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Leading, Teaching and Learning Together: Final Evaluation of the Secondary Education Program

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Prepared by: Three Stones International









UNIVERSITY of RWANDA

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Acronyms

	9 Vear Basic Education
10 VRF	12 Vear Basic Education
CRC	Competence Based Curriculum
CoP	Computity of Practice
	Continuous Professional Development
	District Director of Education
	District Education Officer
	District Education Officer
	Education Costor Stratogic Plan
ESSE	Education Sector Strategic Plan
	Covernment of Rwanda
GOK	
	Information and Communication Technology
	In Depth Interview
	Kov Informant Interview
	Leading Teaching and Learning Tegether
	Mastercard Foundation
	Ministry of Local Covernment
	Ministry of Einance and Economic Planning
MINEDUC	Ministry of Education
NOT	Newly Qualified Teacher
NST1	National Strategy for Transformation
OFCD	Organization for Economic Coordination and Development
PLC	Professional Learning Communities
REB	Rwanda Education Board
RNEC	Rwanda National Ethics Committee
RWF	Rwanda Francs
SBM	School Based Mentor
SEI	School Education Inspector
SEIP	Sector Education Improvement Plan
SIP	School Improvement Plan
SSL	School Subject Leader
STEM	Science Technology Engineering Mathematics
TDMCGC	Teacher Development, Management and Career Guidance and Counselling
	Department
ТоС	Theory of Change
ттс	Teacher Training College
TVET	Technical and Vocational Education and Training
UR-CE	University of Rwanda-College of Education
VVOB	Flemish Association for Development Cooperation and Technical Assistance

Executive Summary

This report presents the endline findings of the outcome evaluation of the Leading, Teaching and Learning Together (LTLT) in secondary education program. VVOB, with the support of the Mastercard Foundation and in collaboration with the Rwanda Education Board (REB) and the University of Rwanda College of Education (UR-CE), implemented the LTLT targeting 680 secondary schools in 14 districts in Rwanda from 2018-2021. The main objective of the program was to improve the quality of secondary education in Rwanda by strengthening competencies of key actors through Continuous Professional Development (CPD) support systems. Key education actors targeted included school leaders (Head Teachers and Deputy Head Teachers), School Based Mentors (SBMs), School Subject Leaders (SSLs) in Science, Technology, Engineering and Mathematics (STEM), Sector Education Inspectors (SEIs), District Directors of Education (DDEs) and District Education Officers (DEOs). Through targeting these actors, the program expected to indirectly support teachers (including newly qualified and newly assigned teachers) and students in order to provide young Rwandans with the skills and competences to succeed in the 21st century.

To establish improved CPD support systems, the LTLT program consisted of two pillars of support in line with the program's Theory of Change (ToC):

Pillar 1: School Leadership (LEAD): Improved school leadership by HTs and DHTs through improved school leadership support systems.

Pillar 2: Teacher Support (TEACH): Improved teaching by teachers, including SSLs and new teachers, through improved teacher support systems.

Objectives of the Endline Study

The endline study is a part of a larger evaluation which aimed to assess the effectiveness of the LTLT program interventions through a longitudinal mixed methods approach. In order to assess the longer-term effectiveness of the LTLT program, the endline study builds upon the baseline assessment (2019) and midline assessment (2020), which allowed for conclusions to be drawn regarding the longer-term effectiveness of the program. The evaluation specifically evidences the effect of the LTLT program on:

- CPD support systems,
- Competences and motivation of direct beneficiaries,
- Impact at school level (focusing on the school as a learning organization)

The evaluation also responds to the following questions:

- What (longer-term) effects did the program have on the CPD support system for DDEs/DEOs, SEIs, school leaders, SBMs, STEM SSLs and (new) teachers.
- What (longer-term) effects did the program have on competences and on motivation of key education actors?
- What (longer-term) effects did the program and CPD support systems have on the school environment and on the school as a learning organization?
- To what extent did the program have differential effects on different sub-groups of beneficiaries or schools (females vs. males; rural vs. urban; public vs. government-aided vs. private, etc.)
- Are any non-effects or unintended/unexpected effects observed? If so, what explains these findings?
- Overall, how did the Covid-19 pandemic and the subsequent closure of schools' influence program implementation and effects?

A mixed methods study using surveys, in-depth interviews and focus group discussions (FGDs) was conducted between April and October 2021 amongst those beneficiaries who participated in either the Diploma Program in Effective School Leadership or the Certificate Program in Educational Mentorship and Coaching and indirect beneficiaries. The survey followed up with those beneficiaries surveyed at baseline who had completed the program and were still employed within one of the 14 program districts (School Leaders N=176, SEIs N=108, SBMs, N=133, and STEM SSLs N=134) and Newly Qualified Teachers (NQTs, N= 172) identified by school leaders included in the endline survey. Ultimately, only 66% of those surveyed at baseline were surveyed at endline. Additionally, interviews were conducted with a selection of beneficiaries (DDEs/DEOs N=13, HT N=26, DHT N=13, SEIs N=12, SBMs, N=14, and STEM SSLs N=14) and indirect beneficiaries (STEM Teachers N=14. NQTs N=14) and FGDs with Parent, Student and Teacher Representatives (N=14) and STEM Students (N=14).

LTLT Program Indicators

Indicator	Baseline	Endline
Percent of new teachers reporting high intrinsic motivation to conduct main teaching roles	71%	92%
Percent of head teachers and deputy head teachers reporting high competence in applying the five standards of school leadership	81%	99%
Percent of SEIs reporting high confidence to coach and mentor head teachers	69%	93%
Percent of schools with a formal induction program for new teachers	60%	95%
Percent of SBMs that demonstrate improved competencies to coach and mentor new teachers	55%	79%
Percent of Heads of Departments/SSLs who report high ability to coach and mentor new STEM teachers	66%	95%

Endline Status of CPD Support Systems

The LTLT Baseline Assessment (2019) found that those schools that reported having CPD, activities were primarily formal timetabled meetings where staff members from departments come together to discuss a case study. These were noted to be primarily knowledge focused and left little opportunity for personalized or needs-based support. In other schools, CPD was not timetabled at all and occurred on an ad hoc basis or not at all. However, at endline, interviews with school actors show that, for most schools, CPD is now on the formal timetable and that there is time on the weekly school schedule for CPD activities. Few respondents still report that CPD takes place on an ad hoc basis. In addition, the understanding of what constitutes CPD has changed. Rather than formal timetabled meetings, CPD at the school level is now primarily seen as school organized trainings for teachers in response to teacher-identified needs and Communities of Practices (CoPs). Leaders noted that they previously based their support on what they thought teachers needed, rather than facilitating processes for teachers to identify their own needs and that teachers' needs are often identified through CoPs.

Baseline findings also highlighted that school based CPD for teaching staff was limited and that there was an inequality in provision of CPD and that some school actors, such as the head teacher and SBM had greater access as compared to other school staff. However, at endline, despite restrictions around meetings due to Covid-19, there was a demonstrated increase in access to CPD opportunities for both STEM SSLs and NQTs, two groups that previously had little access in the past. While head teachers reported increased access to various CPD opportunities, there was a reduction for both the deputy head teacher and SBM over baseline figures.

Additionally, at baseline, inductions were not widely offered for new teachers with only 60% of school's leaders surveyed reporting having a formal induction program. However, interviews with school-based actors highlight that those inductions primarily consisted of giving the teacher teaching materials and introducing them to the staff. While interviews with school-based actors show that there is little standardization across schools as to what constitutes a formal induction, there is a demonstrated increase in

the number of schools offering inductions for new teachers, with 95% of school leaders reporting a formal induction program at their schools, and there is a consensus that new teachers need specialized support during their first year and beyond and that inductions develop better teachers.

The biggest barrier to effective CPD, including induction programs, mentioned at baseline, midline and endline was the limited time available to SBM and SSLs due to concurrent teaching responsibilities. SBMs and STEM SSLs both continue to teach full course loads while concurrently organizing, conducting and evaluating CPD for school staff and conducting inductions for new teachers. Only 3% of SBMs surveyed report that they are not currently teaching a full course load. While STEM SSLs are responsible for aspects of CPD processes within their own departments, primarily consisting of CoPs and supporting induction processes for new STEM teachers, the bulk of the responsibility falls upon the SBM. As CoPs and trainings are often included on the school timetable and can be facilitated by others, coaching and mentoring are not. Therefore, the SBM needs to find the time during their already full schedule to coach and mentor both new and existing teachers. This likely explains why SBMs exhibit a less positive attitude towards coaching and mentoring as compared to STEM SSLs. In addition, findings from both the survey and interviews indicate that SBMs are the least satisfied of all school actors likely due to the expectations placed upon them.

Ultimately, it is likely that CoPs will have the most lasting impact on school level CPD due to their sustainability. CoPs can be led by trained mentors or by the teachers themselves. Interviews with staff highlight the importance of CoPs for developing a teaching community, sharing best practices and solving problems encountered in the classroom. CoPs ultimately help teachers teach better.

PLCs have also created a support network for head teachers. PLCs proved to be very relevant and effective for head teachers in the context of Covid-19 as they provided the opportunity to adopt best practices for Covid prevention as well as support the return of students to the classroom. However, without continued financial support for transportation, the current model of PLCs may be threatened. Despite widespread appreciation for the model and interest in continuing participation, there is little indication that PLCs are being included in sector performance plans and budgets. Additionally, as multiple PLC models are currently in use in Rwanda promoted by different development partners, PLC structures and objectives will likely change over time.

Competences of School Based Actors

As a result of participation in the Diploma Program in Effective School Leadership and the Certificate Program in Educational Mentorship and Coaching, findings from the endline evaluation demonstrate a change in competences and efficacy to lead and support CPD of teachers within secondary schools across the 14 program districts. Ultimately, one of the greatest changes as demonstrated through qualitative findings is the shift in behavior from simply fulfilling a requirement, or doing without understanding and intention, to meaningful behavior, where actions are undertaken with both knowledge and purpose. These changes are evidenced not only in interviews with those who were trained, but in interviews with supervisors, teachers and other key educational stakeholders, who report more effective leadership and support for teaching and learning.

School Leaders

School leaders, including head teachers and deputy head teachers, play an important role in creating the conditions for effective teaching and learning. The literature shows that the quality of school leadership has a significant impact on the quality of education (Robinson, et al., 2008). School leaders who develop, support and evaluate the quality of teaching influence student learning outcomes and that effective leadership is critical for student achievement, particularly in poor performing schools. However, appointed school leaders are often former teachers and do not necessarily have the competences to become an effective school leadership, school leaders gave themselves a medium to high rating on the application of the standards, only one-third of the school leaders reported competence in all five standards simultaneously. At Midline, findings from in-depth interviews with head and deputy head teachers,

highlighted changes in their role as a school leader as a direct result of their participation in the diploma program and indicated significant progress towards achieving expected outcomes. This includes changes in their understanding of their role in managing the school in the context of the five standards of school leadership as set forth by REB, as well as changes in their perceived capacity to effectively lead.

Both quantitative and qualitative findings from the endline evaluation also support the midline findings noting positive changes in leadership in line with all five standards, with the greatest change seen in confidence in leadership, which increased from 64% of head teachers reporting high confidence at baseline to 84% at endline. Changes in overall confidence were fueled by improved confidence to promote the prevailing values of the community in the school and motivating teachers. Most school-based actors and stakeholders interviewed noted changes in leadership style, including greater engagement in the development of the school's mission, vision and core values as well as strategic planning. In addition, teachers noted changes in the accessibility and engagement of school leadership, through participation in CPD including induction programs and CoPs. Skills acquired through participation in the Diploma Program and changes in school leadership style has led to greater collaboration at the school level and has likely reinforced school leader confidence in their role.

Sector Education Inspectors

While SEIs are responsible for monitoring schools within their sectors, they are not employed by REB, and, therefore, are often pulled in many (non-education) directions by their supervisors. Following their participation in the Certificate Program, SEIs report that they are better able to support schools in planning, including developing SIPs and action plans. Through the development of plans and increased reporting from schools, SEIs find that they are better able to demonstrate their role to their superiors and focus on education.

SEIs are also now leading PLCs in their sectors. Findings from the quantitative survey highlight that SEIs are now more confident in their roles, with the biggest change in the ability of the SEI to tailor support for different head teachers and schools and lead meetings and delegate leadership of meetings to head teachers, which have been reinforced through their role in facilitating PLCs. In addition, improved problemsolving capacity of school leaders developed through participation in PLCs has eased the workload of SEIs as schools are now able to resolve more problems on their own rather than seeking the support of the SEI.

School Based Mentors and STEM School Subject Leaders

The most significant shifts for both SBMs and STEM SSLs is in their confidence and perceived efficacy to coach and mentor teachers. Reflecting the differentiation in roles within the school, SBMs exhibited the greatest change in their confidence to lead CPD within their schools whereas STEM SSLs exhibited greater confidence to lead induction programs for new STEM teachers.

While there was little change in those exhibiting a "positive" attitude towards mentoring and coaching for SBMs (76% of SBMs at baseline and 74% at endline), the percentage of STEM SSLs with positive attitudes increased from 57% at baseline to 76% at endline. The most significant change for both is in the understanding that new teachers shouldn't be expected to teach well from their first day on the job. This is also reflected in positive perceptions and widespread adoption of induction programs as seen elsewhere in this evaluation. The biggest barrier for SBMs and, to a lesser extent SSLs, remains as the limited time available for organizing, facilitating and reporting on CPD activities, including coaching and mentoring teachers, inductions and trainings. Ultimately, the high efficacy and confidence to perform their role as leaders of CPD in their school is complicated by the lack of time, which is reflected in reported changes in attitude as well as in qualitive interviews where SBMs are less positive about their ability to affect change and their school environments as compared to STEM SSLs.

School Environment

Findings from the endline evaluation highlight significant changes in leadership within the schools. School leaders report changes in how they engage staff, away from a top-down approach towards a distributed leadership approach that engages relevant stakeholders in decision making processes. In addition, school

leaders better appreciate the roles that others can play in the management of the school and are more likely to delegate authority than prior to their participation in the Diploma Course. As a result of these changes, school leaders report that they find their job easier and are more motivated. Stakeholders also note that changes in management style have led to better communication and understanding of the objectives and decisions made by leadership and are, therefore, more likely to support the school in achieving these objectives and contributing to improved learning environments. Ultimately, these changes have created a better work environment where teachers feel that leadership is approachable and that their ideas are respected and contribute to the success of their schools.

Additionally, quantitative findings illustrate the benefit of having multiple trained actors within the school on confidence and efficacy as well as the school environment. Qualitative findings from both the midline and endline also highlight the successful transfer of learning from the course to practical implementation at the school level is dependent upon having a trained head teacher. Specifically, the midline found that effectiveness was improved by training the head teacher prior to or concurrently with the SBM, SSL and deputy. This ensured that educational actors had the necessary support to effectively implement what was learned during the course.

However, due to high transfer and turnover rates amongst school leadership, gains may be short-lived as new leaders who are not trained are brought in as replacements. Turnover may stall or reverse positive changes seen within schools, particularly with regards to CPD systems. These changes also reduce morale amongst staff as they may, once again, find themselves in a teaching environment where their voices are not heard or respected by leadership.

Impact of Covid-19

Covid-19 has had a significant impact on the education sectors. Once schools resumed in-person studies, terms were shortened in order for students to catch-up and make up for lost time in the classrooms. The busy timetable combined with restrictions on gatherings have reduced the CPD opportunities for teachers since March 2021. In addition, both quantitative analysis of survey participants by training cohort and interviews indicate that Covid has limited the ability of participants to practice and reinforce skills learned during the course and that there may be need for further refresher trainings, particularly for those in Cohorts 2 and 3. However, qualitative findings demonstrate how the skills gained through participation in the Diploma and Certificate courses have helped schools effectively and efficiently respond to the Covid-19 pandemic. PLCs provided school leaders with the ability to share best practices in supporting both student and teacher return to the classroom while CoPs helped teachers to ensure discipline in the classroom.

Recommendations

Findings from the endline evaluation highlight the positive impact that the CPD systems offered through or promoted by LTLT program, such as the Diploma Course in Effective School Leadership, Certificate Program in Educational Mentorship and Coaching, induction programs, PLCs and CoPs, has on school based CPD support systems, the competences and motivation of key school actors and on the overall school environment. Therefore, the evaluation recommends that the Diploma Course continue to be offered to school leaders as a component of pre- or in-service training and that the Certificate Course continues to be offered to all school-based staff either through in-service training or as optional course during preservice trainings. As SBMs are responsible for leading CPD in their schools, there is continued need to advocate for a reduction in teaching hours to ensure SBMs have sufficient time to support teachers. However, offering the training to more school-based staff, including the deputy head teacher, may reduce the pressure on the SBM and can mitigate the impact of staff turnover on the continuation of CPD systems.

Findings also show that there is also need for formal guidance on the content of a formal induction program to further support schools to ensure that new teachers receive sufficient support during their first years of teaching. Additionally, as multiple models for PLCs currently exist in Rwanda, as promoted by different development partners, there is a need to develop a standardized PLC model, based on best practices, for adoption by MINEDUC and REB.

Introduction

Vision 2050 aspires to take Rwanda to high living standards by the middle of the 21st century. The implementation instrument for the remainder of Vision 2020 and for the first four years of Vision 2050 is the National Strategy for Transformation 2017 – 2024 (NST1). Of the three pillars of transformation of NST1, the Social Transformation pillar entails strategic interventions for Improved Access to Quality Education through strategic investments in all levels of education (pre-primary, basic and tertiary), and through improved teachers' welfare and increasing the number of qualified teachers. These strategic interventions will be geared towards laying a strong foundation for quality education for Rwandan children. Science, Technology, Engineering and Mathematics (STEM) will be promoted at all levels of education, and it is projected that STEM students enrolling in higher education and Technical and Vocational Education and Training (TVET) courses will increase from 44% in 2016 to 80% by 2024 (GoR, 2017).

Rwanda has made significant progress in developing the education system over the past decade; however, challenges still remain. According to Ministry of Education (MINEDUC) figures, the percent of qualified teachers in secondary schools is 69.2% and many teachers in Rwanda lack the necessary content knowledge and skills, particularly in the field of STEM, to provide quality teaching for all (MINEDUC, 2018). Research has shown that effective school leadership is also critical for improving student academic achievement (Robinson, et al., 2008) and those teachers selected as Head Teachers do not necessarily have the leadership training or administrative skill necessary to perform their jobs. In recognition of these challenges, Rwanda's Education Sector Strategic Plan 2018/19-2023/24 (ESSP) has identified continuous professional development and management of teachers as a top strategic priority.

VVOB, with the support of Mastercard Foundation (MCF), implemented the "Leading, Teaching and Learning Together (LTLT) *Umusemburo w'Ireme ry'Uburezi* program" (2018-2021) in all secondary schools in 14 districts (approximately 680 schools) in Rwanda. The program aimed to provide young Rwandans with the skills and competences to succeed in the 21st century, including improved learning, well-being and a reduced gender gap, by improving the teaching and learning environment in secondary schools in Rwanda through strengthening the competences of key education actors. The program provided and institutionalized Continuous Professional Development (CPD) support systems and trained school leaders to facilitate coaching and mentoring of teaching staff in order to enhance teaching competences, skills and motivation. The trainings were co-organized and certified by the College of Education of the University of Rwanda (UR-CE) and the Rwanda Education Board (REB), key partners of VVOB. The program specifically targeted Sector Education Inspectors (SEIs), and school leaders including Head Teachers (HTs) and Deputy Head Teachers (DHTs), School Based Mentors (SBMs) and STEM School Subject Leaders (SSLs). Participants took part in CPD courses on effective school leadership, coaching and mentoring and engaged in Professional Learning Communities (PLC) or Communities of Practice (CoP) at the level of the administrative sector (for PLCs) and in schools (for CoPs).

The endline study is a part of a larger evaluation which aimed to assess the effectiveness of the LTLT program interventions through a longitudinal mixed methods approach. In order to assess the longer-term effectiveness of the LTLT program, the endline study builds upon the baseline assessment (2019) and midline assessment (2020), which allowed for conclusions to be drawn regarding the longer-term effectiveness of the program. The evaluation specifically evidences the effect of the LTLT program on (See Evaluation Matrix in Annex 1):

- CPD support systems,
- Competences and motivation of direct beneficiaries,
- Impact at school level (focusing on the school as a learning organization)

The evaluation also responds to the following questions:

- What (longer-term) effects did the program have on the CPD support system for DDEs/DEOs, SEIs, school leaders, SBMs, STEM SSLs and (new) teachers.
- What (longer-term) effects did the program have on competences and on motivation of key education actors?

- What (longer-term) effects did the program and CPD support systems have on the school environment and on the school as a learning organization?
- To what extent did the program have differential effects on different sub-groups of beneficiaries or schools (females vs. males; rural vs. urban; public vs. government-aided vs. private, etc.)
- Are any non-effects or unintended/unexpected effects observed? If so, what explains these findings?
- Overall, how did the Covid-19 pandemic and the subsequent closure of schools' influence program implementation and effects?

The final evaluation also provides endline figures for six program indicators as presented in Table 1:

Objective	Indicator
Improved Teaching (TRAIN)	
Improved teaching competencies of new teachers	 % of new teachers reporting high intrinsic motivation to conduct main teaching roles
Improved leading (LEAD)	
Improved competencies of HTs and DHTs to lead their school effectively	2. % of HTs and DHTs reporting high competence in applying the five standards of school leadership
Improved CPD Support Systems	
Improved School Leadership supp	oort / LEAD (CPD services): resulting in improved leading
Improved competencies of SEIs	3. % of SEIs reporting high confidence to coach and mentor HTs
Improved Teacher support/ TRAIN	I (CPD services): resulting in improved teaching
Reach/scope of Teacher support	4. % of schools with a formal induction program for new teachers
Improved competencies of SBMs	5. % of SBMs that demonstrate improved competencies to coach and mentor new teachers
Improved competencies of Head of Departments and SSLs	 % of Heads of Departments/SSLs who report high ability to coach and mentor new STEM teachers

Table 1: VVOB LTLT Program Indicators

Study Context

Background

Rwanda has made significant progress in developing the education system over the past decade, more than doubling enrollment in secondary schools from 288,036 in 2008 to 732,104 in 2019 and increasing the proportion of female students at the secondary level from 47.8% in 2008 to 53.3% in 2019, primarily as a result of the 2008 policy to provide 9 years free basic education (9YBE) and subsequent policy providing for 12 years free basic education (12YBE) in 2012. The increase in students has been accompanied by an increase in school facilities. In 2008, there were only 689 secondary schools whereas there are now 1,783 secondary schools in the country, the majority of which are government aided (912) as compared to public (547) and private schools (324) (MINEDUC, 2019). With the success of increased access, the current focus is on improved quality of education. This is evidenced by the adoption of English as the language of instruction from upper primary onwards, the implementation of the new competency-based curriculum (CBC) (MINEDUC and REB 2015) and the integration of ICT in the classroom (MINEDUC, 2013).

Despite this progress, challenges to ensuring that the education systems can provide Rwandans with sufficient and appropriate skills, competences, knowledge and attitudes to drive the social and economic transformation of the country still exist as evidenced by dropout and repetition rates. In the 2018/2019 school year, 4.2% of students repeated the grade level and 8.2% of students (8.1% of girls) dropped out – an increase from 5.8% dropout in 2017/2018. Dropout rates in both lower and upper secondary have increased in 2018/19 compared to 2017/18, rising from 1.7% to 5.1% in upper secondary and from 7.1% to 9.1% in lower secondary. In 2018/19 both dropout rates and repetition rates were higher for male students (MINEDUC, 2019). A study conducted by MINEDUC and UNICEF (2007) reported higher repetition rates in schools with lower performance metrics, such as pupil teacher ratios and teacher absenteeism, attributed partially to poor teaching resources and practices. The study also found a statistically significant correlation between teacher absenteeism and repetition rates and a strong link between punishment by teachers and repetition rates, signaling that school-level factors, including teacher professionalism contribute to student achievement. Education across Rwanda has been severely disrupted as a result of the Covid-19 pandemic, with schools closed for significant periods in 2020 and early 2021.

A key challenge, as identified in the ESSP, is the insufficient teacher competencies in subject content, pedagogy and English which jeopardize curriculum delivery and inclusion and negatively impact student learning outcomes (MINEDUC, 2018). The ESSP highlights that ensuring teachers, trainers and lecturers have the knowledge and skills to implement the CBC will be the biggest success factor in relation to providing quality education. Currently, 76.5% of secondary school teachers meet the minimum academic qualifications to teach¹ and only 59.7% of secondary school teachers have met the minimum teacher training requirements to teach². While the pupil to teacher ratio is 24 to 1, the proportion of students to trained teachers is only 38 to 1 (which is higher than the 35 to 1 ESSP target for the 2017/18 school year) (MINEDUC, 2019). The Ministry of Education's target for trained teacher to student ratio is 30 to 1 by the 2023/24 school year. In order to achieve this target and to ensure that 98% of secondary school teachers have the skills necessary to teach the CBC, the ESSP highlights the need for CPD, including school-based mentoring for new teachers (MINEDUC, 2018).

For effective CPD and teaching to take place, there needs to be a conducive environment. According to a report by OECD (2013), "A teachers' self-efficacy is strongly correlated with their ability to engage in reflective practices, having a shared sense of purpose and a collective focus on student learning, which, in turn, is strongly predictive of a positive learning climate for students." Evidence shows that teacher development improves teaching and learning, and that effective school leadership is required for the

¹ MINEDUC defines teachers who have the minimum academic qualifications necessary to teach at a specific level of education as "qualified".

² MINEDUC defines teachers who have met the minimum organized teacher-training requirements (pre-service or in-service) to teach at a specific level of education as "trained". In the other words a trained teacher is a qualified teacher with a qualification in pedagogical skills.

professional development of teachers. The same OECD report highlights that leaders who are able to combine both distributed and instructional leadership styles are more likely to be associated with schools with a strong professional learning community where teachers are able to engage in reflective practices, collaborate, have a shared sense of purpose and focus on student achievement.

In response to challenges in teaching quality in secondary education, VVOB in partnership with REB and UR-CE and with funding from MCF, created the Leading, Teaching and Learning Together in Secondary Education Program (LTLT). The program was rolled out in 14 districts in Rwanda targeting 680 schools between 2018 and 2021 (see Figure 2³). The program's long-term



objective was to provide young Rwandans with the skills and competences to succeed in the 21st century. Professional development of school leaders throughout their careers is one of the linchpins of VVOB's approach to school leadership and the immediate objective of the program is to strengthen the competences of key actors in education through improved CPD support systems including HTs, DHTs, SBMs, STEM SSLs, SEIs, DDEs and DEOs. Although teachers are not directly targeted, the program aims to reach them indirectly through these key education actors. To this end, key actors were expected to apply interventions for teachers (including Communities of Practice (CoPs), formal induction programs for new teachers, coaching and mentoring, etc.) and promote a practice of lifelong learning in their schools. As of March 2021, 2,933 school actors (580 females) had participated in one of the training courses.

The Covid-19 pandemic and subsequent prevention measures created an opportunity for VVOB to continue to support school leadership and learning while building future resiliency. As a supplemental program to the LTLT program, VVOB also implements a program to provide laptops and internet connectivity to secure an enabling online CPD environment for all key actors; develop a digital data-ecosystem for planning and monitoring and evaluation to ensure a quick response system to emerging needs; integrate thematic support on resilient schools in current CPD materials and build the capacity of officials on effective school leadership and mentoring and coaching, including ensuring teachers and school leaders have the required ICT skills to participate in online learning. The project design also supported school actors targeted by the LTLT program to continue participation in the course despite the restrictions put in place to prevent the transmission of Covid-19.

In line with VVOB Programs ToC (see Figure 2), the program is divided into two pillars. The first pillar, LEAD, is designed to improve school leadership support systems while the second pillar, TEACH, improves teacher support systems. Both pillars are further detailed below.

³ Map of VVOB programming, including the LTLT program in secondary schools and the complementary Girls on MARS and Induction System for Mentoring and Monitoring of Newly Qualified Teachers programs in primary schools.



Figure 2: VVOB Program Theory of Change (Including LTLT Program)⁴

Pillar 1: School Leadership (LEAD): Improved school leadership by Head Teachers and Deputy Head Teachers through improved school leadership support systems.

Output 1: A CPD Diploma course on School Leadership for Head Teachers and Deputy Head Teachers in charge of studies;

Output 2: A General CPD Certificate course on Coaching, Mentoring and PLCs for Sector Education Inspectors and engagement of District Directors of Education;

Output 3: CPD support in PLCs of School Leaders at sector level, with coaching by trained Sector Education Inspectors and supervision by District Directors of Education.

Pillar 2: Teacher Support (TEACH): Improved teaching by teachers, including School Subject Leaders and new teachers, through improved teacher support systems.

Output 4: A General CPD Certificate course on Coaching, Mentoring and PLCs for School Based Mentors;

Output 5: A STEM CPD Certificate course on Coaching, Mentoring and PLCs for STEM Heads of Department or School Subject Leaders;

Output 6: CPD support in PLCs for teachers in schools, with coaching by School Based Mentors and STEM School Subject Leaders, and supervision by Deputy Head Teachers.

The following is a brief overview of LTLT outputs:

CPD Training Programs

All trainings were co-organized and certified by the REB and UR-CE, key partners of VVOB.

CPD Diploma Program in Effective School Leadership: Collaboration between VVOB and UR-CE led to the introduction of a CPD Diploma in Effective School Leadership recognized by REB with the first trainees completing training in 2016. The course was subsequently revised in 2017 and 2018. As of 2019, the course was offered via three different formats, with Cohort 1 offered face-to-face, Cohort 2 via a blended

⁴ The Theory of Change is not LTLT Program specific. The ToC includes LTLT Program as well as VVOB programs supporting primary education.

learning format, with face-to-face class time supplemented with online discussions, activities and readings and with Cohort 3 offered fully online due to Covid-19. The purpose of the program was to equip school leaders with knowledge, competences and values to implement the five standards of effective school leadership and contribute to school development that results in enhancing student achievement, including creating strategic direction for the school, leading learning, leading teaching and training, managing the school as an organization and involving parents and the local community in the school. In 2019, the course was also expanded to DDEs and DEOs. In total, 7 DDEs and 9 DEOs enrolled in the Diploma Program across 17 districts.

riogram in seco	Togram in secondary education as of March 2021							
Cohort	Number of Head Teachers	Number of Deputy Head Teachers	Number of District Directors of Education	Number of District Education Officers	Total			
Cohort 1	171	240	Not trained	Not trained	411			
Cohort 2	115	163	7	9	294			
Cohort 3	218	254	Not trained	Not trained	472			
Total	504 (79 Female)	657 (160 Female)	7 (0 Female)	9 (1 Female)	1,177 (240 Female)			

Table 2: Number of Participants trained in the CPD Diploma Program in Effective School Leadership through the LTLT Program in secondary education as of March 2021

Certificate Program in Educational Mentorship and Coaching: This certificate program was delivered by UR-CE with the aim of equipping SEIs with skills for coaching school leaders in leading their schools effectively based on their oversight role for quality education in their respective sectors. The certificate program also equipped SBMs with skills to support teachers and school leaders through guiding and organizing school based CPD primarily through CoPs, coaching and mentoring and promoting reflective practice in their respective schools to advance the implementation of the CBC. It focused on teacher development as an ongoing process in a teacher's career.

Table 3: Number of Participants trained in the CPD Certificate Program in Educational Mentorship and Coaching in secondary education as of March 2021

Cohort	Number of School Based Mentors	Number of Sector Education Inspectors	Total
Cohort 1	227	139	366
Cohort 2	168	8	176
Cohort 3	103	Not Planned	103
Total	498 (79 Female)	147 (31 Female)	645 (110 Female)

Certificate Program in Educational Mentorship and Coaching for Mathematics and STEM: The CPD certificate built on the CPD certificate for SEIs and SBMs, but with a specific focus on STEM. SSLs and Heads of Department in STEM were introduced to a variety of aspects of pedagogical content knowledge for STEM and STEM leadership, to mentor and coach STEM teachers. Two STEM teachers, one in Biology/Chemistry and other in Math/Physics, in each secondary school (including 9YBE and 12YBE schools) within the 14 project districts were intended to participate in the CPD certificate program.

Table 4: Number of Participants trained in the CPD Certificate Program in Educational Mentorship and Coaching for Mathematics and STEM in secondary education as of March 2021

nationales and stein in secondary education as of match 2021						
	Number of Math	Number of Other				
Cohort	STEM School Subject	STEM School Subject	Total			
	Leaders	Leaders				
Cohort 1	246	208	454			
Cohort 2	4()4	404			
Cohort 3	253		253			
Total			1,111 (230 Female)			

Professional Learning Communities⁵

Recognizing that trainings are insufficient on their own and that school leaders need continuous support; PLCs created a forum for school leaders to learn from each other through solving challenges and sharing good practices. SEIs, as a component of the **Certificate Program in Educational Mentorship and Coaching** were trained in skills to initiate and sustain PLCs of school leaders. A full cycle takes one year, with one PLC session organized per quarter. Each session is intended to be a part of an action-oriented cycle designed to identify school and sector challenges, develop school improvement plans (SIPs) that are aligned with the Sector Education Improvement Plan (SEIP), engage school leaders in sharing best practices and reflecting on and disseminating best practices in school leadership.

Communities of Practice⁶

Similar to PLCs, CoPs are a peer learning platform at the school level where teachers can meet and learn from each other. As a component of the **Certificate Program in Educational Mentorship and Coaching**, SBMs and STEM SSLs were trained in initiating and facilitating CoPs in order to support teachers to find solutions to challenges. The program intends that SBMs are responsible for initiating and facilitating CoPs for all teachers and sessions should be organized by grade, while STEM SSL are intended to lead subject specific CoPs. One CoP cycle consists of three sessions but can take as many sessions as necessary to find effective solutions for the identified challenge.

 $^{^{5}\} https://rwanda.vvob.org/download/professional-learning-community-framework$

⁶ https://rwanda.vvob.org/download/communities-practice-framework

Evaluation Methodology

Study Design

The final evaluation is a part of an outcome evaluation which applied a longitudinal mixed methods approach. The outcome evaluation is quasi-experimental in design and included a baseline, midline and endline measurement in all 14 districts that are part of the LTLT in secondary education program. The approach followed respondents and schools over time to take part in in-depth interviews (IDIs), focus group discussions (FGDs) and surveys in order to compare findings at baseline with those at project completion. As the baseline was conducted after the start of the project, in 2019, the evaluation included schools that had not been exposed yet to any of the trainings (so-called baseline schools) and schools where headteachers and deputy headteachers had already started their training (or the School Leadership (SL) schools). Given the mix of schools, the baseline evaluation was designed to study baseline and intermediary outcomes of the CPD diploma program on school leadership. The quantitative component of the endline also included a post-project survey with those two groups of respondents from the baseline to assess changes in outcomes over time. However, due to staff turnover, only 66% of those surveyed at baseline were again surveyed at endline (see Annex 2).

Upon completion of the analysis of the endline survey findings, a qualitative research component included interviews and FGDs with educational actors from two secondary schools from the same sector within each of the 14 project districts. The interviews were designed to further evidence survey findings and complement previous qualitative data collection at both baseline and the midline (2020). Figure 3 provides an overview of the study design.

	Quar	ntitative Research		Qualitative Research
	Sampling:	251 Schools in 14 districts	 Sampling:	14 schools in 14 districts (1 school per district)
Baseline Study	Method:	Survey with 93 "baseline" and 158 "school loader" schools	Method:	IDIs, KIIs
2019	Respondents:	1 per school: HT or DHT, SBM, SSL, NQT and SEI	Respondents:	IDIs: School leaders, SBMs, SSLs, NQTS, SEIs
			 	FGDs: STEM Students
Midline Studv			 Sampling: Method: Respondents:	14 schools in 7 districts IDIs, KIIs School leaders, SBMs, SSI s
2020				NQTs, SEIs and DDE/DEOs REB and UR-CE
	Sampling:	Follow-up with those surveyed at baseline	 Sampling:	24 schools in 14 districts (2 schools per district from same sector)
	Method:	Survey	Method:	IDIs, FGDs and KIIs
Endline Study 2021	Respondents:	HT or DHT, SBM, SSL and SEI surveyed at baseline. New NQT	Respondents:	IDIs: 2 HT, 1 DHT, 1 SBM, 1 SSL, 1 NQT, 1 STEM Teacher, 1 SEI, 1 DDE/DEO per district
		surveyed from school of surveyed HT or DHT		FGDs: 1 STEM Students, 1 Parent Student Teacher Organization Members per district
				KIIs: REB and UR-CE

Figure 3: LTLT Outcome Evaluation Design

Sampling Procedures

Quantitative Research

At baseline, 251 schools out of the total 680 schools were included in the baseline survey.⁷ To assess the intermediate and long-term effects of the CPD support on school leaders, 93 "baseline" and 158 "SL" or schools where leaders (both the head teacher and deputy head teacher) were already enrolled in Cohort 1 of the School Leadership Diploma Course at the time of the baseline data collection were included in the survey. The 158 "SL" schools were selected based on the headteacher and deputy headteacher exposure to the training and not any of the other beneficiary groups' exposure. Therefore, the "SL" sample also included schools where other school actors may have been trained under Cohort 1 (such as the SBM or SSL). Of the 158 "SL" schools, 5 TTC schools were included, although not a primary program target. At the 93 baseline schools, no staff had yet begun either the Diploma or Certificate courses. Within each school, the head teacher or deputy head teacher, SBM, STEM SSL and a newly qualified teacher (NQT, defined as having graduated from a TTC within 3 years of the baseline survey) were interviewed as well as the SEI for each school. As the majority of SEIs were trained during the first cohort, the SEI survey was designed as mid-line survey.

As a longitudinal design, the endline surveyed baseline respondents. In order to maintain the longitudinal approach, the final evaluation surveyed all those that took part in the baseline study (both the baseline and SL group) and successfully completed the trainings in either Cohorts 1, 2 or 3 of either the Diploma Program or Certificate Program. School actors that left the teaching profession were excluded from the sample. In addition, school actors that moved to a school in another district were excluded as it would not be possible to assess the contribution that multiple trained school actors would have on the school environment nor the impact of additional support measures including PLCs.

Additionally, as STEM NQTs are only NQTs for a limited amount of time (after three years they are no longer considered NQTs) the endline survey for NQTs did not use a longitudinal approach. Rather, each school leader surveyed at endline was asked to identify a NQT to be included in the survey. Where feasible, the school leader was asked to identify a STEM NQT.

After applying the sampling criteria, there was a 34% reduction in the total number of survey participants between baseline and endline from 1099 to 723, with the most significant reductions in the STEM SSL (46%) and SBM (43%) categories. It appeared that this was largely driven by the fact that some STEM SSLs and SBMs that were surveyed at baseline, had not been trained in cohorts 1, 2 or 3. At baseline, not all schools had identified staff for the different positions, and it was thus not always clear which actors would be following the CPD programmes. Therefore, at the time of the baseline, the school may have selected a teacher to participate in the survey who was ultimately not assigned the role of SBM or STEM SSL. Tables 5 and 6 summarize changes in sampling between baseline and endline by district and by position.

District	Baseline	Endline	% Change	District	Baseline	Endline	% Change
Gicumbi	116	82	-29%	Nyabihu	33	22	-33%
Gisagara	69	51	-26%	Nyamasheke	89	53	-40%
Kamonyi	106	87	-18%	Nyanza	88	46	-48%
Karongi	95	58	-39%	Nyaruguru	95	59	-38%
Kayonza	53	37	-30%	Rubavu	85	46	-46%
Musanze	75	50	-33%	Rusizi	29	19	-34%
Ngororero	73	52	-29%	Rwamagana	93	61	-34%

Table 5.	Number of surve	vrochondonte	por district at	+ bacalina and	ondling w	th porcont	chango
Table 5:	Number of surve	y respondents	per district at	. Daseline and	enaime, wi	in percent	change

⁷ At baseline, the expected number of schools was 247 (95 "baseline" and 152 "SL" schools), however changes during baseline data collection resulted in an additional 4 schools included in the survey sample.

Table of Hamber of Sarrey respondence by position at baseline and chamne, with percent change and explanation						
	School Leader	SBM	STEM SSL	SEI	NQT	
Respondents at Baseline	256	232	249	135	227	
Respondents at Endline	176	133	134	108	172	
% Change in survey respondents at endline compared to baseline	-31%	-43%	-46%	-20%	-24%	
% Baseline respondents with no training record on file with VVOB	14.1%	24.6%	20.5%	4.4%	n/a	
% Baseline respondents not yet trained at time of endline/ failed/ dropped out	7.8%	9.1%	13.3%	3.7%	n/a	
% Baseline respondents left teaching profession, passed away	3.9%	1.7%	4.0%	3.0%	n/a	
% Baseline respondents moved away from district	0.8%	3.0%	2.8%	2.2%	n/a	
% Other (refused participation, unable to trace, etc.)	4.7%	4.3%	5.6%	6.7%	n/a	

Table 6: Number of surve	y respondents by	position at b	baseline and endline,	with percent	change and explanat	ior
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Qualitative Research

The qualitative data collection included in-depth interviews with key school leaders and teachers, FGDs with school level project stakeholders and key informant interviews with REB and UR-CE. In each of the 14 districts, one school was selected from those included in the quantitative survey, selecting from those schools where most, if not all of the key staff had been trained, including the Head Teacher. In addition, a second school was selected from the same sector as the first in order to further assess evidence of shared leadership and triangulate findings at sector level. Where feasible, the schools with female head teachers were selected for inclusion. Trained head teachers, deputy head teachers, SBMs and STEM SSLs as well as an NQT and STEM teacher were then identified to participate in an in-depth interview along with the trained SEI for the sector and DDE/DEO for the district. At the second school in each sector, the trained HT was identified to participate in an interview. The second school also served as a backup in the event that a respondent was not available at the first school. As schools were closed at the time of the phone-based interviews, focus group discussions were conducted with a mixed gendered group of 4 to 6 STEM students and a mixed gendered group of 4-6 parent student teacher organization members after completion of the phone-based interviews.

Table 2	7:	Qualitative	Research
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		Phone-Based Interviews							Field Visi	ts	
	Head Teacher	Deputy Head Teacher	SBM	STEM SSL	STEM Teacher	New Teacher	SEI	DDE/ DEO	School Visit	FGD Students (STEM Students)	FGD PST org. members
District								14			
Sector							14				
School 1 (from Quant. Survey)	14	14	14	14	14	14			14	14	14
School 2 (selected from sector)	14										
TOTAL	28	14	14	14	14	14	14	14	14	14	14
TOTAL				12	26				14		28

In addition to the school-based data collection, key informant interviews were conducted at the national level with UR-CE trainers, REB officials and VVOB staff.

Table 8: Key Informant Interviews

Name	Organization	Title
Dr Dan Imaniriho	URCE	Lecturer
Dr Alphonce Uworwabayeho	UR-CE	Lecturer
Dr Leon Mugenzi	UR-CE	Lecturer
Dr Michael Tuite	UR-CE	Lecturer
Claudien Nzitabakuze	REB	Former Head TDM Department
Emeritha Kabatesi	REB	Teacher Training Officer
Eugen Rukeba	REB	Former Head School Leadership Unit
James Ngoga	REB	Former Head TDM Department
Nehemien Bacumuwenda	REB	Officer CPMD

Study Instruments

Quantitative Research Study Instruments

Surveys for each respondent group were developed at baseline based on a document review and existing survey scales. The survey collected quantitative information about beneficiaries' attitudes and impressions. Main concepts covered in the surveys can be found in Table 9 below. The questions were closed-ended, facilitating the measurement of any differences between baseline and endline. At endline, the baseline study tools were revised to assess exposure to the Diploma and Certificate courses at each school, assess responses by training cohort, assess exposure to PLCs and CoPs and understand the impact of Covid-19 on outcomes.

Table 9: Quantitative Survey Content

Survey Tool	Concepts Covered
School Leader Survey	 Self-efficacy in five standards of school leadership (based on Tschannen-Moran & Gareis, 2004) Exposure to professional development activities by head teacher, including professional learning communities Delivery of induction programs for new teachers Exposure to professional development activities by teachers School environment (OECD, 2013) Other colleagues trained in the Diploma or Certificate program
SBM Survey and STEM SSLs Survey	 Attitudes about coaching and mentoring Confidence in main SBM tasks Exposure to professional development activities, including communities of practice School environment (OECD, 2013) Delivery of induction program for new teachers Other colleagues trained in the Diploma or Certificate program
NQT Survey	 Motivation (Van den Broeck, Vansteenkiste, De Witte, Soenens & Lens, 2010) Motivation (Fernet, Sencal, Guay, Marsh & Dowson, 2008) Exposure to professional development activities, including communities of practice
SEI Survey	 Confidence and ability in main SEI tasks Frequency and usefulness of professional learning communities Induction programs for new teachers

All questions were translated into Kinyarwanda and survey questions were uploaded into Kobo Toolbox and piloted with a sample of head teachers, deputy head teachers, SBMs, SSLs, NQTs and SEIs from schools that were not included in the baseline survey.

Qualitative Research Study Instruments

Study tools have been developed for each respondent group and translated into Kinyarwanda. All tools were developed inline with the Evaluation Question Matrix in Annex 1.

Table 10: Qualitative Research Study Instrument Content

Interview Tool	Concepts Covered
Head Teacher and Deputy Head Teacher	Participation in CPD Diploma Program in Effective School Leadership
	Changes in school leadership and environment (5 Standards of School Leadership)
	CPD support systems for school leaders
	 CPD support systems for teachers
SBM and STEM SSLs	Participation in CPD Certificate Program in Educational
	Mentorship and Coaching
	CPD support systems for teachers (CoPs, Inductions and
	Mentoring and Coaching)
	CPD support systems for mentors
	 Changes in school leadership and environment
NQT Interview	Induction programs
	CPD support for teachers
	School leadership and environment
STEM Teacher Interview	CPD support systems for teachers
	Changes in school leadership and environment
SEI Interview	Participation in CPD Certificate Program in Educational
	Mentorship and Coaching
	SEI engagement with schools and school leaders
DDE/DEO Inten iour	School level changes Destiningtion in CRD Divisions Programs in Effective School
DE/DEO Interview	Eadership
	Changes in leadership at district, sector and school
	Changes in teaching quality as a result of CPD
STEM Student FGD	Changes in STEM instruction
	Changes in the learning environment
Parent Student Teacher Organization FGD	Changes in school environment
	Community involvement in the school
REB and UR-CE Key Informant Interviews	Relevance and sustainability of the LTLT in Secondary Education
	Program

Data Collection Procedures

Quantitative Research Data Collection

For the quantitative data collection, a team of enumerators were trained in the data collection tools and procedures. Data collection took place in May 2021 via tablets using the Kinyarwanda versions of the surveys that were uploaded to KoBo Toolbox. Given the on-going Covid-19 pandemic and lockdowns, all surveys were conducted by phone with enumerators administering the survey and entering data directly into the KoBo survey form. Previous evaluations have highlighted the effectiveness of phone-based surveys with teachers as it allows for surveys to take place at the convenience of the respondent and is thus less likely to be interrupted by other responsibilities.

Qualitative Research Data Collection

For the qualitative interviews, a team of enumerators, who conducted both the quantitative survey and participated in the midline evaluation, were trained in the qualitative data collection tools in September 2021. As part of this training, the qualitative researchers piloted the discussion and interview guides with survey respondents that had not been included in the qualitative research component. All interviews were conducted by phone, recorded and transcribed into an Excel database.

Following the phone-based interviews, a small team of enumerators were trained in the focus group discussion guides and conducted field visits to all 14 districts in October 2021. One enumerator conducted the discussion while the other acted as note taker. All discussions were recorded.

Data Analysis

Quantitative Data Analysis

Quantitative data was analyzed using SPSS with descriptive statistical analysis in Excel. Findings are presented for all continuous and categorical variables as per the baseline analysis. At baseline, the baseline status of CPD support systems and competences of beneficiaries were only assessed for the 95 "baseline" schools whereas intermediate effects were assessed for only the 152 "SL" schools, using the baseline schools as a control group. However, at endline, due to the possibility of respondents changing of positions or schools, all respondents, regardless of the school category at baseline, were included in the analysis. In addition, as participants were assigned to one of three cohorts, with Cohort 1 having completed the course at the time of the baseline, respondents were analyzed by cohort. Cohort differentiated data is presented where relevant. Differences between baseline and endline responses were tested using bivariate analysis and employing a Chi-square test for categorical variables and paired-t tests were carried out School Leaders, SBMs, STEM SSLs and SEIs while unpaired t-tests were carried out for NQTs.

Change in status between baseline and endline by respondent for the key variables (including change in environment, competences, motivation, etc.) were assessed with analysis also exploring to what extent the program had differential effects on sub-groups of beneficiaries such as gender and training cohort. In addition, analysis provided updated baseline and endline measures for the five project indicators:

- 1. % of new teachers reporting high intrinsic motivation to conduct main teaching roles
- 2. % of HTs and DHTs reporting high competence in applying the five standards of school leadership
- 3. % of SEIs reporting high confidence to coach and mentor HTs
- 4. % of schools with a formal induction program for new teachers
- 5. % of Heads of Departments/SSLs who report high ability to coach and mentor new STEM teachers

Figures presented in the baseline report may differ than those presented in the endline as analysis was based on those respondents that participated in both the baseline survey and the endline survey.

Findings from the midline highlight the strong mediating role of the HT in facilitating the adoption of the school leadership standards and CPD support systems (ex: formalized coaching mentoring or induction programs for new teachers). Therefore, for each respondent included in the survey, analysis looked at (1) if the HT was trained and (2) the total number of staff trained in either the Diploma or Certificate Programs at the school. The descriptive statistics for DHTs, SBMs, STEM SSLs and NQTs were then compared for respondent groups from schools where the HT was trained as compared to respondent groups where the HT has not yet been trained.

While the intent of the final evaluation analysis was to also identify correlates that may lead to greater changes between baseline and endline competences and motivation, the ceiling effects (i.e. high scores) found at both baseline and endline and the relatively small sample size excluded this as an option.

Qualitative Data Analysis

Qualitative data were analyzed using a content analysis approach (Dougherty, 2005) with major and minor themes identified by looking at the frequency (how many participants mentioned a theme) and extensiveness (across how many different sources the theme was mentioned). The qualitative content analysis was conducted using a customized Excel database for qualitative analysis.

Limitations of the findings

Prior to presenting the findings, it is important to highlight that the majority of survey respondents rated themselves very high during the baseline. This may be partly explained by the **Dunning-Kruger effect**, which is a cognitive bias whereby people with limited knowledge or competence in a given subject greatly overestimate their own knowledge or competence in that subject relative to objective criteria or to the

performance of their peers or of people in general (Kruger and Dunning, 1999). However, many respondents at baseline were currently attending or had already completed the course and, therefore, findings for those in training Cohort 1 are "midline" findings rather than baseline. In addition, there is a high chance of socially desirable answers, especially when it comes to rating the effectiveness of school leaders and rating own competence. To partly address this issue, the endline used index scores were categorized using Bloom's cut-off points (Bloom, 1956), with those scoring 0-59% corresponding with a low or poor response; 60-79% corresponding to a moderate or sufficient response; and those scoring 80% or greater corresponding to the desired or high response.

Ethical Considerations

For this endline evaluation, approval was sought from the Rwanda National Ethics Committee. Each respondent included in the study provided informed consent or assent prior to commencement. Consent forms are stored separately from data to ensure no identifying information can be linked to individual responses. No financial incentives were made available to respondents.

Findings

Note: respondent characteristics can be found in annexes 2 and 3.

1. Changes in CPD Support Systems

1.1. Access to Formal CPD Opportunities

Due to school closures throughout much of 2020 and intermittently during 2021, in response to the Covid-19 pandemic, there were fewer opportunities for formal CPD for school actors. Therefore, analysis of finding around frequency of participation in CPD may not fully reflect the influence of the LTLT program. However, analysis of baseline and endline data around ever having accessed CPD opportunities does indicate that there has been an overall increase in access to opportunities, particularly for STEM SSLs and NQTs. The percentage of STEM SSLs reporting participating in UR-CE trainings increased from 5% at baseline to 25% at endline and those reporting participating in trainings offered by development partners increased from 47% at baseline to 79% at endline. As participants refer to the Certificate Program as a UR-CE training and VVOB training, it is possible that respondents have reported participating in the Certificate Program in both categories. However, NQTs also report an increase in participation in both UR-CE trainings, from 2% to 13%, and trainings offered by development partners, from 20% to 48%, signaling an overall increase in access over baseline.

Head teachers, STEM SSLs and NQTs reporting participation in professional networks, such as PLCs and CoPs (see Figure 5) also increased over baseline, however it reduced for deputy head teachers and SBMs. NQTs, along with head teachers, also noted an increase in participation in field visits between baseline and endline (see Figure 6) while all other respondent groups saw a decrease in field visit participation. Reported self-study remained consistently high across the baseline and endline for all respondent groups.



Figure 4: Participated in professional development through professional networks or mentoring in the past 12 months

Source: School Leader, SBM, STEM SSL and NQT Quantitative Surveys



Similar to the aforementioned trends, when asked about participation in any CPD during the previous 12 months on Teaching Practice and Pedagogy, Content Knowledge, and Behavior and Class Management, NQTs reported an increase in participation over baseline findings (see Figures 6-8).

SEIs also report that more schools in their sector are engaging teachers in CPD activities as illustrated in Figure 9. The majority of SEIs (69%) reported that every school in their sector is engaging teachers in CPD activities at least once per year, up from 59% at baseline. Additionally, 95% of SEIs report that 75% or more of the schools in their sector engage teachers in CPD at least once per year, up from 78% at baseline.

I was able to participate in different activities like trainings and CoPs. There is a change because now we are receiving more trainings comparing to before. **STEM Teacher, Male, Gicumbi**



Figure 5: Participated in field visit in the past 12 months





Source: SBM, STEM SSL and NOT Quantitative Surveys

Figure 6: Participation in any CPD during the previous 12 months on Behaviour and Class Management



Figure 9: Participation in any CPD during the previous 12 Figure 8: Participation in any CPD during the previous 12 months on Content Knowledge



Source: SBM, STEM SSL and NQT Quantitative Surveys





Source: SEI Quantitative Survey

1.2. Professional Learning Communities for Head Teachers

Findings from both the survey and interviews with head teachers found high levels of participation in PLCs at endline. In total, 78% of school leaders surveyed reported participating in PLCs, or 96% of head teachers and 36% of deputy head teachers. This finding correlates to findings from interviews with head teachers and deputy headteachers as usually only the head teacher attends the PLC. The deputy attends only if the headteacher is unavailable. Of the head teachers reporting participation in PLCs, 84% report participating in three or more sessions during the six months prior to the survey, with 42% reporting participating in six or more sessions, for an average of 4.5 PLC sessions per head teacher. The baseline survey did not ask specifically about PLCs, but about participation in CPD through professional networks and mentoring, therefore it is not possible to compare with endline findings.

At endline, all SEIs surveyed reported facilitating PLCs focused on school leadership, up from 96% at first measure in 2019. In the past six months, 72% of SEIs report facilitating between 1-5 PLCs, with 26% reporting facilitating more than 6. Less than 2% of SEIs surveyed reported not facilitating any PLCs during the previous six months.

While there is little difference in the number of SEIs reporting that they facilitated PLCs between baseline and endline, there is a difference in the perceived usefulness of the PLCs. At baseline, 7% of SEIs reported that PLCs were extremely helpful in achieving sector education priorities, 74% reporting that they were very useful and 19% reporting that they were moderately useful. However, at endline, 78% of SEIs reported that the PLCs are extremely useful with the remaining 22% reporting that they are very useful in achieving sector education priorities.

Source: SBM, STEM SSL and NQT Quantitative Surveys

SEI, Male, Nyabihu: PLCs are relevant to my work because it makes it easy for me to achieve goals related to the education through collaborating with the school leaders.

During interviews with SEIs, the majority noted that PLCs were useful in that they allow head teachers to learn from each other in order to solve school-level problems while few also noted that the PLCs support head teacher leadership by promoting delegation of responsibilities at the school level.

We discuss how the school leaders may give more responsibilities to the staff that they work with . . . This increases collaboration among the staff members and minimizes stress to the school leaders. Therefore, when we meet again, the school leader is well prepared because he was supported by his staff members to handle their responsibilities. **SEI, Male, Gicumbi**

However, SEIs were less clear on the link between PLCs and CoPs with only one quarter of those interviewed reporting a relationship between the two activities.

PLCs and CoPs are linked. This is because CoPs at schools allow the headteachers to identify the problems at schools. After that, headteachers share them in PLCs to seek help, advice, or learn from others on how they solved the same problems as his school. In short, PLCs cannot occur if there are no CoPs. **SEI, Male, Ngororero**

There is a link between PLCs and CoPs because what is discussed in PLCs on the sector level is from what is discussed on the school levels. That means CoPs give the direction to PLCs the only difference is that PLCs are on sector level while CoPs are on school level. **SEI, Male, Nyanza**

I'm not sure but it might be there but because for us we focus a lot on PLCs I don't remember much about CoPs. **SEI, Male, Musanze**

All head teachers interviewed reported participating in PLCs with the majority noting that the benefit of PLCs is in finding solutions to problems, sharing experiences and learning from one another. One quarter of head teachers also reported that it helps them improve their performance as school leaders.

Yes, PLCs are very useful as we meet and share our experiences and we can learn from each other. Before we had PLCs, every head teacher stayed with his/her own practices and never improved or was able to learn from the best practices of others. In addition, we also share our challenges and find solutions for those issues together, which increase the level of collaboration between head teachers. **Head Teacher, Female, Karongi 2**

Due to their perceived usefulness, all head teachers interviewed reported that they would continue participating in PLCs. However, the primary suggestion for improving PLCs is to offer money for transportation and greater supervision or monitoring of PLCs from UR-CE and district level authorities to follow-up on how resolutions from PLCs are implemented at the school level. Head teachers also requested that PLCs take place more frequently and/ or the time allotted for the PLC to be extended.

1.3. Communities of Practice

Analysis of participation in CoPs shows an increase in reported participation by NQTs over baseline. At endline, the survey of NQTs found that 76% report participating in CoPs as compared to only 37% at baseline. Of those NQTs surveyed at endline, 35% report participating in 1-2 in the previous 6 months and 37% report participating in 3-4. Only 7% of NQTs report not having participated in the previous 6 months.

While not measured at baseline, survey findings show that 97% of SBMs and STEM SSLs report that teachers at their school participate in CoPs at endline and that 93% report that at least 1 CoP has taken place during the previous 6 months (of these, 34% report that 1-2 CoPs and 41% report 3-4 CoPs have taken place). SBMs were more likely to report more CoPs (29% reporting 5 or more) as compared to SSLs (5% report 5 or more), likely reflecting that SBMs are responsible for school-wide CoPs while STEM SSLs are responsible for department specific CoPs. Survey findings also found that while 65% of respondents report that most or all of teachers at their school participate in CoPs, STEM SSLs were more likely to report that all teachers participate (36%) as compared to SBMs (23%).

Interviews with school-based actors also highlight that CoPs are active at their schools, with nearly all SBMs and all STEM SSLs reporting active CoPs at their schools. While all SBMs report that CoPs were adopted at their school because of training, half of the STEM SSLs reported that their school had similar meeting previously, but that these were not effective and that these were improved as a direct result of their participation in the CPD Certificate Course.

Yes, we have active STEM specific Communities of Practice (CoPs). Actually, the SBM, Director of Studies and Head Teacher were trained before me, and I could see them performing CoPs. However, I couldn't understand anything, and I started to care about it after participating in the Certificate Program. **STEM SSL, Male, Ngororero**

Qualitative findings indicate that the frequency of CoPs varies greatly from school to school, from twice per week to once per term. In addition, only half of respondents report that CoPs are on the formal school timetable and half report that CoPs take place on an ad hoc basis, with respondents who report greater frequency of CoPs (once per week) being more likely to report that CoPs are on the timetable. Survey findings also show that less than half of respondents (41%) reported that CoPs are on the school timetable, 30% of STEM SSLs and 52% of SBMs.

CoPs are not on school timetable because the new curriculum is long and the timetable is very condensed, so there is no free time. **STEM SSL, Male, Gicumbi**

Changes noted as a result of teacher participation in CoPs include improved teaching practices and lesson planning, increased problem-solving capacity, collaboration and confidence.

Yes, CoPs have made a significant change; it improved the quality of teaching because they are in their respective departments, with their colleagues in the same department where they teach similar subjects, they share knowledge. They have no shame of asking. The outcome has been student improved level of performance and new acquired knowledge to the teachers. **SBM, Male, Kayonza**

Yes, there is a big change because of these CoPs, teachers are now more open to talk about the challenges they face than before. And, also through those CoPs, we share knowledge, and you will find teachers who teach the same subject sharing some techniques to use; and these lead to the increase of the teachers' skills and confidence which results in better student performance. **SBM**, **Male**, **Rwamagana**

Absolutely, there are many changes as a result of teacher participation in CoPs. For example, teacher's confidence has increased because teachers learned various skills including coaching skills, mentoring skills, strategies and methodologies to be used while teaching. Besides, teachers are now able to develop effective lesson plans to assist them while teaching. **STEM SSL, Male, Gisagara**

Yes, teachers' motivation, engagement, and collaboration has increased as a result of participating in CoPs. For example, we are now friends and closer that we used to be. Through Communities of Practices, we've developed an open discussion, where everybody participates. As a result, we feel free to discuss professional development among others and we become closer. **STEM SSL, Male, Nyanza**:

People have different experiences according to their background. What I benefit from participating in CoPs is to share experience and skills. For example, your colleague may be teaching before at a school that doesn't have a laboratory, but he improvised his experiments. So, once you are together, he may advise you what to do once you face the same issue. Again, in this new STEM curriculum, subjects are somehow similar where you may find a topic in chemistry like the one in physics or mathematics. As teachers have different backgrounds, you may ask for help from your colleague. **STEM Teacher, Male, Rwamagana**

There is a change in quality of teaching due to peer learning through CoPs by department, we share ideas where this approach helps everyone to gain new knowledge and be confident while teaching his/her lesson. This teamwork helps us to excel as teachers. In addition to that, we have teachers who were trained by VVOB on teaching the CBC and they shared with us what they learned. This is also a gain of new knowledge and increases the quality of teaching. **Teacher Representative, Female, Gisagara**

1.4. Coaching and Mentoring

At baseline, 91% of the 78 school leaders that responded to questions about coaching and mentoring reported that teachers received coaching and mentoring from other teachers at their school. At endline, this figured increased to 98%. In addition, survey finding show an increase in frequency of coaching and mentoring with 84% of school leaders reporting that this takes place more than once per month or weekly at endline as compared to 69% at baseline (see Figure 10).

The majority of school actors interviewed reported that their participation in the Diploma program/ Certificate program changed how they approach Figure 10: Frequency of Coaching and Mentoring of Teachers as reported by School Leaders





coaching and mentoring of teachers at their school. Nearly all SBMs and STEM SSLs interviewed note that the quality of the support that they can provide to teachers has improved and, of these, half also note that teachers recognize this improved capacity and are more likely to seek out or value this support. School actors also note more collaborative engagements with teachers in identify needs and solving problems as compared to before. In addition, many report that access to coaching and mentoring has increased for teachers who many have not received support in the past, including new teachers.

This program of mentorship and coaching changed my way of working in supporting teachers so much. I am now more confident compared to how I used to be before because now I know what to do in professionally not in my way of thinking. And, also, other teachers believe in me than how it was before because now that I've been trained, they think that I am fully equipped to support them. Coaching looks more professional than how it was before. Now I listen to them to know what they really want. We have built a strong relationship and good communication, which makes it easier and professional. It is better because there is trust and respect and teachers are more open and honest in communicating with me and others. **SBM, Male, Rwamagana**

Before participating in Certificate Program in Education Mentorship and Coaching, STEM teachers couldn't understand the importance and benefits of mentorship. However, after participating in the Certificate Program, teachers are motivated in attending the mentoring program because they feel it's benefit where they get support about improving their quality of teaching. **STEM SSL, Male, Ngororero**

Of course, I have seen changes in how schools provide professional development, coaching and mentoring teachers since school subject leaders and school-based mentors participated in the Certificate Program in Educational Mentorship and Coaching. Before there were no professionals in charge of those things, and there wasn't one way that we know things should be done. Everyone was just doing her/his own mentorship and coaching with no skills about how these things should be done. But after the trainings SBMs now know how mentorship and coaching works. With the knowledge SBMs and SLL got from the trainings, they are the one who are now providing professional development to others. **District Official, Male, Nyamasheke**

As few STEM SSLs also noted that the improved quality of coaching and mentoring at their school is a result of the training of school leaders as well.

Coaching is now effective and efficient compared to the way it was done before. Our head teacher and Director of Studies, as well as other teachers have attended the VVOB course where they gained various skills used while coaching. **STEM SSL, Female, Nyaruguru**

Coaching activities has improved at our school compared to before because head teacher and Director of Studies has been trained on coaching and effective leadership. Besides, some teachers are also equipped with skills to help other teachers through coaching conversation. **STEM SSL, Male, Nyabihu**

When asked about coaching and mentoring in their schools, STEM SSL responses highlight that their role is one of coaching and leading CoPs for STEM teachers, while the SBM is responsible for mentoring. Nearly half of the interviews explicitly state that the SBM is responsible for mentorship, whereas it is implied in other interviews.

Coaching is now done effectively compared to the way it was done before. For instance, we are now trained enough by VVOB about the effective way of coaching. It wasn't easy to coach a teacher because they felt that coaching is an act for students, not teacher. Besides, I wasn't equipped with enough skills for humbly approaching teachers while coaching. Now, I can easily coach my fellow teachers. Mostly, coaching is now done through CPD. As the same as coaching, mentoring is also done effectively compared to the way it was done before. We now have SBM (School Based Mentor) who is in charge of mentorship activities. **STEM SSL, Male, Nyanza**

1.5. Induction Programs

At the endline, 99% of school leaders report giving any support to NQTs, up from 93% at baseline and 95% report that their school has a formal induction program, up from 60% at baseline (58% increase)⁸. In addition, there was a 18% increase in SBMs reporting delivering an induction program in the previous 12 months between baseline and endline and 52% reported increase for STEM SSLs (see Figure 11). Interviews with school leadership highlight that the majority of schools have formal induction programs in place. However, the content and length of the induction programs appears to vary across schools. Some schools report giving new teachers between 2 days to 1 week where the new teachers do not teach and are able to observe other teachers in the classroom, while other schools did not offer this and simply introduced the teacher to the school environment and procedures. When asked about overall length of induction programs, respondents gave a wide range of responses between one week upwards of 2 years.

Table 11: INDICATOR Reach and Scope of Teacher				
Support				
% of schools with a form	al induction p	rogram for		
new teachers				
	Baseline	Endline		
Total	60%	95%		





Source: SBM Quantitative Survey, STEM SSL Quantitative Survey

Findings also show that there is varying capacity of the school to implement the induction program based on the situation of the school and the timing of the arrival of the new teacher. Often schools need the new teacher to 'hit the ground running' due to being short staffed. In addition, some schools noted receiving a large influx of new teachers to reduce classroom overcrowding as a result of Covid-19 prevention measures.

The LTLT program intends to see a shift away from 'Support Oriented' inductions towards "Standard Oriented" inductions. There was evidence that this was taking place at the schools that report having adopted longer induction programs (those that go beyond 2-3 months), however this was not taking place at all schools. Schools with shorter induction programs or those reporting "informal" induction programs were likely to report that inductions consisted of introductions to the school environment and lesson planning support.

⁸ In the Baseline Report, 54% of school leaders responded that their school has an induction program at baseline. However, the final analysis only looks at those respondents who participated in both the baseline and endline. As the baseline survey data on inductions was incomplete, the figure of 60% is based on 82 responses out of the 175 school leaders surveyed.

Support vs. Standard Oriented Induction Programs

From the Training Manual for the Certificate in Educational Mentorship and Coaching: Professional Development of Head Teachers and Teachers Module 1

Support Oriented Induction Programs:

Are focused on familiarizing new teachers with the work environment and addresses their immediate problems and concerns. The induction programs are not related to the achievement of professional standards

Standard Oriented Induction Programs:

Provides support to new teachers so they can learn how to teach and grow in their teaching profession based on a shared understanding on effective teaching and learning. New teachers receive support in a framework of clear and transparent expectations in terms of professional standards to achieve. This framework concerns all teachers and observes different levels of achievement related to the teaching experience.

Our induction program lasts for a long period of time, but it also depends to the teachers' background, if the teacher is new in teaching the induction program takes longer than when the teacher is familiar with teaching. The induction can last a week before a teacher starts teaching, the second week the teacher starts teaching with another teacher supervision, the third week, he/she starts teaching alone and at this stage the induction continues in form of trainings and advice and feedback provided but not all days to like one year teaching with us. The induction program includes introducing the new teacher to other school staff, and students, it involves a time to introduce the new teacher the school, how the school operates, mission, vision, goals, and other things, working with other teacher in lesson preparation, observing other teachers at our school teaching, and other trainings. **DHT, Female, Rwamagana**

Interviews with Head Teachers highlight the challenge of schools receiving new teachers that do not have a background in education. Some head teachers noted that there is a greater role for MINEDUC to play and that new teachers should receive a standard induction prior to their placement and that schools should have a guidebook for how to carryout inductions of new teachers.

This is a well-known program to help teachers, but, in reality, it is the knowledge that we have learned from VVOB training, that it would be better to have a formal induction at the national level that would help the schools in general, maybe they can work for us as a little booklet that includes steps and points to help us, we can follow in helping a new teacher. **Head Teacher, Male, Rubavu 1**

We have no formal induction program, but I see the need for the Ministry of Education to take the time to train new teachers as there are barriers to having less time to train teachers at schools and often not all teachers have that knowledge, also at our school we do not have enough materials like computers or projector to help them in technological way, sometimes there are things beyond the capacity of the school. **Head Teacher, Male, Ngororero 2**

The majority of those that report that their school does not have an induction program say that they do not have sufficient time to carry out an induction program.

We do not have an induction program; we just introduce them in the school and probably they will catch up in CPD activities. Induction program is very useful and important, but we do not have time for it. **Head Teacher**, **Male, Gicumbi 1:**

While guidelines on the specific content of induction programs do not exist as content is based on the individual needs of the teacher, the survey of school leaders showed that there was an increased focus on subject knowledge content of induction programs as compared to the baseline, likely related to the inclusion of SSLs in induction programs, while there was little change in practices surrounding introducing new teachers to the school and teaching practices and pedagogy, which was already high at baseline (see Figure 12). Findings also showed a reduction in induction content on student behavior and class

management, student evaluation and assessment practices and school management and administration. Interviews with staff also highlighted that induction programs focus primarily on providing an introduction to the school environment (often the responsibility of the head teacher) and support to develop a lesson plan. While some respondents, primarily SSLs, reported providing subject specific in-class support to the new teacher such as lesson observations, others noted that after the introduction, the new teacher would receive support through various CPD opportunities such as CoPs.



Figure 12: Content of Induction Programs at Baseline and Endline

Source: School Leader Quantitative Survey

The majority of NQTs interviewed reported that their induction programs consisted of an introduction to the school, including teachers, school environment, policies and culture, lesson planning, teaching practice and pedagogy and class management. Less than half reported that their induction included content on student assessments while others noted that they were instructed in how to "behave as a teacher".

As a result of participation in the Diploma and Certificate Programs there is a demonstrated increased understanding of the benefits of induction programs for new teachers since the start of the project. At baseline, 57% of school leaders surveyed reported that induction programs benefited a new teachers' teaching competence and content knowledge to a high or very high extent, which increased to 86% at endline. Similarly, 51% of school leaders at baseline reported that induction programs benefited new teachers' motivation and job satisfaction to a high or very high extent, which increased to 89% at endline.

I saw changes because now we do induction knowing why we are doing it; the importance it presents for our school. Secondly, before we never took time to see the level the new teachers are on for determining their induction program and now we first analyze the level of teaching the new teaching is at (looking at his/her background) before designing his/her schedule of induction program. **Deputy Head Teacher, Male, Nyanza**

Before we didn't do teachers induction understanding why and that it is beneficial to the school. We did it but we took it as an additional work for us, we didn't take time to support new teachers as we do now. **Deputy Head Teacher, Female, Rwamagana**

The majority of NQTs interviewed said that they felt that their school prioritized their professional development citing examples of coaching and mentoring provided by the SBM. Nearly all NQTs interviewed reported having school leaders, including the deputy head teacher, SBM or even the head teacher observe their teaching in the classroom. However, those that reported having their classes observed by the SBM were more likely to report greater frequency of observations as compared to others. Overall, NQTs noted that being observed in the classroom helped them to make positive changes in their teaching and classroom practices.

The deputy head teacher observes my lessons every two weeks and evaluates me, and I think that among the points that are put on teachers' performance contract, these ones of lesson observation come first. The SBM also

gave me feedback mainly about the teaching practice and where to improve, he visits me every Friday because that is the day I have a debate with my students, so he comes to see how I planned it, how I lead it and how I support students. And about the staff from REB, because he is in the domain of education, he has a lot of experience as well and gave me feedback on my teaching practices and class management and how to improve. He visited me once. **NQT**, **Male**, **Gisagara**

For example, when someone has observed my lesson, after the class I receive feedback in my department and they show me what I should change and what I did well, this helps other teachers in my department to learn from my mistakes so that they won't make them, and I use this feedback to make changes too. For now, I am able to observe other teachers because I believe that I have enough skills to do that basing on what I learnt from my fellow teachers. **NQT, Male, Musanze**

I usually use this feedback to make changes. For example, when a mentor told me to correct something, I will do all my best so that when he comes back, he can't find that mistake again, so this gave me courage to make changes. **NQT, Female, Ngororero**

1.6. Changes in the Identification of CPD Needs, Planning and Evaluation

Interviews with school-based actors highlight that there have been significant changes in CPD support systems at schools with trained actors. One of the most mentioned change being improved communication about professional development needs. School leaders noted that prior to being trained, they would choose what the teachers' needs should be, but now this takes place in consultation with teachers and other school staff and that there are more channels for teachers to share their needs, such as during CoPs. In addition, school leaders report greater involvement in monitoring teachers in the classroom as well as improved collaboration between SBMs, SSLs and deputy head teachers in order to identify the needs of teachers.

They never disclosed their shortcomings before, fearing that it would be used to dismiss them from their positions; it was difficult to know how to help them. But now, as colleagues, school staff easily communicate their needs, and we discover solutions to those needs if we have the capacity to meet those requirements. **Head Teacher, Male, Rwamagana 2**

Now, I easily identify professional development needs of school staff compared to before participating in the Diploma Program because all those needs are raised by teachers in meetings such as CoPs and CPDs. So, the way I identify professional development needs of school staff has really changed. . . teachers and other school staff can now easily engage with us and are very open to share what they see missing for their professional development. **Deputy Head Teacher, Male, Nyanza**

The majority of school leaders also report that they have a plan for CPD at their schools and more than one-third have specific time set aside for CPD at their school. Plans are mostly developed by the SBM and deputy head teachers and, in some schools, the SSLs are also included in the planning processes. Plans are often posted for teachers to see or shared with teachers via WhatsApp.

Yes, at our school to develop a CPD plan, SSLs develop their activities in their departments, then SSLs and SBM collect them and bring them to me as Deputy Head Teacher and then work together to develop a CPD plan for the whole school. What are included are, CPD activities, materials that will be needed, and the time each activity will be implemented. **Deputy Head Teacher, Male, Musanze**

We do not have CPD plan so far because we are not yet having time to sit and plan it, we just conduct it when we see that it is necessary. The SBM and I, if we see that it is required, we plan it and inform all teachers. **Deputy Head Teacher, Female, Nyaruguru**

In-line with midterm evaluation findings, the endline found that without a supportive leadership, CPD is less likely to be prioritized.

I have tried to present a CPD plan to the school leaders, but they did nothing about it, but next time I will try to remind them about it and see if there will be a change. **SBM, Male, Karongi**

The final evaluation explored the extent to which school actors access and engage in CPD opportunities, both within the school and externally. This is also referred to as the CPD support system. As per the definition provided in the Certificate Program for Educational Mentorship and Coaching training, CPD is defined as "an umbrella term that covers all formal, non-formal and informal professional learning experiences over the duration of a teacher's career. It should achieve a balance between individual, group, school and national needs; encourage a commitment to professional and personal growth; and increase resilience, selfconfidence, job satisfaction and enthusiasm for working with children and colleagues (Bubb & Earley, 2007). In other words, it is about creating opportunities for adult learning, with the purpose of enhancing the quality of education." CPD includes, but is not limited to, formal trainings and workshops, professional networks, such as PLCs and CoPs, lesson observations, field visits and self-study.

Despite this broad definition, most school actors refer to CPD as a formal training event offered through the school. CPD is therefore seen as separate from CoPs and other support offered through the school for the purpose of professional development. However, this does not reflect a lack of understanding of CPD as an umbrella term, but rather how terminology is used in practice.

Through CPD and Communities of Practice, teachers gather together and ask others about the challenges they are facing. So, I can identify the needs of STEM teachers through CoPs and CPD. **STEM SSL, Male, Ngororero**

The professional development opportunities that I have participated in are CoPs and CPD, where I received different trainings from our school leaders and mentor. **NQT, Male, Musanze** The systems for monitoring CPD are relatively the same across schools. The SBM along with the deputy and head teacher are responsible for monitoring CPD, with the SBM often the one responsible for preparing reports to share with the deputy and head teacher. The reports are used to identify needs so that school leadership can address them. Only one SBM interviewed said that their school does not have any CPD opportunities, and another said that they don't receive any support from the school leadership and that at they feel that no one is looking at their reports. All others interviewed felt that they had the skills to monitor CPD activities at their schools.

CPD activities (such as coaching activities, mentoring, CoPs, induction) are monitored at our school, and I am responsible for monitoring and evaluating the impact of CPD activities. I share a written report to DHT and HT once per week showing how all these activities worked. School leaders will use this report to know what changes have been made and decide on support needed. The Head Teacher uses this information to know how teachers may be helped based on what they asked for, because in the report I mention support needed by teachers. **SBM, Male, Nyamasheke**

The information is shared with the Head Teacher through written reports, and we do it every time there is an activity. Usually, we don't get any feedback from the Head Teacher, it is as if we do not say anything. They ignore that information, we may spend a year requesting a support on and get nothing at all. **SBM, Female, Rubavu**

While district leaders receive reports on CPD, one district official notes that there is a challenge of consolidating the reports due to the absence of a standardized reporting mechanism.

The monitoring of CPD is mainly done at the level of school and sector. The district is not involved that much. But the monitoring is not effective. I would say it is also a gap because it is difficult to consolidate all the reports. A structured monitoring and reporting is also needed. I would suggest software or an application that should be put in someone's telephone so that the activities of CPD are directly reported. But the Sector SEI also has a few schools, and I think s/he should have a file for every school CPD. Otherwise; CPD has been the only affordable way of

induction of new teachers. District Official, Male, Kamonyi

Ultimately, the majority of school actors interviewed reported that there have been significant improvements in the quality of CPD since participation in either the Diploma Program or Certificate Program. One of the most mentioned changes is that teachers collaborate more and work together to solve problems.

2. Competences and Motivation of Key Educational Actors

Competences and motivation of School Leaders, which includes both head teachers and deputy head teachers, SBMs and STEM SSLs were assessed quantitatively through baseline and endline surveys using the scales as set forth during the baseline.

2.1. Competences and Motivation of School Leaders

2.1.1. Instructional Leadership

Efficacy for instructional leadership was assessed through a seven questions scale (see Table 12). While baseline efficacy for instructional leadership was already high at baseline, there was an increase from an average of 30.8 points out of 35 (SD: 3.5) at baseline to 32.9 points (SD: 1.9) at endline for an average increase of 2.12 points (change is statistically significant, two-tailed P value < 0.001). The greatest changes were seen in head teacher's abilities to promote the prevailing values of the community (0.41 average increase), motivate teachers (0.36 average increase), create a positive environment in the school (0.33 average increase) and raise student achievement on standardized tests (0.33 average increase).

School Leader Competency Scales School leader competency scales are based on the scales developed by Tschannen-Moran and Gareis and outlined in *Principals' sense of efficacy: Assessing a promising construct* (2004) and the Five Standards for School Leadership. The scales assess three competences: 1. Efficacy for Management; 2: Efficacy for Leadership; and 3: Confidence in the Five Standards

Table 12: School Leader Baseline and Endline Scores for Efficacy for Instructional Leadership

rable 12. School Leader Baseline and Engline Scores for Eneacy for instructional Leadership							
In your current role as a headteacher or deputy head teacher, to	Average at Baseline	Average at Endline	Average				
what extent can you:	(Standard Deviation)	(Standard Deviation)	Change				
Promote the prevailing values of the community in your school	4.0 (0.95)	4.4 (0.58)	0.41				
Motivate teachers	4.5 (0.62)	4.8 (0.38)	0.36				
Create a positive learning environment in your school	4.4 (0.77)	4.8 (0.43)	0.33				
Raise student achievement on standardized tests	4.3 (0.75)	4.7 (0.49)	0.33				
Generate enthusiasm for a shared vision of the school	4.5 (0.65)	4.8 (0.43)	0.25				
Manage change in your school	4.5 (0.59)	4.8 (0.43)	0.25				
Facilitate student learning in your school	4.4 (0.72)	4.6 (0.55)	0.19				

Source: School Leader Quantitative Survey

Analysis of efficacy for instructional leadership scores using Bloom's cut-off points, which combines all scores on the seven questions into an overall score on school leadership efficacy, those school leaders exhibiting high efficacy for instructional leadership increased from 87% at baseline to 99% at endline (see Figure 13). At baseline, 2% exhibited low efficacy, while no respondent exhibited low efficacy at endline.

When asked to rate their head teacher's ability to lead effectively, while high at both baseline and endline, there is a difference when looking at *Figure 13: School Leader Efficacy for Instructional Leadership at Baseline and Endline*

for School Leadership.



those NQTs whose head teachers had already been trained at baseline. Those with trained head teachers at baseline were more likely to rate their head teacher as effective or very effective (98.6%) as compared to those without a trained head teacher (92.6%)⁹. At endline, all NQTs surveyed had a trained head teacher with 98.3% rating their head teacher as effective or very effective.

⁹ A statistically significant finding, Chi Squared equals 3.91 with 1 degree of freedom and two-tailed P value <0.1

Efficacy for Management 2.1.2.

Efficacy for school management was assessed through a scale of five questions (see Table 13). Analysis of baseline and endline responses show that scores increased an average of 0.99 points from 26.9 points out of 30 (SD: 2.8) at baseline to 27.9 points (SD: 1.8) at endline (change is statistically significant, two-tailed P value < 0.001). The greatest increases were seen for those reporting ability to handle the paperwork required of the job (0.27 average increase) and maintain control of the daily schedule (0.26 average increase).

1	0		
In your current role as a headteacher or deputy head teacher, to	Average at Baseline	Average at Endline	Average
what extent can you:	(Standard Deviation)	(Standard Deviation)	Change
Handle the paperwork required of the job	4.5 (0.57)	4.8 (0.42)	0.27
Maintain control of your own daily schedule	4.4 (0.62)	4.7 (0.48)	0.26
Handle the time demands of the job	4.6 (0.55)	4.8 (0.42)	0.16
Shape the operational policies and procedures that are necessary to manage your school	4.5 (0.62)	4.6 (0.52)	0.14
Prioritize among competing demands of the job	1 6 (0 61)	17(016)	0.00
Thomas anong competing demands of the job	4.0 (0.01)	4.7 (0.40)	0.07
Cope with the stress of the job	4.3 (0.80)	4.3 (0.61)	0.07

Table 13: School Leader Baseline and Endline Scores for Efficacy for Management

Source: School Leader Quantitative Survey

More than half (53%) of respondents showed no improvement in efficacy for management between baseline and endline. As baseline figures were already very high, this finding is not surprising. There was also little difference in those reporting no improvement by Cohort, however Cohort 3 was more likely to report a greater increase with 8% scoring 6 or more points over baseline as compared to 4% of Cohort 2 and 2% of Cohort 1.

Figure 14: School Leader Efficacy for Management at Baseline and Endline



At endline, there was an increase in those reporting high efficacy for management, up from

Source: School Leader Quantitative Survey

47% at baseline to 64% at endline (see Figure 14). There was little difference between male and female respondents reporting high efficacy, 63% for females at endline and 65% for males.

2.1.3. Confidence in Leadership

Confidence in leadership was measured through a six-point scale with confidence as a school leader increasing from an average of 24.2 points out of 30 (SD: 2.9) at baseline to 26.1 points (SD: 2.6) at endline for an average increase of 1.9 points (change is statistically significant, two-tailed P value < 0.001) (see Table 14).

Table 14: School Leader Baseline and Endline Scores for Confidence in School Leade	ership
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How confident do you fool doing the following?	Average at Baseline	Average at Endline	Average
now confident do you leer doing the following:	(Standard Deviation)	(Standard Deviation)	Change
Influencing decisions about the school made at a higher administrative level	3.6 (0.87)	4.1 (0.83)	0.48
Engaging parents and the community to improve the quality of the school	3.9 (0.67)	4.3 (0.73)	0.34
Managing school resources	4.1 (0.69)	4.4 (0.70)	0.32
Monitoring the quality of teaching and learning in the school	4.2 (0.71)	4.5 (0.63)	0.28
Developing strategies for raising learning achievement	4.2 (0.66)	4.4 (0.63)	0.23
Developing and implementing a school improvement plan	4.1 (0.59)	4.3 (0.70)	0.22
Source: School Leader Quantitative Survey			

The greatest changes in confidence occurred around influencing decisions about the school made at a higher administrative level (0.48 average increase), engaging parents and community to improve the quality of the school (0.34 average increase) and managing school resources (0.32 average increase).

Using the Bloom's cut-off points, findings show that those reporting high confidence in their leadership skills has increased to 84% at endline from 64% at baseline (see Figure 15). There was little difference in confidence between male and female head teachers. Figure 15: School Leader Confidence in Leadership at Baseline and Endline



Source: School Leader Quantitative Survey

Despite being trained at the time of the baseline, Cohort 1 (65% reporting high confidence) had similar "baseline" confidence as the other three Cohorts (65% for Cohort 2 and 67% for Cohort 3). At endline, Cohorts 1 and 2 had a greater number of head teachers reporting high confidence (85% and 87% respectively) as compared to Cohort 3 (79%). While the reason for this difference unknown, it may be related to Cohort 3 being fully online or the timing of the course during the Covid-19 pandemic.

2.1.4. Competence in 5 Standards of School Leadership

In order to assess school leader competence for the Five Standards of School Leadership, a composite score was developed incorporating the Instructional Leadership, Efficacy for Management and Confidence in Leadership scales. The composite school leadership scores by standard can be found in Annex 4.

Analysis of the overall change in competency to implement the Five Standards of School Leadership, or the combination of all 5 Standards, we see that there is an increase in competency from baseline to endline. At baseline, 81% of respondents showed high competence, which increased to 99% at endline. Female school leaders were less likely than males to have high baseline competency (77% as compared to 82% for male colleagues), however both exhibited similar endline scores of 100% and 99% respectively. At baseline, head teachers scored lower than deputy head teachers, with 79% of head teachers with high baseline competency as

Table 15: INDICATOR Improved Competencies of HeadTeachers and Deputy Head Teachers to Lead their SchoolEffectively		
% of HTs and DHTs reporting high competence in		
applying the five standards of school leadership		
	Baseline	Endline
Total	81%	99%
Female	77%	100%
Male	82%	99%
Head Teachers	79%	99%
Deputy Head Teachers	86%	98%
Source: School Leader Quantitative Survey		

compared to 86% for deputy head teachers, with similar endline scores of 99% and 89% respectively.

At baseline, school leaders were less likely to report high competency for **Standard 1:** *Creating a Strategic Direction for the School* (76%) as compared to the other standards (excluding Standard 5). However, at endline, 93% reported high competency for Standard 1. During interviews with school leaders, many noted that they previously had Missions, Vision Statements, Core Values and had action plans in place, but that these were made with the only purpose of filling a requirement imposed upon them by supervisors. After participation in the Diploma course, school leaders understood how these can be developed and used to better manage their schools, recognizing that a Mission, Vision and Core Values can help galvanize school stakeholders towards achieving a common purpose.

We see great results of having them clearly stated. An example of changes that are taking place: before setting goals, you may find that the teacher of ICT was also teaching another lesson, which is okay, but that teacher would put little emphasis on the subject to the point of using hours scheduled for teaching ICT and use them to teach that other lesson. But Now, ICT teachers cannot make this mistake because they see that we aim to
develop ICT in our mission and they put more effort into ICT in order to achieve this mission. Head Teacher, Female, Karongi 2

The impact I have seen is that it gives the school and its members a vision, which is why I see this school as having the best performance and remember I told you that it is a new school in the sector. It is because we work for our own goals and because everyone has been involved so that they help with the implementation. **Head Teacher, Male, Rubavu 1**

Before the y were there as a decoration or to be on file, but now they are put into action. **Head Teacher, Female,** *Nyabihu 2*

While school leaders showed high competency for managing their schools under Standard 2: Managing the School as an Organization at both baseline (89%) and endline (99%), interviews highlight that the extent to which changes have taken place at the school level are not fully reflected in these figures. Interviews with school leaders show that while the majority of schools had plans in place, they were only developed to fulfil an expectation form their supervisors. There was little understanding of how to develop plans and no expectation that these plans could be used for the actual management of the school. As a result of their participation in the Diploma Course, head teachers now understand how to develop and use plans for management of their school. In addition, there is now an understanding of how the School Improvement Plan and yearly action plans can support fiscal responsibility in that the action plans ensure that spending does not deviate from what was planned. And, beyond improved budgeting, school leaders viewed planning as more than just ensuring that the physical needs of the school are met, but also planning for how the school can improve student achievement. As these plans are no longer developed by one person, but in coordination with stakeholders (including staff, students and parents), there is now buy-in towards achieving school goals. Many school leaders noted that Covid-19 has prevented meetings, however many overcame these challenges by meeting in smaller groups (primarily the association members), sharing information through applications such as WhatsApp, and using students to share information with their parents.

Yes, we have SIP at our school, we used to have it before, but it was in another format. The other format didn't care about learning and teaching, it was about infrastructure only. We have changed the format and changed the content from the way it used to be. Before it was the school leader who did it alone, but now other school staff, teachers, students and parents have been involved in giving us feedback. The impact I have seen is that teaching and learning have a good vision and because it involved different stakeholders, the implementation is much faster. **Head Teacher, Male, Ngororero 1**

Before we used to prepare the SIP in order to have something to submit, so it wasn't as descriptive as it is now, with some operations not included, but after completing the Diploma Program, we understand the importance of having a School Improvement Plan that is well developed and does not skip or leave out important activities to guide your actions. We observed most of the modifications in the budgeting section. It is simple to prepare and create a budget when you have a well-mapped strategy. And you may create estimates and projections, but they won't deviate much from reality since we stick to our budget. We didn't think it was necessary to discuss progress before, but after finishing the Diploma program, we realized it was, and we utilized meetings to update them for even more assistance and direction on postponed activities. **Head Teacher, Male, Rwamagana 2**

Before attending the diploma program in effective school leadership, we had an SIP, but that SIP only focused on property and finances, it included things like we will make this and that money, we will cultivate here and there, etc. But if you analyzed it, you would see that the SIP we had before didn't reflect on subjects itself, nothing about academic goals and plans. So, that's the change we are planning to make, insert plans related to academics. For example, How will the mathematics be like in S1 or P1? We will improve our SIP to reflect plans about subjects and other academic matters. **Head Teacher, Male, Karongi 1**

With regards to finances, most school leaders reported improvements, primarily associated with either increased delegation of financial responsibilities or more engagement in finances (reflecting more collaboration and teamwork in school management). Nearly half also reported that financial management responsibilities were broadened to include various stakeholders (including parents) while others noted

developing tender committees to ensure transparency. However, school leaders did note that school finances were greatly affected by Covid-19. Due to school closures and the need to adhere to Covid-19 prevention measures, schools found themselves exceeding spending on some unexpected items and reducing spending on others. Some school leaders recognized the opportunity provided by their experience of responding to the pandemic and now understand the need to think about the future and incorporate more long-term planning.

It [Covid-19] changed a lot of things. On top of managing the school resources and staff, we needed to care about the health regulations to prevent Covid-19. And with Covid-19, we had to build new classrooms and washing stations, which required money that we did not plan for. Compared to before, we now had to manage our expenses closely. **Deputy Head Teacher, Male, Karongi**

The Covid-19 affected our finances, where before we had organizations and individuals sponsoring the school, as our school is a school with many students with disabilities, some stopped supporting financially the school while other reduced their funds because of Covid-19. This was a challenge for managing school finances as the funds granted to the school reduced. **Deputy Head Teacher Male, Nyanza**

But it had a positive impact as it taught us that, as schools, we also need to have savings for the unknown future, it instilled a culture of saving and being long-term oriented. **Head Teacher, Male, Karongi 1**

Another key finding from the interviews with school leaders highlights the shift towards teamwork and delegation when it comes to management of school resources. Many head teachers reported feeling that they themselves were the one solely responsible for management of school resources, but, because of their training, now understood how they could delegate these functions to other staff. Interviews with deputy head teachers also indicate that they have taken on more managerial responsibilities and highlight that there is greater delegation of responsibilities within the school. In addition, the majority of deputy head teachers report that they are now the ones responsible for the management of the school's physical resources.

There has really been a change after the training, because even though there are some in charge, for example as a school accountant in terms of school resources but as I told you we are now working together, a lot of the decisions we all agree on. So that gives me the ability to manage all of that because I would have been involved too. The impact I would say is that the school is thriving because people work well together and make decisions together. To manage school staff is easy because everyone has a clear understanding of their responsibilities, and they know the mission and vision of the school. So that gives me the strength and ability to manage the school staff. **Deputy Head Teacher, Male, Kayonza**

Prior to enrolling in the Diploma Program in Effective School Leadership, I assumed that maintaining school resources and finances was solely my responsibility and that of the school accountant, that school staff was also our responsibility, and that school policies and the responsibility of the disciplinary committee. However, after attending the program, I realized that the management of school life is the responsibility of all staff members, including the school administration and instructors. So, now that I realize that I share duties with others, I can manage school resources, school employees, and school rules more efficiently than before and without feeling overburdened since I work with others, and everyone has a part to play in management. I couldn't manage school resources, school staff, and school policies well before because I was overburdened with all of those responsibilities, but now every staff member has a role to play, which encourages collaboration, and I am able to manage everything effectively because I am not as overburdened as I was before. **Head Teacher, Male, Rwamagana 2**

While already high at baseline, school leaders reporting high competency in **Standard 3: Leading Learning** and **Standard 4: Leading Teaching and Training**, increased from 87% and 90% respectively at baseline to 99% and 98% at endline. Interview findings suggest that there are varying ways in which head teachers interpret leading learning and teaching at their schools, the most mentioned being coordinating with or working closely with teachers to improve teaching practices for student performance, supporting CPD and ensuring that teachers have the resources that they need to perform their jobs, all mentioned by one third of respondents. Head teachers also reported that monitoring or evaluating teachers and learning outcomes as

a key function. Most head teachers also mentioned that there was an increase in student motivation as a result of their role leading learning with some noting that they have instituted either teacher or student incentives to increase performance.

My role in leading learning is working with teachers to increase learning efficacy at our school. Since I completed the Diploma Program in Effective School Leadership, my collaboration with teachers has improved. Every Wednesday we meet with teachers and share experiences and where possible we visit other schools in order to acquire experience and that has built confidence of our staff. The first noticeable change has been the improved student results as some teachers are volunteering to take their time and help the weaker students through teaching and coaching after lessons to improve students' intellectual capacity. Also, we have established a program of awards as a motivation to teachers. These awards are given on a basis of initiatives taken by teachers and timeliness in delivering their tasks. **Head Teacher, Male, Nyanza 2**

It has really changed, now I use different ways trying to understand what my teachers need, like visiting them in the classroom and having meetings and sharing feedback and I notice the areas that need to improve. The change is that I can provide things according to their needs, whereas before I just provided what I wanted to, not what was actually needed. **Head Teacher, Female, Gicumbi 2**

Now, they are both more supportive compared to how they were before, and it was because of the trainings we received. They are more aware of the role of SBM and how this can help in school performance. **SBM**, **Male**, **Nyanza**

Before, the head and deputy head teacher did not understand the importance of CPD and they wouldn't let us mentors have time with the fellow teachers. But now. that they have been trained and they are really supportive. **SBM, Female, Kamonyi**

There are a lot of changes in the school's leadership and management. The number of meetings was increased, the way school leaders communicate and engage with teachers has improved and the school support for teaching has also improved. . . The way our HT engages with school staff and teachers has improved. Due to this, teachers feel free to talk and raise their issue. While I'm not completely sure, I attribute these changes to being trained on leadership. **STEM Teacher, Female, Nyanza**

He [deputy head teacher] mobilizes and encourages teachers. Some people have different mindsets, some are closed while others are open, so the deputy head teacher mobilizes them which facilitates the CoP activities because when he mobilizes them, they all attend. . . when the deputy head teacher encourages them, they understand it quickly. In addition, the deputy head teacher helps me to coach teachers as he was also trained. **SBM, Male, Gisagara**

With regards to engaging with parents and community members as per **Standard 5**: *Involving Parents and the Local Community in the School*, those school leaders that participated in Cohorts 1 and 2 were more likely to report that they have been able to engage with parents/communities while those in Cohort 3 were more likely to report less success due to inability to meet due to Covid-19. Survey findings also show that while school leaders were less likely to report high competency in engaging parents and community members at baseline (75%) compared to the other four standards, this increased to just 89% at endline.

Overall, however, most school leaders noted improvements in involvement of parents and community members in the leading of the school, with a quarter of head teachers reporting increased information sharing and a small number reporting increased involvement in the management of the school. The main roles of parents and community in the school has been in securing resources or making school improvements, such as school feeding or construction projects, and in addressing school absences (which increased because of Covid). Findings indicate that the most significant change in engagement with parents and the community to take place as a result of participation in the Diploma Program is that now school leaders have a better understanding of what the role of parents and community members could be and improved methods of engagement. However, one third of school leaders noted that some parents are still unable to understand their role and/or believe that they don't have a role in their child's education.

We work with parents and the community, and the involvement has increased, what we have done to improve, now the parents' communities play a big role in school management, and they are the first who motivates other parents to play their role in the school. We gave them a big space so that can play their role. And we have seen that it is very useful and constructive. The challenge some parents don't put much in working together with teachers on the children's education. **Head Teacher, Female, Kamonyi 1**

Before we didn't place any importance on working closely with parents and community. Now, after completing the Diploma Program, we learned the benefits associated with engaging parents and the community. And, before, we did not know strategies that we can use to attract parents to get involved in the school; but the Diploma Program helped us by training us and equipping us with the required skills. **Head Teacher, Female, Karongi 2**

In fact, their engagement started after the training, they are very involved because I invite them to come to the meetings and work together to set up school improvement plans. I was able to understand their role, which helped me to approach them and explain their role to them. **Head Teacher, Male, Rubavu 1**

Parent, student and teacher representatives also report greater engagement by school leaders in the management of the school, including participation in the development of SIPs, mission and vision of the school. As a result, members note better collaboration and a better understanding of initiatives undertaken by the school which allows for greater community support for the development of the school.

Another change that has taken place is that mission and vision have been established. Its establishment, with a lot of people involved, included students, teachers and parents. I think it has brought a lot of positive change to the school because we are working towards a goal, and we all strive to implement our commitments and we have worked harder as a team. **Parent Student Teacher Organization Member, Student, Female, Karongi**

However, in FGDs, approximately half of the STEM Students reported that their parents are adequately involved in decisions made at the school. While recognizing that their schools have parent representatives, some report that more engagement is needed.

Our parents are very involved because they even have a committee that participates in decision making like we have a student's committee our parents also have a committee. **STEM Student, Female, Nyanza**

I once asked the question at the student assembly in the morning I asked why the school doesn't invite our parents to a school meeting because since I arrived here, parents had been only invited for a meeting once for the past two years. And the response from the head teacher was that there is one parent here around the school who represents the other parents and that everything that has been agreed on in a meeting he shares with our parents. And I wondered how one parent can reach all our parents. I said I have never seen that one parent at my home, and they told me to keep quiet. **STEM Student, Male, Gisagara**

2.2. Competences of Sector Education Inspectors to Coach and Mentor Head Teachers in PLCs

Competences of SEIs to coach and mentor head teachers was assessed through a scale of 10 questions on confidence for SEI roles. Analysis of survey data shows that confidence has increased from 40.7 out of 50 (SD: 3.7) in 2019 to 45.3 (SD: 4.4) at endline, or an increase of 4.6 points (change is statistically significant, two-tailed P value <0.001). While all questions within the confidence scale showed improvement over baseline, the biggest changes were in SEI ability to tailor support for different head teachers and schools and leading meetings and delegating leadership of meetings to head teachers (both with a 0.69 point increase).

The Certificate Program in Educational Mentorship and Coaching has been very useful because I gained different skills that I had never studied in class. We were trained about school leadership and this helps me to know how I will support schools in my sector. . . when I visit schools I check if they have mission and vision, I also look at school leadership and their teaching strategies, I look at how school leaders collaborate with parents, and when I

find that the school is not working well I know how I should support them because I have skills needed to do that. **SEI, Female, Nyamasheke**

The increase in leading meetings and delegating leadership is most likely associated with SEI coordination of PLCs for head teachers. While 96% of SEIs reported facilitating PLCs at baseline, increasing to 100% at endline, findings from interviews with SEIs shows that they now understand the process for leading PLCs. As one SEI noted when asked about the extent to which the program was useful:

Nowadays I allow the school leaders to carry out the PLC's and my support is only to guide them; I allow them to do it by themselves. **SEI, Male, Gisagara**

Additionally, guiding head teachers in strategies for teacher motivation may also be related to PLCS as revealed in interviews with head teachers.

For instance, In PLC we discussed about how we can solve the challenge some teachers have that cause them to be late to school. My teachers were coming late because they were living in the town, so in a PLC the other head teachers advised me to help them to find a house nearby our school to rent and I used their idea and help my teachers to live together closer to the school and now they come at school early. **Head Teacher, Male, Musanze 2**

		0	
To what extent do you feel confident doing the following?	Average at Baseline	Average at Endline	Average
To what extent do you reer confident doing the following.	(Standard Deviation)	(Standard Deviation)	Change
Tailoring support for different headteachers and schools	3.8 (0.83)	4.5 (0.62)	0.69
Leading meetings and delegating leadership of meetings to headteachers	3.9 (0.84)	4.6 (0.53)	0.69
Guiding headteachers on approaches to teacher induction	4.0 (0.83)	4.5 (0.60)	0.54
Managing student data	3.8 (0.87)	4.3 (0.70)	0.53
Guiding headteachers in strategies for teacher motivation	4.2 (0.74)	4.7 (0.50)	0.46
Monitoring and evaluating the quality of education provision	4.0 (0.75)	4.5 (0.63)	0.46
Coaching and mentoring headteachers and deputy headteachers (in general)	4.1 (0.71)	4.6 (0.51)	0.45
Facilitating headteachers in learning from one another	4.1 (0.75)	4.6 (0.53)	0.45
Guiding headteachers in leading schools and facilitating effective teaching and learning	4.2 (0.76)	4.6 (0.53)	0.44
Encouraging headteachers to assist in finding solutions for problems in the sector	4.1 (0.71)	4.4 (0.58)	0.35

Table 16: Sector Education Inspector Baseline and Endline Scores for Confidence in Coaching and Mentoring Head Teachers

Source: SEI Quantitative Survey





Table 17: INDICATOR Improved Competencies of Sector Education Inspectors

% of SEIs reporting high confidence to					
coach and mentor HTs					
Baseline Endline					
Total	Total 69% 93%				
Female 79% 100%					
Male 66% 90%					
Source: School Leader Quantitative Survey					

SEIs reporting high confidence in their ability to coach and mentor head teachers increased from 69% at baseline to 93% at endline (see Figure 16). While Cohort 1 had already participated in the Certificate Program at the time of the baseline study in 2019, baseline figures for bot h Cohorts 1 and 2 were similar,

Source: SEI Quantitative Survey

with 70% of Cohort 1 reporting high confidence and 68% of Cohort 2. However, by endline, these diverge with 95% of Cohort 1 reporting high confidence as compared to 84% of Cohort 2. While Covid-19 negatively affected ability of SEIs to support head teachers, the timing of the lockdowns would have a greater negative effect on SEIs trained during Cohort 2.

Of course, Covid and schools' closure has prevented me from implementing those skills effectively. For example, we were not able to put into practice what we learned as soon as we finished the courses as we were suddenly put in lockdown. We have spent almost a year without practicing the skills like leading the meetings, handling the challenges of the schools, and so on. We managed to gather in online meetings and provide guidance, but it was not as much as required. The most affected skill was leadership because it was difficult to lead people online as we were not allowed to meet face to face. **SEI, Male, Gicumbi**

When specifically asked to rate their **ability to coach and mentor head teachers**, applying Bloom's cut-off SEIs reporting "high ability" increased from 91% in 2019 to 99% at endline, with females showing no improvement at 96%. Further analysis by training cohort shows that in 2019, 100% of female SEIs in Cohort 1 (who were trained at time of the survey) reported high confidence as compared to 83% of those in Cohort 2. At endline, however, 94% of females in Cohort 1 reported that they had high ability to coach and mentor compared to 100% in Cohort 2. There was no difference in ability for male SEIs for Cohort 1 and 2 in 2019 or at endline, with both cohorts increasing from 89% in 2019 to 100% at endline.

The Certificate Program in Educational Mentorship and Coaching has been very useful, because they have given us knowledge about how we can help schools. It is my responsibility, and it has helped me to fulfill it. Lessons we learned, such as how to help teachers identify strengths and weaknesses, helped us figure out how to better help schools. **SEI, Male, Rubavu**

It [the course] helped me to guide the head teachers to identify the challenges they are facing at their schools and possible ways to solve them. **SEI, Male, Gicumbi**

The part [of the course] which stuck with me was the coaching mentoring part because I use it the most, especially while helping head teachers to clear the gaps... Yes, the closure of schools affected the implementation of skills because we spent a long period without putting into practice. **SEI, Female, Rwamagana**

All SEIs surveyed report having delivered any **one-to-one mentoring** to head teachers or deputy head teachers since taking part in the Certificate Course. Currently, the majority (72%) of SEIs are mentoring six or more school leaders, with 36% mentoring more than 10, and that sessions take place one per term (88%). Those that report that sessions take place once a month, or more frequently, were more likely to have fewer mentees. Of those with five or fewer mentees, 30% report mentoring sessions at least once per month, with 17% at least once per week as compared with those reporting more than 5 mentees, where 5% report mentoring at least once per month.

Findings from interviews with SEIs indicates that the problem-solving skills gained through their participation in the course was the most useful to their work.

SWOT analysis, which contains the problem tree. This is because I was not familiar with gathering in meetings and discussing our problems, identifying the opportunities we have that can help us solve them, or identifying what we are capable and incapable of solving. Thus, this the part of the course still sticks with me because I apply it almost daily. **SEI**, **Male**, **Ngororero**

SEIs have found it difficult to implement what they learned during the course as they have many competing responsibilities outside of the schools. As SEIs are not based under MINEDUC, they often have non-education related responsibilities that take priority.

Yes, there is a challenge of having a limited time which prevents me from implementing what I learned effectively. For example, as SEI, I have a lot of responsibilities as I work with different ministries like infrastructure, development, MINECOFIN, education, etc. in these days, I am working with of ministry of infrastructure in

construction, and you can understand that I have a limited time to apply the skills I learned in the courses. **SEI**, **Male, Nyabihu**

We have an unclear work plan. We have many unrelated responsibilities. For example, we work with MINECOFIN, MINEDUC, MINIFRA, and MINALOC. They all want us to perform duties effectively and efficiently and it is not possible. Sometimes, we can't figure out what is a priority to accomplish. **SEI, Male, Nyanza**

One SEI interviewed reported that the skills developed through the course have helped them to increase their focus on education by demonstrating plans and the extent to which achievement of these plans contribute to meeting sector priorities.

The SEIs are normally not based under MINEDUC, we are based under MINALOC, so when we have duties to accomplish from MINALOC that is what we focus on. . . in previous years, it seemed like we did not have a clear plan of what to do in education, but now we develop a clear plan which allows us to spend our time on education and meet these priorities. And when the leaders observe how we are performing in education, they don't assign us additional tasks, they give us time to work on educational responsibilities. **SEI, Male, Ngororero**

In addition, half of the SEIs interviewed noted that school leaders are able to carry out more activities independently and require less support from the SEI as a result of head teacher participation in the Diploma Program. SEIs are now able to monitor schools rather than provide intensive support.

Nowadays many activities are being done by the school leaders my involvement has reduced. They have become more responsible and are more willing to do things on their own. **SEI, Female, Rwamagana**

Head teachers also noted changes in engagement with SEIs since their participation in the Certificate Program, highlighting the advisory role of the SEI.

Working together with SEI is great because we work hand in hand, and he often visits the school and gives us advice . . . we work together as a team, and we share experiences oriented in same direction with the aim of school development. **Head Teacher, Male, Nyanza**

The SEI works very closely with us, helping us often; because whenever we look for him, we find him. He helps us set up those SIPs, missions and vision, incorporating a lot of his ideas. . . [he] is someone who helps us tremendously because he has been trained too. All these changes came after we were trained. . .The role he plays helps me fulfill my responsibilities and makes me feel that my work should be valued. **Head Teacher, Male, Rubavu**

2.3. Competences and Motivation of School Based Mentors

Competences and motivation of SBMs were measured through three sets of questions to assess attitudes towards coaching and mentoring, confidence in coaching and mentoring and efficacy for coaching and mentoring.

2.3.1. Attitudes towards Coaching and Mentorship

SBM Attitudes Towards Coaching and Mentoring on average did not show any change between baseline and endline, with average score of 29 out of 35 at baseline (SD: 2.4) to 29.4 points (SD: 2.7) for an average increase of 0.41 points (change is not statistically significant, two-tailed P value >0.1) (see Table 18). The biggest change in attitudes, however, was a decrease in those who report that a new teacher should be able to teach well from the first day on the job, which decreased from 3.1 at baseline to 1.8 at endline (average decrease of 1.3 points). There was also better awareness that the mentor should not be the one to decide on the type of support offered to a mentee with an average decrease of 0.34 points over baseline. However, both the statement that a school should provide learning opportunities for all and the statement that teachers need coaching and mentoring in their first year of teaching did not change, as both were high at baseline (4.5 and 4.6 respectively) and there was a reduction in those that feel that teachers need coaching and mentoring after their first year of teaching (reduction of 0.32 points over baseline). This finding may reflect the findings from interviews with school actors as, while the majority of schools have formal induction programs, very few schools provide support for new teachers beyond one year. Additionally, the number of SBMs reporting that their fellow teachers contribute to the performance of their students and that teachers and head teachers should have the same view on learning decreased between baseline and endline.

Table 18: SBM Baseline and Endline Scores for Attitudes towards Coaching and Mentoring

	0 0		
To what extent do you agree with the following statements about	Average at Baseline	Average at Endline	Average
coaching and mentoring?	(Standard Deviation)	(Standard Deviation)	Change
A new teacher should be able to teach well from the first day in the job	3.1 (1.2)	1.8 (1.1)	-1.3
The mentor should decide the kind of support provided to a teacher being mentored	3.0 (1.2)	2.6 (1.1)	-0.34
A school should provide learning opportunities for all teachers	4.5 (0.58)	4.5 (0.54)	-0.07
Teachers need coaching and mentoring in their first year of teaching	4.6 (0.65)	4.5 (0.59)	-0.08
Teachers need coaching and mentoring after their first year of teaching	4.6 (0.65)	4.3 (0.61)	-0.32
My fellow teachers at the school also contribute to the performance of my students	4.6 (0.53)	4.3 (0.48)	-0.33
Me, my fellow teachers and my headteacher should have the same view on learning and teaching	4.7 (0.56)	4.3 (0.56)	-0.39

Source: SBM Quantitative Survey.

Analyzing the composite score using Bloom's cut-off points shows that there was no change in attitude between baseline (76% exhibiting a positive attitude) and endline (74% exhibiting a positive attitude), and that male and female teachers had similar attitudes. However, analysis of Cohorts shows that at baseline, Cohort 1 participant were more likely to have a more positive attitude towards coaching and mentoring (88%) as compared to the other two cohorts (70% for Cohort 2 and 71% for Cohort 3). However, at endline, there was an increase for Cohort 3 to 88%, whereas Cohort 1 reduced to 74%. Cohort 2 remained lowest at 68%. This may indicate that the training has positive short-term impact on increased positive attitudes towards coaching and mentoring.

2.3.2. Confidence for Coaching and Mentorship

SBM Confidence for Coaching and Mentoring increased from an average of 15.4 points out of 20 (SD: 1.6) at baseline to 16.8 points (SD: 2.1) at endline for an average increase of 1.4 points (change is statistically significant, two-tailed P value < 0.001) (see Table 19). While all questions in the scale exhibited increased scores over baseline, the biggest change observed was in the SBM's confidence to lead continuous professional development of teachers (average increase of 0.43).

Average at Baseline Average at Endline How confident do you feel doing the following? (Standard Deviation) (Standard Deviation) 3.8 (0.48) 4.2 (0.64) Leading continuous professional development of teachers 3.8 (0.54) Coaching and mentoring teachers 4.2 (0.63) Delivering induction for new teachers 3.9 (0.55) 4.2 (0.59) Dealing with resistance from colleagues to adopting new

Table 19: SBM Baseline and Endline Scores for Confidence in Coaching and Mentoring

Source: SBM Quantitative Survey

teaching and learning approaches

At baseline, slightly more than half (53%) of respondents exhibited high confidence in their ability to coach and mentor teachers, which increased to 87% at endline (see Figure 17). This was also reflected in interviews with SBMs who noted that they did not understand how to coach and mentor teachers prior to their participation in the Certificate Program. Specific content of the training that SBMs mentioned as being the most useful to them included how to coach and mentor teachers, including the use of coaching conversations, followed by induction programs and leading CoPs.

3.8 (0.64)

Average

Change

0.43

0.36

0.31

0.29

4.1 (0.57)

There was little difference in high confidence scores for female and male teachers at baseline and endline. However, cohort analysis shows that Cohort 1 was least likely to be confidence at baseline (47%), but much more likely at endline (91%) as compared to the other two cohorts. Cohort 3 showed the least change (58% at baseline and 79% at endline), which may reflect that Cohort 3 participated in the course online while schools were closed, and thus have had less opportunity to practice their skills once schools re-opened. Figure 17: SBM Confidence towards Coaching and Mentoring at Baseline and Endline





2.3.3. Efficacy for Coaching and Mentorship

SBM Efficacy for Coaching and Mentoring increased from an average of 15.2 points out of 20 (SD: 3.0) at baseline to 17.1 points (SD 1.7) at endline for an average 1.9 increase (change is statistically significant, two-tailed P value equals 0.001) (see Table 20). The extent to which SBMs agreed with the statement that they feel able to support teachers in dealing with the challenges that they face at school exhibited the greatest increase, from 3.5 at baseline to 4.3 at endline, for an average 0.83-point increase. This was also reflected in interviews with SBMs, who highlighted increased problem-solving skills.

The certificate program in educational mentorship and coaching has been very useful to me in my work. For example, especially during CoPs and coaching conversation, I can provide advice to a person and show how he can resolve the problem himself. **SBM, Male, Karongi**

How much do you agree with the following statements?	Average at Baseline (Standard Deviation)	Average at Endline (Standard Deviation)	Average Change
I feel able to support teachers in dealing with challenges they face at the school	3.5 (1.0)	4.3 (0.48)	0.83
I feel able to coach and mentor teachers at my school	3.8 (0.87)	4.2 (0.49)	0.41
I feel able to support teachers in identifying resources for their professional development	3.9 (0.88)	4.3 (0.52)	0.36
I feel able to support teachers to identify goals for their professional development	4.0 (0.79)	4.3 (0.47)	0.30
Source: SBM Quantitative Survey			

Table 20: SBM Baseline and Endline Scores for Efficacy for Coaching and Mentoring

At baseline, 54% of SBMs exhibited high efficacy, which increased to 97% at endline (see Figure 18). While endline figures for efficacy were similar for all three cohorts, Cohort 1 was more likely to report that high efficacy (as they were being trained at the time of the survey) at 63% as compared to Cohort 2 (48%) and Cohort 3 (54%). While only 15% of the SBMs surveyed were female, those females were more likely to report high efficacy at baseline (80%) as compared to males (50%), however endline figures were

Figure 18: SBM Efficacy for Coaching and Mentoring at Baseline and Endline



Source: SBM Quantitative Survey

similar with 100% of females and 96% of males exhibiting high efficacy.

2.3.4. Competences and Motivation of SBMs

While confidence and efficacy were similar at baseline, SBMs demonstrated a greater increase in efficacy at as compared to confidence, while attitude remained constant (see Figure 19). Interviews with SBMs highlighted an increased capacity to support teachers through mentoring and coaching.

I would say that the program helped a lot and changed how I support teachers at a high extent. As I said, before, I didn't have skills about how to support teachers and when a teacher used to ask me a question, I used to answer him/her right away and leave without providing enough time to pay attention to him/her so that I can understand his/her concern and help him/her to sort it out appropriately. There is an improvement compared to before because for now, when a teacher has a problem, I provide to him/her a support of coaching conversation and we discuss about that problem and try to resolve it, and it is very useful for him/her because it helps him to make a target to achieve the resolution of his/her problem. **SBM, Male, Rusizi**

In order to assess the extent to which SBMs demonstrate improved competencies to coach and mentor new teachers, the three indices for attitude, confidence and efficacy were combined to create a composite score, which was then analyzed using Bloom's cut-off points (see Table 21). Findings show that at baseline, 55% of SBMs demonstrated improved competence, and, by endline, 79% demonstrated improved competences.

Figure 19: SBMs Exhibiting Positive Attitudes, High Confidence and High Efficacy between Baseline and Endline





Table 21: INDICATOR Improved Competencies ofSBMs				
% of SBMs who demonstrate improved				
competencies to coach and mentor new				
teachers				
	Baseline	Endline		
Total	55%	79%		
Female	70%	80%		
Male	52%	79%		

However, the main challenge noted by nearly all SBMs is that, in addition to supporting teachers, they are currently responsible for teaching a full course load. Only 4 (or 3%) of the 133 SBMs surveyed at endline report having dedicated time for their work as an SBM.

Time to implement what we learnt is really a problem. The timetable at our school is full and I also have a lot of courses to deliver, as do all teachers, which makes it so hard to find the time to implement what I learnt. **SBM**, **Male, Rwamagana**

2.4. Competences and Motivation of STEM School Subject Leaders

Competences and motivation of STEM SSLs used the same metrics as those for assessing the competences and motivation of SBMs.

2.4.1. Attitudes towards Coaching and Mentorship

STEM SSL Attitudes Towards Coaching and Mentoring increased from an average of 27.8 points out of 35 (SD: 2.2) at baseline to 29.3 points (SD: 2.3) at endline for an average increase of 1.4 points (change is statistically significant, two-tailed P value is < 0.0001) (see Table 22). Similar to findings from SBMs, the biggest change is the understanding that teachers should not be expected to teach well from their first day on the job (change of 1.3 points over baseline). However, findings show that there is still poor understanding of whether or not a mentor should be the one to decide the support offered to the mentee, which showed no change between baseline and endline. During interviews with STEM SSLs, the majority reported that mentoring is not the responsibility of the SSL, but rather the SBM. Therefore, this absence of engagement in mentoring by STEM SSLs may be reflected here.

	0	0	
To what extent do you agree with the following statements about coaching and mentoring?	Average at Baseline (Standard Deviation)	Average at Endline (Standard Deviation)	Average Change
A new teacher should be able to teach well from the first day in the job	3.4 (1.2)	2.1 (1.3)	-1.3
Teachers need coaching and mentoring after their first year of teaching	4.5 (0.62)	4.7 (0.45)	0.24
Teachers need coaching and mentoring in their first year of teaching	4.4 (0.69)	4.7 (0.47)	0.14
A school should provide learning opportunities for all teachers	4.6 (0.51)	4.6 (0.55)	0.01
My fellow STEM teachers at the school also contribute to the performance of my students	4.6 (0.49)	4.6 (0.50)	-0.01
The mentor should decide the kind of support provided to a teacher being mentored	3.8 (1.0)	3.8 (1.3)	-0.07
Me, my fellow teachers and my headteacher should have the same view on learning and teaching	4.8 (0.44)	4.6 (0.56)	-0.19

Table 22: STEM SSL Baseline and Endline Scores for Attitudes towards Coaching and Mentoring

Source: SSL Quantitative Survey.

Overall, there was an increase of in those exhibiting a positive attitude, increasing from 57% at baseline to 76% at endline (see Figure 20). Cohort 1 was more likely to have a positive attitude at baseline, as they would have been participating in the Certificate Program at the time of the baseline survey (66%) as compared to Cohorts 2 (52%) and 3 (58%). However, at endline, those exhibiting positive attitudes were highest for those in Cohort 1 and lowest in Cohort 3 (82%, 77% and 67% respectively). There was little difference between females (59% baseline and 79% endline) and males (57% baseline and 75% endline).

Figure 20: STEM SSL Attitudes towards Coaching and Mentoring at Baseline and Endline



Source: SSL Quantitative Survey

Before participating in the Certificate Program in Education Mentorship and Coaching, I couldn't understand the impact or importance of engaging with STEM teachers because I felt that they are capable of supporting themselves. However, after attending the program, I grasp and fully understand the importance of coaching and mentoring teachers. **STEM SSL, Female, Nyaruguru**

2.4.2. Confidence for Coaching and Mentorship

STEM SSL Confidence for coaching and mentoring increased from an average of 15.2 points out of 20 (SD: 2.6) at baseline to 17.3 points (SD: 2.1) at endline for an average increase of 2.0 points (change is statistically significant, two-tailed P value < 0.0001), with more than a half point average increase across all confidence related questions (see Table 23). The greatest increase was in providing induction programs for new STEM teachers (0.60 point average increase) and in dealing with resistance from colleagues to adopting new science and mathematics teaching and learning practices (0.56 point average increase).

Table 29. Stell 552 baseline and endine secres for confidence in coaching and mentoring					
How confident do you feel doing the following?	Average at Baseline	Average at Endline	Average		
	(Standard Deviation)	(Standard Deviation)	Change		
Delivering induction for new science and mathematics teachers	3.9 (0.73)	4.5 (0.57)	0.60		
Dealing with resistance from colleagues to adopting new science and mathematics teaching and learning approaches	3.8 (0.86)	4.3 (0.63)	0.56		
Leading continuous professional development of science and mathematics teachers	3.7 (0.81)	4.2 (0.67)	0.44		
Coaching and mentoring science and mathematics teachers	3.9 (0.73)	4.3 (0.67)	0.42		

Table 23: STEM SSL Baseline and Endline Scores for Confidence in Coaching and Mentoring

Source: SSL Quantitative Survey

Overall, those showing high confidence increased to 90% at endline as compared to 52% at baseline (see Figure 21). This increased confidence is reflected in interviews with STEM SSLs who reported increased competency and confidence as a result of their participation in the Certificate Program.

My confidence has improved because of many skills that I learned. So, when I am training other teachers, I am now fully confident. **STEM SSL, Male, Rubavu** *Figure 21: STEM SSL Confidence for Coaching and Mentoring at Baseline and Endline*





The course attended has changed how I support STEM teachers. Before, the support I gave was not sufficient because I lacked the knowledge. But, after being trained it increased . . . Before mentoring and coaching wasn't done properly, we had no guidance, and we did not know how it should be done. Now, due to the training, we know what it is, how to do it and, as a result, we see improved quality of teaching. **STEM SSL, Male, Gicumbi**

At baseline, both female and male STEM SSLs had a similar proportion exhibiting high confidence (48% and 53% respectively). However, at endline, males STEM SSLs were more likely to exhibit high confidence (93%) as compared to their female colleagues (79%). While the proportion of female STEM SSLs surveyed are few (22%), the majority were trained during Cohort 2 and 3 (83%) as compared to male SSLs (68%). As Cohort 2 and 3 overlapped with the Covid-19 pandemic, the inability to practice the skills learned during the course may explain these lower confidence rates.

Yes, after the training we faced the challenge of Covid -19 which affected the implementation because after the training was the appropriate time to implement what we learned. But, due to Covid-19, we didn't have that time to implement what we have learned. . . we were focused on preventing Covid-19 rather than implementing what we learned. **STEM SSL, Female, Nyamasheke**

2.4.3. Efficacy for Coaching and Mentorship

Survey findings show that STEM SSL efficacy for coaching and mentoring increased from an average of 15.2 points out of 20 at baseline (SD 3.2) to 17.3 points (SD: 2.1) at endline for an average increase of 2.1 points (change is statistically significant, two-tailed P value is < 0.0001) (see Table 24). The largest increase is in those STEM SSLs who feel able to support STEM teachers to deal with the challenges that they face in school (increase of 0.81 points). This is reflected in interviews with STEM SSLs who highlight their role in organizing STEM specific CoPs and note the role of CoPs in supporting problem solving amongst teachers.

	0 0		
How much do you agree with the following statements?	Average at Baseline (Standard Deviation)	Average at Endline (Standard Deviation)	Average Change
I feel able to support science and mathematics teachers in dealing with challenges they face at the school	3.6 (1.1)	4.4 (0.58)	0.81
I feel able to support science and mathematics teachers in identifying resources for their professional development	3.9 (0.94)	4.4 (0.56)	0.50
I feel able to support science and mathematics teachers to identify goals for their professional development	3.6 (0.92)	4.3 (0.63)	0.47
I feel able to coach and mentor science and mathematics teachers at my school	3.9 (0.95)	4.2 (0.59)	0.32
Source: SSL Quantitative Survey			

Table 24: STEM SSL Baseline and Endline Scores for Efficacy for Coaching and Mentoring

Source: SSL Quantitative Survey

There is much change for teachers as a result of participating in CoPs. Due to peer learning, teaching skills have improved and teachers feel confident while teaching. Sharing ideas helps to solve the problems they encounter. **STEM SSL, Male, Gicumbi**

Yes, I have SSL where we meet in CoP and discuss our problems, but if you have any questions, you can even approach him/her. For example, you may have a problem about not finishing your program. You discuss together and they help you to find out why you are not finishing it according to the questions he/she has asked you. This helps you to find the solution to the problem yourself. **STEM Teacher, Male, Karongi**

At baseline, 59% of STEM SSLs surveyed exhibited high levels of efficacy, however, this increased to 95% at endline (see Figure 22). Overall, there was little difference between female and male STEM SSLs at baseline, however at endline 97% of males reported high efficacy as compared to 90% of females. Analysis by training cohort shows that Cohort 3 has a lower proportion of trainees reporting high efficacy (88%) as compared to the other two cohorts which may reflect a lack of opportunity to implement skills as a result of Covid-19 prevention measures.

2.4.4. Competences and Motivation of STEM SSLs

STEM SSL attitude, confidence and efficacy for coaching and mentoring were relatively low at baseline (see Figure 23), reflecting the newness of the position for many STEM SSLs as many were assigned the designation of SSL upon being informed of the Certificate Program. At baseline, only half of STEM SSLs (57%) had a positive attitude around coaching and mentoring and, while this did increase by 32% to 76% at endline, it did not increase as significantly as confidence, which increased by 74% between baseline and endline and efficacy, which increased by 62%.

In order to assess the extent to which STEM SSLs report high ability to coach and mentor new STEM teachers, the following two questions were combined: (1) I feel able to coach and mentor science and mathematics teachers at my school and (2) I am confident delivering induction for new

Figure 22: STEM SSL Efficacy for Coaching and Mentoring at Baseline and Endline



Source: SSL Quantitative Survey

Figure 23: STEM SSLs Exhibiting Good Attitudes, High Confidence and High Efficacy between Baseline and Endline



Source: SSL Quantitative Survey

Table 25: INDICATOR Improved Competencies of STEM SSLs					
% of HoDs/SSLs who	report high ab	oility to			
coach and mentor new STEM teachers					
Baseline Endline					
Total	66%	95%			
Female	76%	90%			
Male 63% 96%					
Source: SSL Quantitative Surv	ey				

science and mathematics teachers (see Table 25). Findings show that at baseline, two-thirds (66%) of STEM SSLs reported high ability to coach and mentor, and, by endline, nearly all reported high ability (95%).

However, as noted previously, STEM SSLs report that they are not responsible for mentoring as this is the function of the SBM. In addition, during interviews, STEM SSLs were more likely to focus on how the course helped them as teachers, rather than how the course helped them to support other teachers. This is also highlighted when asked what content of the course was most useful, STEM SSLs were more likely to mention content that they use as teachers, including lesson planning, 5E's and improvisation as compared to coaching and mentoring or CoPs.

Like SBMs, SSLs also noted insufficient time for implementing skills/supporting teachers with others mentioning a lack of resources to support their role as an SSL.

I was limited by a short time due to having a tight timetable. I tried to find a free time where I can share with my colleagues what I learnt but the time was limited. For example, sometimes I took the occasion while we were in teachers' room or the last hour on the timetable, but it was very challenging because in 12YBE, that time everyone wants to go home and you find that, a few accepted to remain with me. I raised the issue to the school leaders, but it was not yet resolved. **STEM SSL, Male, Gicumbi**

There is a limited time during the school schedule. For instance, we only have 2 hours at my school for CPD activities. So, it is pretty much challenging to cover all the skills learned in that limited time. I suggest that teachers should meet during school break because there is a plenty of time during break. **STEM SSL, Male, Nyanza**

The obstacles that hinder me from applying what I have learned is the lack of computer or laptop and internet access. So, we can implement some skills because of lacking computer. About training other teachers, we don't have enough time because I have many lessons (36 hours) per week. When I spoke to the Head Teacher about providing some hours for coaching and mentoring other teachers, they said that they will work on it in future. **STEM SSL, Male, Rubavu**

Additionally, due to Covid-19 and school closures, STEM SSLs were more likely to report that because of not using the skills learned through the Certificate Course, they have forgotten quite a bit of the content.

Covid greatly affected the implementation of the skills that we learned from the courses. First, students forgot everything that they studied upon returning to school, so we had to start over. This required us to go the extra mile to be able to complete the program. So, this affected the implementation of skills that I learned during the course because I couldn't get the time to work on the CPD support systems such as coaching and mentoring, or CoPs. **STEM SSL, Male, Ngororero**

All STEM SSLs interviewed also reported that their capacity to teach STEM has improved due to their participation in the Certificate Program. More than half said that the course improved their ability to improvise in the classroom, such as using different materials and methods in their teaching. Others noted that they are using more technology and online materials in the classroom so that students better understand the content of the lessons, particularly in the absence of equipment to perform in-person classroom experiments. Nearly half also said that the course has helped them improve their lesson preparation.

These changes are really attributed by many things. After attending the Certificate Program in Educational Mentorship and Coaching, I observed that the methodologies and pedagogies that I used before were not flexible at all. In fact, I can now spare some minutes in class talking about real life situations with students when they are tired, to boost their mood and motivate them. **STEM SSL, Male, Kamonyi**

Before taking the courses of VVOB, I was not flexible in class. . . After attending the VVOB's course, I am now flexible, and I can view every student's perspective and point view. Before participating the VVOB course, I have never prepared the lesson before attending the class. However, after participating in the Certificate Program, I can easily prepare the lesson plan and find other teaching aids. **STEM SSL, Male, Rwamagana**

3. Effect of CPD Support Systems on School Environment and School as a Learning Organization

3.1. School Environment

A series of 17 questions were asked about the school environment to both SBMs and STEM SSLs to rate the school environment¹⁰ (see Table 26). At baseline, the average score out of 85 was 71.7 (SD 7.6) and at endline the average score was 73.4 (SD 5.7) with an average increase of 1.7 over the baseline (change is statistically significant, two-tailed P value <0.01). STEM SSLs were more likely to report greater change with an average 2.1 increase in in the environment score at endline compared to 1.2 for SBMs, which corresponds with qualitative finding as SBMs were more likely to say that there has been little change in how school leaders engage with staff whereas STEM SSLs were generally more positive about leadership at their schools, even those from the same schools.

	Average at	Average at	Averag	e Change
How much do you agree with the following statements?	Baseline (Standard Deviation)	Endline (Standard Deviation)	All	Schools w/ trained DHT & HT
School activities proceed as planned in my school	3.6 (1.1)	4.2 (0.52)	0.64	0.69
I often receive advice/consultation from my colleagues to improve my teaching	4.1 (0.87)	4.5 (0.52)	0.38	0.51
Objectives and plans are achieved successfully in my school	3.8 (0.93)	4.2 (0.53)	0.37	0.41
SBMs/ SSLs in my school helps me improve my lessons	3.9 (1.1)	4.3 (0.69)	0.36	0.46
l often give advice/consultation to my colleagues to improve their teaching	4.3 (0.77)	4.5 (0.05)	0.22	0.27
I use the feedback/ advice given by my colleagues to improve my teaching and learning process	4.2 (0.88)	4.4 (0.50)	0.17	0.25
The vision/ mission of my school is shared with school community members	3.9 (1.1)	4.1 (0.70)	0.16	0.26
My opinions often contribute to the process of making decisions in my school	4.0 (1.0)	4.2 (0.64)	0.16	0.29
Objectives and plans are developed based on evidence and data in my school	4.1 (0.92)	4.2 (0.54)	0.15	0.17
I am willing to share my good lesson practice with my colleagues	4.5 (0.78)	4.5 (0.50)	0.08	0.08
My headteacher is supportive in improving teaching and learning in my school	4.3 (0.85)	4.4 (0.57)	0.07	0.13
Results from national examinations are analyzed by all teachers together	4.4 (0.95)	4.4 (0.76)	0.05	0.12
The vision/ mission of my school is clearly stated	4.3 (0.83)	4.3 (0.58)	0.04	0.10
The school leaders encourage us to give some comments/ ideas to contribute to school improvement	4.3 (0.94)	4.3 (0.65)	0.01	0.02
There is a cooperative system among the different subjects in my school	4.2 (0.89)	4.2 (0.53)	-0.07	0.07
There are clear aims or objectives in my school	4.4 (0.63)	4.3 (0.62)	-0.12	-0.08
I make effort to achieve the vision/ mission of my school	4.6 (0.78)	4.5 (0.61)	-0.14	-0.10

Table 26: SBM and SSL Baseline and Endline Scores on the School Environment

Source: SBM Quantitative Survey, STEM SSL Quantitative Survey

While those with composite school environment scores greater than 90% exhibited minimal change between baseline and endline (increasing from 27% to 32%) (see Figure 24), there was a significant

 $^{^{\}rm 10}$ Cronbach's alpha for environment scale of 17 questions is 0.866

increase¹¹ in those reporting a score greater than 80%, which increased from 71% of respondents at baseline to 93% at endline.



Figure 24: Environment Score for SBMs and STEM SSLs at Baseline and Endline



Further analysis of environment scores indicates that the presence of a trained deputy head teacher is significantly associated with an improved school environment score, with 30% of those without a trained deputy head teacher scoring the school environment at 90% or greater, whereas 33% of those with a trained deputy scored their school environment at 90% or greater¹².

The majority of SBMs and STEM SSLs (56%) rated their school environment higher at endline as compared to baseline while 40% rated their school lower at endline as compared to the baseline. While not statistically significant, those who report that either their fellow SBM or STEM SSL were trained, were more likely to increase the school environment rating between baseline and endline (see Figure 25). Similarly, those schools with more trained staff were also more likely to increase their rating of the school environment between baseline and endline (see Figure 26).

Interviews with teaching staff find that the majority believe that their "school is a place where teachers take risks, seek out and try new ideas and strategies, and discuss their work Figure 25: Environment Score Change for SBMs and STEM SSLs Based on Colleague Mentor Training Status



Source: SBM Quantitative Survey, STEM SSL Quantitative Survey

Figure 26:Environment Score Change by Number of Trained Staff at School at Endline



Source: SBM Quantitative Survey, STEM SSL Quantitative Survey

openly; a school where teachers positively thrive on collaborating with and learning from each other". One quarter of NQTs specifically mention the role that CoPs or CPD plays in creating this environment.

Yes, because usually courses at our school starts 8:00 A.M., but one day we came up with a new idea of helping those students who were about to take their national exams and as teachers we agreed that from 7:00 to 8:00 A.M. we will be helping those specific students. This tells you that here teachers take risks to try new ideas and strategies. And again, we do work openly, we collaborate, we learn from each other from those CoPs. So, this statement is true. **NQT, Male, Rubavu**

¹¹ Chi Squared equals 43.18 with 1 degree of freedom, two-tailed P value < 0.0001

¹² Chi Squared equals 189.184 with 1 degree of freedom, two-tailed P value < 0.0001

Yes, this statement is a reality to our school because we do share ideas as teachers and together, we became more creative. When there is a new idea, we support each other so that we can implement it. And these bring us together for more and more collaboration and for learning from each other. Actually, CoPs are the living evidence of this statement. **NQT, Male, Nyanza**

Half of NQTs interviewed also feel that their school prioritizes their professional development, while others note that lack of time during the school schedule, compounded by the added Covid-19 measures contribute to their perception that the school does not fully prioritize their professional development needs:

I may say that the school prioritizes my professional development needs at a moderate extent and this mainly due to lack of time as I mentioned. . . Apart from induction, there is no other professional development opportunity I attended. No, I didn't have an opportunity to attend any training because I arrived there when the needed a lot a new teacher. **NQT, Female, Rusizi**

3.1.1. Shared leadership

Nearly all school leaders interviewed reported a change in leadership style as a direct result of their participation in the Diploma Program. The biggest change noted is that they now engage more with other teachers and staff at their school than previously. Many head teachers realized that they needed to trust their staff more and that it is not necessary for them to be responsible for all decisions or carry out all management activities on their own. The training also helped them to fully understand the responsibilities of their staff. As a result of this shift in perspective, many noted that their jobs have become easier, and that staff are more engaged and responsive because of these changes. Most also reported an increase in confidence and satisfaction in their work as a result.

In learning there is power delegation, whoever can do something, he/she takes that responsibility and performs *it*, if I am around or not. I feel safe because everyone at school can fulfill school responsibility on my behalf and then I monitor what has been done. Sharing leadership has reduced my tasks and being overloaded and has increased the communication between all of us within the school. **Head Teacher, Female, Musanze 1**

Yes, I experienced changes in job satisfaction. Before I took all the responsibilities that are supposed to be shared and performed with the involvement of stakeholders as my responsibilities and the work was a lot, I was overloaded by work. But, when I started working with others, my work became easy to perform which increased my job satisfaction. **Head Teacher, Male, Nyanza 1**

Before I was overloaded by my job as a school leader because I didn't know how to prioritize, or even share responsibilities with others. But now, I don't do everything at the same time, I do prioritize, and delegate when necessary and I am not still overloaded which made me more satisfied in my job as a head teacher. **Head Teacher, Male, Karongi 1**

Deputy head teachers also reported similar changes in their leadership approaches, with a few noting that these changes have made their work easier. In addition, while noting increased confidence and satisfaction with their work as a result of these changes, they were also more likely to mention that they were either actively looking or would leave their position for a better paying position, whereas this was not brought up in any of the head teacher interviews.

Because now we cannot do anything without consulting the committee and getting from different views. We put our ideas together and make a decision, not like before where we used to make decisions from our views. **Deputy Head Teacher, Male, Nyamasheke**

I started working more closely with teachers, we are planning everything together, and this is increasing the way we communicate and help each other at school. . . When I started working closely with teachers and delegating responsibilities my workload reduced and it is even easy to achieve the set goals as more teachers feel more involved. **Deputy Head Teacher, Male, Nyanza**

When working with others, I am more informed about the school. For example, I can assist the Head Teacher and accountant today, easy their work burden and even inform myself regarding school finances and even

contribute to the well management of the school. Moreover, my work became easier because now I know the methodology to use and I am aware of my responsibilities . . . Prior to attending the Diploma Program, I was taking on all obligations and performing them alone when it was intended to be shared and executed with the engagement of stakeholders, my work felt very boring and demanding, but once I started working with others, my work became easier to complete, which boosted my job satisfaction. **Deputy Head Teacher, Female, Rwamagana**:

And this has increased my confidence, because now I apply for different job vacancies because of the skills learned. **Deputy Head Teacher, Male, Kamonyi**

Rather than commenting on changes in leadership style when engaging with teachers, deputy head teachers interviewed reported on their change in leadership over students, focusing on supporting students with disabilities and promoting gender inclusiveness.

Before I never cared about inclusiveness and gender promotion. . . I am encouraging girls to take leadership positions. **Deputy Head Teacher, Male, Kamonyi**

Changes in school leadership were also noted by the SEIs who acknowledged improvements in collaboration amongst school leaders and staff. Some report that this change has reduced the level of engagement required by the SEI at the school.

Yes, there is a big change because the school leaders and staff are no longer working in competition or directing what they must do like before. Today, they do an open discussion, they collaborate, and they learn from each other, they no longer feel fearful to express their weakness among each other. This helps them to have clear meetings and discuss the needs and opportunities in CPD. **SEI, Male, Ngororero**

Three years ago, I had an understanding that the school will operate effectively while I fully supervised. But this has changed now. This is because there are many departments at school that can support operations even if the school leader is not around. Therefore, my understanding was changed, even if I don't provide full supervision, the schools can operate and achieve more because it is now taken as an organization, they improved in collaboration and togetherness. **SEI**, **Male**, **Nyabihu**

More than half of school leaders reported increased engagement with their SEIs. This primarily takes place through PLCs, however some noted that this is happening during school visits as well. However, only one third of deputy head teachers noted changes in their engagement with SEIs and that the changes are primarily in how they view the role of and/or engage with the SEI themselves. They did not report changes in the actual quality or quantity of support provided by the SEI, with two noting that there was already strong collaboration previously.

Because we have learned those lessons with the SEI, they have changed the way they interact and work together, because we got to know how we can work together to improve the education standards and solve the problems we face. **Deputy Head Teacher, Male, Rusizi**

It changed a little bit because before we were linked/ connected by reporting only, and we saw inspections negatively as controls, but now we see inspections in form of school visits as the way to know what we are doing great, and where we are failing. And then we benefit the support in form of advice on how to improve in the areas that our school is failing. **Deputy Head Teacher, Female, Rwamagana**

Yes, it changed on time mainly after we attended the diploma program, we started updating him more often about the development of the school, our needs, and consulting him before talking and reporting to the district and in case of challenges while before we were only reporting to the SEI. **Deputy Head Teacher, Male, Karongi**

Participating in the training changed the way we communicate with SEI because we all understood that we should work together and be involved in school plans. **Deputy Head Teacher, Male, Kayonza**

In-line with comments from head teachers, SEIs also note that there is now better communication and collaboration between themselves and head teachers, with some reporting that school leaders are no longer intimidated by SEIs. And, as noted previously, SEIs report that their jobs have become easier as head teachers are now able to resolve more of their problems internally.

We work together with the school leaders, by attending the meetings at school, the school leader leads the meeting, and we facilitate these meetings by providing advice, identifying the possible solutions for the raised issues or challenges. Now the school leader and teachers are no longer intimidated by our presence, they feel free to express their ideas and get the support they need. **SEI**, **Male**, **Nyabihu**

Because now head teachers are not afraid to approach us. Before the trainings you would find that I am always the one to visit schools and see if they have a challenge but, nowadays they are the ones to approach me even when I am at the office, they find me there. What I liked most about the trainings was that they increased the knowledge to the Head Teachers where you find that now they can solve some problems on their own and this has made my work much easier. **SEI, Male, Musanze**

Nowadays many activities are being done by the school leaders my involvement has reduced. Yes they have become more responsible, am so much willing to do things on their own. **SEI, Female, Rwamagana**

As I had said earlier nowadays my support is to supervise and the whole power is now left to the head teachers and the SBM, because they are the ones who lead these sessions which is different because before the trainings, I would be the one to lead them and even the participation of teachers was still down but now they are the ones who leads them. **SEI, Male, Gisagara**

Half of the head teachers interviewed report also engaging with district level officials, however, very few elaborated on what this engagement looked like. No deputy head teachers interviewed reported any engagement at the district level aside from sharing reports. And, while more than half of male head teachers noted engagement with district level officials, only one female head teacher reported engagement at this level. However, female head teachers were more likely than their male counterparts to report that they involve other head teachers in supporting them in their leadership role.

I think that at the district, they haven't been given the training because when they visit, they have their priorities. However, we haven't reported anything, and they refused to work on it. There is a good climate for working together with them. **Head Teacher, Male, Nyamasheke 1**

Working with other leaders SEI and DDE has changed as well, before they used to come only focusing on what is not going well and reacted negatively but now when they come to visit us, if they are not going well, they advise us and help us to find the solution together. **Head Teacher, Male, Nyaruguru 2**

It has changed because we now do PLCs, we work together with the sector and we look at where we have our weaknesses and look how we can get support, we work together for improvement. **Head Teacher, Female,** *Kamonyi 1*

While school actors, SEIs and district level officials note positive changes in school leadership, the primary challenge noted is the transferring of school leaders. Many respondents note that the transferring of a school leader negatively impacts engagement within both the school and the sector level.

It is hard to say that there is a big change because many headteachers who were trained were transferred before three years. We are remaining with only two headteachers who attended the courses. However, because the SSLs, SBMs, and some teachers attended the courses which enabled them to contribute to the improvement and changes in the schools' management even though the headteachers were new. The school closure affected the changes because that is when most of SSLs, SBMs, and Head Teachers were transferred to the other schools in the other sectors. This affected the improvement of school management and leadership in general. **SEI, Male, Ngororero**

Focus group discussions with parent, student and teacher representatives also highlighted changes in leadership practices within schools reporting that school leadership actively engages with stakeholders in the management of the school. Respondents attribute this increased engagement to more efficient and responsive school management.

There have been significant changes in the last 3 years, as school leaders attend various trainings aimed at imparting knowledge on good school leadership, implementing them as collaborators with others in school development. You find that in general they are more social with students and teachers than ever before, and it helps children to love school and teachers because they find that school is for caring them, it motivates them at their work. **Parent Representative, Male, Kamonyi**

The changes that exist are visible and many. First, it is the way in which the school values everyone's opinion, the students, the teachers and the parents. Things which are different from before because it didn't exist, the school belonged to the school leaders. **Teacher Representative, Male, Karongi**

The change has been the establishment of various committees that assist in sensitization and monitoring of school development activities. For example, as a parent committee it became increasingly clear its role in teaching other parents that they should be involved in school development activities, and it was productive because they were so involved through monitoring student learning and providing support where needed for the school to continue to thrive. **Student Representative, Male, Karongi**

One of the main reasons for these changes was the head teachers and dean of studies who participated in trainings, who then came to apply what they learned and shared it with us. Also, after implementing it we saw a positive change as the days went by, we put more effort into it. **Parent Representative, Male, Karongi**

Another change is about sharing responsibilities. Before that period, teachers were not aware of what is going on in their school either school plans or activities taking place but now, teachers and students' representatives are informed on everything to be done. This shows the good collaboration between school leadership and partners. **Teacher Representative, Male, Musanze**

Before I used to take decisions on my own, but after the training I learned the importance of a shared decision with the objective of improving the school. The impact of all this is that I have been able to get along with the community around the school by increasing community engagement. **Head Teacher, Male, Rubavu 2**

3.2. Effects of Multiple Trained School-Based Actors on Knowledge, Attitudes and Practices

Findings indicate that there is a positive effect of having more than one trained school actor on confidence and efficacy. Further analysis of SBM findings indicates that confidence is positively affected by the presence of other trained colleagues (see Table 27) as having a trained SSL is statistically associated with the SBM reporting high confidence as compared to those without a trained SSL.¹³

Trained Staff	Positive Attitude	High Confidence	High Efficacy	Count of SBMs
Trained SSL	71%	90%*	96%	112
No Trained SSL	90%	71%*	100%	21
Trained DHT	73%	87%	97%	116
No Trained DHT	76%	88%	94%	17
Trained HT	72%	87%	97%	102
No Trained HT	81%	87%	97%	31

Table 27: Trained Staff and SBMs exhibiting positive attitudes, high confidence and high efficacy at endline

Source: SBM Quantitative Survey *Designates a statistically significant association

¹³ Chi Squared equals 4.022 with 1 degree of freedom, two-tailed P value equals 0.0449

Similar to the findings from analysis of SBM survey data, findings from the STEM survey indicate that confidence is positively affected by the presence of other trained colleagues (see Table 28) as having a trained SBM is statistically associated with the STEM SSL reporting high confidence as compared to those without a trained SBM.¹⁴ In addition, having a trained deputy head teacher was associated with the STEM SSL reporting a positive attitude towards coaching and mentoring¹⁵ and a trained head teacher was associated with greater reported efficacy¹⁶.

Trained Staff	Positive Attitude	High Confidence	High Efficacy	Count of STEM SSLs
Trained SBM	74%	93%*	97%	115
No Trained SBM	84%	74%*	84%	19
Trained DHT	81%*	91%	96%	97
No Trained DHT	62%*	86%	95%	37
Trained HT	77%	93%	99%*	89
No Trained HT	73%	84%	89%*	45

Table 28: Trained Staff and STEM SSLs exhibiting positive attitudes, high confidence and high efficacy at endline

Source: SSL Quantitative Survey *Designates a statistically significant association

3.3. Teacher Satisfaction and Motivation

At baseline and endline, perception of general teacher satisfaction and motivation was assessed through surveys for School Leaders, SBMs and STEM SSLs through a series of four questions scored on a five-point Likert scale (see Table 29). Perceptions of teacher satisfaction and motivation has shifted from a mean of 14.4 (SD: 2.6) at baseline to 15.6 (SD: 2.3) at endline, or an average increase of 1.2 points (change is statistically significant, two-tailed P value < 0.001).

 Table 29: School Leader, SBM and STEM SSL Perception of Teacher Satisfaction and Motivation between Baseline and

 Endline

To what extent do you agree with the following statements about	Average at Baseline	Average at Endline	Average
your school?	(Standard Deviation)	(Standard Deviation)	Change
I am worried about retaining teachers at my school	3.0 (1.4)	2.5 (1.1)	-0.53
Teachers at my school complain about the pressures of their work	2.9 (1.3)	2.5 (1.2)	-0.48
Teachers at my school are respected by others in the community	4.0 (0.88)	4.2 (0.76)	0.18
Teachers at my school are motivated in their job	4.4 (0.66)	4.4 (0.61)	-0.02

Source: School Leader Quantitative Survey, SBM Quantitative Survey, STEM SSL Quantitative Survey

While agreement around statements on respect and motivation were similar across all respondents at baseline and endline, there was a notable difference in respondents agreeing/strongly agreeing with

Figure 27: % of Respondents that Agree/Strongly Agree with the Statement: I am worried about retaining teachers at my school



Figure 28: % of Respondents that Agree/Strongly Agree with the Statement: Teachers at my school complain about the pressures of their work



Source: School Leader Quantitative Survey, SBM Quantitative Survey, STEM SSL Quantitative Survey

Source: School Leader Quantitative Survey, SBM Quantitative Survey, STEM SSL Quantitative Survey

¹⁴ Chi Squared equals 4.708 with 1 degree of freedom, two-tailed P value equals 0.0300

¹⁵ Chi Squared equals 13.722 with 1 degree of freedom, two-tailed P value <0.001

¹⁶ Chi Squared equals 4.607 with 1 degree of freedom, two tailed P value equals 0.0318

statements on concern over teacher retention and teachers complaining about pressures of their work. At endline, school actors are particularly less worried about retaining teachers (average reduction of 0.53 points from the baseline), however deputy head teachers still express concern about retaining teachers with 33% reporting that they agreed or strongly agreed with the statement at baseline compared to 41% at endline (see Figure 27). In addition, while there is a general decrease in school actors noting that teachers complain about the pressures of their work, SBMs who agreed with this statement increased from 27% to 33% at endline, in addition, while baseline figures were high, 43% of STEM SSLs still agreed or strongly agreed with this statement (see Figure 28).

3.3.1. Newly Qualified Teachers

The endline survey repeated the Work-Related Basic Need Satisfaction scale (W-RBNS) was included during the baseline survey to measure NQT need satisfaction in three domains: need for competence, need for relatedness and need for autonomy (Van den Broeck et al., 2010). According to the self-determination theory all three aspects play a role in determining motivation and satisfaction at work. The version of the W-RBNS scale included in the NQT survey included 18 items scored on a five-point Likert scale, from strongly disagree to strongly agree (see Annex 5). At baseline, both the competence and autonomy subscales showed low reliability, therefore the endline only presents the analysis of the composite W-RBNS scale and the relatedness sub-scale.







At endline, findings indicate a shift in overall work-related basic needs satisfaction as compared to baseline. While mean composite W-RBNS score at baseline was 4.2 (SD: 0.35) increasing to 4.3 (SD: 0.24) (change is statistically significant, two-tailed P value < 0.001). When applying Bloom's cut-off points, findings show an overall increase from 76% of respondents reporting high work-related basic needs satisfaction at baseline to 91% at endline with little difference between female and male NQTs (see Figure 29).

With-in the scale, some questions exhibited greater change between the baseline and endline surveys, that may be driving the change in W-RBNS findings, including:

- The percentage of teachers that strongly disagreed with the statement they doubt that they are able to execute their job properly increased from 49.3% at baseline to 63.7% at endline,
- The percentage of teachers that strongly agreed with the statement that they are good at the things that they do in their job increased from 40.9% at baseline to 55.6% at endline,
- While the majority of NQTs still wish that they could do things differently at work, there was an increase in those who disagree with this statement from 34.7% at baseline to 43.9% at endline,

Analysis of the relatedness sub-scale shows a mean increase from 4.5 (SD: 0.45) to 4.6 (SD: 0.33) between baseline and endline (change is statistically significant, two-tailed P value < 0.001), and an increase from 92.4% of respondents showing high relatedness at baseline to 97.7% at endline.

A second scale, the Work Role Motivation scale for teachers (Fernet et al., 2008), was also re-administered during the endline survey. This scale looks at how motivated teachers are to conduct various tasks that are specific to the teaching profession and specifically looked at motivation for teaching and instruction, lesson preparation and administrative tasks. For all tasks, a similar set of 10 questions was asked using a 5-point Likert scale. The scale was eventually divided into three subscales: intrinsic motivation (2 items), extrinsic motivation (6 items) and a-motivation (2 items).

Findings show increase in intrinsic motivation and amotivation across all three tasks assessed (see Figures 30, 31 and 32). The change at endline is most apparent when applying Bloom's cut-off points to assess intrinsic motivation. Respondents exhibiting high intrinsic motivation increased from 71% at baseline to 92% at endline and high extrinsic motivation increased from 79% to 87%. There was also little change in amotivation, with 99% surveyed exhibiting low amotivation at baseline and 100% at endline.

Findings from the survey show that NQTs were less likely to consider leaving their school at endline as compared to baseline, with 54% of teachers at baseline reporting that they never think about leaving the teaching profession, to 80% at endline. However, the number that always thinks about leaving has remained relatively constant (2.7% at baseline and 2.9% at endline).

When asked if they ever thought of leaving the teaching profession, only one out of 13 NQTs interviewed said that they had ever thought of leaving the profession as the work was more difficult than they had expected it to be and the pay too low. The main reason cited for leaving a school was related to being closer to their home or looking for future promotions. NQTs report that a strong, collaborative school leadership keeps teachers at their schools, with other motivating factors including the availability of resources and strong induction programs.

No, I don't think about leaving this school because I am happy to be here. Everything is fine starting from leaders. For example, our leaders are social. Whenever you have a question, you are free to ask and compared to other schools, we have enough materials like computers when never you need to do research you are free to do that not fighting over one computer. **NQT, Male, Kamonyi**

I think that they are motivated to stay at this school

Figure 30: NQT Motivation for Administrative Tasks



Source: NQT Quantitative Survey

Figure 31: NQT Motivation for Lesson Preparation



Source: NQT Quantitative Survey

Figure 32: NQT Motivation for Teaching and Instructing





Table 30: INDICATOR Improved Teaching Competencies of New Teachers							
% of new teachers reporting high intrinsic							
motivation to conduct main teaching roles							
Baseline Endline							
Total	71%	92%					
Female	69%	92%					
Male 72% 92%							
Source: School Leader Quantitative Survey							

because the school leaders and other teachers' commitment. People who work here are all committed, their commitment become a motivation to everyone who come here. **NQT, Female, Rwamagana**

I would say that my interest in teaching profession increased compared to the time I arrived at this school because I was supported, I also had time to read books especially when I am planning lessons and I gained good people around me who are supportive, and I learned from them. **NQT, Female, Rusizi**

I cannot know each one's reason but what I think that keeps them here is the best leadership of the school, they do really care for teachers. Our head teacher collaborates with us, and he understands our needs. **NQT, Male, Nyanza**

4. Effects of Covid-19 on CPD Support Systems and Competences of Educational Actors

Survey and interview findings show that Covid-19 has had a significant impact on CPD support systems for secondary education resulting in a reduced capacity to support teachers. School closures in response to the Covid-19 pandemic and shifting priorities resulted in a reduction of CPD opportunities for teachers across all districts during the 2020-21 school year with 79% of SEIs report that there is a reduction in CPD opportunities for teachers. Similarly, despite the increase in provision of higher quality coaching and mentoring support for teachers, some school actors do note that the Covid-19 pandemic has reduced the level of support, including CoPs, due to increased teaching demands because of shortened terms. In addition, those who completed training immediately before or during school closures were unable to practice these skills.

There are few changes because we don't have enough time to work on it and most of the teachers are very discouraged due to a lot of credit hours in teaching. **STEM SSL, Male, Musanze**:

The Certificate Program in Education Mentorship and Coaching has changed the way I support STEM teachers at my school at a low level due to the lack of implementation. After completing the course, the Covid-19 pandemic started. So, it wasn't easy to implement the skills that we learned. **STEM SSL, Male, Rwamagana**

Many respondents highlighted that the return to school brought about challenges that required significant amount of their time. As many students turned to income generating activities to support their families during the period when schools were closed, school actors reported that students found it difficult to return to classes and that much effort was required to return their focus to academics.

Due to the closure of schools, when we returned to school we had to start from scratch. I had other important concerns that I didn't focus on helping teachers to improve their teaching methodologies and approaches. Instead, I was focused on student's discipline and motivation. **Head Teacher, Female, Karongi 2**

The majority of headteachers (53%) and SEIs (69%) also reported a reduction in the frequency of PLCs. Less than a quarter of head teachers interviewed reported that PLCs made use of digital technologies such as WhatsApp to keep in touch and few noted that they would like to further explore options to access PLCs using online forums and video conferencing. However, during interviews with head teachers, most reported that PLCs re-started once lockdowns ended and schools re-opened, with one reporting that PLCs are still not taking place and another noting a decreased emphasis on PLCs post-Covid.

PLCs have really changed since Covid-19. . . when we come back to school, we put more effort on lessons not on the meetings and this decreases the effectiveness of PLCs. **Head Teacher, Male, Nyanza 2**

When asked for examples of how PLCs have supported them in their work, head teachers interviewed gave examples of how PLCS have supported the transition back to school post-Covid. Responses highlighted the challenges of both students and teachers re-adjusting to school after the extended school closure.

For example, in December when students and teachers came back to school, it was not easy for them to feel comfortable in class because they had been engaged in small business and other activities. Hence, I used experiences gained in PLCs like social activities and financial saving groups, as a way to gain back their attention from those small business activities. **Head Teacher, Male, Nyanza 2**

I can give you an example: after Covid-19, some of the students came back to school with unpleasant manners and we raised the issue in the PLC. We decided to start clubs at school that would help those students and we asked teachers to approach those students and talk to them. This was done and the results were positive. **Head Teacher, Male, Rwamagana 1**

Lack of time for inductions was particularly noted by SBMs who were also more likely to report that Covid intensified this issue. They primarily cited the shortened school terms and the influx of new teachers in

combination with an already full workload as a teacher leaves them with little time left to support other teachers.

Covid really changed the way we support them. We used to take a week focusing on them and then in the following days we had one day in a week to check on them, to listen to them, to know more about the support they may need. But, with Covid, we could have only one day in a week because there were many new teachers at school, and we were behind . . . Everyone was under pressure. So, we all put our attention to teaching to make sure that we used our time efficiently during the shortened trimester. **SBM, Male, Rwamagana**:

Covid changed the support that we provide for new teachers because of the time. Everyone is in rush. Even the new teachers because, at the end of the day, they need to deliver. We cannot take much of their time because of the pressure of the shortened trimesters. **SBM, Female, Rubavu**

Covid changed the support provided to new teachers because we received a lot of new teachers as a way of reducing large number of students to minimize their risk of getting Covid. As a person who oversees supporting them, but also with a fulltime workload, it was very difficult to help them all in that induction program. **SBM**, **Male, Gisagara**

SSLs also noted they struggled with the time to support inductions for new teacher due to Covid, as well as with the expectation to carry out more functions via online platforms.

Because of Covid, the government has encouraged teachers to adapt coaching programs to be delivered remotely. However, some new teacher doesn't really have tech skills to be able to engage with online platforms. So, the support has reduced as the engagement has also reduced. **SSL, Female, Nyaruguru**

The impact of Covid is still the same and the amount of support that were provided to new teachers has reduced. For example, I have a new teacher who was assigned to me, but during the first week, schools were closed, and it was very challenging to induct a new teacher online. Literally, it seems to be impossible. **SSL, Male, Nyanza**

The impact of Covid on support for new teachers was also mentioned by the NQTs, noting both the workload of the SBM as well as the influx of new teachers reduced support.

I may say that the school prioritizes my professional development needs at a moderate extent and this mainly due to lack of time as I mentioned. . . Apart from induction, there is no other professional development opportunity I attended. . . I didn't have an opportunity to attend any training because I arrived there when they needed a lot of new teachers. **NQT, Female, Rusiz**i

I can say that as new teachers we didn't get enough time of having induction program, our SBM is the one who oversaw this and he usually has a lot of work, we could see that he has a very short time to combine all of the things. **NQT, Female, Rwamagana**

In addition, Covid-19 prevention measures have greatly limited the ability of schools to engage with parents as meetings were not allowed and Umuganda, the country-wide mandatory community service which some schools relied on as a way for schools to involve communities in school improvement activities, was no longer taking place. Parent and student representatives also note that they have not been able to meet with the school which has negatively affected collaboration since the start of the pandemic.

Yes, Covid-19 changed parents and community engagement because now community events like Umuganda still do not take place, and meetings with parents are not also allowed and we can only meet with the parents' committee. Most of the ways we engaged with parents are not still possible. Now the only possible way is when a parent takes an initiative and come to school individually. And many parents are now very busy looking for jobs those that lost their past employment because of covid-19, others working hard to pay debts of days of lockdowns when we were not working. **Deputy Head Teacher, Female, Rwamagana**

That is to say [because of Covid-19], the relationship between parents and the school as a whole has diminished today. **Student Representative, Female, Kamonyi**

Conclusions and Recommendations

CPD Support Systems

CPD is still a relatively new concept in Rwandan education, with the Teacher Development and Management Policy in Rwanda (TDM) initially drafted in 2007, setting the stage for the development of the CPD framework. With the adoption of the new CBC curriculum, the focus of CPD is currently centered on enhancing the professional competencies of teachers to deliver the new curriculum and develop proficiency in ICT, English and promotion of active learning and inclusion strategies. Under this new CPD initiative, teachers are expected to assume the responsibility for their own professional growth and District Directors of Education, District Education Officers, SEIs and head teachers need to be empowered to monitor learning. In addition, there is a recognition that newly appointed teachers participate in two years of school-based coaching and mentoring (MINEDUC 2018).

The LTLT Baseline Assessment (2019) found that those schools that reported having CPD, activities were primarily formal timetabled meetings where staff members from departments come together to discuss a case study. These were noted to be primarily knowledge focused and left little opportunity for personalized or needs-based support. In other schools, CPD was not timetabled at all and occurred on an ad hoc basis or not at all. However, at endline, most schools reported having CPD on the formal timetable and note a set time during the weekly school schedule for CPD activities, with few still noting that they take place on an ad hoc basis. In addition, the understanding of what constitutes CPD has changed. Rather than formal timetabled meetings, CPD at the school level is now primarily seen as school organized trainings for teachers in response to teacher-identified needs and CoPs. Leaders noted that they previously based their support on what they thought teachers needed, rather than facilitating processes for teachers to identify their own needs. Many note that teacher needs are often identified through CoPs.

Baseline findings noted that school based CPD for teaching staff was limited and that there was an inequality in provision of CPD and that some school actors, such as the head teacher and SBM had greater access as compared to other school staff. However, at endline, despite Covid, there was a demonstrated increase in access to CPD opportunities for both STEM SSLs and NQTs, two groups that previously had little access in the past. While head teachers reported increased access to various CPD opportunities, there was a reduction for both the deputy head teacher and SBM over baseline figures.

Additionally, at baseline, inductions were not widely offered for new teachers or consisted of giving the teacher teaching materials and introducing them to the staff. While endline findings show that there is little standardization across schools as to what constitutes a formal induction, there is a demonstrated increase in the number of schools offering inductions for new teachers and there is a consensus that new teachers need specialized support during their first year and beyond and that inductions develop better teachers.

The biggest barrier to effective CPD, including induction programs, mentioned at baseline, midline and endline was the limited time available to SBM and SSLs due to concurrent teaching responsibilities (VVOB 2019). SBMs and STEM SSLs both continue to teach full course loads while concurrently organizing, conducting and evaluating CPD for school staff and conducting inductions for new teachers. While STEM SSLs are responsible for aspects of CPD processes within their own departments, primarily consisting of CoPs and supporting induction processes for new STEM teachers, the bulk of the responsibility falls upon the SBM. As CoPs and trainings are often included on the school timetable and can be facilitated by others, coaching and mentoring are not. Therefore, the SBM needs to find the time during their already full schedule to coach and mentor both new and existing teachers. This likely explains why SBMs exhibit a less positive attitude towards coaching and mentoring as compared to STEM SSLs. In addition, findings from both the survey and interviews indicate that SBMs are the least satisfied of all school actors likely due to the expectations placed upon them.

While there has been a recommendation for schools to reduce SBM teaching hours to allow them to dedicate more time to CPD, this has not been carried out in the majority of schools due to lack of teachers to fill this gap and only 3% of SBMs surveyed at baseline note having a reduced teaching load.

Ultimately, it is likely that CoPs will have the most lasting impact on school level CPD due to their sustainability. CoPs can be led by trained mentors or by the teachers themselves. Interviews with staff highlight the importance of CoPs for developing a teaching community, sharing best practices and solving problems encountered in the classroom. CoPs ultimately help teachers teach better.

PLCs perform a similar role as the CoPs. The problem-solving cycle of the PLC has helped head teachers develop problem analysis and solving skills in addition to identifying and implementing practices to improve educational outcomes in their schools, including increasing attendance of students and teacher. PLCs have also created a support network for head teachers. PLCs proved to be very relevant and effective for head teachers in the context of Covid-19 as they provided the opportunity to adopt best practices for Covid prevention as well as support the return of students to the classroom.

However, without continued financial support for transportation, the current model of PLCs may be threatened. Despite widespread appreciation for PLCs and an interest in continuing participation, there is little indication that PLCs are being included in sector performance plans and budgets. Additionally, as other PLC models are currently in use in Rwanda as promoted by development partners such as the FCDO funded Building Learning Foundations program, the sustainability of PLCs may ultimately depend upon the adoption of a singular model by REB.

Recommendations

- Advocate to REB to encourage schools to reduce the teaching requirements for SBMs to have sufficient time for CPD and include content in the Diploma Program on the importance of reducing teaching hours for SBMs.
- Advocate to REB to develop formal guidelines on the content of inductions and provide further support at the sector level to ensure that new teachers are inducted. Some sectors noted that new teachers attend a formal pre-service training, however this did not seem to be widespread.
- As many respondents report that the deputy head teacher is responsible for coaching and mentoring teachers, consider offering the Certificate Course in Educational Mentorship and Coaching to deputy head teachers in order to supplement the role of the SBM.
- As multiple models for PLCs currently exist in Rwanda, as promoted by different development partners, there is a need to develop a standardized PLC model, based on best practices, for adoption by MINEDUC and REB. If included within the ESSP and performance plans, PLCs will be included in education budgets.
- Work with REB to develop a simple standardized CPD reporting formats and schedules to ease reporting and ensure data collected is useful for decision making.

Competences of School Based Actors

As a result of participation in the Diploma Program in Effective School Leadership and the Certificate Program in Educational Mentorship and Coaching, findings from the endline evaluation demonstrate a change in competences and efficacy to lead and support CPD of teachers within secondary schools across the 14 program districts. Ultimately, one of the greatest changes as demonstrated through qualitative findings is the shift in behavior from simply fulfilling a requirement, or doing without understanding and intention, to meaningful behavior, where actions are undertaken with both knowledge and purpose. These changes are evidenced not only in interviews with those who were trained, but in interviews with supervisors, teachers and other key educational stakeholders, who report more effective leadership and support for teaching and learning.

School Leaders

School leaders, including head teachers and deputy head teachers, play an important role in creating the conditions for effective teaching and learning. The literature shows that the quality of school leadership has a significant impact on the quality of education (Robinson et al., 2008). School leaders who develop, support and evaluate the quality of teaching influence student learning outcomes and that effective leadership is critical for student achievement, particularly in poor performing schools. However, appointed school leaders are often former teachers and do not necessarily have the competences to become an effective school leader. With support of VVOB, REB developed **National School Leadership Standards** that form the basis of VVOB's support to school leaders since 2014:

- 1. Creating strategic direction for the school
- 2. Leading learning
- 3. Leading teaching and training
- 4. Managing the school as an organization
- 5. Involving parents and the local community in the school

Figure 33: Five Standards of School Leadership



In 2019, the LTLT Baseline Assessment found that when looking at individual standards for school leaders gave themselves a medium to high rating on the application of the standards, only one-third of the school leaders reported competence in all five standards simultaneously (VVOB, 2019). At Midline, findings from in-depth interviews with head and deputy head teachers, highlighted changes in their role as a school leader as a direct result of their participation in the diploma program and indicated significant progress towards achieving expected outcomes. This includes changes in their understanding of their role in managing the school in the context of the five standards of school leadership as set forth by REB, as well as changes in their perceived capacity to effectively lead.

Both quantitative and qualitative findings from the endline evaluation also support the midline findings noting positive changes in leadership in line with all five standards, with the greatest change seen in confidence in leadership, which increased from 64% of head teachers reporting high confidence at baseline to 84% at endline. Changes in overall confidence were fueled by improved confidence to promote the prevailing values of the community in the school and motivating teachers. Most school-based actors and stakeholders interviewed noted changes in leadership style, including greater engagement in the development of the school's mission, vision and core values as well as strategic planning. In addition, teachers noted changes in the accessibility and engagement of school leadership, through participation in CPD including induction programs and CoPs. Skills acquired through participation in the Diploma Program and changes in school leadership style has led to greater collaboration at the school level and has likely reinforced school leader confidence in their role.

Endline findings also showed a shift in the role of deputy head teachers following their participation in the Diploma Program as they have adopted a greater role in the management of the school. As head teachers began to delegate responsibilities, deputy head teachers, who are often also referred to as the dean of studies, took on a greater role in resource management. There is also indication in the findings that these new responsibilities coupled with qualifications earned through participation in the Diploma Program has encouraged deputy head teachers to seek out head teacher positions.

Sector Education Inspectors

While SEIs are responsible for monitoring schools within their sectors, they are not employed by REB, and, therefore, are often pulled in many (non-education) directions by their supervisors. Following their

participation in the Certificate Program, SEIs report that they are better able to support schools in planning, including developing SIPs and action plans. Through the development of plans and increased reporting from schools, SEIs find that they are better able to demonstrate their role to their superiors and focus on education.

SEIs are also now leading PLCs in their sectors. Findings from the quantitative survey highlight that SEIs are now more confident in their roles, with the biggest change in the ability of the SEI to tailor support for different head teachers and schools and lead meetings and delegate leadership of meetings to head teachers, which have been reinforced through their role in facilitating PLCs. In addition, improved problemsolving capacity of school leaders developed through participation in PLCs has eased the workload of SEIs as schools are now able to resolve more problems on their own rather than seeking the support of the SEI.

School Based Mentors and STEM School Subject Leaders

At the start of the LTLT Program, while the majority of schools had a SBM many schools did not have a designated STEM SSL. When asked to send someone to the training, staff were identified to fill these roles. Baseline findings showed that a little over half of the SBMs and STEM SSLs were highly competent to coach and mentor (new teachers), reflecting the newness of the position for many. While, at endline, many of those identified to participate in the baseline survey were ultimately not trained, 25% of SBMs and 21% of SSLs surveyed, as the school likely selected a different person to attend the training. However, for those who were trained, the course served as a necessary introduction to the function of a school mentor.

The most significant shifts for both SBMs and STEM SSLs is in their confidence and perceived efficacy to coach and mentor teachers. Reflecting the differentiation in roles within the school, SBMs exhibited the greatest change in their confidence to lead CPD within their schools whereas STEM SSLs exhibited greater confidence to lead induction programs for new STEM teachers.

Figure 34: Competences of SBMs and STEM SSLs at	Baseline
and Endline	

	SB	M	STEM	SSL		
	Baseline	Endline	Baseline	Endline		
Positive Attitude	76%	74%	57%	76%		
High Efficacy	54%	97%	59%	95%		
High Confidence	53%	87%	52%	90%		

Source: SBM Quantitative Survey, STEM SSL Quantitative Survey

While there was little change in those exhibiting a "positive" attitude towards mentoring and coaching for SBMs (76% of SBMs at baseline and 74% at endline), the percentage of STEM SSLs with positive attitudes increased from 57% at baseline to 76% at endline. The most significant change for both is in the understanding that new teachers shouldn't be expected to teach well from their first day on the job. This is also reflected in positive perceptions and widespread adoption of induction programs as seen elsewhere in this evaluation. The biggest barrier for SBMs and, to a lesser extent SSLs, remains as the limited time available for organizing, facilitating and reporting on CPD activities, including coaching and mentoring teachers, inductions and trainings. Ultimately, the high efficacy and confidence to perform their role as leaders of CPD in their school is complicated by the lack of time, which is reflected in reported changes in attitude as well as in qualitive interviews where SBMs are less positive about their ability to affect change and their school environments as compared to STEM SSLs.

Recommendations

- Changes in individual competences as well as in overall school management highlights the relevance and effectiveness of the Diploma Program in Effective School Leadership for school leaders. VVOB should continue to advocate for the inclusion of program content into pre-service trainings and offer as in-service training as a pre-requisite for newly appointed head teachers and as an optional course for newly appointed deputy head teachers.
- SEIs participated in the Certificate Program in Coaching and Mentoring with the intent to gain skills needed to effectively support school leaders. While the content of the training included leadership components, SEIs may have benefited more from the Diploma Program in Effective School Leadership, which includes content on coaching and mentoring, as they provide significant support to schools in developing their strategic direction and in management. Rather than assigning SEIs to

participate in one course over the other, SEIs could choose which course to participate in depending on their existing skill set and availability of time.

- Evaluation findings highlight the positive school level changes that take place at school with strong support for CPD. As the leaders of CPD within their schools, SBMs have a lot of expectations placed upon them and skills to be effective leaders but lack the time to fully inhabit this role. Only 3% report not teaching a full course load. For CPD to be effective, SBMs need time in their schedule to develop, facilitate and evaluate CPD at their schools.
- In addition to STEM SSLs, other teachers should be offered the opportunity to participate in the Certificate Program to increase school capacity for CPD, reduce reliance on the SBM and ensure that there are trained staff in the event of staff turnover.
- As a UR-CE course, there is evidence that content from both the Diploma and Certificate courses are being incorporated into existing course offerings by trainers. Therefore, if the courses are ultimately not formalized as a component in-service training, course content can be further and more systematically incorporated into existing curriculum or depending on student interest, offered as standalone course offering.
- Explore different modalities to expand course coverage, including offering the online course to mentors and teachers within the same school to create a peer network during the course, with individualized group support offered by at UR-CE tutor, either provided in-person on online.

School Environment

Studies of leadership in schools show that leadership practices that directly target improving instruction, or leading teaching and learning, have a positive impact on teachers' working relationship and ultimately creates a school climate that encourages student achievements (Louis et al., 2010). Through collective actions educators can influence students' results and enhance their achievements, therefore, when teachers work together with a clearly set mission and vision, there can be a lasting and significant impact on learner outcomes (Scharatt, 2018).

Findings from the endline evaluation highlight significant changes in leadership within the schools. School leaders report changes in how they engage staff, away from a top-down approach towards a distributed leadership approach that engages relevant stakeholders in decision making processes. In addition, school leaders better appreciate the roles that others can play in the management of the school and are more likely to delegate authority than prior to their participation in the Diploma Course. As a result of these changes, school leaders report that they find their job easier and are more motivated. Stakeholders also note that changes in management style have led to better communication and understanding of the objectives and decisions made by leadership and are, therefore, more likely to support the school in achieving these objectives and contributing to improved learning environments. Ultimately, these changes have created a better work environment where teachers feel that leadership is approachable and that their ideas are respected and contribute to the success of their schools.

Additionally, quantitative findings illustrate the benefit of having multiple trained actors within the school on confidence and efficacy as well as the school environment. Qualitative findings from both the midline and endline also highlight the successful transfer of learning from the course to practical implementation at the school level is dependent upon having a trained head teacher. Specifically, the midline found that effectiveness was improved by training the head teacher prior to or concurrently with the SBM, SSL and deputy. This ensured that educational actors had the necessary support to effectively implement what was learned during the course.

However, due to high transfer and turnover rates amongst school leadership, gains may be short-lived as new leaders who are not trained are brought in as replacements. Turnover may stall or reverse positive changes seen within schools, particularly with regards to CPD systems. These changes also reduce moral amongst staff as, once again, their voices are not heard or respected by leadership.

Recommendations

- Continue to support school leaders in effective school leadership through mandating the Diploma Program in Effective School Leadership as a requirement for all head teachers and suggested for deputy head teachers.
- When implementing training programs or expanding the program into new districts, train the school leader first or concurrently with other school-based staff.
- Look at how to retain leadership at schools and/or promote from within to ensure that good practices remain in the school and are not lost when head teachers are transferred.

Impact of Covid-19

Covid-19 has had a significant impact on the education sectors. Once schools resumed in-person studies, terms were shortened in order for students to catch-up and make up for lost time in the classrooms. The busy timetable combined with restrictions on gatherings have reduced the CPD opportunities for teachers since March 2021. In addition, both quantitative analysis of survey participants by training cohort and interviews indicate that Covid has limited the ability of participants to practice and reinforce skills learned during the course and that there may be need for further refresher trainings, particularly for those in Cohorts 2 and 3.

However, qualitative findings demonstrate how the skills gained through participation in the Diploma and Certificate courses have helped schools effectively and efficiently respond to the Covid-19 pandemic. PLCs provided school leaders with the ability to share best practices in supporting both student and teacher return to the classroom while CoPs helped teachers to ensure discipline in the classroom.

Recommendations

- Offer online refresher trainings or refresher content trained school-based actors, particularly on content that was more challenging or had the highest fail rates. This could also be in the form of weekly reminders.
- Engage UR-CE trainers or even TTC tutors to support and provide refresher content to head teachers during PLCs

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Annexes

Annex 1: Evaluation Matrix

Evaluation Question	нт	DHT	SBM	STEM SSL	STEM Teacher	New Teacher	SEI	DDE/ DEO	REB	URCE	STEM Students FGD	PST Org FGD
What (longer-term) effects did the program have on the CPD support system for DDEs/DEOs, SEIs, school leaders, SBMs, STEM SSLs and (new) teachers?	x	x	x	x	x	x	x	x	x	x	x	x
CPD support systems for DDE/DEO							х	х				
CPD support systems for SEIs												
CPD support systems for HTs/ School Leaders	x	x						х				
CPD support systems for SBMs			x									
CPD support systems for STEM SSLs				x								
CPD Support systems for Teachers (and NQTs)	x	х	x	x	х	х	х					
Coaching/ Mentoring	x	х	х	х	х	х	х					
CoPs	x	х	x	x	х	х						
Induction Programs	x	x	x	x		х						
What (longer-term) effects did the program and CPD support systems have on the school environment and on the school as a learning organization?	x	x	x	x	x		х		x	x		x
5 Standards of School Leadership	х	х	x	x	х		х	х	х			x
Shared Leadership within the school	х	x	x	x					x		х	x
Shared Leadership with SEI/ DDE/DEO	х	x					х	х	x			
School Culture/School as a learning Organization			x	x	х	х						
Quality of Teaching								х	x		х	х
Support for STEM					х						х	
Confidence in teaching the STEM curriculum					х							
Learning Outcomes							х	х	х			x
Overall, how did the Covid-19 pandemic and the subsequent closure of schools' influence program implementation and effects?	x	x	x	x	x	x	x	x	x	x	x	x
To what extent did the program have differential effects on different sub-groups												
of beneficiaries or schools (females vs. males; rural vs. urban; public vs.	x	x	x	x	×	x	х	x	x	x	×	х
Are any nen effects or unintended/unevpected effects observed? If so what												
explains these findings?	х	x	x	x	x	х	х	x	x	х	x	х
What (longer-term) effects did the program have on competences and on motivation of key education actors?	x	x	x	x	x	x	x	x	x	x		

Annex 2: Endline Survey Demographics Table 31: Endline Survey Participant Demographics

	S	ichool Leade	rs	SEI		SBM			STEM SSL			
		Endline			Endline			Endline		Endline		
	Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total
Total	35	141	176	24	84	108	20	113	133	29	105	134
Head Teachers	29	96	125									
Deputy Head Teachers	6	45	51									
Mean Age (SD)	44.4	43.5	43.7	41.3	43.3	42.9	40.7	37.6	38.1	35.6	35.8	35.7
	(7.4)	(7.0)	(7.1)	(3.8)	(6.1)	(5.7)	(8.5)	(6.3)	(6.7)	(6.6)	(5.5)	(5.7)
Level of Education												
Finished S3	0.0%	0.7%	0.6%	0.0%	0.0%	0.0%	0.0%	0.9%	0.8%	0.0%	1.0%	0.7%
A2 in Education	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	10.0%	6.2%	6.8%	6.9%	1.9%	3.0%
A1 in Education	0.0%	3.6%	2.8%	0.0%	0.0%	0.0%	40.0%	36.3%	36.8%	34.5%	32.4%	32.8%
Bachelor of Education (A0)	97.1%	84.4%	86.9%	75.0%	97.6%	92.6%	50.0%	51.3%	52.6%	58.6%	62.9%	61.9%
Post-Graduate Diploma in Education	0.0%	2.1%	1.7%	0.0%	0.0%	0.0%	0.0%	2.7%	2.3%	0.0%	1.0%	0.7%
Masters	2.9%	9.2%	8.0%	25.0%	2.4%	7.4%	0.0%	0.9%	0.8%	0.0%	1.0%	0.7%
Mean years (SD) working in current role at the school	4.7 (3.4)	5.3 (3.5)	5.1 (3.5)	8.8 (2.1)	8.5 (2.6)	8.6 (2.5)	4.4 (2.2)	5.2 (3.6)	5.1 (3.4)	6.0 (3.4)	7.1 (3.5)	6.9 (3.5)
Mean years (SD working as a head/deputy teacher	9.6 (5.3)	10.1 (5.0)	10.0 (5.1)									
Mean years (SD) working as a teacher at this school												
Mean years (SD) working as a teacher				5.3 (5.5)	7.5 (5.7)	7.0 (5.7)	12.1 (8.6)	8.6 (6.2)	9.1 (6.7)	9.0 (4.4)	9.7 (4.6)	9.5 (4.5)
Which Training Cohort were you in?												
Cohort 1	60.0%	50.4%	52.3%	75.0%	77.4%	76.9%	30.0%	32.7%	32.3%	17.2%	32.4%	29.1%
Cohort 2	28.6%	32.6%	31.8%	25.0%	22.6%	23.2%	45.0%	50.4%	49.6%	69.0%	39.0%	45.5%
Cohort 3	8.6%	14.9%	13.6%	0.0%	0.0%	0.0%	25.0%	16.8%	18.0%	13.8%	28.6%	25.4%
Not reported	2.9%	2.1%	2.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Access to computer/ laptop												
Yes, only for myself	68.6%	75.9%	74.4%				25.0%	16.8%	18.1%	17.2%	30.5%	27.6%
Yes, sharing with others	20.0%	18.4%	18.8%				55.0%	63.7%	62.4%	62.1%	55.2%	56.7%
No	11.4%	5.7%	6.8%				20.0%	19.5%	19.6%	20.7%	14.3%	15.7%
Access to internet												
Yes, at home and in school	57.10%	61.00%	60.20%				5.0%	3.5%	3.8%	34.5%	38.1%	37.3%
Yes, at my school only	31.40%	18.40%	21.00%				65.0%	66.4%	66.2%	31.0%	28.6%	29.1%
Yes, at my home only	8.60%	7.80%	8.00%				5.0%	9.7%	9.0%	20.7%	20.0%	20.2%
No	2.90%	12.80%	10.80%				25.0%	20.4%	21.1%	13.8%	13.3%	13.4%
Which STEM subjects do you teach?												
Mathematics				1						58.6%	53.3%	54.5%
Physics										17.2%	22.9%	21.6%
Chemistry										27.6%	36.2%	34.3%
Biology										31.0%	31.4%	31.4%
Computer Science										3.5%	2.9%	3.0%

	Newly Qualified Teachers								
		Baseline			Endline				
	Female	Male	Total	Female	Male	Total			
Total	70	155	225	66	106	172			
Head Teachers									
Deputy Head Teachers									
	30.5	30.5	30 5 (5 7)	29 5 (5 5)	30.7 (5.2)	30 2 (5 3)			
Mean Age (SD)	(6.4)	(5.5)	50.5 (5.7)	27.3 (3.3)	30.7 (3.2)	50.2 (5.5)			
Level of Education									
Finished S3	0.0%	0.0%	0.0%	1.5%	0.0%	0.6%			
A2 in Education	17.1%	5.8%	9.3%	12.1%	11.3%	11.6%			
A1 in Education	45.7%	53.5%	51.1%	21.2%	33.0%	28.5%			
Bachelor of Education (A0)	32.9%	35.5%	34.7%	60.6%	54.7%	57.0%			
Post-Graduate Diploma in Education	4.3%	3.2%	3.6%	1.5%	0.9%	1.2%			
Masters	0.0%	0.7%	0.4%	3.0%	0.0%	1.2%			
Mean years (SD) working in current role at the school									
Mean years (SD working as a head/deputy teacher									
Mean years (SD) working as a teacher at this school	1.3 (10)	1.3 (1.2)	1.3 (1.10	1.2 (0.7)	1.3 (0.8)	1.3 (0.7)			
Mean years (SD) working as a teacher	3.9 (6.1)	3.5 (5.3)	3.7 (5.5)	3.1 (4.8)	3.0 (3.4)	3.0 (4.0)			
Which group of subjects do you teach?									
STEM	51.4%	48.4%	49.3%	42.4%	53.8%	49.4%			
Humanities	10.0%	13.6%	12.4%	18.2%	17.9%	18.0%			
Languages	22.3%	32.3%	29.8%	37.9%	20.8%	27.3%			
Entrepreneurship	11.4%	11.6%	11.6%	9.1%	9.4%	9.3%			
General Studies	14.3%	11.6%	12.4%	6.1%	5.7%	5.8%			

Table 32: Newly Qualified Teacher Survey Participants at Baseline and Endline

1. School Leaders (Head Teachers and Deputy Head Teachers)

	Female	Male	Total
School Leaders (all)	35 (20%)	141 (80%)	176
Head Teachers	29 (23%)	96 (77%)	125
Deputy Head Teachers	6 (12%)	45 (88%)	51

Table 33: School Leaders Included in Endline Survey

Baseline School Leader: 256 Total 31% Reduction over baseline

Table 34: Status of Baseline School Leader Survey Participants at Endline

Category	Count	% of Total
Exclude: Cohort 4	2	0.8%
Exclude: Dropped out of course	2	0.8%
Exclude: Failed	16	6.3%
Exclude: no longer in education	6	2.3%
Exclude: no longer in education (Retired)	3	1.2%
Exclude: No Record of Training by VVOB	36	14.1%
Exclude: other (changed position)	2	0.8%
Exclude: other (Refused Participation in Endline Survey)	4	1.6%
Exclude: other (Sick at Endline)	1	0.4%
Exclude: Outside of Districts	2	0.8%
Exclude: Passed Away	1	0.4%
Exclude: TTC	5	2.0%
Include in Endline Survey	176	68.8%
Grand Total	256	100.0%

Figure 35: Distribution of School Leaders at Endline






Figure 37: Education of School Leaders Surveyed at Endline



Table 35: School Leader Experience

	Female	Male	Total
Average Years as School Leader at Current School	4.7	5.3	5.1
Average Years as School Leader in Total	9.6	10.1	10.0





2. Sector Education Inspectors

Table 36: SEIs Included in Endline Survey

Table 50. Sels meladed in Endine Survey						
	Female	Male	Total			
SEIs	24 (22%)	84 (78%)	108			

Baseline School Leader: 135 Total 20% Reduction over baseline

Table 37: Status of Baseline SEI Survey Participants at Endline

Category	Count	% of Total
Exclude: Dropped out of course	1	0.7%
Exclude: Failed course	4	3.0%
Exclude: Inconsistency with baseline data	2	1.5%
Exclude: No longer in education	2	1.5%
Exclude: No longer in education (Retired)	1	0.7%
Exclude: No Record of Training by WOB	6	4.4%
Exclude: Other (arrested)	1	0.7%
Exclude: Other (changed position)	6	4.4%
Exclude: Outside of Districts	3	2.2%
Exclude: Passed Away	1	0.7%
Include in Endline Survey	108	80.0%
Grand Total	135	100.0%

Figure 39: Distribution of School Leaders at Endline





Figure 40: Age Distribution of School Leaders Surveyed at Endline (43 Years Average)

Figure 41: Education of SEIs Surveyed at Endline



Table 38: SEI Experience

	Female	Male	Total
Average Years as SEI	8.8	8.5	8.6
Average Years as Teacher before becoming an SEI	5.3	7.5	7.0





3. SBMs

Table 39: SBM Included in Endline Survey

	Female	Male	Total
SBMs	20 (15%)	113 (85%)	133

Baseline SBM: 232 Total 43% Reduction over baseline

Table 40: Status of Baseline SBM Survey Participants at Endline

Category	Count	% of Total
Exclude: Cohort 4	13	5.6%
Exclude: Duplicate	1	0.4%
Exclude: Failed	7	3.0%
Exclude: no longer in education	3	1.3%
Exclude: No Record of Training by WOB	57	24.6%
Exclude: other (arrested)	1	0.4%
Exclude: other (changed position)	2	0.9%
Exclude: other (Refused Participation in Endline Survey)	1	0.4%
Exclude: Outside of Districts	7	3.0%
Exclude: TTC	5	2.2%
Exclude: Unknown, unable to verify person	2	0.9%
Include in Endline Survey	133	57.3%
Grand Total	232	100.0%

Figure 43: Distribution of SBMs at Endline





Figure 44: Age Distribution of SBMs Surveyed at Endline (38 Years Average)

Figure 45: Education of SBMs Surveyed at Endline



Table 41: SBM Experience

	Female	Male	Total
Average Years as Teacher at Current School	8.0	7.6	7.7
Average Years as SBM	4.4	5.2	5.1
Average Years as a Teacher before becoming an SBM	12.1	8.6	9.1



Figure 46: SBM Training Cohort

4. STEM SSLs

Table 42: SBM Included in Endline Survey

	Female	Male	Total
STEM SSLs	29 (22%)	105 (78%)	249

Baseline STEM SSLs: 249 Total 46% Reduction over baseline

Table 43: Status of Baseline SSTEM SSL Survey Participants at Endline

Category	Count	% of Total
Exclude: Cohort 4	22	8.8%
Exclude: Dropped out of course	3	1.2%
Exclude: Duplicate	3	1.2%
Exclude: Failed	8	3.2%
Exclude: no longer in education	7	2.8%
Exclude: No Record of Training by VVOB	51	20.5%
Exclude: other (arrested)	2	0.8%
Exclude: other (changed position)	2	0.8%
Exclude: other (Unable to track down at Endline)	1	0.4%
Exclude: Outside of Districts	7	2.8%
Exclude: Passed Away	1	0.4%
Exclude: TTC	5	2.0%
Exclude: Unknown, unable to verify person	3	1.2%
Include in Endline Survey	134	53.8%
Grand Total	249	100.0%

Figure 47: Distribution of STEM SSLs at Endline





Figure 48: Age Distribution of STEM SSLs Surveyed at Endline (36 Years Average)

Figure 49: Education of STEM SSLs Surveyed at Endline



Table 44: STEM SSL Experience

	Female	Male	Total
Average Years Teaching at Current School	6.0	7.1	6.9
Average Years as Teacher in Total	9.0	9.7	9.5





5. Newly Qualified Teachers

Table 45: NQTs Included in Endline Survey				
	Female	Male	Total	
NQTs	66 (38%)	106 (62%)	172	

Baseline NQTs: 227 Total 24% Reduction over baseline

Figure 51: Distribution of NQTs at Endline





Figure 52: Figure 45: Age Distribution of NQTs Surveyed at Endline (30 Years Average)

Figure 53: Education of NQTs Surveyed at Endline



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	Female	Male	Total
Average Years Teaching at Current School	1.2	1.3	1.3
Average Years as Teacher in Total	3.1	3.0	3.0

6. Schools at endline:

		Total Sabaala				
	1	2	3	4	5	
Total schools	55	86	67	43	3	254

Annex 3: Endline Qualitative Data Collection Demographics

	Parent, Student	Teacher Repr	resentatives	STEM Students					
	Female	Male	Total	Female	Male	Total			
Total	39	39	78	38	40	78			
District									
Gicumbi	4	2	6	3	3	6			
Gisagara	2	4	6	2	4	6			
Kamonyi	3	3	6	3	3	6			
Karongi	2	3	5	2	3	5			
Kayonza	2	3	5	2	3	5			
Musanze	3	3	6	3	3	6			
Ngororero	3	3	6	3	3	6			
Nyabihu	2	4	6	2	4	6			
Nyamasheke	3	3	6	3	3	6			
Nyanza	3	3	6	3	3	6			
Nyaruguru	3	0	3	3	0	3			
Rubavu	4	2	6	4	2	6			
Rusizi	1	4	5	1	4	5			
Rwamagana	4	2	6	4	2	6			

Table 47: Focus Group Discussion Participant Demographics

Table 48: In-Depth Interview Participant Demographics

	He	ad Tea	d Teacher Deputy Head SBM		STEM SSL			STEM Teacher			NQT			SEI			DDE/DEO							
	F	М	Т	F	М	Т	F	М	т	F	М	Т	F	М	Т	F	М	т	F	М	Т	F	М	т
Total	7	19	26	2	11	13	2	12	14	3	11	14	6	8	14	3	11	14	2	10	12	0	13	13
District																								
Gicumbi	1	1	2					1	1		1	1		1	1		1	1		1	1		1	1
Gisagara	1		1		1	1		1	1		1	1	1		1		1	1		1	1		1	1
Kamonyi	1		1		1	1	1		1		1	1		1	1		1	1		1	1		1	1
Karongi	1	1	2		1	1		1	1	1		1		1	1		1	1		1	1		1	1
Kayonza		2	2		1	1		1	1		1	1		1	1		1	1					1	1
Musanze	1	1	2		1	1		1	1		1	1		1	1		1	1		1	1		1	1
Ngororero		2	2		1	1		1	1		1	1	1		1	1		1		1	1		1	1
Nyabihu	1	1	2		1	1		1	1		1	1		1	1		1	1		1	1		1	1
Nyamasheke		2	2		1	1		1	1	1		1	1		1		1	1	1		1		1	1
Nyanza		2	2		1	1		1	1		1	1	1		1		1	1		1	1			
Nyaruguru	1	1	2	1		1		1	1	1		1		1	1		1	1					1	1
Rubavu		2	2		1	1	1		1		1	1	1		1		1	1		1	1		1	1
Rusizi		2	2		1	1		1	1		1	1	1		1	1		1		1	1		1	1
Rwamagana		2	2	1		1		1	1		1	1		1	1	1		1	1		1		1	1
Age																								
20-24																	1	1						
25-29										1	1	2				2	7	9						
30-34		1	1				1	7	8		4	4	2	3	5	1	3	4						
35-39	2	5	7	1	3	4	1	4	5	2	5	7	4	1	5					2	2			
40-44	2	5	7		5	5		1	1		1	1		1	1				2	5	7			
45-49	3	6	9	1	2	3														2	2			
50-54		2	2		1	1														1	1			
55-59														3	3									
Level of Education																								
Finished S3																								
A2 in Education								1	1							1	3	4						
A1 in Education							1	5	6		2	2	2	4	6	1	1	2						
Bachelor of Education (A0)	7	18	25	2	11	13	1	6	7	3	8	11	2	3	5	1	7	8	2	10	12			
Post-Graduate Diploma in Education											1	1	1	1	2									
Masters		1	1										1		1									
Which Training Cohort were you in?																								
Cohort 1					8	8	2	10	12	3	4	7							2	10	12		5	5
Cohort 2				2	1	3		2	2		7	7											4	4
Cohort 3					2	2																		
Not reported																							4	4

Annex 4: 5 Standards of School Leadership Composite Score and Findings

0		
Standard 1	Creating strategic direction for the school	 Generate enthusiasm for a shared vision of the school Shape the operational policies and procedures that are necessary to manage your school Influencing decisions about the school made at a higher administrative level
Standard 2	Leading learning	 Create a positive learning environment in your school Facilitate student learning in your school Raise student achievement on standardized tests Developing strategies for raising learning achievement
Standard 3	Leading teaching and training	Motivate teachersMonitoring the quality of teaching and learning in the school
Standard 4	Managing the school as an organization	 Manage change in your school Handle the time demands of the job Handle the paperwork required of the job Maintain control of your own daily schedule Prioritize among competing demands of the job Cope with the stress of the job Developing and implementing a school improvement plan Managing school resources
Standard 5	Involving parents and the local community in the school	 Promote the prevailing values of the community in your school Engaging parents and the community to improve the quality of the school

Figure 54: Questions included in Analysis of the Five Standards of School Leadership

At baseline, Cohort 1 participants had already participated in the Diploma Program, however their baseline scores were lower than those in Cohorts 2 and 3 (with 83% of both categories scoring high competency at baseline). While all three cohorts increased competency scores at endline, those in Cohort 1 exhibited the greatest increase in those reporting high competency (20%) as compared to Cohorts 2 (17%) and Cohorts 3 (13%). These findings suggest that Cohorts 2 and 3 were subject to the **Dunning-Kruger effect** and that there is a time component required for improved competency.

Figure 56: School Leader Competency for the 5 Standards of School Leadership at Baseline and Endline



Figure 55: School Leader Competency by Cohort for the 5 Standards of School Leadership at Baseline and Endline



Source: School Leader Quantitative Survey

Source: School Leader Quantitative Survey

Annex 5: World-Related Basic Need Satisfaction Scale for Newly Qualified Teachers

Table 49: Work-Related Basic Need Satisfaction Scale for Newly Qualified Teachers

	Average at	Average	
To what extent do you agree with the following statements?	Baseline	at Endline	Average
To what extend do you agree with the following statements:	(Standard	(Standard	Change
	Deviation)	Deviation)	
Competence Sub-Scale	4.4 (0.48)	4.5 (0.38)	0.16
I doubt whether I am able to execute my job properly (<i>REVERSE SCORED</i>)	4.2 (0.99)	4.6 (0.70)	0.33
I am good at the things I do in my job	4.3 (0.83)	4.5 (0.65)	0.24
I feel competent at my job	4.5 (0.63)	4.7 (0.52)	0.13
I really master my tasks at my job	4.5 (0.70)	4.6 (0.63)	0.11
I don't really feel competent in my job (REVERSE SCORED)	4.6 (0.88)	4.7 (0.80)	0.09
I have the feeling that I can even accomplish the most difficult tasks at work	4.2 (0.67)	4.3 (0.70)	0.07
Autonomy Sub-Scale	3.8 (0.50)	3.9 (0.42)	0.05
I feel free to do my job the way I think it could best be done	4.2 (0.85)	4.4 (0.61)	0.23
If I could choose, I would do things at work differently (REVERSE SCORED)	2.7 (1.25)	2.9 (1.22)	0.22
The tasks I have to do at work are in line with what I really want to do	4.1 (0.78)	4.3 (0.64)	0.14
I feel like I can be myself at my job	4.4 (0.70)	4.5 (0.54)	0.13
In my job, I feel forced to do things I do not want to do (REVERSE SCORED)	4.3 (0.96)	4.3 (0.91)	0.02
At work, I often feel like I have to follow other people's commands (<i>REVERSE SCORED</i>)	3.1 (1.35)	2.7 (1.31)	-0.45
Relatedness Sub-Scale	4.5 (0.45)	4.6 (0.33)	0.13
Some people I work with are close friends of mine	4.1 (0.94)	4.4 (0.59)	0.24
I don't really feel connected with other people at my job (REVERSE SCORED)	4.5 (0.71)	4.7 (0.45)	0.20
At work, I can talk with people about things that really matter to me	4.5 (0.63)	4.6 (0.57)	0.11
I don't really mix with other people at my job (REVERSE SCORED)	4.6 (0.51)	4.7 (0.61)	0.09
At work, I feel part of a group	4.5 (0.72)	4.6 (0.65)	0.09
I often feel alone when I am talking with my colleagues (REVERSE SCORED)	4.5 (0.75)	4.6 (0.77)	0.08
Source: NQT Quantitative Survey.	-	-	