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Remote Supervision Options for School Quality Assurance Officers
Recommendations for a cost-effective and rapid develop-and-test process

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Abbreviations and acronyms

MBSSE	Ministry of Basic and Senior Secondary Education (Sierra Leone)
SQAO	School Quality Assurance Officer
SSEIP	Sierra Leone Secondary Education Improvement Programme

1. Introduction

The Sierra Leone Secondary Education Improvement Programme II (SSEIP II) is a five-year programme funded by the UK Foreign, Commonwealth and Development Office (FCDO) to support the Ministry of Basic and Senior Secondary Education (MBSSE) to improve learning outcomes for students at secondary level and to increase the enrolment, retention, and well-being of girls and children with disabilities in school. As part of **Output 1: Strengthened monitoring, supervision, and school support by districts**, the programme will explore the use of different digital tools for School Quality Assurance Officers (SQAOs), including tools for remote visits.

Since September 2020, EdTech Hub has worked with the MBSSE to support its vision of prioritising the use of data for decision-making at all levels of the education system. In particular, this support has included collaborating with the Government of Sierra Leone and implementing partners of the Leh Wi Lan[1] programme (continued under SSEIP II) to better understand what factors affect the variability in the activity levels of SQAOs, and the level of engagement with digital tools by school principals. Through this research focus, we better understand the different methods SQAOs have used to collaborate with the principals in their clusters.

Following this work, the SSEIP II project will look at supporting the MBSSE to formalise remote supervision options for the SQAOs, particularly for those with remote clusters. As part of this work, this report focuses on recommendations for how SQAOs can conduct remote school visits, particularly for schools in hard-to-reach areas. Section 2 provides details on the background, previous research, and findings. Section 3 provides examples from the literature on using remote tools in education, such as WhatsApp. Section 4 recommends two remote supervision options, including costs to consider when testing these solutions. Conclusions are given in Section 5.

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[1] See
https://www.camb-ed.com/intdev/article/510/education-at-the-heart-of-sierra-leones-post-recovery-and-march-to-growth Retrieved 11 December 2023

2. Background

Since the end of 2020, approximately 175 SQAOs have provided a systemwide means for the MBSSE to support quality assurance at the school level. Since early 2021, the Leh Wi Lan programme has worked with the MBSSE to support capacity development and effective functioning of the SQAOs.

SQAOs conduct school quality assurance visits and collect data on priority whole-school issues and lesson observations to gather data on classroom and pedagogy indicators and verify the attendance of students and teachers. The data is collected on a tablet provided to them by the programme and using the Tangerine app.[2]

Each SQAO is assigned a cluster of schools in their allocated district. This allocation consists of schools at all levels and varies in number from district to district and within districts. SQAOs are given a common target of visiting eight schools from their cluster per month and submitting 16 monthly forms related to these schools. There are three forms that SQAOs need to complete: the lesson observation form, the attendance validation form, and the school quality assurance form. Although they are expected to submit 16 forms each month, it has not been specified how many of each form they need to submit, as the focus has been more on completing eight school visits and using the forms to document the visits in some way, rather than focussing on the specific data collected from each visit. For example, the form completed most often is the attendance validation form, as this is the shortest. However, the school quality assurance form provides more insights into a school (↑Beoku-Betts & Leh Wi Lan, 2023).

Previous research by ↑Beoku-Betts & Leh Wi Lan (2023) found several reasons for the variability in activity levels among different SQAOs. Two of the findings are:

1. **SQAOs allocated to urban areas conduct more visits than those allocated to schools in rural areas, and they visit a higher proportion of their allocated schools.**

   Some SQAOs are allocated to schools in hard-to-reach places. For those allocated to schools that are difficult to access, getting to these schools takes longer, requires more fuel, and takes SQAOs through difficult terrain. As a result, SQAOs with more rural clusters visited

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[2] https://www.tangerinecentral.org/ Retrieved 6 February 2024

these schools less frequently than SQAOs with clusters closer to urban centres.

2. **SQAOs of all activity levels have built strong relationships with principals in their clusters. SQAOs have engaged in informal remote supervision via WhatsApp.**

   The use of WhatsApp for communication with principals was common among SQAOs with lower activity levels. This mode of communication may be a substitute for visiting schools regularly if the schools are in rural, hard-to-reach areas at some distance from the district education office.

These findings led to the recommendation to explore the **trialling of hybrid quality assurance methods, such as remote visits,** in the next programme. Several SQAOs have schools in hard-to-reach areas, and as a result, these schools are not visited as regularly as schools in urban centres. As SQAOs stay in contact with principals through WhatsApp, we could harness this mechanism to implement remote visits to help provide extra support to rural schools that are not visited frequently enough. Remote visits also support finding a nuanced way to assign SQAOs targets.

3. Examples from the literature

Our literature review found limited examples of remote supervision options for school inspectors or monitors. For this reason, we have included one example of remote monitoring using a mobile application and WhatsApp, one example of the use of remote tutoring, and lastly, an example of the use of messaging apps, WhatsApp and SMS, to support learning.

1. **Improving educational outcomes & reducing absenteeism at remote villages with mobile technology and WhatsApp: findings from rural India (↑Nedungadi et al., 2018)**

↑Nedungadi et al. (2018) investigated how using a monitoring app and WhatsApp could reduce teacher absenteeism, increase teacher effectiveness, and improve student performance in schools in remote villages in India. Here, 'cluster coordinators' (similar to SQAOs) provided remote support and monitoring of the apps and WhatsApp. The methodology involved both physical site visits by cluster coordinators and online groups.

The study was set in rural India and found that the model functioned well in rural settings with poor internet connectivity and limited infrastructure, similar to those in hard-to-reach areas in Sierra Leone.

The method used increased teacher attendance, peer learning, and teacher attendance at planned activities, with feedback suggesting more interest and engagement in teaching.

Despite some initial resistance to the daily monitoring, teachers began to value the online support as it had a positive impact on their teaching practices. The study noted that teachers saw an increase in teaching and learning outcomes; however, this insight is anecdotal and, therefore, needs to be validated, as we do not know how much these outcomes improved.

↑Nedungadi et al. (2018) found that the monitoring systems resulted in a reduction in the frequency and cost of school visits, as cluster coordinators were able to manage and supervise schools using messaging apps and WhatsApp.

Overall, this solution provided a low-cost method of monitoring classrooms in rural villages by using mobile apps in conjunction with WhatsApp.

2. **Under the Hood of an EdTech Study in Kenya: Implementation challenges, successes, and lessons learnt (↑Büchel et al., 2023)**

This study looked at how mobile phone-based remote tutoring has been implemented in Kenya. Here, students were sent maths problems via SMS and received a 20-minute follow-up phone call from their teacher. Calls were one-to-one and were used to support students with the weakest performance. Teachers used test scores to prioritise students who needed extra support.

The study found that while the phone calls were effective, they were most effective when students had targeted instruction based on their performance. The need for instruction targeted to the recipient's level is supported by a study conducted in Sierra Leone (↑Crawfurd et al., 2023), showing that phone interventions without a targeted instructional mechanism are ineffective.

Overall, if the remote supervision mechanism used with the SQAOs will use phone calls, it will be essential to ensure that calls with principals are targeted to the needs of the principals and their schools.

3. **How can messaging apps, WhatsApp and SMS be used to support learning? A scoping review (↑Jordan, 2023)**

This scoping review examines how social media and messaging apps can support education in low- and middle-income countries. The review produced four main findings:

1. Messaging can effectively support teachers by motivating them and giving them ideas for activities.

2. Messaging is cost-effective.

3. Messaging can support teachers' professional development by maintaining contact with teachers and providing additional support to the usual in-person training.

4. Materials sent via messaging apps can have a wider reach as they are readily available to circulate with colleagues.

One example of using a WhatsApp group, followed by in-person training, was in Ghana for an educational leadership training programme. ↑Brion (2019) found that after conversation triggers were sent to the group on WhatsApp, participants reported that the triggers helped remind them of the training content, networking, and peer learning and increased their motivation.

4. Recommendations

For remote supervision to work effectively, we need to ensure that SQAOs can connect with school principals even when they cannot visit schools in person. We can harness existing devices, internet connectivity, networks, and relationships between SQAOs and principals in SQAO school clusters.

Both SQAOs and principals have been provided tablets and a monthly mobile data allowance, allowing them to stay in contact with each other. Using the devices they already have will enhance the cost-effectiveness of any solution.

Remote monitoring solutions can fall into two categories: synchronous monitoring or asynchronous monitoring. Synchronous monitoring would refer to voice calls with principals (either through the network or via the internet). Asynchronous could refer to interactions using automated messages, nudges, and polls using a chatbot that is then monitored by the SQAOs or by SQAOs reviewing and responding to messages sent by the principals in their clusters. This could be done via messaging apps such as WhatsApp or Telegram.

In this section, we make two recommendations for possible solutions for supporting remote SQAO supervision of schools. This report will summarise each solution, followed by a costing approach to develop and test the process.

4.1. Option 1: WhatsApp chatbot and follow-up phone call

WhatsApp chatbots have become increasingly popular in education programmes. The chatbots can be powered using AI or can include pre-programmed responses to provide automated responses to particular questions or messages. WhatsApp is also a popular messaging application in Sierra Leone and is widely used. A smartphone, tablet, or desktop computer can all be used for WhatsApp.

Principals are already collecting school data on the tablets they have been provided with, using the Tangerine app. Through processing the data collected on Tangerine, a WhatsApp chatbot system can engage with the principals in conversation, replacing the current one-way process whereby principals simply submit the data collected. A chatbot system will trigger a response to the submitted data. The chatbot can send automatic nudges if a principal has not submitted data, and it can also be set up to send messages at certain times of the day or month and ask questions — or

potentially create polls — that principals can respond to. Interactions with principals through the chatbot will be stored in the database.

If SQAOs are provided with a dashboard that is linked to the database, they will be able to see and monitor responses from the principals, as well as see which principals have not responded to the automated messages on WhatsApp. When SQAOs monitor the dashboards, they can prioritise school visits according to the schools needing more support. This will make their supervision more needs-based and support marginalised schools further.

SQAOs can follow up with the principals of the schools they prioritise via a phone call (via a network or WhatsApp) to conduct a remote school visit. During this phone call, SQAOs will be able to ascertain any issues principals raise and provide guidance. During the remote visit, a data collection form can be completed on Tangerine that takes them through a 'remote visit phone call' to address issues that the principal highlights.

The international education advisors Fab Inc[3] have already processed the SQAO data into PowerBi[4] dashboard reports. Similar reports can be produced and accessed by the SQAOs to manage their clusters.

In order for this solution to work, principals will need to have access to either an internet connection or network connectivity to receive WhatsApp messages and phone calls.

4.2. Option 2: Learning portfolios

Part of the purpose of the SQAO visit is to provide lesson observations for teachers in their clusters. Principals are also tasked with conducting lesson observations in their schools. An option to replace the in-person lesson observations conducted by SQAOs on their school visits would be for principals to provide teacher learning portfolios.

For the portfolios, principals would need to collect examples of work from teachers over one week (or less frequently, such as over a month). The portfolios could include lesson plans, details on what went well in the lessons and challenges, and photographs from the lessons during the week. These examples of work would showcase the teacher's work completed over the week.

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[3]See https://fabinc.co.uk/ Retrieved 11 December 2023
[4] See https://sl.education-os.org/reports/census/qualityassurance Retrieved 11 December 2023

Once the principals submit the learning portfolios for their school, these can be reviewed by the SQAOs to ascertain which schools may need further support. In order to manage the reviewing workload for SQAOs, either the principal could select one teacher at a time to submit a portfolio, or the SQAO could select a teacher for each school at random. As with the previous option, this solution would also provide a way of prioritising schools in need.

Principals who do not have access to the internet at their schools could submit the learning portfolios offline through a form on Tangerine. Once they have internet connectivity, these can be uploaded for the SQAOs to review.

This solution would provide an asynchronous method of supervising schools. However, if a synchronous method was required, reviews of the learning portfolios could be followed up with a phone call, as with the previous solution.

4.3. Costing approach for remote supervision

In Sierra Leone's education sector, implementing WhatsApp chatbots and follow-up phone calls or learning portfolios necessitates a dynamic and multifaceted financial costing approach from MBSSE. This approach includes evaluating initial setup investments for both options.

For the WhatsApp chatbot, this encompasses software development and integration with existing systems like Tangerine. The learning portfolios involve setting up a system for collecting, submitting, and reviewing teacher portfolios, which may include online and offline methods. Ultimately, both options require adequate training and support for SQAOs and principals to ensure uptake and utilisation, which has associated costs specific to the scale and location of implementation.

Operational expenses are crucial for both options and cover the maintenance of technological systems, connectivity costs for online platforms, and resources for offline data collection and submission methods. Leveraging existing technologies like Tangerine will help manage costs. Rapid feedback loops are essential in both cases, enabling continuous monitoring and adjustments. This mechanism is fundamental for adapting to changing educational needs, ensuring cost efficiency, and informing decisions for scaling the programme.

Regular monitoring and evaluation, with a dedicated budget, are indispensable for assessing the system's effectiveness and contributing to these feedback loops. Cost itemisation, breaking down expenses into

technology development, training, operational costs, connectivity, and monitoring, helps identify significant cost drivers and potential areas for efficiency improvements.

Rapid feedback loops in both options also facilitate continuous cost iterations, supporting sustainability and scalability. This strategic, context-sensitive financial approach, integrating detailed cost itemisation, analysis, and rapid feedback mechanisms, is pivotal for developing financially sound, sustainable, and scalable innovations for quality school monitoring and evaluation processes within ministries. Adopting these measures ensures disciplined fiscal management, adaptability, and informed decision-making, which are vital for efficiently utilising limited resources in low- and middle-income country settings.

5. Conclusion

The MBSSE wants to professionalise the SQAO cadre and ensure that they effectively monitor schools at the district level.

As the Leh Wi Lan programme continues, working with the MBSSE to strengthen the monitoring, supervision, and support of schools provided by the SQAOs is an important step in professionalising the SQAO role.

Providing an option for remote monitoring of schools, particularly for SQAOs with clusters in hard-to-reach areas, may increase their efficiency significantly as they will not have the added pressure of long journeys on difficult terrains to reach schools. This could also positively impact principals as they will be able to get continuous support from SQAOs even if they cannot visit in person.

Testing these solutions to see what will be viable given the constraints in Sierra Leone is imperative.

References

This bibliography is available digitally in our evidence library at
https://docs.edtechhub.org/lib/VE9NUFGZ

Büchel, K., Crossley, C., Cullen, C., & Letsomo, T. (2023). *Under the Hood of an EdTech Study in Kenya: Implementation challenges, successes, and lessons learnt* [Policy Brief]. EdTech Hub. https://doi.org/10.53832/edtechhub.0175. Available from https://docs.edtechhub.org/lib/XRGSHEUJ. Available under Creative Commons Attribution 4.0 International. (details)

Beoku-Betts, I., & Leh Wi Lan. (2023). *Investigating the Activity Levels of School Quality Assurance Officers in Sierra Leone* (Working Paper 51). EdTech Hub. https://doi.org/10.53832/edtechhub.0154. Available from https://docs.edtechhub.org/lib/AHVWDNGT. Available under Creative Commons Attribution 4.0 International. (details)

Brion, C. (2019). Keeping the learning going: using mobile technology to enhance learning transfer. *Educational Research for Policy and Practice*, *18*(3), 225–240. https://doi.org/10.1007/s10671-018-09243-0. Available from http://link.springer.com/10.1007/s10671-018-09243-0. (details)

Crawfurd, L., Evans, D. K., Hares, S., & Sandefur, J. (2023). Live tutoring calls did not improve learning during the COVID-19 pandemic in Sierra Leone. *Journal of Development Economics*, *164*, 103114. https://doi.org/10.1016/j.jdeveco.2023.103114. Available from https://linkinghub.elsevier.com/retrieve/pii/S030438782300069X. (details)

Jordan, K. (2023). How can messaging apps, WhatsApp and SMS be used to support learning? A scoping review. *Technology, Pedagogy and Education*. https://www.tandfonline.com/doi/full/10.1080/1475939X.2023.2201590. (details)

Nedungadi, P., Mulki, K., & Raman, R. (2018). Improving educational outcomes & reducing absenteeism at remote villages with mobile technology and WhatsApp: findings from rural India. *Education and Information Technologies*, *23*(1), 113–127. https://doi.org/10.1007/s10639-017-9588-z. Available from https://www.researchgate.net/publication/315112660_Improving_educational_outcomes_reducing_absenteeism_at_remote_villages_with_mobile_technology_and_WhatsAPP_Findings_from_rural_India. (details)