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How has the Leaders in Teaching intervention changed teaching quality in Rwandan secondary schools? Perceptions of Sector Education Officers

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About Laterite and the REAL Centre:

Laterite is a data, research and analytics firm specialised in research for social impact. Founded in East Africa, the firm uses rigorous techniques to provide context-relevant evidence. Laterite's aim is to help decision-makers find solutions to complex development problems.

The REAL Centre at the University of Cambridge pioneers research into overcoming barriers to education, such as poverty, gender, ethnicity, language and disability, and promotes education as an engine for inclusive growth and sustainable development.

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Table of contents

Acronyms

AIMS	African Institute for Mathematical Sciences
CMU	Carnegie Mellon University-Africa
IEE	Inspire, Educate and Empower Rwanda
REAL Centre	Research for Equitable Access and Learning Centre at the University of Cambridge
SEO	Sector Education Officer
URCE	University of Rwanda-College of Education
VVOB	Flemish Association for Development Cooperation and Technical Assistance programme

How has the Leaders in Teaching intervention changed teaching quality in Rwandan secondary schools? Perceptions of Sector Education Officers

The context

Researchers interviewed 12 Sector Education Officers (SEOs) who support schools across seven districts in Rwanda. In these semi-structured interviews, SEOs were invited to share their impressions of the Leaders in Teaching initiative and its associated programmes led by six implementing partners, and the impact they perceive that the initiative may have had on their communities, school leadership, teachers and students.

Key findings

- SEOs spoke positively about the Leaders in Teaching initiative which they felt contributed to school leaders' improved capability to manage their schools, including by motivating their staff. Interviews with SEOs highlighted that they were much more likely to be familiar with the initiative's implementing partners such as VVOB or AIMS than with the Leaders in Teaching intervention as a whole. This might be because the intervention's programmes – led by implementing partners – directly trained local educational stakeholders including SEOs.
- SEOs reported that the continuous professional development delivered by Leaders in Teaching implementing partners helped develop STEM teachers' confidence in delivering engaging lessons. They also observed students' decreased apprehension to study STEM subjects, and higher performance in these subjects.
- Half of SEOs expressed their desire for the initiative not only to be maintained but also expanded to incoming school leaders and to the primary school level.

Implications

- SEOs' positive perspectives on the Leaders in Teaching initiative suggest that education-related initiatives which holistically engage multiple education stakeholders, addressing gaps at each level, may have the potential to enhance the quality of education.
- Supporting less well-equipped schools to access teaching aids and scientific materials and strengthening teachers' capacity to integrate the use of these materials into their lessons could lead to higher quality teaching and improved student engagement and performance in these subjects.
- Peer learning offers an effective way for both teachers and school leaders to enhance their own practices and should be encouraged within and across localities.
- Engaging regularly with SEOs and school leaders could help determine capacity gaps in their localities which could inform similar initiatives to improve the teaching and learning quality in the future.

Setting the context

Leaders in Teaching is a five-year Mastercard Foundation initiative that aims to improve the quality of teaching and learning in Rwandan secondary schools through a range of programming, with a focus on STEM subjects. Established in 14 districts of Rwanda in 2018, the initiative is centred around four pillars:

- **Recruit**: recruiting bright and committed young people into the teaching profession.
- **Train**: supporting improvements to the quality of teaching and learning through strengthened teacher training and professional development.
- **Lead**: strengthening educational leadership.
- **Motivate**: promoting the teaching profession and motivating teachers through recognition and public engagement.

Leaders in Teaching aims to prepare teachers to deliver quality and relevant learning through programmes implemented by six implementing partners: the African Institute for Mathematical Sciences (AIMS), the University of Rwanda-College of Education (URCE), the Flemish Association for Development Cooperation and Technical Assistance programme (VVOB), Inspire, Educate and Empower (IEE) Rwanda, UNICEF, and Carnegie Mellon University-Africa (CMU) (see Annex A for further details).

The Leaders in Teaching initiative places strong emphasis on research and learning and this responsibility sits with the two Learning Partners: Laterite and the Centre for Research for Equitable Access and Learning (REAL) at the University of Cambridge. Together they work to establish an evidence base – of relevance to education policy-makers – of the drivers of teaching quality in Rwanda's secondary schools. This is achieved through combining understanding of teacher quality (from qualitative research) with measures of changes in teaching quality (from quantitative surveys).

This study draws from a broader qualitative exploration of the Leaders in Teaching initiative. This paper draws from interviews conducted in December 2021 in Rwanda utilising multi-methods and involving 51 STEM teachers, 12 school leaders, 12 school-based mentors, 420 secondary students and 12 Sector Education Officers (SEOs). The paper aims to elicit SEOs' perspectives of the Leaders in Teaching initiative, as well as the initiative's potential contribution to improving school leadership and STEM teaching in Rwandan secondary schools.

Study objectives

In Rwanda, SEOs have a portfolio of responsibilities across their respective sectors involving a school-level monitoring and evaluation function; a school leadership supporting function, especially on aspects of school management; school data checks and reporting; and, of relevance to this initiative, the coordination and monitoring of educators' continuous professional development. Additionally, SEOs act as a bridge between schools, by sharing best practices exhibited by educators within certain schools with other schools in the same sector (Ndihokubwayo et al, 2021, p.85). Interviewing these sector officials on their perspectives of Leaders in Teaching was essential given their expertise on education matters – including active education programmes - in their localities and their ability to gauge the initiative's added value to the schools they oversee.

The twelve SEOs surveyed were invited to share their views on their impressions of the Leaders in Teaching initiative and the perceived impact the initiative may have had on their communities, school leadership, teachers, and eventually students. This paper seeks to understand: (i) SEOs' awareness of the Leaders in Teaching initiative, (ii) the nature of SEOs' involvement in the implementation of the initiative in their localities, (iii) SEOs' perceptions of the impact of Leaders in Teaching on key beneficiaries, and (iv) SEOs' recommendations for improving the Leaders in Teaching initiative. Finally, this paper will offer concluding thoughts as well as implications for policy.

Sampling

This study took place within the broader framework of a 5-year research effort comprising cycles of quantitative and qualitative inquiries with educators, Leaders in Teaching implementing partners as well as policy makers. This paper is based on interviews conducted with 12 SEOs who assumed a supervisory function for each of the 12 schools surveyed for this qualitative study. These 12 schools were drawn from 94 Rwandan secondary schools in which the learning partners have conducted yearly quantitative surveys with school leaders and STEM teachers since early 2020, along with learning activities with students and their mathematics teachers.

The selected 12 schools are spread across 7 districts in the Northern, Southern and Western Provinces of Rwanda. For each of these schools, the SEO supervising the school was invited to take part in a semi-structured interview. Table 1 outlines the characteristics of the sample. Among the interviewees, 11 were male and 1 was female – a pattern reflective of this profession, as in Rwanda, most SEOs are male. Of the sampled schools, 11 were located in rural settings while 1 was located in an urban area.

One SEO was also responsible for supervising a School of Excellence[1], while all others supported regular schools.

Table 1: Overview of sample

Sector Education Officer	Gender	District	School location	School of Excellence	Pseudonym
1	Male	Ngororero	Rural	No	SEO (A)
2	Male	Gisagara	Rural	No	SEO (B)
3	Male	Kamonyi	Rural	No	SEO (C)
4	Male	Musanze	Urban	No	SEO (D)
5	Male	Nyamasheke	Rural	No	SEO (E)
6	Male	Karongi	Rural	Yes	SEO (F)
7	Male	Gicumbi	Rural	No	SEO (G)
8	Female	Gicumbi	Rural	No	SEO (H)
9	Male	Nyamasheke	Rural	No	SEO (I)
10	Male	Musanze	Rural	No	SEO (J)
11	Male	Kamonyi	Rural	No	SEO (K)
12	Male	Gicumbi	Rural	No	SEO (L)

Research instrument and process

Participants engaged in semi-structured interviews which drew on a set of pre-prepared open-ended questions aimed at exploring perceptions related to the Leaders in Teaching initiative. This process allowed participants the freedom to orient the conversation and communicate their individual views concerning the initiative. The interview schedule contained 5 parts (see Table 2). This paper analyses data gathered under Section 5.

Table 2: Outline of interview schedule

1) Introductory questions related to roles and responsibilities and the nature of support provided to schools.
2) Series of participant questions related to perceptions of the role of SEOs.
3) Series of participant questions related to diversity including perceived differences concerning teacher and students' gender, perceptions of disability and recommended strategies for working with girls, boys, and students with disability.

[1] Rwanda's Ministry of Education established schools of excellence in 2011. Initial plans sought to put in place one school of excellence in each of Rwanda's 30 districts. At these STEM-focused schools, the top students in science receive instruction from highly "qualified teachers" who leverage on-site infrastructure including ICT equipment, laboratories and libraries (The New Times, 2011; Williams, 2013, p.9).

4) Series of participant questions on perceptions of impacts of COVID-19 on teaching and learning.
5) Series of participant questions on perceptions of the Leaders in Teaching initiative related to understanding, involvement in, and perceived impact of the intervention.

Semi-structured interview schedules were piloted in 7 schools of two districts – Kamonyi and Rwamagana - to enable our teams to conduct interviews in survey-like settings. Following the pilot, interviews were led by facilitators from Laterite's field staff team who had previously worked on Leaders in Teaching research and had completed rigorous training on the initiative and by conducting qualitative mock and pilot interviews. All interviews lasted about 60 minutes and were audio-recorded, transcribed, and translated from Kinyarwanda into English. These were scheduled for a time convenient for SEOs.

Process for gaining ethical consent

Approval for the research was obtained from Rwanda National Ethics Committee (No. 707/RNEC/2021) on 16 September 2021 and the University of Cambridge Ethics Committee. The researchers also sought approval from the National Council for Science and Technology which was secured on 12 July 2021 (No: NCST/482/251/2021). Furthermore, before interviews commenced, all participants were provided with a consent form which comprised a description of the research purpose, an outline of process, a description of how the interviewee's records would be kept confidential, and how participant's privacy would be assured. Enumerators articulated clearly that involvement was voluntary and that interviews could be discontinued at any stage. Enumerators also gave participants opportunities to ask questions to ensure that they felt comfortable with being involved in the research. Lastly, enumerators obtained signed consent and provided participants with physical copies of consent forms for future reference.

Analysis

A constant comparison analytical approach was applied in this study. This involves comparing each unique finding and interpretation as they emerge with earlier examples from the interview data (Lewis-Beck et al., 2004). Using NVivo 12 software, interview data were coded, annotated, developed into themes and then analysed. The objective of this approach was to cluster participants' responses into themes and sub-themes via three stages: 1) Open coding (arranging data into relevant, clearly labelled clusters); 2) Axial coding (arranging clusters into similar categories or 'codes'); 3) Selective coding (pooling and refining codes) (Glaser, 1965). The researchers also used classical content analysis - developing numerical descriptions of specific aspects of data analysed (Bauer, 2000) - during the analytical process to determine the frequency of themes and sub-themes.

Findings

Section 1: SEOs understanding of the Leaders in Teaching initiative

Assessing SEOs' familiarity with the Leaders in Teaching initiative was an important aspect of understanding whether the initiative benefited the communities where it was rolled out. While not every official interviewed knew the specific name of this initiative, most held an awareness of its implementing partners and programmes. In addition, participants expressed awareness of how the initiative supported its beneficiaries, including school leaders, teachers and students.

How much do SEOs know about the Leaders in Teaching initiative?

When SEOs were asked what they knew about the intervention, three quarters of participants noted their recognition of the term "Leaders in Teaching" which they mainly related to the training of education stakeholders at the sector and school levels. A quarter of interviewees initially expressed no awareness of Leaders in Teaching, however, when further prompted, they expressed knowledge of the initiative's implementing partners, perhaps due to their direct collaboration with them. This is demonstrated in the following extract:

> "Int: *What do you know about the Leaders in Teaching initiative?*
> Resp: *I don't know anything about it.*
> Int: *Even if you don't know LIT, have you had any role in shaping or supporting the training programmes developed by Leaders in Teaching (LIT), for instance by VVOB, AIMS, UR-CE, etc.?*
> Resp: *We work with VVOB and AIMS. We work with AIMS about the teaching of science courses in schools."* (SEO K)

Across the sample, 9 out of the 12 SEOs interviewed expressed knowledge about **VVOB's** activities, which they understood to be designed to support school leaders. As stated by two SEOs: "We monitored VVOB activities related to helping head teachers" (SEO F); "What I remember about the Leaders in Teaching initiative, it was a project being done by VVOB which was training about teaching, and leading" (SEO C). Familiarity with VVOB's *Leading Teaching, Learning Together programme (LT)*[2] was expected as one of its training programmes – the continuous professional development Certificate in Educational Mentorship and Coaching – targeted both SEOs and school-based mentors[2].

[2] Rwanda Basic Education Board established the School-Based Mentorship Program Framework, which put in place school-based mentors (SBMs) in every public or government-aided school. The framework key focus was to "strengthen the roll-out of the CBC and the use of English as medium of instruction" (URCE,

Following their training, SEOs were encouraged to set up Professional Learning Communities which would involve both school leaders and their deputies (Laterite, 2019b).

Moreover, a third of SEOs interviewed were familiar with the **AIMS** programme, which was broadly perceived to increase the capacity of teachers and school leaders in science. As remarked by SEO D: "We work with AIMS; it helps us improve the knowledge and capacity of our leaders by teaching them mathematics and science." Two SEOs also referred to **Professional Learning Communities** which they both attended and monitored (SEO A & G). These communities were described as offering a platform for educators to raise issues and collectively devise solutions. It is important to note that AIMS *Teacher Training Program* also benefited from the support of SEOs. The Teacher Training Program intervention – which adopted a training of trainers' model - selected STEM School Subject Leaders in each secondary school for training. These subject leaders, also known as training coordinators, would subsequently organize training sessions with other STEM teachers at the sector level, with the support of their respective SEOs (Laterite, 2019a).

Awareness of **URCE** and **IEE's** programmes were less evident amongst those interviewed. One SEO knew about the IEE programme through its local representative, which he understood was designed to support teachers' competence to support their colleagues (SEO D). Another referred to a programme delivered by both URCE and VVOB – which delivered school leadership training to both SEOs and school leaders (SEO B). Understandably, none of the officials interviewed mentioned the UNICEF/CMU joint initiative, which specifically targeted central government education stakeholders. Under the programme *Strengthening the governance system and teacher management in Rwanda* these implementing partners established an Education Management Information System – which integrated 12 Education databases – and trained Rwanda's education officials to use these systems (Laterite, 2019d).

How was the Leaders in Teaching initiative designed to support teachers and school leaders?

In respect to how the initiative was designed to support teachers and school leaders, four SEOs communicated that Leaders in Teaching helped to **develop teaching capacity**. One official felt that it was important that **school leaders work to enhance their teachers' motivation,** commenting: "School leaders need to know how to get the most

2023, p.3). SBMs are teachers within schools, with the responsibility to coordinate "teachers' professional development activities", support their fellow teachers to enhance their English skills, as well as their capacity in "CBC teaching and learning" (URCE, 2023, p.3).

out of teachers, motivating them and supporting them whenever possible to deliver the best performance" (SEO, I). Another official remarked that Leaders in Teaching would **observe and provide feedback on teaching practices**, especially as they recalled that the learning partners went to schools to observe how they taught and later held discussions with SEOs regarding practices seen. Last, but not least, two SEOs understood that the initiative would **support teachers to better deliver STEM content** in their classrooms.

How was the Leaders in Teaching initiative designed to support students?

When asked about how the initiative was designed to support students, two SEOs believed that Leaders in Teaching would contribute to students enjoying learning and STEM subjects. One SEO shared that the Leaders in Teaching initiative equipped them with the skills to raise students' interest in learning. "Although we are going to know more about it, we have a basic [understanding] of how to help children know that they must love studying and love school" (SEO E). In another sector, the perception was that the initiative would help decrease students' apprehension towards studying science and support more effective ways of teaching science in schools.

> *"I think it is designed to promote science with both boys and girls. Most people, especially girls, consider science to be difficult… So, all of these projects come together in the sense that we have something to achieve in science in terms of improving the quality in delivery and teaching the STEM subjects as well increasing student performance in STEM, and it has been possible."* (SEO H)

Section 2: SEOs' involvement with the Leaders in Teaching initiative

A quarter of the SEOs interviewed understood that Leaders in Teaching had a research function. While they did not report any involvement in shaping the initiative, two recalled that the schools they supervised had been surveyed: "Well, what I do know about it is that you do surveys in schools where you go and look at teaching practices, and then they call us to collaborate." (SEO, J). A quarter of the SEOs further stated that they took part in **monitoring or evaluating** Leaders in Teaching programmes in their sectors. While one SEO reported monitoring beneficiaries' participation in the initiative, another focused on its pedagogical aspect and the extent to which the knowledge and skills which programme beneficiaries developed through training were passed on to teaching staff in their schools. In respect to the latter point, SEO K shared: "My role is to evaluate the implementation of how science courses are delivered. Also, I check if those trained teachers train their colleagues as well". Another SEO referred to his participation in various aspects of **implementation of its programmes**. As stated,

"…let's say teacher training when it is going to happen, when the project comes we sit down and say what the teachers need. So when they go to training, we are involved. That is to say, when we are with partners, we are involved. Whether in providing, organizing, and implementing the changes that the training has made to its intended audience." (SEO H)

Section 3: SEOs' perceptions of the Leaders in Teaching initiative's impact on educators and students

We asked SEOs for their views on the Leaders in Teaching initiative's potential impact on the quality of education in their localities. SEOs observed changes at various levels: school leadership, teachers, and students.

Perceived improvement on school leadership

Concerning school leadership, **cascading knowledge acquired with STEM teachers** was raised as an important area of improvement by a third of the officials interviewed. It was noted, for example, that, upon receiving training on sciences, school leaders would share this knowledge with their STEM teaching staff and support the latter to use the recommended teaching methods. As remarked by one SEO:

"I believe that after getting the training, the head teachers could support teachers in promoting sciences. If the science teacher was using the teaching methodology which did not allow students to do [practicals], they got to understand the effective teaching approach to adopt. So, the training programmes developed by Leaders in Teaching, including the ones that teachers are currently taking, help them to apply various strategies to boost the quality of teaching STEM subjects." (SEO B)

In relation to this area of improvement, another SEO observed an increase in the proactivity of school leaders following training. This official described situations in which school leaders owned the process of finding solutions to their respective schools' issues:

"The leader who is in that training is pushed to think of different strategies they can use to ensure they monitor how effective the teachers are in delivering the content to help students perform well. For areas of improvement or noticed gaps, the leader thinks of strategies to address those issues." (SEO L)

Improving school leaders' awareness of their role was another improvement identified by a quarter of SEOs in relation to school leadership. SEOs observed that school leaders, previously absorbed by non-school related community activities, were

more focused on their school duties following exposure to the training. In terms of school leaders' role outside the school, head teachers who participated in Leaders in Teaching training seemed to understand that their role in improving quality teaching and learning went beyond the school premises. For instance, SEOs remarked that school leaders' roles extended to the community surrounding the school with whom collaboration is crucial in retaining students in education. In that same vein, school leaders were encouraged to engage in peer learning.

Improvements in school management were also highlighted by a quarter of SEOs in reference to improvements to school leadership. SEOs recognised the value of the programme in empowering both their peers and school leaders with management skills. This, according to one of the officials interviewed, led to productive and solution-oriented discussions with head teachers. Another recalled witnessing school leaders improve their school and HR management competencies and remarked that school leaders had become more resourceful when addressing issues encountered in their schools. A third SEO expanded on the importance of training both new and experienced head teachers on school leadership and pointed to the improvements in school leaders' management practices after they received training.

Student improvements

Several SEOs remarked that the training provided by Leaders in Teaching implementing partners contributed to a **decreased fear to take on STEM courses** amongst students. SEOs appreciated the role of science hour – an initiative of AIMS in collaboration with Rwanda Basic Education Board[3] - in **fostering love for STEM subjects**. "Again, that science hour helps the children to love Math and science" (SEO, G). As a result of teachers' use of more effective ways of teaching STEM topics, SEOs further felt that students now **appreciate STEM courses**, like mathematics. Additionally, these pedagogical methods were noted as having been supported by the science materials which AIMS offered to schools participating in their programme.

Officials also saw the benefits of the programme through **students' performance** in their localities. For example, they noted increased "competencies" amongst students (SEO F) and "clear improvement in results" (SEO A). Another SEO shared:

[3] The Government of Rwanda established Rwanda Basic Education Board (REB) in 2020. Under the leadership of the Ministry of Education, this institution works to "promote the quality of education in basic, specialized and adult schools". This institution is responsible for establishing and distributing the curricula used in schools (at nursery, primary, secondary and adult school levels) and pedagogical tools necessary for their implementation. The continuous development of teachers also falls under the remit of this institution which also works to enhance the use of ICT in education.

"We recently heard testimony from someone (not from this school) who wrote a message appreciating AIMS for its support because they observed a high performance of students who passed the science subjects." (SEO L)

Teacher improvements

Almost half of the SEOs surveyed agreed that **teachers' pedagogical skills** had improved because of the Leaders in Teaching initiative. Of these officials, three shared that teachers now have the capacity to effectively deliver STEM subjects to their students. According to participants, both the teaching aids offered by AIMS and its science hour enhanced STEM teaching.

Additionally, one SEO noted teachers' recent focus on delivering science lessons in laboratories where experiments can take place, perhaps a result of AIMS work to encourage teachers to adopt a practical approach to teaching STEM "*Before, schools would focus on theories, but now practices are also focused on*" (SEO B).

Several SEOs also appreciated the **value of additional materials** availed by Leaders in Teaching partners for use by teachers. These consisted of routers and airtime designed to enable them to conduct research on their own teaching subjects and communicate with their peers. Few participants further shared that Leaders in Teaching partners provided the space for teachers to be involved at the early stages of planning for training programmes and to **share best practices with their peers** within and beyond the sectors where their schools are located.

A quarter of officials noted teachers' **improved confidence in teaching STEM** following exposure to the Leaders in Teaching initiative. Two officials shared that the training received compelled teachers to develop their content knowledge of the STEM subjects they were responsible for teaching and increased their confidence in their own teaching. A third official also remarked that there was a change in teachers' mindsets. He explained that teachers had to first acknowledge that STEM subjects were not "hard topics", before conveying to students that "it is possible to know mathematics" for instance (SEO D).

Finally, two officials observed that following training, **teachers' motivation increased**. It was highlighted, for example, that teachers' discussions about their work and their training nurtured their motivation to teach and "love of work" (SEO L).

Section 5: SEOs' recommendations for Leaders in Teaching

Though they were not specifically asked about it, SEOs did provide recommendations for the future of the Leaders in Teaching initiative. Recurrent themes raised by our interviewees included the initiative's expansion, and its evaluation.

Initiative or training expansion

About half of our sample of SEOs talked about their wish to see the initiative extended. In their views, the initiative could also include a focus on non-science related subjects. Further, the training could be offered to new school leaders, as well as primary schools. The initiative could also expand to cover more schools and sectors. One official recognised the benefits of the online training for both STEM teachers and their respective leaders, especially during the school closures triggered by the COVID-19 pandemic, noting that some even earned certificates. Another SEO, while acknowledging the benefits of the training, underlined the need for this initiative to be inclusive of primary school teachers. In another sector, it was felt that given its extensive nature, the training could help educators earn a Master's degree in lieu of certificates.

Leaders in Teaching evaluation

A few leaders focused on the accountability aspect of the initiative. One felt that school leaders who were trained under this initiative should be asked to report on the impact of the training received on their schools. Another one asked that learning partners who conducted research in their schools, share the study results which would help them identify and address issues. A third commented on the need for Leaders in Teaching to connect with not only the schools, but also with officials at the sector and district levels, as well as with the Rwanda Basic Education Board.

Conclusion

This study aimed to shed light on the perspectives of Rwandan SEOs on the Leaders in Teaching initiative. In this vein 12 SEOs, working in half of the 14 districts where the initiative is active, shared their understanding of the programmes under this initiative, provided an overview of their involvement in the initiative and its benefits to the education sector. It was important to seek SEOs' perspectives of the Leaders in Teaching initiative given their expertise in education matters, understanding of active education programmes in their localities, and mandate to coordinate and monitor continuous professional development for the schools they supervise.

While most officials interviewed knew about Leaders in Teaching implementing partners, a quarter were not aware of Leaders in Teaching as the initiative encompassing the programmes that were rolled out in their localities. Most officials were familiar with programmes led by AIMS and VVOB, whereas there was little knowledge about those run by IEE and URCE and none about the ones run by UNICEF/CMU, perhaps due to the high-level stakeholder focus of these programmes.

Overall, SEOs demonstrated a broad understanding of the programmes rolled out under this initiative. They knew that the initiative would support school leaders to motivate their teaching staff, while teachers themselves would receive training to enhance their content knowledge and pedagogical skills, particularly in STEM subjects. These officials also expected that the initiative would lead to less apprehension on the part of students to study STEM subjects.

SEOs spoke in positive terms about the Leaders in Teaching initiative. They reflected that the initiative contributed to improving the capacity of (i) school leaders to manage their schools, (ii) teachers to confidently deliver engaging lessons, and (iii) in some cases, led to a higher performance of students in STEM. About half of the interviewees expressed their wishes for the initiative to not only be maintained but also expanded to those who did not benefit from it: incoming school leaders and primary school teachers.

Implications

- SEOs shared positive perspectives on the Leaders in Teaching initiative, suggesting that education-related initiatives which holistically engage multiple education stakeholders, addressing gaps at each level, may have the potential to enhance the quality of education.
- The initiative highlighted the importance of accessing teaching aids and scientific materials to facilitate an effective delivery of STEM lessons. Supporting less well-equipped schools to access these materials and strengthening teachers' capacity to integrate their use to their lessons could lead to higher quality teaching and improved students' performance in these subjects.
- Peer learning – which some of the Leaders in Teaching implementing partners have encouraged – offers an effective way for both teachers and school leaders to enhance their own practices. Supporting teachers and school leaders to sustain collaboration within and across their localities to learn about and implement best practices could help improve the quality of education at their respective schools.
- Engaging SEOs and school leaders regularly, given their expertise in the education sector, could help determine capacity gaps in their localities which could inform similar initiatives in the future.
- Further iterations of the initiative could be adapted to target primary school teachers, as well as early career school leaders and could integrate non-STEM topics to their training curricula.

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Annex A: Leaders in Teaching implementing partner programmes

The *African Institute for Mathematical Sciences* (AIMS) focused its intervention on STEM teachers in secondary schools in the 14 Leaders in Teaching districts. AIMS worked to enhance the capacity of these teachers to deliver the competency-based curriculum in the topics of Biology, Chemistry, Mathematics and Physics (Laterite, 2019a).

The *Flemish Association for Development Cooperation and Technical Assistance's* (VVOB) *Leading Teaching, Learning Together* programme empowers SEOs as well as school leadership and teaching staff with training on leadership, mentorship and coaching (Laterite, 2019b).

Inspire, Educate and Empower Rwanda (IEE), aimed to recruit the best-performing female high school graduates into the teaching profession. These young women would gain hands-on exposure to this career path through placements in secondary schools, under IEE's *Teaching Assistantship programme* (Laterite, 2019c).

UNICEF and Carnegie Mellon University (CMU)'s joint programme *Strengthening the governance system and teacher management in Rwanda* involved the collection of data to feed into a digital version of the Teacher management information system (TMIS). Under this programme these implementing partners would work to establish an Education Management Information System – which would integrate 12 education databases – and train Rwanda's education officials to use these systems (Laterite, 2019d).

The *University of Rwanda College of Education* (URCE)'s programme aimed to enhance its faculty's capacity to conduct research, deliver teaching and use ICT to support the roll-out of the competency-based curriculum (Laterite, 2019e).

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