Credit: Laterite.

Teacher voices on teaching quality and learning outcomes in Rwanda

October 2022

Introduction

Research by Laterite and the Research for Equitable Access and Learning (REAL) Centre at the University of Cambridge for the Mastercard Foundation's Leaders in Teaching programme revealed important insights about secondary teaching and learning in Rwanda. These insights come from data collected in early 2020 on a wide range of subjects relating to teaching quality and student learning.

In June 2022, we shared these findings with education professionals to gather their feedback and recommendations on how to address the challenges identified in the research. This involved five events across four provinces with a total of 122 Rwandan secondary school teachers, school leaders and Secondary Education Officers who participated in the 2020 research. In September 2022, we held an event with policy actors and implementing partners to discuss how the teachers' recommendations could be actioned to strengthen secondary teaching and learning in Rwanda.

The next section summarises the findings from the 2020 data, and describes teachers' reflections on the causes of the findings. The following section summarises the teachers' recommendations on how education policy and practice can address the findings. Whilst international evidence supports some of the recommendations we describe, they come from the teachers and do not necessarily reflect the views of Laterite, the REAL Centre or the Mastercard Foundation. The final section outlines policy-makers' response to the teacher recommendations, and priorities for STEM and secondary teaching and learning in Rwanda.

Schools involved in Leaders in Teaching 2020 research

358 schools in our sample

14 districts of Rwanda (does not include Kigali)

350 school leaders & 1,820 STEM teachers

4,000+ Secondary 3 students

91% of schools are in rural areas

13% are schools of excellence

Location
▲ Rural
● Urban

School of excellence
● Yes
● No

Leaders in Teaching districts
☐ Yes
☐ No
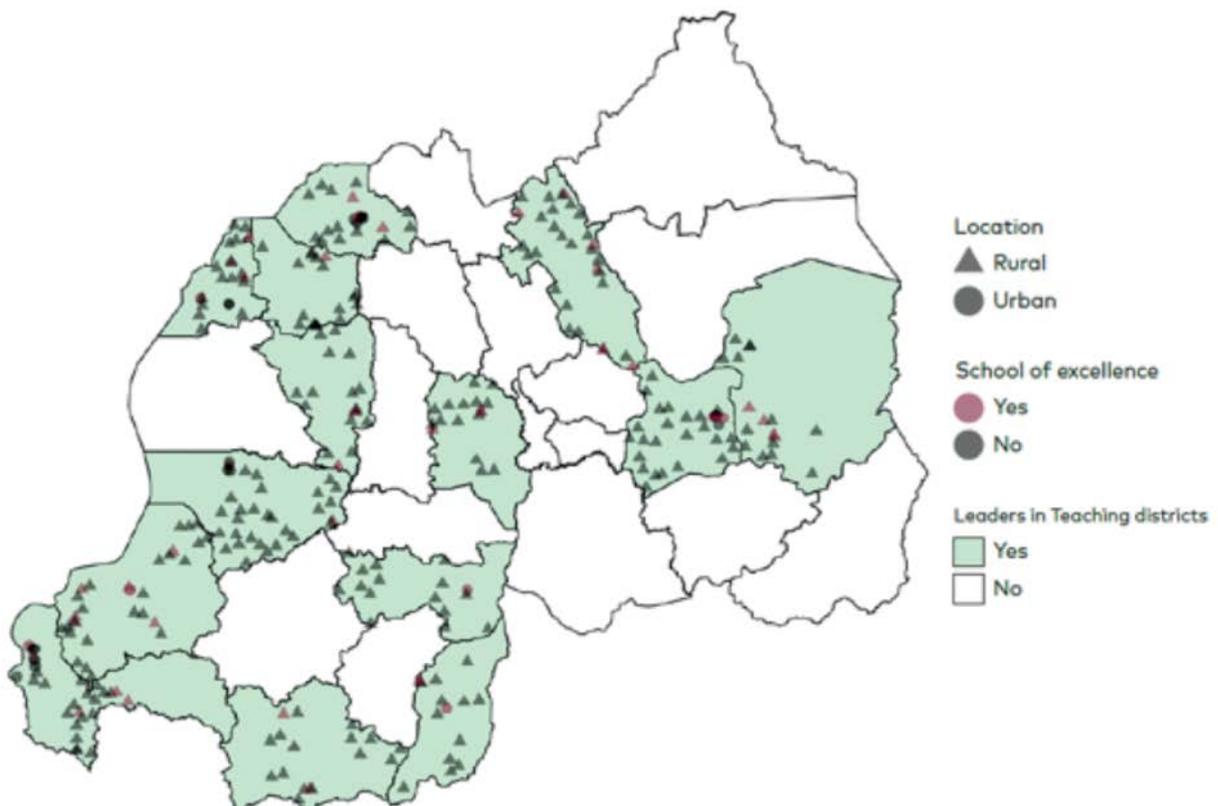
Summary of 2020 findings from Leaders in Teaching research

This section summarises the findings from the 2020 round of data collection on three topics:

1. **the link between students' characteristics and their learning outcomes and trajectories,**
2. **gender inequalities among Rwandan school leaders and teachers,**
3. **what makes a good teacher and positive teaching practices.**

Topic 1: The link between students' characteristics and their learning trajectories

The students with the top numeracy assessment scores and most advantaged backgrounds are concentrated in schools of excellence.

SCHOOLS OF EXCELLENCE

50%

Average numeracy assessment score at the start of 2020
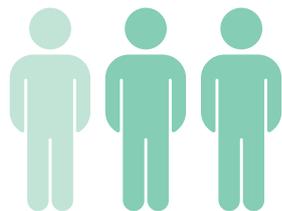
1 in 3 students are from the wealthiest fifth of households in our sample

OTHER SCHOOLS

39%

Average numeracy assessment score at the start of 2020
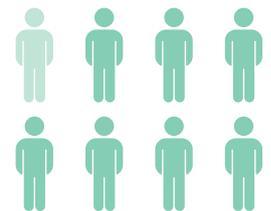
1 in 8 students are from the wealthiest fifth of households in our sample

Note that student numeracy assessments were carried out at the start of the 2020 school year, before students had covered the Secondary 3 curriculum. It is therefore expected that scores would be low at this point.

How do students get allocated to schools of excellence?

Students complete national primary leaving examinations in Primary 6

> The highest performing students are placed in schools of excellence

> Other students who pass their national exams are placed in regular schools

> Students who did not pass cannot proceed to secondary school and must repeat the grade

This system makes it difficult for students who are less advantaged, such those from lower-income backgrounds or living with a disability, to be allocated to the best-resourced schools.

From Secondary 3, boys outperform girls in mathematics - even though more girls are enrolled

In Secondary 3 there are

5 girls for every **4 boys**

However, girls are more likely than boys to be enrolled in low-income schools
Students in low-income schools: 59% girls, 41% boys
Students in high-income schools: 51% girls, 49% boys

Boys outperform girls, but the gap is small:

Average S3 numeracy assessment scores at the start of 2020

Girls **37%**

Boys **39%**

This gap equates to boys answering
1 more question correctly
than girls on average (in a test of 30 questions)

The gender gap is more pronounced in regular and rural schools, and where students are from poorer backgrounds.

Numeracy assessment scores (start 2020)

	Schools of excellence	Other schools	Urban schools	Rural schools	Wealthiest fifth of households	Least wealthy fifth of households
Female	48%	35%	45%	36%	44%	34%
Male	48%	38%	45%	38%	46%	38%
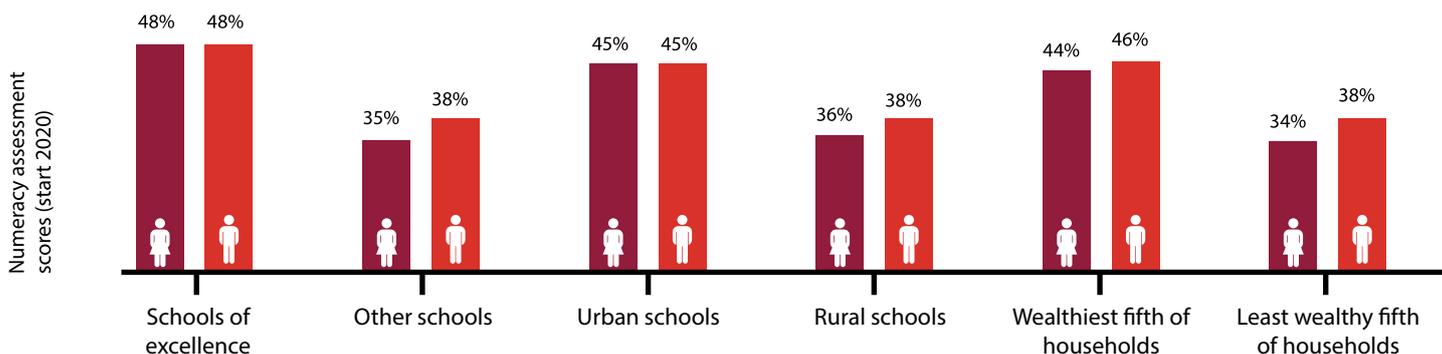
Average secondary 3 numeracy assessment scores decrease with student age

Numeracy assessment scores (start of 2020 school year)

Expected age for Secondary 3

- 14-15 (expected age): 43%
- 16
- 17
- 18
- 19: 31%

Student age
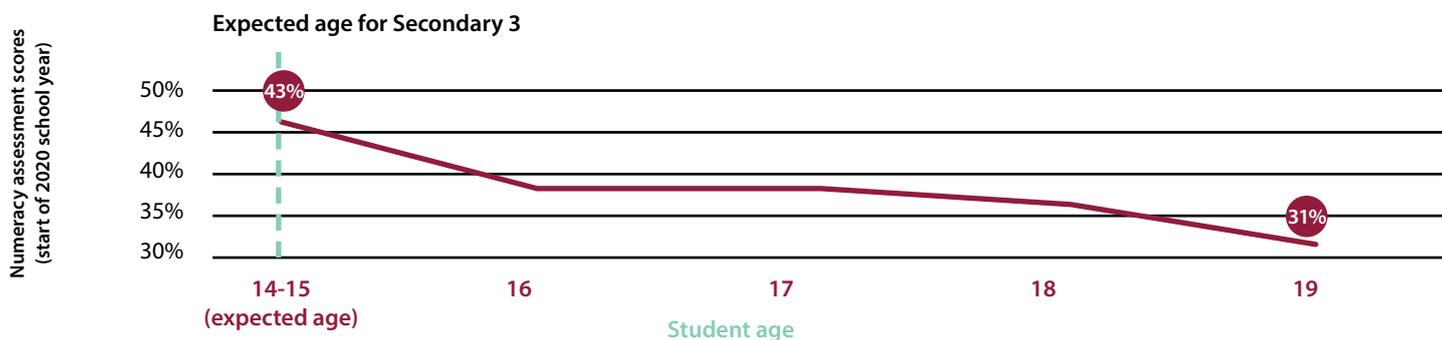
This is because students who are older than expected for their grade have repeated more often than their peers, or have missed periods of scholing due to dropout and re-entry.

Students from less wealthy backgrounds, who do not perform as well at school as their wealthier peers, are also more likely to be overaged

56% Overaged students from the least wealthy fifth of households in our sample

31% Overaged students from the wealthiest fifth of households in our sample

According to teachers, what causes these inequalities in learning outcomes?

- Cultural biases can hold girls back from studying STEM subjects in upper secondary, as these are typically seen as male subjects.
- Females are charged with additional housekeeping roles not given to males to a similar extent, which reduces their time for revising their lessons and completing homework.
- Many schools of excellence are also boarding schools, which allow students more uninterrupted time for studying, but come with higher fees. This is a barrier to students from low-income backgrounds, who tend to also be from rural areas. These students are also more likely to be overaged.

> **"Girls do not have as much time as boys for revision due to household chores. If girls were to be provided the same amount of time as boys, they would perform at the same level."**
> -Male teacher

Topic 2: Gender inequalities among Rwandan school leaders and teachers

There are large gender disparities in the number of school leaders and STEM teachers

1 in 5 school leaders

1 in 4 STEM teachers
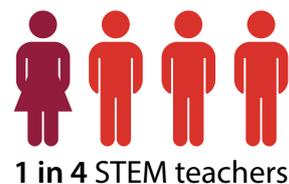
Prior to the pandemic, female teachers were less likely to have taught or taken an online course, or to have received training on e-learning

1 in 10 female teachers

2 in 10 male teachers
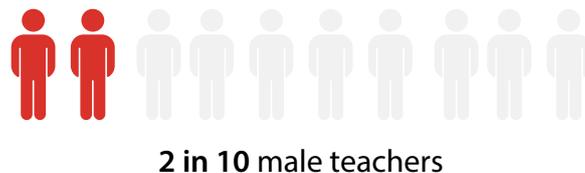
In classroom observations, female teachers were more likely to support student autonomy and encourage participation

Teachers who supported student autonomy in the classroom by giving students choices, roles in the classroom, and chances to volunteer:

70%
Female teachers

58%
Male teachers

Classrooms where most students voluntarily participated in learning:

27%
Female-led classes
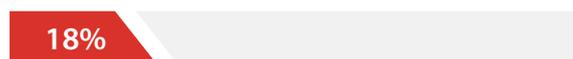
18%
Male-led classes

According to teachers, what causes these gender inequalities in STEM teaching and school leadership?

- Fewer females study STEM combinations, which limits the pipeline of female students becoming STEM teachers.
- There are no financial incentives which would motivate a teacher – whether male or female - to teach STEM over humanities for instance. STEM is perceived as a hard topic to study, especially by girls and women, and a demanding one to teach given the requirement to extensively prepare for lessons including experiments. Together with additional demands on females' time in the household, this results in it being less likely that a female would take on STEM studies and eventually become a STEM teacher.
- Cultural biases, which can reinforce beliefs that leadership roles and science subjects are for men, can discourage women from pursuing school leadership roles.
- Female teachers tend to shoulder more family responsibilities than their male counterparts, so cannot accept teaching positions that are located far from their families.
- Female teachers are less likely than male teachers to own and regularly use ICT devices such as laptops, and are less confident using them.

Topic 3: What makes a good teacher?

Teachers see their role as working towards the following:

Encouraging good academic performance

Fostering cultural values

Helping students to become good citizens, apply their learning, and get jobs

> "If the teacher was able to transform students, they should be able to apply what they learned in real life"
> – Trainee teacher

Almost all teachers demonstrated the following strengths in the classroom:

96%
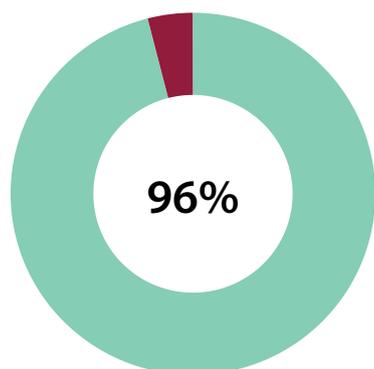
Used time constructively

82%
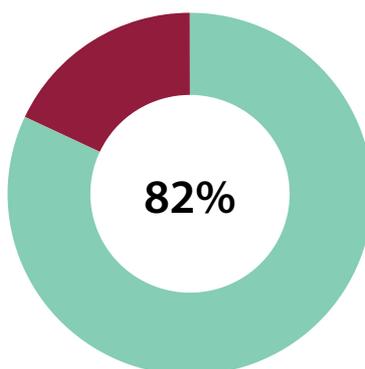
Students were found to be on task

95%
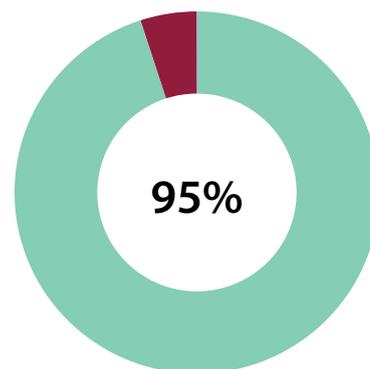
Set clear behavioural expectations for students

Positive teaching practices that should be more widely practiced, only a few teachers used these good practices in the classroom:

Identifying student successes or positively acknowledging good behaviour

Giving students choices during lessons

Acknowledging student efforts

Why give positive acknowledgement?

✓ Helps develop student confidence, self-regulatory skills, interest in a subject, and motivation.

Why give students choices?

✓ Helps them engage in learning and decision-making, which is important for adolescents as they become more independent.

Why acknowledge student efforts?

✓ Supports student perseverance and motivation in the classroom.

"He or she should encourage (students) to be participative. In a classroom, there are different students whereby some of them are understanding but you realise that they are timid to talk. Therefore, it is a teacher's responsibility to encourage the timid student to talk regardless of what is right or wrong."

- Experienced teacher

According to teachers, why are some positive classroom practices not used more frequently?

- Teachers feel capable of applying good classroom practices as identified by the evidence shared with them, but struggle to find the time to use these practices given that large class sizes mean limited time to spend on following up with students individually.

- Teachers already feel rushed to deliver the curriculum in the allotted teaching time per period (40 minutes), and find that the content in the curriculum is too advanced for the students' grade levels.

Recommendations from teachers for education policy

This section summarises the recommendations from teachers who had participated in the research on how education policy and practice can address the findings.

> "[We recommend] … increasing the number of CPD [continuous professional development] provided to teachers, especially STEM teachers, and implementing peer-learning at the sector or district level so that teachers that deliver the same subjects learn from each other … [and] … providing more opportunities for practices in laboratories, similarly to what the African Institute for Mathematical Sciences is doing." – Male teacher

To address inequities between schools of excellence and regular schools:

- Promote collaboration between better- and lesser-equipped schools by encouraging study trips for students in regular schools to schools of excellence for practical exercises.

- Provide all schools with equitable and sufficient levels of equipment and teaching & learning materials.

- Reframe existing procedures for allocating students to schools of excellence to give all children an equitable chance of being placed in these institutions, by providing scholarships to girls, especially in rural areas, to enable them to study STEM subjects in schools of excellence.

To promote girls participating in STEM at school:

- Introduce initiatives that promote females in STEM so they can serve as role models for young girls. This can include:
  - Bringing women role models working in STEM into classrooms or mathematics clubs as invited speakers to share their experience and motivate girls
  - Using the science hour to listen to radio messages from successful women who studied mathematics and science to encourage girls to pursue the same

- Motivate girls to study STEM subjects by giving public acknowledgement of girls who succeed in mathematics and science, and/or providing them with scholarships or school materials.

- Provide training for teachers and parents on the equal value of girls' education, recognising their key role in girls' education.

- Give teachers more training on gender-sensitive pedagogies in the classroom, such as giving girls and boys the same opportunities to lead study groups or take on responsibilities in class.

- Encourage parents to distribute household chores equally between boys and girls to give them time to study, and to encourage girls to study mathematics and science.

To address the gap among teachers in online teaching and learning:

- Equip all schools with ICT tools and laboratory materials.

- Support this with intensified training about ICT tools on an ongoing basis so that teachers have up to date skills – with priority given for female STEM teachers, who should be given tailored ICT training to boost their confidence in this area.

To encourage and support women to teach STEM and pursue leadership roles:

- Organise national campaigns about gender equality to sensitise the public to accepting female leaders at the school-level, and show that leadership roles are not gender-specific.

- Prioritise placing female STEM teachers and school leaders in schools close to their families so they can better balance their teaching and caregiving responsibilities.

- Support teachers' professional development by providing training opportunities that are close to their areas of residence.

- School leaders should encourage female teachers to pursue higher qualifications which would give them a competitive advantage in applying for leadership roles.

- Consider ways to ensure gender diversity in school leadership, such as prioritising the hiring of a female deputy when there is a male head teacher.

To create a supportive teaching environment that enables quality learning:

- In order to allow sufficient time to cover the curriculum follow up with students with different abilities:
  – Revise the curriculum so that teachers can cover the material in the time allocated
  – Revise the teaching timetable to allocate more time to lesson preparation and marking
  – Revisit the balance of teachers' administrative duties so they can focus on their teaching responsibilities.

- Give clear guidelines about how teachers can address inappropriate behaviour by students in the classroom.

- Increase teachers' salaries and the capitation grant to align with costs of living and price increases *(Note: this recommendation came before the August 2022 Government announcement that teacher pay will be increased)*

- Build more classrooms in schools to avoid having classes with more than 30 students, so that teachers can follow up on slow learners and have time to mark homework.

- Ensure schools have sufficient electricity, internet in smart classrooms, textbooks, and laptops for teachers and students to assist in teaching and learning.

- Build refectories in schools without these facilities so that teachers and students have dedicated areas to eat their meals.

- Increase the government's participation in school meal programmes, guaranteeing that all children have the necessary nutrition for them to be able to learn. Students from low-income households often miss classes or drop out of school as they are unable to pay the school feeding fees. Government support for low-income students would help address this situation.

- Have counsellors and staff in charge of counselling and career guidance in schools. This is especially important for students at risk of dropping out, as teachers do not always have time to provide them with the one-on-one support they need. Another option would be to have dedicated specialists in schools who could teach specific classes or advise staff regularly about teaching and learning for slow learners and students with educational needs.

Recommendations from policy and programme representatives

This section summarises discussions from a policy event the researchers held with policy actors and implementing partners about the recommendations from teachers. The event was attended by representatives from the Ministry of Education (MINEDUC), the Rwanda Basic Education Board (REB), the National Examination and School Inspection Authority and the Rwanda Information Society Authority; the Mastercard Foundation; Leaders in Teaching implementing partners including Inspire, Educate and Empower Rwanda (IEE), UNICEF, VVOB, the African Institute for Mathematical Sciences (AIMS) and Carnegie Mellon University Africa; and secondary school STEM teachers, school leaders and sector education officers.

The event offered a unique opportunity for these education practitioners to speak directly to education policy-makers and programme implementing partners. The participants explicitly noted the importance of listening to teachers' voices to inform policy choices that reflect what teachers find in their classrooms.

Policy-makers, teachers and implementing partners broadly agreed with the teachers' recommendations, and identified the following recent plans, policies and programmes to address them:

- MINEDUC increased teachers' salaries in August 2022 and is providing $5 million in financial support to the Teachers' Savings and Credit Cooperative "Umwalimu Sacco" to improve the welfare of teachers and curb attrition.

- MINEDUC is supporting students as well as teachers. Those studying to become teachers benefit from a 50% discount in their tuition fees. Those who have been in the profession for a while benefit from scholarships at the University of Rwanda to upgrade their qualifications.

- MINEDUC, in collaboration with the Ministry of Infrastructure, is working towards having all schools connected to electricity by 2024 as part of the universal coverage plan.

- REB is preparing a national campaign to sensitise young women to get into STEM teaching and school leadership roles.

- REB will soon open a Regional Centre for STEM and an Africa Centre for School Leadership, which will open up opportunities to study and learn from research affecting STEM teachers, school leaders and students.

- The Mastercard Foundation, in partnership with the Forum for African Women Educationalists (FAWE), is supporting girls from vulnerable backgrounds to get an education through scholarships.

- Inspire, Educate, Empower Rwanda (IEE) is attracting young women who studied science to join the teaching profession through its Teaching Assistantship Programme.

Teachers, school leaders and sector education officers attended research dissemination events in June 2022. Image credit: Laterite

Policy-makers, Leaders in Teaching partners, education practitioners and researchers joined the policy event in September 2022 to discuss the teachers' recommendations. Image credit: Mastercard Foundation

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