

# Final reflections

Achievements and lessons learned

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## iMlango

KENYA

APRIL 2017 – MARCH 2021



Girls'  
Education  
Challenge

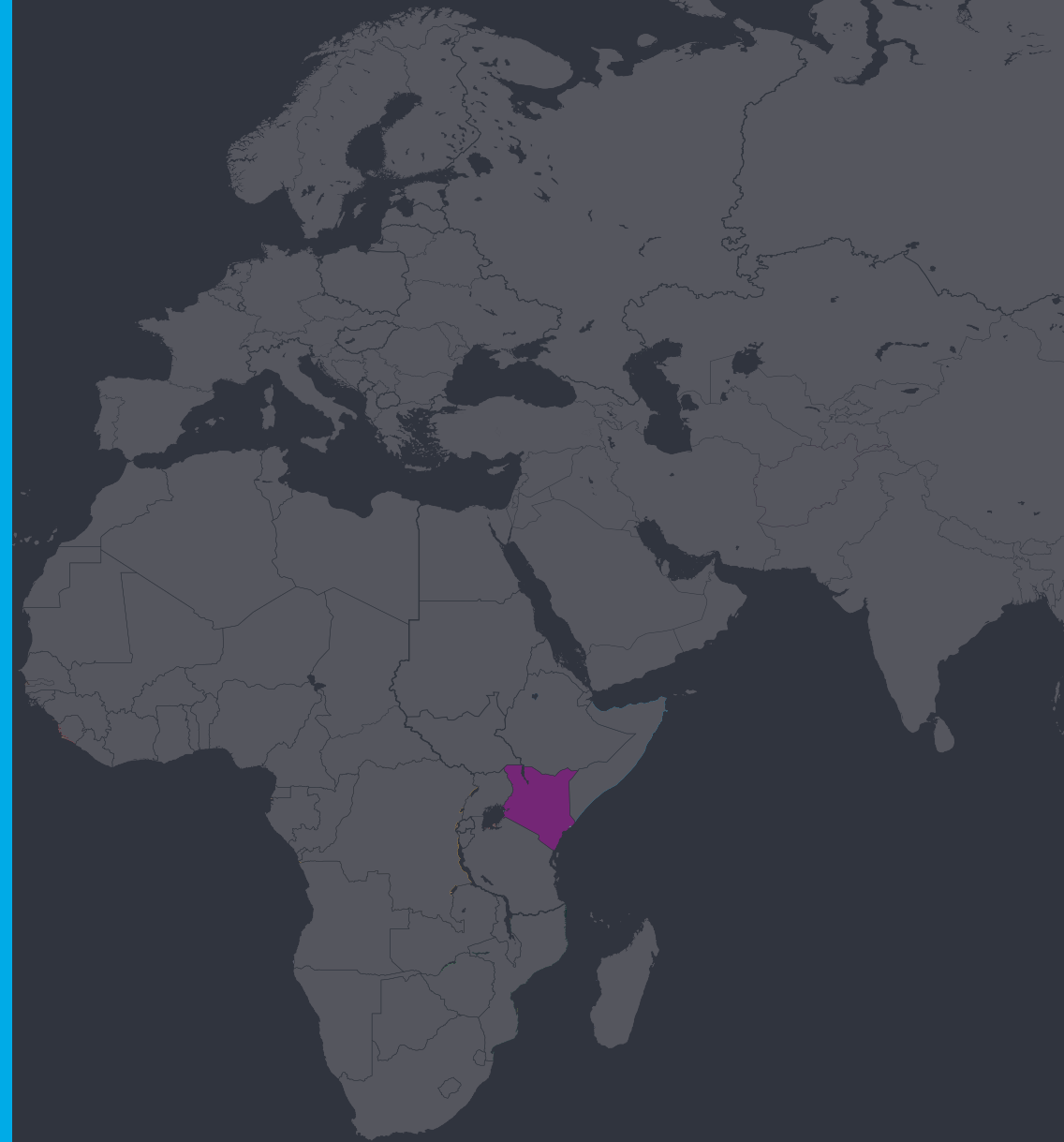


sQuid

camara  
education

**“So, we had a girls’ club and where we discussed issues. The girls give their views and what they have learned. It was so encouraging to them and raised their esteem. It made the girls aware of themselves and they could express themselves freely. Even today they express themselves freely about what they are doing at home and what they are encountering in life. They are free to explain.”**

Teacher



● Kenya

# What did the iMlango project do?

**The iMlango project was a technology-driven project, investing in girls' education in Kenya at the primary and secondary school level. The project was delivered by a consortium of partners, led by global satellite operator Avanti Communications, alongside sQuid (the digital transactions and eLearning solutions provider), Whizz Education (a simulated maths tutoring provider) and Camara Education (a provider of hardware).**

The project was operational in four Kenyan counties: Kajiado, Kilifi, Makueni and Uasin Gishu. These regions were selected on the basis that they represent a cross-section of the type of situations driving marginalisation of girls in the more rural regions of Kenya. The majority of the schools were located in rural settings, with some schools situated in peri-urban regions. Their selection was based on factors including poverty rates, attendance statistics and low learning achievements for girls. Overall, the project was implemented in 205 primary schools and a further 40 secondary schools, and was estimated to have reached 99,190 girls.

iMlango identified common barriers to girls' education in these regions. School-based challenges included poor quality teaching and learning environments, whilst communities were also found to face financial barriers such as unemployment and poverty and an inability to afford tuition fees. Other factors identified to be key barriers to girls' education were a lack of perceived value of education and aspirations, entrenched social attitudes surrounding girls' schooling and dropout rates as a result of teenage pregnancies and early marriages.

iMlango was designed to achieve three overarching outcomes: learning (numeracy and literacy), transition and sustainability. Key project objectives included improved primary school attendance and quality of teaching (using ICT), girls' learning progress, improved life skills and increased use of project data to inform decision-making.

The Theory of Change sought to support improvements to girls' learning by providing

- a) teaching and learning interventions focussed on the immediate need for higher quality teaching and better learning content.
- b) interventions designed specifically to challenge the gendered expectations which act to limit the academic performance, aspirations and progression of the most marginalised girls.



These project activities included:

- 1. Digital learning content, connectivity and monitoring.** Via the provision of high-speed satellite broadband connectivity (supplied by [Avanti](#)) and IT resources including school computer labs and projectors, iMlango was able to facilitate online learning. This was further achieved through the project's digital learning content: individualised simulated Maths-Whizz tutoring and digital whole-class maths content (provided by [Whizz Education](#)) and reading content for literacy (produced by Longhorn). The digitised nature of the maths content further enabled real-time project monitoring and measurement.
- 2. Life skills and support for girls' education.** To support girls' education, iMlango invested in girls' clubs (run by [Impact\(ED\)](#), formerly the Discovery Learning Alliance). These aimed to develop life skills and increase the self-esteem of girls to engage more in their lessons and other school activities. Alongside this, the project developed a Gender Action Plan, which included training for school staff and community engagement in activities encouraging girls' attendance at school.
- 3. Continuous professional development and support for teachers.** iMlango provided continuous training in order to develop best practices for integrating ICT into lessons. In-field teams also provided leadership guidance to headteachers and were available to ensure timely technical maintenance and support for the digital aspects of the project.
- 4. Attendance monitoring and support.** The project facilitated the increased monitoring of attendance rates, through the use of electronic smart cards which students used to register their attendance at school each day (provided by [sQuid](#)) and cardless attendance monitoring methods. This, coupled with the provision of microloans to support families to send their daughters to school, aimed to encourage girls' retention and progression at school.
- 5. Coordinated child protection approaches.** iMlango linked schools with local safeguarding referral systems in order to facilitate child protection across the project's participating schools.

The project worked at four levels: the individual (directly with girls and indirectly with boys), the school, the community and the system. The assumption was made that the interconnectedness of these four areas should ensure long-lasting results that directly affect the girls and other participants and stakeholders involved in the project.

**“Technology also brings very live issues to the learner. For example, they can watch a story instead of reading alone, they can watch a story, and read, and understanding goes up. They also access a variety of materials that improve their literacy and numeracy.”**

Government official



# How did the iMlango project adapt during COVID-19?

**The first confirmed case of COVID-19 was announced in Kenya on March 13, 2020 and two days later the Kenyan Government closed all schools and colleges nationwide, disrupting nearly 17 million learners countrywide. Schools remained closed and formal examinations were cancelled until a phased reopening. In-school teaching returned in October 2020 for students from primary and secondary schools, so that they could prepare for the Kenya National Examinations Council (KNEC) assessments in March 2021. Other students returned in January 2021, to continue the academic year.**

During the school closures, the Government of Kenya (through the Ministry of Education and in collaboration with partners) rolled out an alternative remote and digital learning programme through radio and TV broadcasts. There were also associated initiatives established such as [Keep Kenya Learning](#). Digital attempts to provide uninterrupted learning for learners while schools were closed were inevitably hampered by challenges relating to internet access and electricity reliability, particularly for the most marginalised communities.

School closures also affected the implementation of iMlango, since class-based teaching and learning could no longer take place. As a result, the project adapted its activities to respond to the education crisis. An iMlango android app was developed and made available to learners' (both girls and boys) parents to support continued learning, where possible, during the school closure period. The teaching and learning content on the iMlango portal was adapted in order to be accessible

through the mobile app. Through the app, learners had access to digital teaching and learning content including literacy stories and quizzes, Maths-Whizz numeracy content, audio podcasts, safeguarding messages, messaging on Gender Equality and Social Inclusion (GESI) and COVID-19 'stay safe' messaging.

iMlango activities continued to reach as many children (girls and boys) as possible to provide learning through the digital tools. In addition, online teacher training and dissemination of teaching and learning materials became a focus. Communication was enhanced through WhatsApp user groups with teachers and various digital channels with broader stakeholder community groups to ensure girls remained supported. The support groups also had a strategic agenda in sensitising the parents on the need to support the remote teaching and learning alternatives the project rolled out. The key learnings from these activities are outlined later in this report.



# What did the iMlango project achieve?

## Improved learning outcomes and life skills for girls

Overall, the [endline evaluation](#) of iMlango determined that the project is likely to have led to improved learning outcomes for girls. However, it has not been possible to demonstrate this reliably and in the anticipated manner because of necessary changes to the evaluation framework (due in large part to COVID-19 related restrictions on data collection). With regard to literacy and numeracy, girls provided self-reported perception of learning gains, with 75% stating that they were doing better in their schoolwork in early 2021 than during the previous academic year.

Interviews with teaching staff during the endline evaluation reported that iMlango had led to a greater impact on girls' learning performance than boys', due to the project's specific focus on girls. Moreover, with regard to students' life skills, iMlango was reported to have led to increases in self-esteem and the girls' clubs were identified as a particularly impactful activity for girls' confidence. When asked about the benefits of being part of a girls' club, students overwhelmingly agreed that it helps to increase confidence, to learn to solve problems and to make decisions in their life (99%, 99% and 100% respectively). Girls' clubs were also found to have offered good value for money, due to being delivered at a low 'cost per child' rate that schools are likely to be able to sustain.

## Positive educational impact through technology

The introduction of technology into schools was a core component of the iMlango project and a contributing factor to learning outcomes and teaching quality. In particular, it appears to have increased student enjoyment of learning. At the [midline evaluation](#), 77.9% of teachers surveyed selected 'increased enthusiasm for learning' as an area that the iMlango project has had a direct impact on students. At the [endline](#), all girls surveyed agreed that they were excited when they used the lab. Furthermore, the online literacy and numeracy content (Longhorn reading content and the Maths-Whizz individualised simulated maths tutoring and digital whole-class maths content) were also considered to have led to improved learning outcomes and girls' enjoyment. Some 83% of the girls surveyed believed that online literacy tests directly contributed to improved literacy outcomes, whilst a further 82% of students attributed an improvement in their maths grades to the Maths-Whizz tutor. [Data provided by Whizz Education](#) also suggests that the Maths-Whizz learning content improved the ability of students (girls and boys) to catch-up to the international standard Maths Age<sup>1</sup> it is estimated that it would take Grade 4 students half the time to catch up to the international standard Maths Age of 13 with access to (and recommended usage levels of) the content than those without it.

**“In literacy, there was a format given on teaching English. It is very systematic and it flows. For example, when teaching a story, you start with the vocabulary. This helps children understand the story and answer questions well.”**

Teacher

<sup>1</sup> Students' knowledge levels in mathematics are measured in terms of Maths Age, Whizz Education's international benchmark for attainment. Maths Age is a criterion-referenced metric with a natural interpretation: a student with a Maths Age of 9 has the maths knowledge expected of a nine-year-old. When students undertake a diagnostic assessment on MathsWhizz, they receive a Maths Age across several topics, as well as an overall Maths Age (the mean of those topics). As students interact with the Maths-Whizz virtual tutor, their Maths Age is continually updated from lesson to lesson.

## Improved teaching quality and school governance

Activities focused on teaching quality and school governance were found to have some positive impact in the [endline evaluation](#). Qualitative data provided evidence of positive attitudes towards teaching, including more student-centred practices and ICT was identified as having made teaching easier and more effective. Teaching was also reported to have positively contributed towards increasing gender equality, with 97% of students reported that their teachers treated boys and girls equally. Continued professional development was cited as an important contributing factor to improving teaching quality, impacting upon skills in learner-centred teaching and ICT integration, and was another project activity which represented good value for money.

There was some evidence of the project's impact on school governance. Technology was found to have contributed to this change. The provision of digital learning and attendance data was considered to have somewhat influenced decision making and technology was shown to facilitate more effective school management processes. There was a relatively high level of engagement with the project among county-level education officials, although challenges remain for how this involvement can be built upon and sustained (discussed in the lesson learned section below).

## Increased attendance and enrollment

Findings suggest that attendance and enrolment had improved over the course of the project. Some 61% of students self-reported not missing any school in a typical week in the endline survey. Meanwhile, attendance data from the sQuid smart cards indicated an overall improvement from 2018, whilst also suggesting a significant increase from Term 1 (January to March) 2020 to 2021 (from between 50-69% to 75-77%). Technology was reported to be a contributing factor to improved attendance, both in terms of increasing student motivation for attendance through having access to computers and better tracking attendance through the use of digitised monitoring. Demographic and domestic factors such as the head of household's educational attainment, non-menstruation related sickness, a lack of money and family events, however, were the main reported barriers to attendance.

### // DEBORAH'S STORY



Deborah lives with her parents in the Kilifi County Township and attends primary school. She is 12 years old and has three siblings, two brothers and one sister, who all attend the same school.

Deborah's father is a teacher within Kilifi Town and her mother sells vegetables in the local market whilst also looking after the family and their home. Deborah also supports her parents by doing some of the chores at home such as cooking and cleaning and taking care of her younger siblings.

Deborah joined her primary school in 2014 and she has enjoyed her time there. She sometimes felt overburdened by the responsibilities at home in addition to the schoolwork, but continued to love learning. She felt as though her performance at school had not been improving as a result of the additional responsibilities at home, and hoped to discuss this with her parents so that she can concentrate on her studies.

Deborah's school is one of the primary and secondary schools supported by the iMlango project. One of the interventions has been the introduction of a computer lab and additional digital devices for whole class teaching. From the day Deborah first sat at a computer, she loved working on it and learning how to use it for her studies. She loved reading stories and other materials on the computer, learning maths and practicing her typing skills.

Deborah was not able to use the computers during COVID-19 due to the restrictions, but prefers lessons taught using a laptop and projector. She feels that computers make learning more interesting and help her to more quickly understand the different topics being taught.

## // DORCAS'S STORY



Dorcas Mwangeli Mwangi lives in Makueni County and has been teaching at her current school since 2017, having started teaching in 2009.

Dorcas noted that since iMlango started to work with the school, "...the students are more interested in attending classes". She attributes this increase in interest to the introduction of ICT into the classroom. She says that she has noticed "...less absenteeism from both students and teachers throughout

the school term" and this has been further boosted by the feeding programme that has enabled students to stay at school and concentrate.

Dorcas has also noticed a great improvement in the literacy and numeracy performance of the students. Other activities, such as the girls' clubs, have also had a great impact as evidenced by the improved self-esteem and self-confidence of the girls.

Dorcas believes that teaching has been made much easier by the introduction of technology into learning. She states, "A lot has been simplified with the use of computers and projectors." She finds teaching more enjoyable now given that they are using the same syllabus but are aided by technology.

She believes that across the school, teachers are putting in more time into planning and reviewing their lessons than before iMlango's involvement. She says, "Teaching has become more practical as we can now teach through demonstration and illustration. The ICT enhancement has made this much easier."

She also acknowledged that the school administration has been very supportive of enhancing ICT classes. Even during COVID-19 a number of students were able to receive support virtually from teachers.





# The iMlango project in numbers



Percentage of girls who reported being able to access a computer lab regularly

**81%**

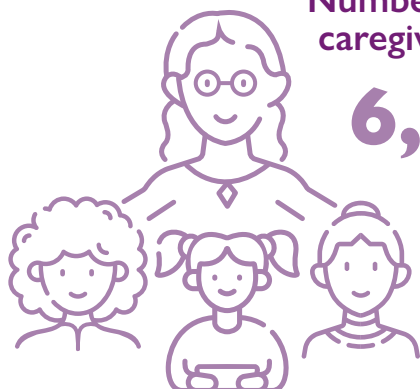


Number of girls reached

**99,190**

Number of parents/caregivers reached

**6,189**



Number of teachers trained

**5,179**

Male: **2,194** Female: **2,985**

Number of primary schools reached: **205**

Number of secondary schools reached: **40**

Number of boys reached indirectly: **94,655**

Percentage of girls who reported that teachers treat boys and girls equally: **97%**

Percentage of girls who would like to complete primary education: **98%**

Percentage of girls who were excited when teachers delivered lessons using computers, projectors or online resources: **91%**

Percentage of girls who felt that attending girls' clubs helped to:

- Increase their confidence: **99%**
- Support them to solve problems: **99%**
- Support them to make life decisions: **100%**



# What did iMlango learn?

## Reduce dependence on unreliable connectivity through a blend of online and offline content

The reliable provision of online learning content is a positive and central part of the iMlango offering. However, the challenges of sustaining connectivity in remote areas revealed the value in pursuing a blend of online and offline learning content. This helps to provide a 'connected' approach but reduces the dependence on connectivity via a robust offline back-up. Indeed, the majority of teachers interviewed stated that they had used the animated offline content and found it effective. A blended approach underpins the accessibility of the learning content (via the provision of offline materials) whilst reaping the gains of the personalised nature of the connected, online learning content.

## Strengthen life skills and raise self-esteem through girls' clubs

Girls' clubs were effective in building confidence and self-esteem and in strengthening girls' life skills. The low cost of the clubs and the benefits of using local mentors make them particularly sustainable. Continuing this activity and maximising their impact in future iterations of iMlango is a high priority.

## Address the barriers to implementing and sustaining EdTech activities in rural settings

When implementing EdTech activities in rural settings it is important to identify and address the various barriers that may negatively impact the use of technology in schools, such as the lack of equipment or size of computer labs in relation to class size, challenges with electricity supply and/or internet connectivity, and technical issues with devices. It is also important to consider whether the cost per child of the components required for online learning in rural settings (e.g., the provision and maintenance of education licences, connectivity, technology and the associated human resources) can be afforded, sustained and scaled by the schools. It is also important for a project's technology-focused design to be adaptive. The pace of change within the EdTech sector is rapid and new programmes, especially donor-funded ones, benefit from being structured in such a way that they are both able and motivated to proactively respond to changing contexts. Finally, a simple design, with a deliberate focus on few experimental components, is likely to increase the EdTech activities' overall effectiveness and value for money.

## Recognise the limits of technology

Whilst the iMlango learning app developed to provide learning content during COVID-19 school closures did help support some students, it had limited impact for children without access to smartphones or in households who could not afford data bundles. Home learning requires other access routes for some students, such as radio and printed materials.

**“There is a big difference [in teaching]. As a teacher you can go to the iMlango application and access, for example, a maths teacher teaching a topic like fractions. If you are teaching in an iMlango school, you will access the application, go to the class, then the subject, then topic, select fractions and let the children listen to the explanation from the teacher in the gadget. iMlango also has past papers for the past years and the answers. If you are not in iMlango school, you cannot access that.”**

Headteacher

## Keep investing in professional development for teachers

The endline evaluation found that increased teacher training contributes to learner-centred teaching and the integration of technology into the classroom. Indeed, teachers who were initially 'technophobic' became adept at using the technology and this was identified as a key factor in improvements to teaching quality. For effective EdTech programming, the evaluation recommended that headteachers are integrated into the training programme to increase senior-level understanding and 'buy-in'. It is also recommended that the online training for maths teachers should become an open access resource, enabling other teachers who are not part of the programme to benefit from it. Finally, it is suggested that inclusive education strategies are more prominent in the training approach to ensure that children with disabilities are able to use and benefit from the technology in the same ways as their peers.

## Respond to opportunities and challenges through project monitoring

One key learning from the iMlango project is that EdTech interventions provide opportunities to collect and use real-time data. Teaching can be individualised more quickly and easily based on data from each student. The integration of differentiated learning and real-time monitoring can be a key strength within EdTech programmes. It is important to ensure this integration is factored within the project's design. Within the context of a girls' education programme, evidence from the project's attendance data for cohort tracking would allow to measure the rate of girls' transition from primary to secondary school.



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