a). *About TMIS*. Teacher Management Information System. <https://tsctmis.org/about>. (details)

- Ministry of Basic and Senior Secondary Education. (2021b). *National Policy on Radical Inclusion in Schools*. Government of Sierra Leone. <https://mbsse.gov.sl/wp-content/uploads/2021/04/Radical-Inclusion-Policy.pdf>. (details)
- Ministry of Basic and Senior Secondary Education. (2021c). *Policy Guidelines on School Approvals*. Government of Sierra Leone. https://mbsse.gov.sl/wp-content/uploads/2022/12/MBSSE-School-Approvals-Policy-Guidelines_final.pdf. (details)
- Ministry of Basic and Senior Secondary Education. (2022a). *National Policy on Radical Inclusion in Schools Implementation Plan 2021–2026*. Government of Sierra Leone. <https://mbsse.gov.sl/wp-content/uploads/2022/05/MBSSE-Radical-Inclusion-DIGITAL.pdf>. (details)
- Ministry of Basic and Senior Secondary Education. (2022b). *National Strategy for Out-of-School Children in Sierra Leone*. Government of Sierra Leone. https://mbsse.gov.sl/wp-content/uploads/2022/06/Sierra-Leone-National-OOSC-Strategy-FINAL-_Printed.pdf. (details)
- Ministry of Basic and Senior Secondary Education. (2023). *2022 Annual School Census Report*. Government of Sierra Leone. https://mbsse.gov.sl/wp-content/uploads/2023/07/Annual-School-Census-Report_2022.pdf. (details)
- Ministry of Basic and Senior Secondary Education. (2024). *About the MBSSE*. Ministry of Basic and Senior Secondary Education, Government of Sierra Leone. <https://mbsse.gov.sl/about-us/>. (details)
- Ministry of Basic and Senior Secondary Education, & Ministry of Technical & Higher Education. (2022). *Sierra Leone Education Sector Plan 2022–2026*. Government of Sierra Leone. <https://www.unicef.org/sierraleone/media/1306/file/Sierra%20Leone%20Education%20Sector%20Plan%202022%20-%202026.pdf>. (details)
- Ministry of Communication, Technology & Innovation. (2024). *About the Ministry—Ministry of Communication, Technology & Innovation*. Ministry of Communication, Technology & Innovation, Government of Sierra Leone. <https://mocti.gov.sl/about-the-ministry/>. (details)
- Ministry of Education, Youth and Sports (Sierra Leone). (2010). *National Education Policy*.

<https://mbsse.gov.sl/wp-content/uploads/2020/03/2010-National-Education-Policy.pdf>. (details)

Ministry of Finance. (2023). *Benefit Incidence Analysis of the Education Sector in Sierra Leone* [Research Report]. Government of Sierra Leone. <https://mof.gov.sl/documents/benefit-incidence-analysis-of-the-education-sector-in-sierra-leone/>. (details)

Ministry of Information and Communications. (2009). *National ICT Policy of Sierra Leone* (pp. 63). Government of Sierra Leone. <https://www.ellipsis.co.za/wp-content/uploads/2016/07/SierraLeone.pdf>. (details)

Momoh, A., & Atherton, P. (2022). How Sierra Leone is betting on data to fight the impact of climate change on schools. *Global Partnership for Education*. <https://www.globalpartnership.org/blog/how-sierra-leone-betting-data-fight-impact-climate-change-schools>. (details)

Mullan, J., & Taddese, A. (2020). *EdTech in Sierra Leone: A Rapid Scan* (Country Scan No. 3). EdTech Hub. <https://doi.org/10.53832/edtechhub.0038>. Available from <https://docs.edtechhub.org/lib/C5MWWQI2>. Available under Creative Commons Attribution 4.0 International, Open Access. (details)

Republic of Sierra Leone, UNICEF, & IIEP-UNESCO Dakar. (2020). *Education Sector Analysis: Assessing the enabling environment for gender equality*. <https://unesdoc.unesco.org/ark:/48223/pf0000375434/PDF/375434eng.pdf.multi>. (details)

Rising Academies. (n.d.). *Rising Academies—Rising On Air*. Rising Academies. Retrieved September 17, 2024, from <https://www.risingacademies.com/rising-onair>. (details)

Rising Academy Network. (n.d.). *Rising Academies—Our Partners*. Rising Academies. Retrieved November 1, 2024, from <https://www.risingacademies.com/our-partners>. (details)

Rising Academy Network. (2022). *Rising Academies*. Rising Academies. <https://www.risingacademies.com>. (details)

Save the Children. (2024). *Education | Sierra Leone | Save the Children*. <https://sierraleone.savethechildren.net/what-we-do/education>. (details)

- Sengeh, D. M. (2021, October 14). EdTech in Sierra Leone: Reimagining education for continuous learning and teaching. *Global Partnership for Education*.
<https://www.globalpartnership.org/blog/edtech-sierra-leone-reimagining-education-continuous-learning-and-teaching>. (details)
- Sengeh, D. M. (2022, September 7). How we are implementing our national policy on radical inclusion in education. *Africa Renewal*.
<https://www.un.org/africarenewal/magazine/how-we-are-implementing-our-national-policy-radical-inclusion-education>. (details)
- Statistics Sierra Leone. (2018). *Sierra Leone Multiple Indicator Cluster Survey 2017* [Survey Findings Report]. Statistics Sierra Leone.
https://www.statistics.sl/images/StatisticsSL/Documents/sierra_leone_mics6_2017_report.pdf. (details)
- Teaching Service Commission. (2020). *About Us | Teaching Service Commission — Sierra Leone*. Government of Sierra Leone.
<https://tsc.gov.sl/about-us/>. (details)
- UNESCO. (2015). *Education 2030: Incheon Declaration and Framework for Action for the Implementation of Sustainable Development Goal 4*.
https://uis.unesco.org/sites/default/files/documents/education-2030-incheon-framework-for-action-implementation-of-sdg4-2016-en_2.pdf. (details)
- UNESCO. (2023, June 14). *Sierra Leone | Technology | Education Profiles*. UNESCO.
<https://education-profiles.org/sub-saharan-africa/sierra-leone/~technology>. (details)
- UNICEF. (n.d.). *Education: Access to education and marketable skills remains a challenge for children in Sierra Leone*. Retrieved August 30, 2024, from <https://www.unicef.org/sierraleone/education>. (details)
- UNICEF. (2022). *UNICEF Sierra Leone*. <https://www.unicef.org/sierraleone/>. (details)
- UNICEF Office of Innovation. (n.d.). *Giga: Connecting Every School to the Internet*. Retrieved September 17, 2024, from <https://www.unicef.org/innovation/giga>. (details)

World Bank. (2021). *Development Projects : Sierra Leone Free Education Project — P167897*. World Bank.
<https://projects.worldbank.org/en/projects-operations/project-detail/P167897>. (details)

World Bank. (2023). *Education and Technology Readiness Index (ETRI)*. World Bank.
<https://www.worldbank.org/en/topic/education/brief/edtech-readiness-index>. (details)

Annex 1. KII participant profiles

Table 1A. *Key informant interview participants*

Stakeholder group	Organisation	Female	Male	Total
Government (national)	Ministry of Basic and Senior Secondary Education (MBSSE)	-	3	3
	Teaching Service Commission (TSC)	-	1	1
	Ministry of Technical and Higher Education (MTHE)	0	-	0
Government (district)	Ministry of Basic and Senior Secondary Education (MBSSE)	-	1	1
	Teaching Service Commission (TSC)	-	3	3
Donors and development partners	World Bank	-	1	1
	UNICEF	-	1	1
	UK Foreign, Commonwealth and Development Office (FCDO)	1	-	1
	Save the Children	-	1	1

	Rising Academies	-	1	1
	Mott McDonald	1	-	1
	EducAid	1	-	1
	CGA Technologies	-	1	1
Total		3	13	16

Annex 2. Student FGD information

Student FGDs

All students were from government schools in the Western Area Urban district (Freetown).²⁶ A total of 30 students participated, with ages ranging from 11 to 20 years old. A breakdown is provided in the table below:

	Male	Female	Total
Junior secondary school	4	8	12
Senior secondary school	6	12	18
Total	10	20	30

Only two disabilities were reported/recorded (visual impairment and sickle cell).

²⁶ It should be noted that FGDs were conducted with students in the capital city of Sierra Leone, which is an urban area. These results may not be representative of students in more rural areas.

Annex 3. Teacher and school leader survey

A total of 23 respondents from a range of positions detailed in the table below completed the survey. At least one participant from 10 out of the 16 districts across the country responded to the survey; the districts include Tonkolili, Falaba, Bonthe, Kailahun, Port Loko, Moyamba, Kono, Kenema, Koinadugu and Pujehun.

	Male	Female	Total
Headteacher/Deputy Headteacher	8	2	10
Principal/Vice Principal	4	0	4
Teacher/Assistant Teacher	4	0	4
SQAO	5	0	5
Total	21	2	23

Annex 4. Detailed KII findings

This section presents the findings from the primary research undertaken as part of the landscape analysis. Through key informant interviews (KIIs), the team engaged with key groups of stakeholders with diverse roles and responsibilities in the Sierra Leone education space to understand their perspectives and experiences of EdTech in the country. The issues highlighted and discussed by these stakeholders offer valuable insights into what needs to be considered for priority areas for the NDLS. These considerations can be used to shape and support ongoing EdTech efforts and initiatives.

Considerations for developing an EdTech strategy

The main considerations highlighted in the KIIs are:

- Building **digital readiness and EdTech infrastructure**;
- **Relationships and co-ordination** across stakeholders engaged in EdTech programmes and initiatives;
- Reflections on the **value and impact of EdTech interventions** in the Sierra Leonean context and opportunities for the NDLS.

Many of the issues highlighted across these subthemes are cross-cutting. Throughout the landscape analysis, the challenges and opportunities identified by these stakeholders, including broad sectoral and organisational issues, are also discussed under each theme.

Build both digital readiness and EdTech infrastructure

This study investigates perceptions of digital learning and literacy across different stakeholder groups. For this study, **digital literacy** in Sierra Leone can be defined as learners equipped with the knowledge, skills, and attitudes that will enable them to flourish in a digital future. In this context, **digital learning** presents a pathway to digital literacy. While this aspiration is holistic, and relevant across multiple sectors, it primarily falls within the mandate of education agencies.

Broadly, stakeholders have similar perceptions of how to define digital literacy and its importance. Participants in this study understood digital literacy as a skill that centres the ability of individuals to utilise digital devices/technology to support learning effectively. This is consistent with the objectives outlined in a range of government policies and programmes related to EdTech, as presented in [Section 3](#). Stakeholders placed strong emphasis on the ability to navigate software, as well as operate the hardware, to access information. A stakeholder from the MBSSE defined digital literacy as ***“a range of skills and competencies that enables individuals to effectively use digital technologies to access, evaluate, create, and communicate information.”***

The digital readiness of the education system

One of the core themes from the primary data on digital learning and literacy was the education system’s digital readiness. Stakeholders detailed their experiences implementing EdTech interventions and the lessons they learnt from those activities.

- **It is important to establish a strong foundation of digital readiness in preparation for any EdTech intervention:** The system’s

overall digital readiness was a vital reflection point among government officials and development partners. Many expressed concerns about the dangers of a poorly established foundation around digital literacy and using technology. For the foundations of a digital learning system to be robust, stakeholders detailed the need for a shift in the mindset and attitudes of learners and users more broadly. Behavioural changes were identified as a key requirement for any digital strategy to be successful, with one government stakeholder saying,

“We know we have this problem of engaging technology or using technology to educate. Most access to this information, or this technology, is for pleasure and for entertainment, you know. So maybe, perhaps we need some more sensitisation on the needs and importance of this. How it can help to make up, to promote progress in our society.”

Some stakeholders strongly advocated for more internal reflection on the integration and use of EdTech in all cases, with a clear rationale for its value in each instance. This call for caution and greater consideration indicates an attempt to avoid distractions or waste of already limited resources.

- **Stakeholders emphasised the need for contextually relevant digital content/curriculum:** Blanket approaches of importing content from other countries and settings were criticised. There is recognition that more deep thinking is needed to create and utilise materials for the Sierra Leonean context. Under this theme, the relationships between digital content, teacher training, and the relevance of EdTech emerge strongly. One implementing partner reflected on their use of digital content:

“The challenge I find is content [...]. For instance, we get content that has been used in Japan, we get content that has been developed by people sitting in New York [...]. So just [making] sure that we get the right content for whichever EdTech strategy that is going to happen.”

- **The overall well-being and digital safety of learners, as they access any digital content, was a recurring theme that was highlighted in the KIIs:** Informants recognised that students, in particular, are vulnerable in the digital space, for example, through

loss of privacy and personal data, and exposure to harmful content. These stakeholders flagged this as a critical issue, and a few explained the precautionary measures or strategies they have developed to mitigate these potential harms. Child protection appears to be a priority issue, and stakeholders are actively considering how their strategies and programmes can ensure the safety and security of learners. This added challenge compounds the already existing complexities around implementing effective and sustainable EdTech interventions. One donor noted:

“[...] we have a responsibility not only to provide access and the opportunity but also safeguarding with the right skills and tools. Especially, about the mental impacts and the mental health issues on the internet [...] the online bullying and social media.”

- Government officials also highlighted data protection concerns stemming from administrative requirements. The need for confidentiality when managing sensitive information, and the lack of general awareness about data privacy were concerns. They spoke at length about various aspects of data protection spanning storage and loss, data visibility, and cybersecurity. These concerns extended to staff in the ministry as well as those at the school level. To address this, officials discussed potential strategies with a holistic perspective, considering the establishment of overarching regulations and laws for the system, and educating all staff about the importance of data protection in their day-to-day lives. The safety of devices or technology installed in schools was also mentioned. The impact of theft on interventions was highlighted, and government stakeholders discussed mitigation strategies to address this. In particular, local ownership was presented as one of the more common approaches, especially in rural or remote communities. Government stakeholders also mentioned engagement with community leaders and coming to an agreement on the use of technology for educational purposes for the community as another mitigation strategy.

Stakeholders also discussed the steps they have taken to address these challenges. All stakeholders mentioned effective and continuous teacher training and professional development, including the use of EdTech. All groups highlighted the gap in technology, capabilities, and guardrails that must be bridged to protect all engagement in the digital space. This need

for capacity development also applies to administrators, and government officials expressed the expectation that ministry staff would have to adapt.

Educational technology and supporting infrastructure

The challenge of accessing and effectively using technology is interwoven with the limited digital capabilities of stakeholders in the system: As highlighted by one government stakeholder, it combines **“a lack of devices, lack of adequate power, a lack of training, and the need for exposure.”** As mentioned in [Section 9](#), access to devices, electricity, and the internet is a challenge in Sierra Leone. Not only are students and teachers not used to using devices, many parts of the country have limited network access. As the MBSSE and TSC work towards creating a digital strategy that affects both teachers and students, they will need to emphasise improving the digital infrastructure in Sierra Leone. In many ways, the lack of soft skills and exposure to technology has profound implications for integrating digital processes in the education sector. In many places across the country, teachers and students do not enjoy exposure to hardware. Where EdTech is available, interviewees highlighted incidents where there is an aversion to using EdTech due to a lack of training or experience.

Relationships and co-ordination

The NDLS development process aims to bring together a cross-section of stakeholders and actors in the EdTech space. Therefore, understanding the nature, frequency, purpose, and practical utility of existing interactions—and the mechanisms of these engagements—is critical at this stage to ensure alignment and maximum long-term impact of programmes.

Government and donor co-ordination

KIIs indicate an urgent need to establish better government and donor co-ordination mechanisms. The primary data reflects findings from studies which indicate a high level of engagement from donors ([↑Kanyako, 2016](#)), significant donor influence([↑Harris, 2023](#)), and considerable fluidity in individual and institutional relationships ([↑Harris & Conteh, 2020](#)). In interviews, stakeholder responses indicate that donor focus areas and intervention priorities are guided by a combination of the policies and the primary issues presented by the government, as well as its alignment with development partners’ organisational mandates and areas of expertise.

Resource constraints often shape shifts in priorities, and both stakeholder groups highlighted instances where priorities had changed to support or accommodate a broader group of parties. This shift was predominantly manifested through a combination of government capacity, preferences, and donor expertise. For example, government officials expressed the multiple and shifting stresses they have to navigate, including stalled projects, sustaining the scaling of interventions, and a high turnover of consultants. An underlying issue is the government's significant reliance on donor funding, which constrains decision-making. Both the government and donors mentioned co-ordination challenges. Government agencies recognised their role in leading these co-ordination efforts and providing oversight to donor activities; however, they also acknowledged that there is still duplication of efforts across all stakeholder groups. One government official noted:

“It’s better to have a strategy and also a policy because we have several donors with so much duplication of activities. That’s one of the challenges, we have several donors coming in with the same thing.”

The varied capacities of these two groups add a layer of complexity to the relationship and roles in terms of support versus oversight. In particular, donor influence in shaping ultimate programming comes through strongly. As a matter of practicality, there appears to be significant overlaps in roles, and government stakeholders highlighted examples of initiatives where donors have stepped in to deliver already ongoing projects. This somewhat contrasts with donors' perceptions (often tied to their strategic approach) of being invited to support government programmes. While the broader conditions which informed these shifts were not discussed, there is a clear sense that the duplication of efforts and the reassignment of responsibilities poses challenges for all groups. Moreover, the intersection of EdTech programming with multiple ministries and agencies (for example MBSSE, DSTI, and MoCTI) also confuses each agency's roles, creating uncertainty in leadership responsibilities.

From the donor perspective, co-ordination was seen as the responsibility of both the government and the donor agencies themselves. While the government's role as the regulator of the sector as a whole was emphasised, donors also perceived the government as navigating internal challenges around communication and alignment of programme activities. Here, donors reflected on the need for greater intra-governmental co-ordination.

Without clear and consistent internal and external co-ordination structures, highlighted by both stakeholder groups, pragmatic co-ordination mechanisms emerge as necessary to guide activities along programme cycles. In many cases, development partners discussed strategies they developed to communicate with each other and wider stakeholder groups to ensure programme alignment. Notably, government officials highlighted the convening power of the donors as a driving force for co-ordinating activities:

“They [donors] co-ordinate. They work with us [the ministry]. They provide funds, and they call us to discuss whatever strategy, whatever tool that they want to use and then we ensure that all of what they were doing are in line with our policies.”

(Government — District level official).

The KIs highlight that an appropriate and effective balance between government leadership and donor participation is actively being negotiated while programmes are being implemented. Importantly, all stakeholder groups demonstrated an awareness that the complexity of the education ecosystems and issues being addressed required greater co-ordination than currently exists.

Donor co-ordination

- KIs also highlighted an urgent need for development partners to co-ordinate among themselves. Two distinct sub-categories emerged among development partners: funding agencies (large-scale funders such as FCDO and the World Bank) and implementing partners (such as Mott MacDonald). Major funders discussed their co-ordination efforts with each other and with the government. Through these engagements, focus areas are negotiated and agreed upon in an attempt to avoid oversaturation and duplication. This indicates donor awareness of programme proliferation and recognition of the additional bandwidth required for the government to manage the same coherently.
- Relatively smaller funders indicated that they must actively seek out more extensive programmes and agencies to understand what has been done and how their programmes and expertise fit into the digital learning landscape. As one implementing partner expressed:

“I’ve been working on, trying to get into conversations with [donors], understand what [they are] working on,

trying to get into conversation with the delivery units [...]. So just to make sure that in this landscape, we are able now to be part of the conversation”.

- Implementing partners sit at the intersection of multiple pressures. Firstly, they must be attentive to government and funder priorities, which establish accountability and reporting structures based on set targets and milestones. Secondly, they also have to strike a balance with the needs of direct beneficiaries of interventions. While these driving forces often align at a high level, activities on the ground are frequently informed by the preferences of local actors. In many instances, implementers presented themselves as being on the front line of programme delivery. With this perspective, they often highlighted the unique insights this provided in bridging policy aspirations with the realities of operations. One implementing partner noted:

“As an implementer, you need to find a very good balance between your commitment to the donor, but also being true to the needs of the people that your program serves [...] that’s the opportunity and maybe sometimes the constraint; you’re stuck between two very powerful forces with the country, the people, and the government that you serve.”

- Implementing agencies also emphasised the importance of being responsive and adaptable to a changing context. They highlighted instances where programme activities and outputs were revised after feedback from government agencies, for example:

“At the moment, we are working through redesigning the dashboards to make sure that they actually speak to information that is important for a policymaker.”
(Implementing partner).

- This stakeholder group’s reflections underscore the intersection of multiple actors, issues, and priorities. The flexibility of funders, engagement of government, and adaptability of implementing partners are recurring dynamics that stakeholders perceive as critical factors shaping an intervention’s impact.

The value and impact of EdTech

This section highlights the perceived and experienced value and impact of EdTech initiatives in the ecosystem so far. Here, we acknowledge the challenges key groups face while spotlighting opportunities associated with or realised through these. However, the opportunities for technology to support children with learning needs were often not discussed in any specific detail, which might indicate a need for more thought and engagement across groups. In one case, this ambiguity was directly addressed by a stakeholder, who emphasised that further investigation would be required to gain clarity on this issue.

“And how can technology be used to facilitate inclusion and engagement in the classroom? So I think for me, the short-term goal will be defining and understanding what the problem is, from this perspective.”

(Implementing partner)

Supporting holistic teaching and learning

Many stakeholders identified opportunities for teachers and learners to attain new skills through digital technologies. Moreover, stakeholders explained how these technologies can help provide nuanced insights into learning, especially when benchmarked against performance expectations. These observations also informed how and when it is most appropriate to introduce technology in lessons based on students' learning levels.

“We realised that actually part of the challenge is [students’] comprehending and writing skills, and their numeracy and literacy skills are still behind. But while we want to introduce [the technology] to them, maybe it makes more sense for them to actually be introduced to something that allows them to get to this level. And that’s now one of the learnings that we are getting is that this EdTech solution is really good that we can use. But also the challenges that are coming out of it is that it is showing us the gaps that some of the students and some of the schools have.” (Implementing partner)

However, stakeholders also indicated that information presentation and communication can be improved. Incomplete, late transmission and poorly presented data undercut the effective use and perceived benefits of educational technology and digital processes. While sharing information is

a goal for all groups, the experience of engaging with this process was also highlighted as a critical consideration for sustainability.

Supporting administrative processes and capacity building

Stakeholders discussed how EdTech has been used in the sector and its associated benefits. Support for the administrative processes is already yielding important effects with the potential of having a significant impact, especially for remote supervision. Other positive results, in terms of improvements in teacher management capacity from efforts thus far, were also highlighted. These gains are perceived as having a ‘trickle-down’ effect and also serve as encouragement to their peers. The benefits, such as a working dashboard to track performance, were used to illustrate how buy-in can be achieved. While these successes are notable, the overall picture shows that the scale of uptake so far is insufficient to meet needs.

Among stakeholders, there appears to be an understanding that a sustainable strategy would need to shift from heavy reliance on the engagement of a few to gaining traction with a critical mass of teachers and administrators. As a result, stakeholders are encouraging and facilitating the creation of networks and communities of practice, where teachers can more easily seek support from supervisors as well as share challenges with each other. Moreover, digital technology itself (via WhatsApp) appears to offer a viable solution, as highlighted by a government official:

“The teachers have WhatsApp groups, where their supervisors talk to them on WhatsApp. And if you see how interesting conversations or discussions they have in these groups, the support they are getting, how they support each other, how they reach out to each other.”

The capacity of ministry staff was also highlighted as a salient issue which is actively being addressed. Donors and implementing partners are working with the government at all levels to ensure they have the digital skills to carry out their roles.