

Playful learning with technology

15 recommendations for introducing new models of play in under-resourced Kenyan classrooms.

by humans who play in partnership with IREX and Dignitas as part of the Kenya Play project with generous support from the LEGO Foundation

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A note from Laura De Reynal, our Director of Design & Research

In 2021, our team has partnered with IREX and Dignitas to launch a four-year, play-based, learning with technology program across Kenyan schools. The program, called K-Play and generously funded by The LEGO Foundation, aims to support teachers in the rural areas of Kilifi and Kwale’s primary schools, as they discover, learn, and introduce play-based learning with technology in their classrooms.

Because many individuals and organizations have done similar work before, we wanted to talk to them to inform our work and collect practical insights, stories, suggestions, and ideas for how we can implement playful learning with technology (PLT) at-scale in Kenya. The result of these conversations: a set of 15 insights and design ideas that we are happy to share here for everyone to use and benefit from. Think of this document as a prompt for brainstorming with your team, a whiteboard of ideas, a collection of design principles, or maybe even an inspiration for a future research agenda.

In play,
Laura de Reynal

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PARTICIPANTS

In this document, you will find insights from conversations with key stakeholders, design ideas, and recommendations for K-Play. We were fortunate enough to chat with people working in Kenya, Tanzania, South Africa, Brazil, China, covering various domains of expertise, ranging from teacher coaching to makerspaces, behavioral science, refugee settings, creative coding, and much more. The goal of this work is to help us learn as a community, inspire our program design, and ensure that we build upon great pre-existing work. The organizations and individuals we engaged with are listed below.

Organizations we talked with:

Ubongo.org - Tanzania

The IRC - East Africa

Busara Center - Kenya

METIS - Kenya

Dignitas - Kenya

Youth Voices - Kenya

University of Johannesburg

- South Africa

American University - USA

Brookings Institute - USA

IREX - Global

Lifelong Kindergarten MIT - USA

Scratch Foundation - USA

MIT Playful Journey Lab - USA

MundoMaker - Brazil

Peter Tabichi - Kenya



BROOKINGS



For these interviews, our goal was to learn as much as possible from experts, within the scope of our design challenge. How might we introduce and scale playful learning with technology in Kenyan schools?

Although this challenge is grounded into needs that are specific to the K-Play project, it brings up questions and tensions that resonate globally across organizations and projects.

Introducing materials and ideas with teachers and community members through human-centered design and co-creation processes.

Helping teachers shift their mindset about learning through play and about technology

How might we introduce and scale playful learning with technology in Kenyan schools?

Ensuring that this work is relevant and valuable to Kenyan communities with deep respect for their unique culture.

With this in mind, our semi-structured interviews and brainstorming sessions aimed to answer the following research questions:

1. How do organizations introduce learning through play in various educational settings?
2. What are the design principles and methods used through these projects?
3. What did organizations learn while doing this work?
4. What are the common mistakes people make when introducing learning through play and technology?
5. How do organizations engage the community and caregivers around learning through play?
6. What needs to be considered, adapted, or reinvented when working on play-based learning remote and resource-constrained settings?
7. What are some insights on play across cultures, and levels of localization and contextualization needed?

Methods

1. Semi-structured Interviews: we have questions in mind and we follow a light script while also letting the conversation go where it makes the most sense.
2. A mix of discussion, reflections, and some brainstorming
3. Interviews are 1-1 or 1-2
4. Interviews lasted 45 minutes to 1 hour

15

recommendations for introducing new models of play in under-resourced Kenyan classrooms.

- 1 Playful learning through technology can be a standalone program.
- 2 Rich media can help educators and caregivers navigate and implement new concepts.
- 3 Caregivers can help continue learning through play at home if there is trust and self-efficacy.
- 4 All educators might not be able to adopt learning through play in the classroom, but champions can lead the way.
- 5 Learning to step back is essential to understand the value of playful learning.
- 6 Learning through play as an educative concept might not resonate culturally.
- 7 Networks of mentors can complement the best professional development training.
- 8 Headmasters are agents of change and essential to bringing learning through play in the classroom.
- 9 Propose activities with many solutions to help shift teacher's roles.
- 10 Teachers can earn their student's respect, even when they play together.
- 11 Students can localize the tools as part of their learning activities.
- 12 Teachers can be motivated by social recognition from their communities.
- 13 Consider the program as an opportunity for an exchange, not just a transmission of knowledge.
- 14 Start the program with a science fair to make the learning experience tangible from the onset
- 15 Design curriculum to function as mirrors and windows for students.

Playful learning with technology can be a stand-alone school program.

Teachers might experience higher stress levels if they are trying to make LTPT fit within their existing schedule – given the daily pressure they already face – but they might respond well to an informal learning program. Program designers can consider both options with teachers and school leaders to identify the most appropriate.

How does learning through play with technology fit into primary school teachers' daily activities? When, where, and how are teachers going to implement what they learn with the coaching sessions?

While it would be optimal to see interactive, engaging, playful, project-based, and group-based learning happening in playful ways throughout the day for all courses, teachers might appreciate organizing these activities as complementary and standalone activities, until they are ready to do more integration. This can take the form of afterschool clubs or complementary learning modules.

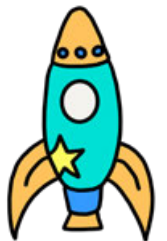


Photo credit: Sigmund, Unsplash

Feeling inspired? Answer these questions to think about how YOU would use this recommendation:

How can you encourage teachers in your context to create their own implementation models?

What are different models that you think might work well?



Don't know where to start? Here are some tips:

- **Work with school leaders and teachers to design the right implementation model for their schools:** primary school teachers are more likely to implement new playful activities in school if they have a dedicated time for it. It must be endorsed and encouraged by school leaders. Whether they decide to run a Saturday Tinkering Club, or if they choose to use the 3D printer for one hour per day at a set time, it is possible to make space for these activities as a unique, standalone activity in the schedule, or to merge them with existing activities. The key is for teachers and headmasters to decide together.
- **Propose 1-3 implementation models:** Outline 1 to 3 options for implementation models, and propose them to headmasters and teachers. These options can be elected or remixed if needed.
- **Create the implementation model from scratch:** Run a design workshop with teachers and school leaders to design the best model for their school, from scratch.

Time to doodle your ideas...



“Parents and headmasters don’t want to see children play, they want to see good exam results.”

– Karen Tan, *IRC*



Photo credit: Dignitas

2

Rich media can help educators and caregivers navigate and implement new concepts.

Using media like edutaining videos or radio shows to conduct teacher professional development is not always thought of, yet it can provide engaging, relatable, and effective demonstrations and can be a powerful tool to introduce new practices at scale.



Photo credit: IRC

Ubongo.org has been developing edutaining content at scale on the African continent and tested a variety of media to reach remote audiences. Videos and audio shows have contributed to the introduction of playful learning activities at **home** and **school**. When new playful learning activities are shared through media

(in complement or replacement from face-to-face training and coaching), teachers can engage with the content at their own pace, and watch it as many times as needed. Similarly, caregivers can engage in playful learning activities with their children following radio instructions.

Radio Showtimes



Visit Ubongo.org for more information about their radio and tv shows for education and playful learning



Unicef Market: portable solar-powered digital radio for education programming

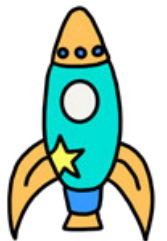
UN response to Covid19



Feeling inspired? Answer these questions to think about how YOU would use this recommendation:

How can radio or video be used to enhance teachers experience in the classroom?

How might we use media to scale the program across a country?



Don't know where to start? Here are some tips:

- **Community generated videos:** Encourage educators and students to make short videos to describe, explain, demonstrate their projects. These can become sharable learning resources.
- **WhatsApp groups:** Encourage peer-to-peer exchange in WhatsApp group, a platform where it's easy to share rich media like photos, videos, audio recordings.
- **Create audio or video tutorials to guide educators, parents or students through specific methods or activities.** Sometimes, if an activity is a bit complex or requires visual explanation, a step by step tutorial on video or radio might be better suited than paper based tutorials, and might be less costly than in-person coaching.

Time to doodle your ideas...



“Children hear the audio content and they are the ones asking their parents to play the games. It’s designed for family usage and it works well.”

– Nisha Ligon,
Ubongo.org



Caregivers can help continue learning through play at home if there is trust and self efficacy.

Sometimes, the bridge between learning at school and home can be hard to establish especially with formal learning activities. Playful learning activities are very appropriate for learning experiences at home and in school. Caregivers can be engaged to support teachers by implementing complementary activities at home with their children.

The Busara Center in Kenya has researched with caregivers and teachers to understand how to best help introduce new learning and teaching behaviors in homes and schools. Their work shows that caregivers are held back by a lack of self-efficacy and trust, and teachers are held back by the multiple competing priorities they juggle. New activities represent a cognitive burden for them. Through the Keep Kenya Learning project, the Busara Center identified that caregivers can support

children's learning at home if interventions focus on building confidence and trust. It can be tempting to focus on the lack of resources or the lack of great learning tools, but helping caregivers realize their potential as children's first teachers is equally (if not more) important. There is an opportunity to maintain high levels of caregiver engagement through LTPT (Learning through play and technology) activities, beyond the COVID-19 school crisis.



Photo credit: IRC



Photo credit: the IRC & the Aga Khan Foundation

Caregivers learning about activities they can facilitate in their home to help their children's school readiness



Photo credit: the IRC

Primary School students practicing SEL games at home with their mother in complement of activities done at school to develop executive functioning

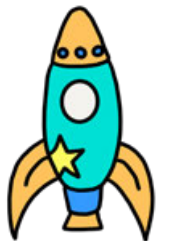


Photo credit: Jordan Rowland

Feeling inspired? Answer these questions to think about how YOU would use this recommendation:

How might we provide caregivers with complementary activities to bring learning through play at home?

What programmatic roles can be created to create a bridge between school and the community?



Don't know where to start? Here are some tips:

- **Create opportunities for parents to volunteer and help teachers run playful workshops at school.**
- **Propose complementary project activities at home:** Invite parents to reflect and play with their children at home, following the projects they are doing at school.

Time to doodle your ideas...



“As we studied how best to support caregivers to bring learning at home, we realized that the difficulty was not just in the lack of resources, but in the lack of trust and self efficacy.”

– Lara Tembey, *Busara Center*



4

All educators might not be able to adopt learning through play in the classroom, but champions can lead the way.

It might be unrealistic to expect that all primary school teachers will integrate LTPT in their classroom, yet it is possible to find the most motivated teachers to lead a new LTPT projects and gradually bring this new practice in Kenyan schools.



Photo credit: Jordan Rowland, Unsplash

For many teachers in resource constrained areas, learning through play with technology is **very far from their daily reality**. Teachers feel stressed to ensure their students perform well on standardized tests, and they don't often have enough resources to do their jobs well. Many of them might not have access to technology, or educational materials for their classes. With this in mind, we should not expect that all primary school teachers will easily adopt new LTPT practices in their classrooms. We should design a program that

takes into account educator's **capability, motivation and opportunity** (COM-B) to adopt these new behaviors in the classroom.

In some cases, it might be better to identify the champions and to work with them in depth, instead of working with all the teachers in a given school. By watching a peer adopt the program and its new practices, other educators can familiarize themselves without pressure.



Teacher champions can model learning through play with technology in their schools, to help introduce these new concepts in gradual ways.

Photo credit: STEMpedia at Makerspace-Ghana, Africa.

Feeling inspired? Answer these questions to think about how YOU would use this recommendation:

How can we provide opportunities for teachers to grow into playful learning with technology?

What are some ways to involve other educators or young adults who are motivated but might not be the student's formal teachers?



Don't know where to start? Here are some tips:

- **Create a thoughtful application process for teachers:** Instead of automatically enrolling all teachers in the program, consider creating a thoughtful application process to identify the teachers most motivated to adopt playful learning. They will pave the way for their peers little by little.
- **Open the position to other champions outside of the formal school network:** Consider enrolling people from outside the formal school staff to run the first sessions of the program and to help teachers get used to these novel concepts.

Time to doodle your ideas...



“You will find some teachers who are already bought in. Some who are tech savvy, some who are already doing the work. They can lead the way.”

– Nisha Ligon,
Ubongo.org



5

Learning to step back is essential to understand the value of play

AnjiPlay, in China, developed a method that encourages teachers to step back and learn from their students. Teachers are tasked with recording videos of students engaging in playful learning activities. They hold the camera and record, without

participating in children's activities. Then, educators spend time watching their recordings and analyzing the playful learning interactions. **Teachers are elevated to the role of researchers, and they discover the true value of play for children.**

It can be difficult for educators to stand back and let students take the lead in their learning experience. It implies that students evaluate their levels of risk, test some new methods, fail and try again, and take their risks. Yet, stepping back is essential to the successful implementation of learning through play in schools. It enables educators to witness the value of play, and it enables students to develop creative thinking skills.



Image by Caterooni – Own work, CC BY-SA 4.0, View full image on wikimedia.org



Photo Credit: Anji Play

Children build, play and learn together while adults step back and observe.

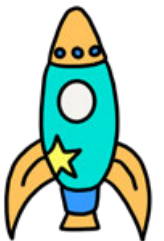
Educators analyse recorded videos of children playing, and reflect on them with their peers and their students: an effective method to step back and see the value of play.



Feeling inspired? Answer these questions to think about how YOU would use this recommendation:

How do we design playful learning experiences where students experience the autonomy they need for true play?

How might we help educators be more comfortable with stepping back?



Don't know where to start? Here are some tips:

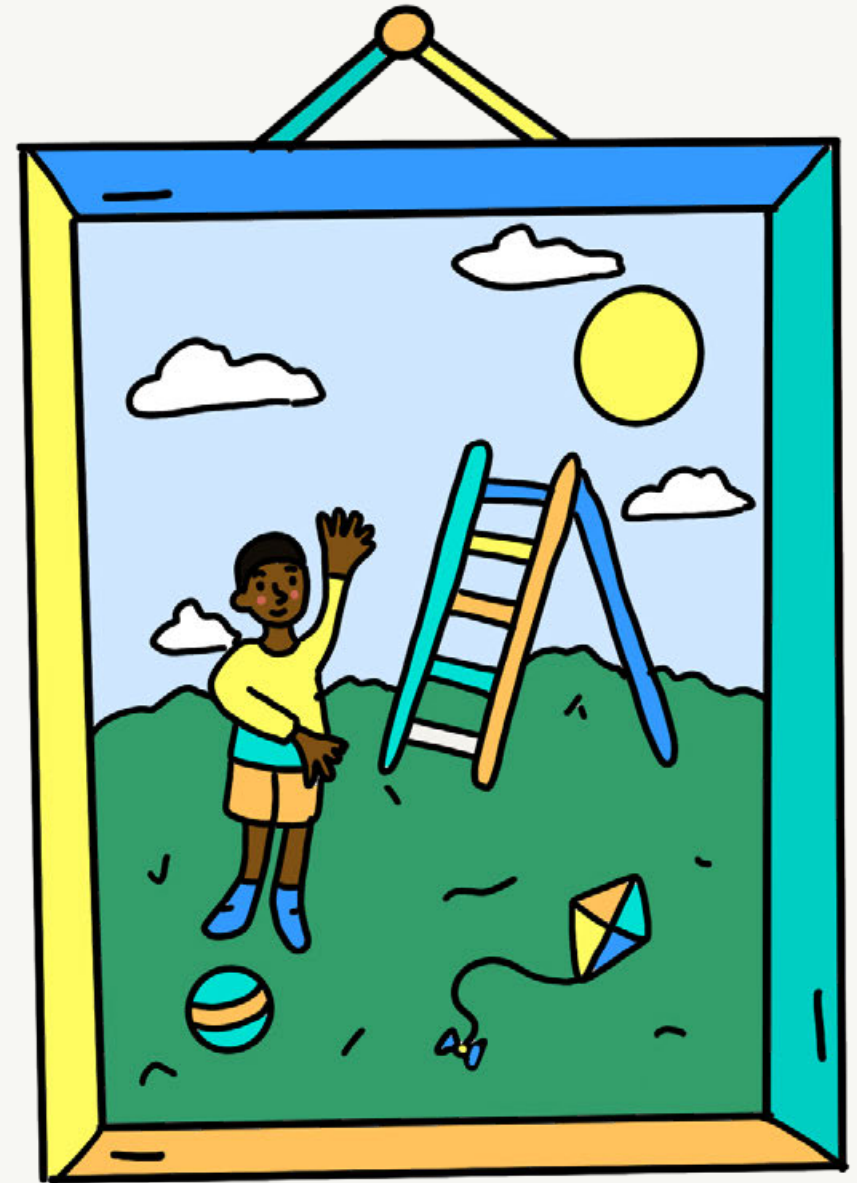
- **Use coaching sessions to practice “stepping back.”** These sessions are good opportunities for educators to observe each other and see the value of play, while in a safe environment for them.
- **Create observation sheets for teachers to use in the classroom.** Give teachers specific prompts on what to look for, as they let children explore autonomously. This way, they have a role and they are guided.
- **Invite teachers to take photographs or videos and share them with their peers during coaching sessions.** Just like AnjiPlay does, invite teachers to record activities or to take photographs of children's projects and group work. Bring them to the professional development sessions to comment with peers and see the value of play.
- **Ensure that “stepping back” is not perceived as a loss but simply a new role and a shift in teachers' practice.** This will likely lead to more comfort.

Time to doodle your ideas...



“There was a video of a child playing with a ladder... The teachers did a whole analysis of this playful interaction as if it was an analysis of an art piece.”

– Ryan Mather,
talking about Anji Play



Learning through play as an educative concept might not resonate culturally.

Playful learning with technology helps students develop problem solving skills, creative thinking, computational fluency and more 21st century skills. Yet, the word “play” is often associated with entertainment and amusing activities. In some contexts, it has negative connotations and does not resonate with education stakeholders (parents, teachers, govt. etc.)

The IRC and their partners from the Play Matters project conducted research to identify how various stakeholders responded to play based learning experiences in Tanzania, Uganda and Ethiopia. Findings confirm what other researchers had found in Ghana

or Nigeria: play based learning as an educative concept does not always resonate to local communities and can lead to counterproductive behaviors. We must listen to what is valuable to teachers and parents from the region, before introducing projects branded with the word “play.”



Photo credit: Seth Doyle



Photo credit: BRAC Play Labs Tanzania

Some existing programs will talk about “Learning with Robotics” as opposed to playful learning with technology. The word “innovation” is also often used to describe similar approaches to learning.

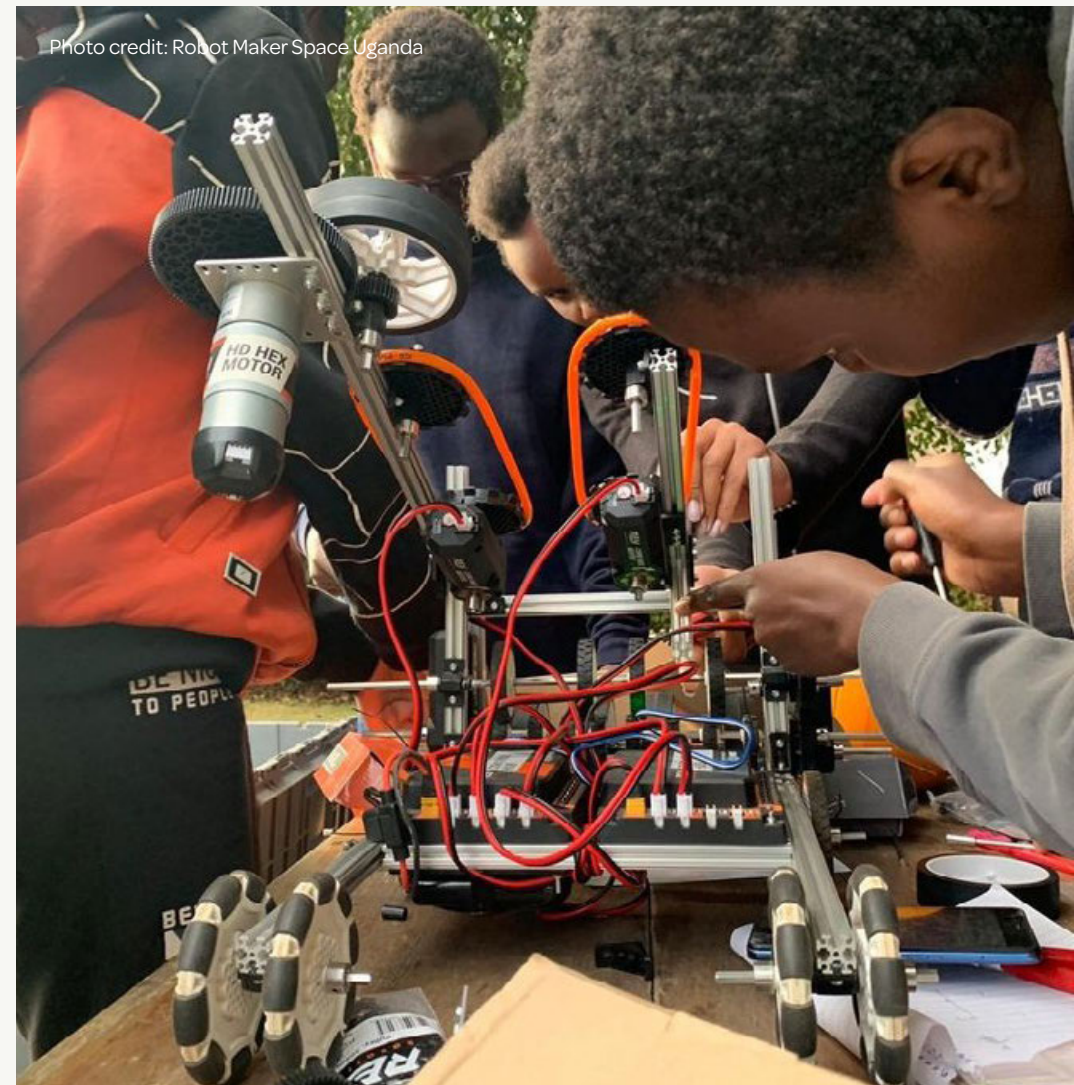


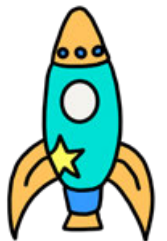
Photo credit: Robot Maker Space Uganda

Play spaces are often associated with early childhood centers, for kindergarten classes. In certain places like in Ghana, parents are even demanding less play in kindergarten spaces, to ensure their children are prepared for primary school.

Feeling inspired? Answer these questions to think about how YOU would use this recommendation:

What resonates with educators and parents from Kenya when it comes to innovative teaching practices? What do they find the most valuable?

What is the right language to talk about engaging, enjoyable learning, if not play?



Don't know where to start? Here are some tips:

- **Identify and test the right language to introduce the program at scale:** Conduct a series of prototyping and testing sessions to identify the right language and the right cultural approach to this work. Some concepts might resonate better than others with local communities.
- **Listen to how teachers and community members talk about the program:** Pay attention to the vocabulary teachers use throughout the program when they talk to their peers, their superiors, or community members. For example, if teachers talk more about activities for “creativity” or “problem solving” rather than “playful activities” or “learning through play” then you might consider adjusting your program communications.
- **Identify what values parents and teachers want to communicate to student:** Conduct qualitative research to understand the educative values that are dear to parents and teachers in Kenya, and ensure that these are present into the program's structure, messaging and governance.

Time to doodle your ideas...



“The educative technical definition of “play” does often not resonate with our audiences, aside from the Early Childhood Education professionals, who are trained on playful learning concepts.”

– Karen Tan, *IRC*



Play is often associated with recess and not with learning.

“If we mention to students the word “creativity” they don’t know what it means. But when I make them do projects and teamwork together, I find that they learn through practical work.”

– Peter Tabichi,
Kenyan Secondary School



Networks of mentors can complement the best professional development training.

There are LTPT champions in Kenya, Uganda and other parts of the world, who are applying these innovative teaching and learning practices in their schools and communities, yet, for teachers in challenging or remote settings, it can be difficult to learn from these champions.



All photos credit to: METIS Collective Kenya



Many organizations focus on creating networks of mentors to empower and support leaders. METIS and Dignitas Project are two examples based in Kenya. They use various platforms such as WhatsApp or Zoom for virtual meetups, where they facilitate connections between the leaders and their inspiring mentors.

These programs present opportunities to model the kind of pedagogical experiences desired. For example, dancing classes are used by METIS to demonstrate how students learn skills through observing a mentor. Leaders can also learn about the importance of empathizing with their audience, co-creating, staying humble, and more. The network, the connections, and the innovative teaching methods are the key ingredients to successful professional development.



Photo credit: Sincerely Media

63 fellows have graduated from the METIS program in Kenya and are implementing innovative change in their communities. The recipe to impact: curated connections + training + community of learning

METIS fellows receive 1-1 coaching for their project.



Photo credit: Sincerely media

Every in-person retreat will be used to model the desired approach to teaching and learning.

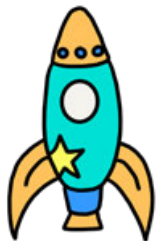


Photo credit: METIS Collective

Feeling inspired? Answer these questions to think about how YOU would use this recommendation:

How might we help connect teachers with a network of playful learning champions?

How might we support teachers in the program as they share insights with each other? How might we facilitate teacher learning circles, virtually or in-person?



Don't know where to start? Here are some tips:

- **Create social media groups for teachers to connect.** Contribute to a sense of “cohort” and community by inviting teachers to connect together on social media. They can exchange experiences, tips, and grow together as they engage with the teacher training and professional development program.
- **Host regular guest speakers events.** Invite other teacher champions to share their experiences with playful learning activities in their classroom. Prompt them to share advice, encouragements, practical solutions and inspirational content.
- **Provide formal mentorship opportunities.** Invite educators to mentor each other based on their strengths. You can create a buddy system to pair teachers with someone who can teach them something. Structure and facilitate the mentorship program with key milestones.

Time to doodle your ideas...



“One of the barrier to creative teaching is motivation.

There is a switch that we need to switch on.”

– Peter Tabichi,
Kenyan Secondary School

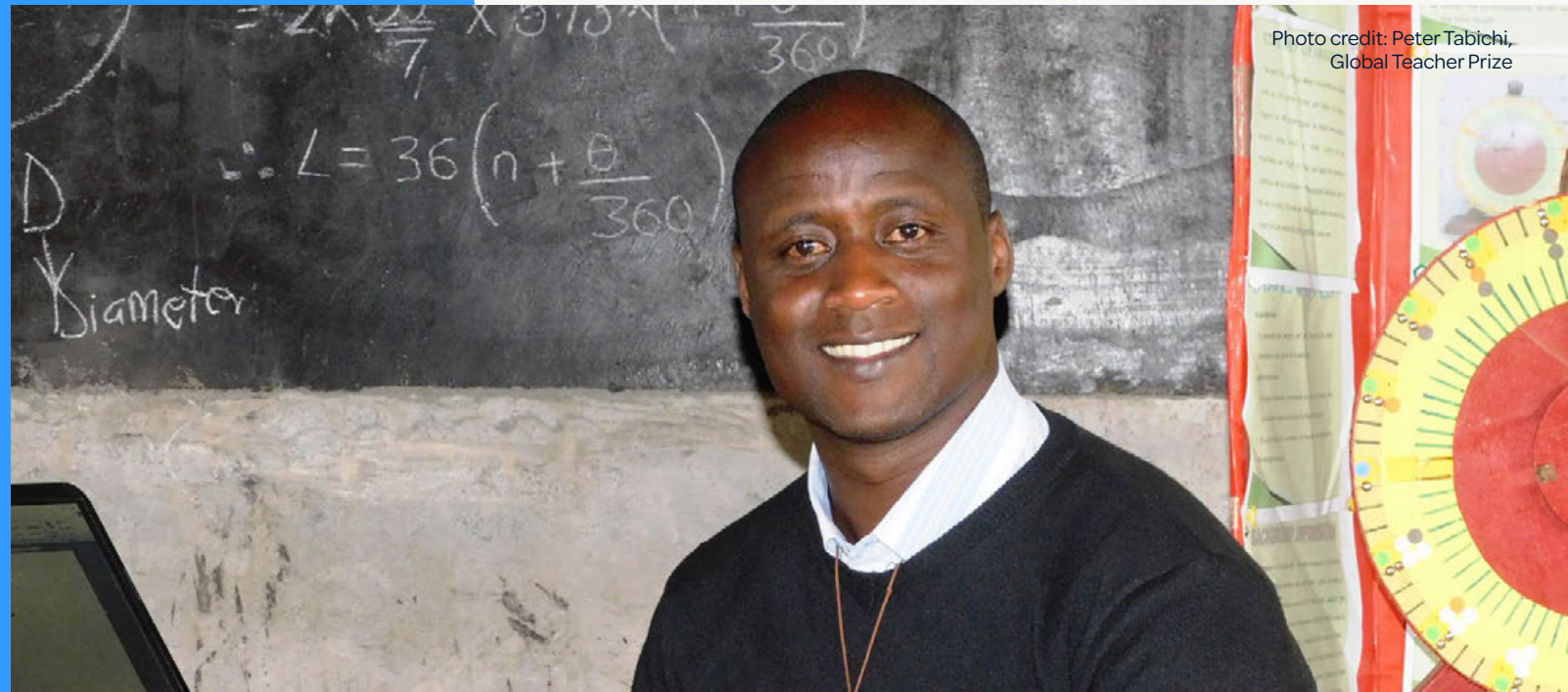


Photo credit: Peter Tabichi,
Global Teacher Prize

Headmasters are agents of change and essential to shift practices in the classroom.

Headmasters and school leaders are usually considered at the administrative level yet they are essential agents of change in the school and teachers cannot do this work without them.

Dignitas Project in Kenya has expertise in teacher's growth and development. With 11 design principles, the organization provides evidence based training and coaching to improve learning in and out of the classroom. One of their key insight and where they differentiate themselves, is through the engagement of the headmasters and school leaders.

Although they are often considered for their administrative and authority role on projects, organizations tend to not include them fully in the program as agent of change. Dignitas recognizes that they are instrumental in shifting practices at school and includes them in curriculum training as well as teachers.

They are true agents of change.

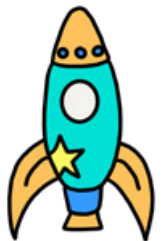


Photo credit,
the Dignitas Project

Feeling inspired? Answer these questions to think about how YOU would use this recommendation:

How can school leaders experience the value of playful learning with technology?

What is the role of school leaders in the program mentorship and networking?



Don't know where to start? Here are some tips:

- **Include headmasters in your playful learning program.** Ensure they have ample time and opportunities to engage with the ideas, materials, and the leaders of the program. Help them as they support their teachers and advocate for the program.
- **Give a role to school leaders. Create specific leadership roles for school leaders as part of the program.** For example, they could be in charge of organizing a science day festival, or to show student's work to the neighborhood, or they could help with ongoing assessment and coaching of teachers. Finding the right level of engagement will be key to ensuring sustainable shift in practices.

Time to doodle your ideas...



“There’s only so much a teacher can do without the support of school leaders.”

– Deborah Kimathi,
Dignitas Project



Propose activities with many solutions to help shift teacher's roles.

Teachers might have a hard time shifting their role in the classroom from the owner of knowledge to the facilitator of playful learning experiences, yet, we can design activities that don't have a right or wrong answer to ensure that there is no rote learning, by design.

As the largest coding community for kids, the Scratch Foundation supports creative coding for everyone around the world. It is used by 200 million children. Introducing Scratch or other LTPT tools in the classroom can be a challenging experience for educators, as it often implies a shift in traditional teaching practices. For example, there can be a fear of students being more talented than the teachers with these playful technology experiences, a fear of losing control over the student's

projects. Facilitating something where educators are not the expert requires a mindset shift. If the educator doesn't know the answer, they can use the resources available and say "Let's figure it out together" with their students. This is dramatically different from what educators are used to in their traditional approach to teaching. They are no longer the sole owner of knowledge, and Scratch is only a tool with endless possible usages.



Scratch is a tool designed to enable many different creations from its users. Sometimes, educators introduce it in the classroom with an “exercise” that students have to reproduce. If doing so, they remove the possibility for students to see the creative potential of the tools and they hinder the learning process. The key is to propose open ended exploration with prompts, in a way

that helps students find their FLOW. For example, “Let’s animate our names” is an prompt that provides a simple entry path, but a wide variety of solutions with various levels of difficulty. Low floor (easy to start), high ceiling (various levels of difficulty) and wide walls (various applications and creations possible) are key design principles for learning through play with technology.

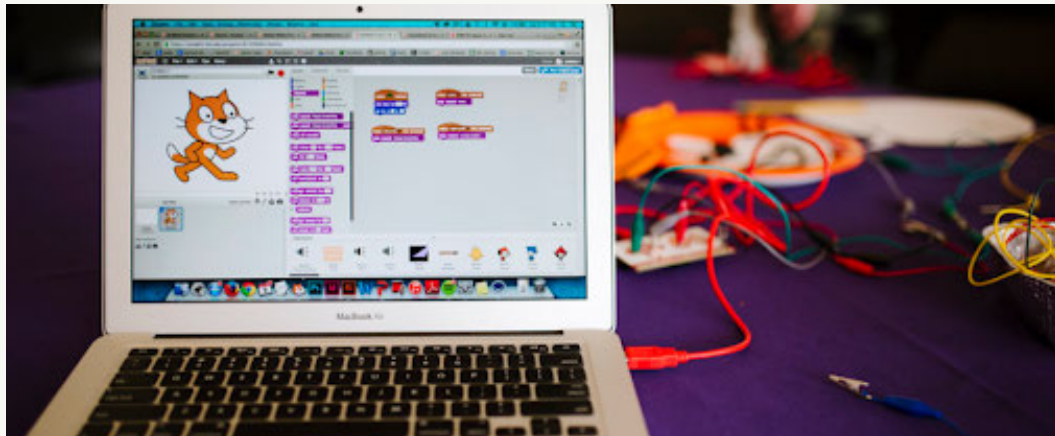
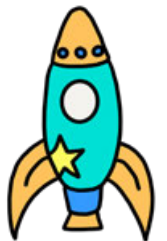


Photo credit: Mitch Resnick



Feeling inspired? Answer these questions to think about how YOU would use this recommendation:

How can we propose activities that will emphasize the process as opposed to the end goal?



Don't know where to start? Here are some tips:

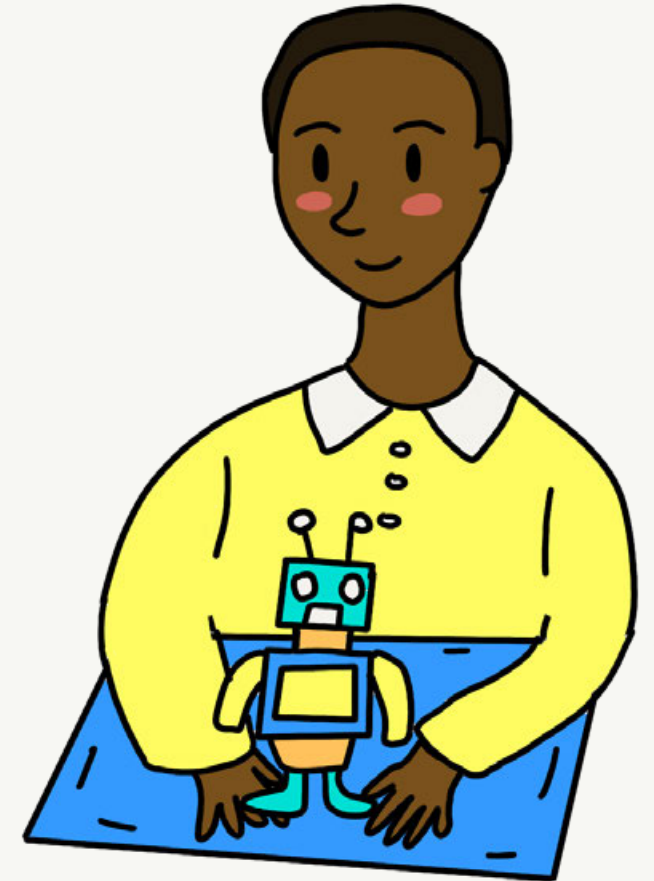
- **Propose activities to do in the classroom that have multiple solutions.** For each activity that you propose, verify that they have no right or wrong answers, that they emphasize the process as opposed to the end goal or the "solution."
- **Model this concept in the teacher trainings.** Use the teacher trainings to model the same concept: for example, engage teachers in reflections about play that have no right or wrong answers.
- **Celebrate the diversity of solutions.** More precisely, when teachers have diverse solutions to a question, make a point to celebrate the uniqueness and the value of each solution. For example: "wow! Who would have thought there could be so many unique projects for the same activity?"
- **Use open ended questions to enable the creative diversity of solutions.** Ask open ended questions, prompt teachers or students to think of as many solutions possible. For example say: "Let's animate our names using Scratch, and let's find out how many unique projects we come up with." or ask "What did you enjoy while animating your name?"

Time to doodle your ideas...



“If we designed lessons that have many solutions, then it strips away the role of the teacher as the sole owner of knowledge.”

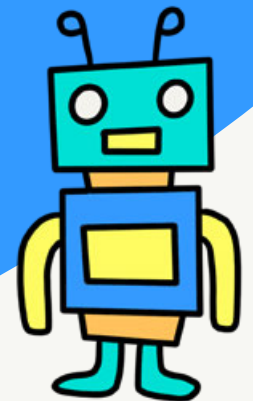
– Jacy Edelman,
Scratch Foundation



“Technology and play might be different opportunities. For example, a 3D printer provides some structure but there’s no right or wrong thing you can make. There are things that students can print. Knowing there’s no one correct answer may help the

teachers come to understand that these pieces of technology are not to be used as a test, but rather are tools to learn with. One important shift is to help educators value the process of learning in addition to the outcomes.”

– Karen Tan, *IRC*



Teachers can earn their student's respect, even when they play together.

The fear of losing student's respect is a common barrier to the introduction of playful learning yet, it is possible for teachers to modify their practice with students without losing their respect or authority.

In the University of Johannesburg, Lindford Mmatlake has been running Scratch Coding club with his students on the Saturdays. These club sessions are thoughtfully designed to match South African culture, with moments to share, reflect, laugh, help each other and more. The facilitators are no longer called "Teacher" but instead, they are referred by students with

their Scratch name. A way to break down the hierarchy between the teacher and the students, so that all can learn together and students feel comfortable exploring and expressing themselves. By showing that they care about student's creative projects and that there is no right or wrong answer, facilitators did not lose student's respect.

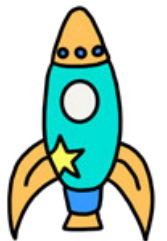


Photo credit: Dignitas Project

Feeling inspired? Answer these questions to think about how YOU would use this recommendation:

How might we support teachers in feeling confident while they engage in playful learning with students?

How does a teacher's sense of identity impact their perception of playful learning?



Don't know where to start? Here are some tips:

- **Debunk the myths that playful learning means losing student's respect.** Ask teachers what their fears are, with regards to playful learning with technology in the classroom. Listen to them and address them with brainstorming sessions. Teachers can come up with strategies to engage students without losing their respect. If that theme is salient, address it frontally and debunk the myth with case studies, evidence and modeling activities.
- **Test and model during trainings.** During the coaching sessions and teacher trainings, test some specific strategies for such as saying things such as "I don't know, let's learn together" to practice the idea that educators do not lose the respect of students if they change their attitude in the classroom.
- **Talk about intellectual humility.** Introduce the concept of intellectual humility, and talk about how teachers can learn with students and from students, without losing their respect. Practice an activity where teachers hear the facilitator acknowledge that they don't know everything and reflect with teachers afterwards: did you lose your respect for the facilitator when they said "I don't know?" "What strength of character do we see when people do that?"
- **Talk about education as an exchange.** Engage teachers in reflections about education as an exchange as opposed to a transmission of knowledge. Ask teachers to share stories of times in their lives when they learned something in an informal setting.

Time to doodle your ideas...

“Teachers need to connect with students, through passions for projects. If you don’t connect, then they see you as a police officer.

– Peter Tabichi,
Kenyan Secondary School



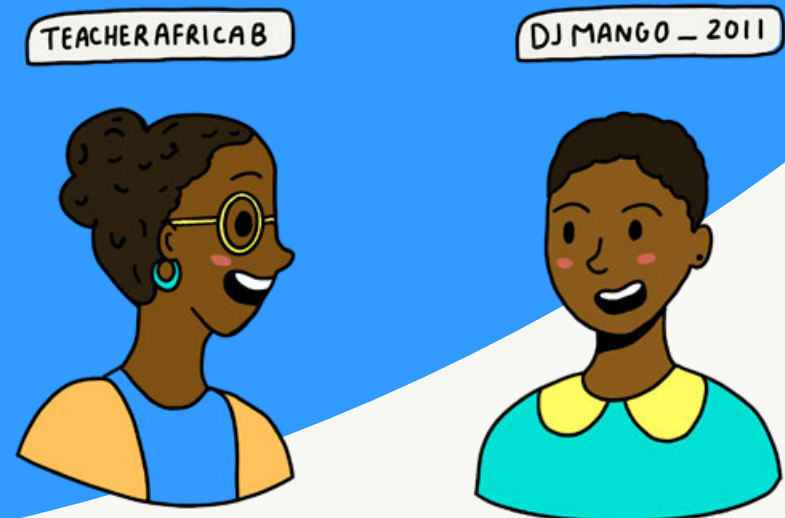
“One of my beliefs is that children respect the authority of someone they learn best from.

In our club, we call each other by our Scratch names.

I am AfricaTeacherBae

This way, the line between the position of the student and the teacher is broken down.”

– Linford Mmatlake,
University of Johannesburg



Students can localize the tools as part of their learning activities.

The current playful learning with technology tools might not be fully localized and might be missing relevant imageries and sounds for students, yet it is possible (and an opportunity) for students to add their own photos, imagines, voices and colors to the resources. Students and teachers can create the content that they wish to see on platforms like Scratch. If they do so, it will be an great learning opportunity and introduction to creative coding.



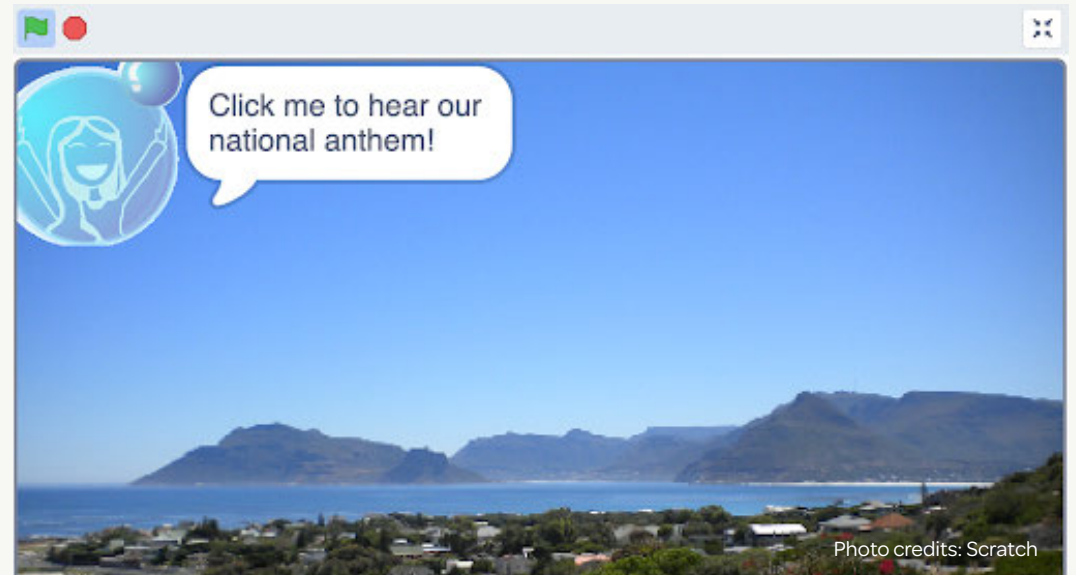
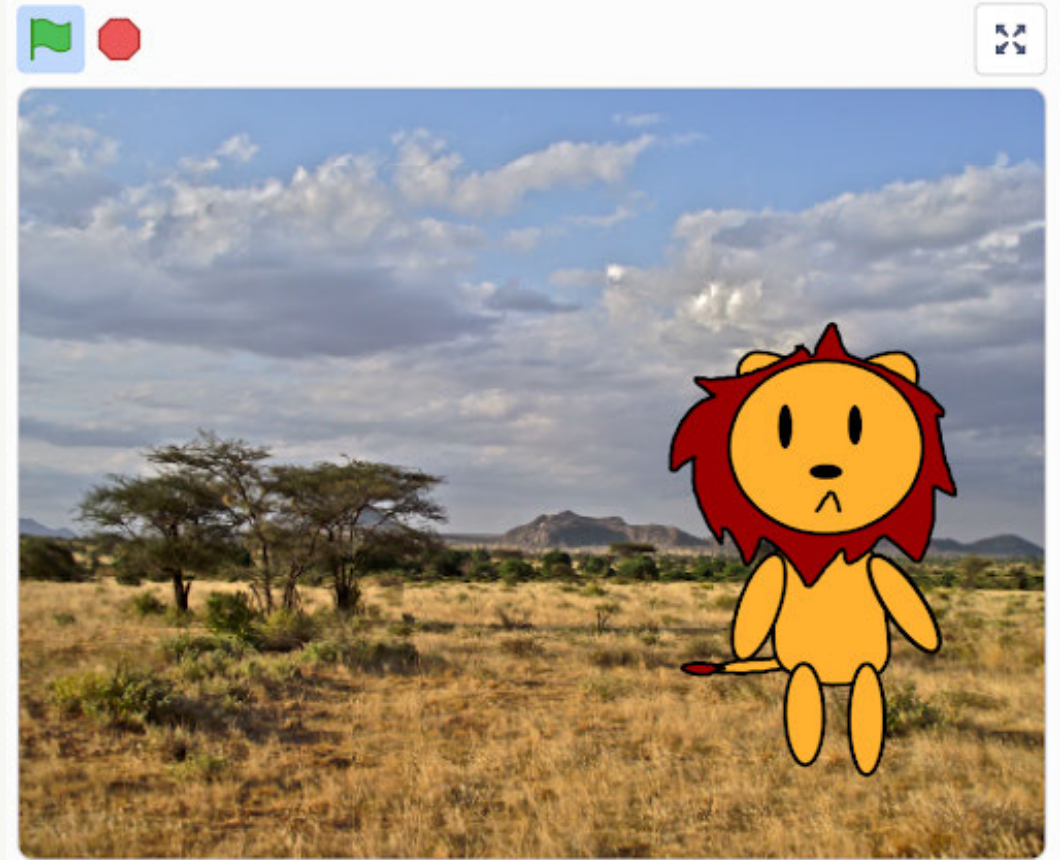
When they realized that Scratch resources were mostly created by people from other countries and other cultures, the team from University of Johannesburg invited students to create their own. Students learned that they could be the creators of content, and not only the consumers. Teachers encouraged

them to use their own images and pictures instead of the ones that were there, to record their own voices, to draw their own tools and so on. This approach enables students and educators to see technology as a tool they can contribute to shaping, and not as a final end product.

Students projects with custom voices, imageries and pictures to share their world.



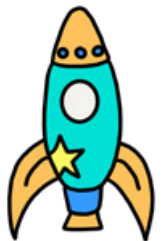
Students recorded their own song with the South Africa national anthem



Feeling inspired? Answer these questions to think about how YOU would use this recommendation:

How might we encourage students and educators to contribute and modify the creative technology tools?

What support does the community need in the localization process?



Don't know where to start? Here are some tips:

- **Run co-design sessions with students.** In addition to running experiments with teachers, ensure that students can participate in co-design sessions. This will make their voices heard and enable a deep understanding of the level of localization required to ensure our curriculum can have the function of mirrors and windows into the world.
- **Invite students to create what they find missing.** As students go through the learning process, ask them to point out they feel something might be missing from the tools and the activities. When they do, encourage them to create what they would like to see. You can turn that into a creative learning experience and ensure that students feel empowered to localize the materials as they see fit.
- **Come up with some prompts for teachers.** Propose different prompts that teachers can use during their activities to appraise localization needs when they use adapted tools and curriculum from different parts of the world. For example, they can ask students:
 - “When you created this project, did you feel like anything was missing?”
 - “How can we improve this tool together?”
 - “What is new for you in this activity?
What was familiar and just like you?”

Time to doodle your ideas...

“In South Africa,
there is a culture
with focus on
family dimensions.

We take this
aspect of our
culture and embed
it into the Scratch
coding clubs.

– Linford Molaodi,
University of Johannesburg



Teachers can be motivated by social recognition from their communities.

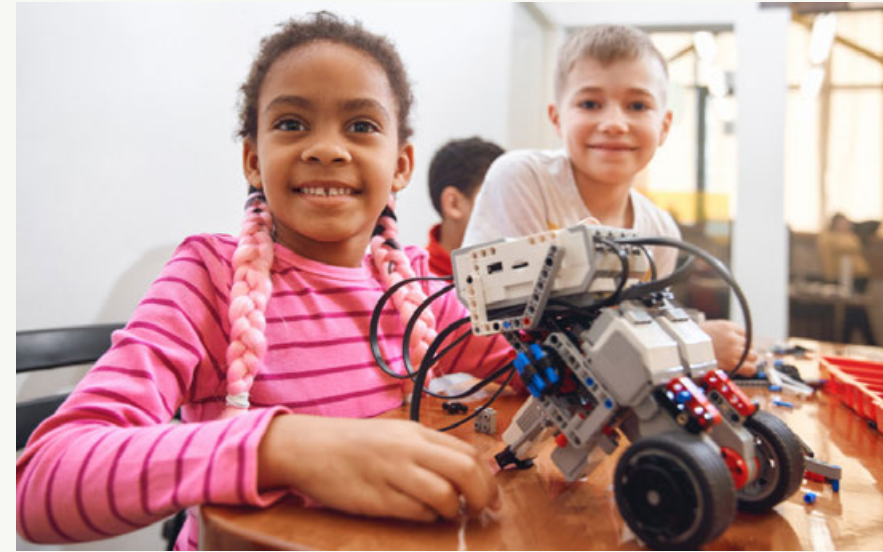
It might not be feasible to increase teacher's financial resources for recognition, but it is possible to make teachers feel valued and recognized for their contributions and hard work through community events.

Teachers work very hard, face daily pressure and challenges, and feel motivated by contribution to their student's growth and their communities.

Community events like graduation ceremonies, science fair, project

festivals and so on can help teachers feel appreciated, can help parents understand what their students are learning, can help strengthen the connection between school and home in general. Such events can help teachers feel appreciated and their work feel very tangible.





Science fair events can motivate students and teachers to complete projects and to demonstrate their progress to their community. It makes learning tangible and can be very rewarding.

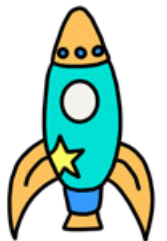


Graduation ceremonies are unique opportunities to celebrate students, teachers and school leaders work with the participation of the parents.

Feeling inspired? Answer these questions to think about how YOU would use this recommendation:

What can help teachers feel valued and recognized for their innovative work?

How might we showcase the value of this work to community members and parents?



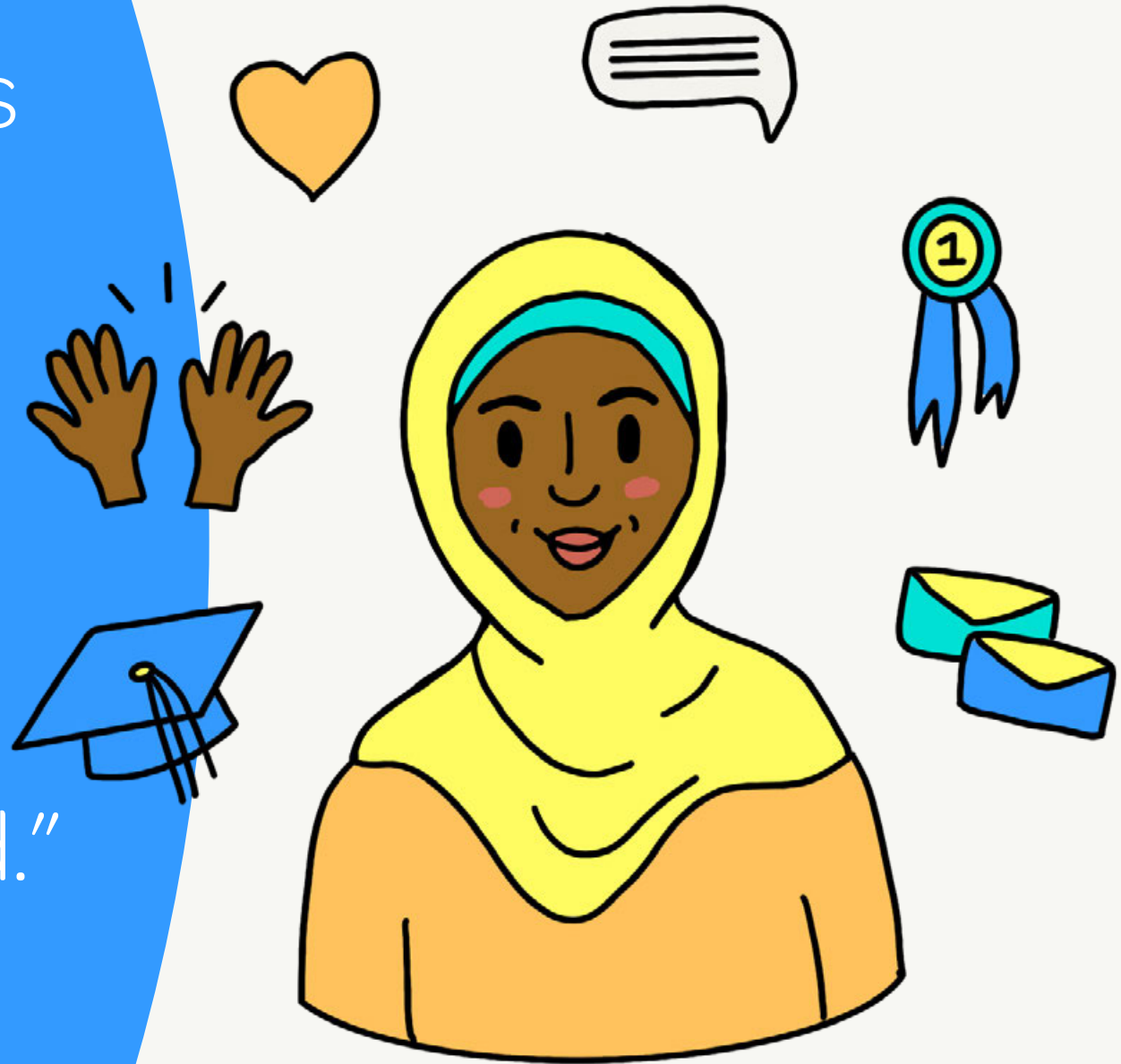
Don't know where to start? Here are some tips:

- **Create opportunity for community recognition:** event with parents and headmasters or schools to meet up. Provide opportunities for teachers and community members to come together during celebratory events. Ensure teachers have opportunities to demonstrate their work to peers, superiors and community members.
- **A certificate that resonates with teacher's aspirations.** Provide a certificate of teacher professional development to all educators. Make sure the certificate mentions teacher's progress beyond "Play." For example, mention the learning of innovative pedagogies, or child-centered learning, or the usage of technology in the classroom. Propose a certification that resonates with teachers growth aspirations.
- **Embedded assessment to demonstrate students progress.** To contribute to teachers motivation, propose embedded assessments so that they can observe their student's progress and evaluate themselves. If progress is tangible, it will be more rewarding for teachers and it will increase their motivation.
- **Work on projects that the community values.** Learning through play with technology is an excellent opportunity to work on projects that are relevant to local communities. For example, students could create Scratch animations to promote a cause that is dear to them, or create toys that they will share with children in their neighborhood, or solve a different challenge that the community asks help with. This can be a great way to build intrinsic motivation for teachers and students.

Time to doodle your ideas...

“Think about non-financial incentives for teachers, like social recognition and public congratulations. Find the forum where teachers can get recognized.”

– Lara Tembey,
Busara Center



Consider the program as an opportunity for exchange, not just a transmission of knowledge.

It is common for teacher professional development projects to focus on the training only, yet for a truly meaningful and successful experience, designers must approach this work with humility and consider it more of an exchange with teachers.



MundoMaker is a Brazilian organization whose mission is to bring creative learning pedagogies to public schools and communities in remote areas. The organization has worked all around Brazil to conduct workshops and introduction sessions to robotics, design thinking, problem-solving methodologies, and so on.

Through these invaluable experiences, they learned essential design principles to make this work successful: getting to know the

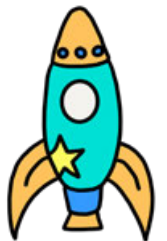
community, staying humble and focus on creating a sharing experience and not only a transmission of knowledge, work with 3 dimensions of interaction: ourselves, each other, and technology, be welcoming to the community's ideas and more.

These design principles make it possible to gradually build an environment with trust and self-efficacy, which are so necessary for the exploration and change of pedagogical practices.

Feeling inspired? Answer these questions to think about how YOU would use this recommendation:

How might we learn from teachers and create with them, as opposed to focus on training them on specific topics?

What are some design principles we show up with humility?



Don't know where to start? Here are some tips:

- **Listen at each occasion and be open.** Coaches, trainers and project leaders can make a point of asking open-ended questions, listening actively and exchanging frequently with educators and K-Play stakeholders. During each training, prompt teachers to share their needs, fears, hopes, dreams and aspirations to ensure that the project is an exchange of ideas.
- **Design experiences for educators to contribute their own ideas.** For each training event and coaching session, ensure that educators have ample space and prompts to express their needs and ideas.
- **Introduce technology gradually.** Similarly to the MundoMaker approach, think of technology as a tool that can be introduced later on, gradually and not as an end goal in itself. Demonstrate and model behaviors in which humans and the learning process are more important than the technology itself.

Time to doodle your ideas...



“You are not coming here to give anything; you exchange things.”

– Fabio Zsigmond,
MundoMaker



Photo credit: MundoMaker



Start the program with a science fair to make the learning experience tangible from the onset.

The concept of learning through play can be appealing immediately and resonate well with people, or it can be also challenging to imagine and conceptualize. But when projects start with an experience of learning through play, then the audience understands the value and the mechanisms from the onset.



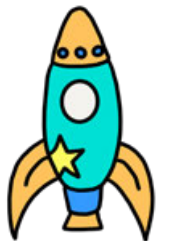
Photo credit: Lego League Zimbabwe, Techzim

Science fairs, or demonstrations, or other events are essential to the adoption of learning through play. Experts like Scratch Foundation or MundoMaker have used these demonstrations from the onset of a project to make the experience very relatable and tangible for people.

The idea is to show the kind of projects and activities that we are talking about, to involve people in them right away so that they experience it first hand, and to reflect together on that very first experience. A straightforward way to introduce new concepts through one event.

Feeling inspired? Answer these questions to think about how YOU would use this recommendation:

How might we demonstrate the value of learning through play at the onset of a project?



Don't know where to start? Here are some tips:

- **Organize a playful learning with technology event.** In the very first weeks of the program, organize an event for people to experience the pedagogy first hand. Ensure they can participate, and that there are a few projects for everyone to engage on. Provide food for families.
- **Experience learning through play.** Propose professional development sessions that enable experiential learning. Learning through play is understood when people experience it together. It will not be conducive to learning if the training takes place in a lecture style.

Time to doodle your ideas...



“In each school, we began with a STEAM event, with food, with families and with teachers. Volunteer educators would run the event.

Teachers would see the children so engaged and say,

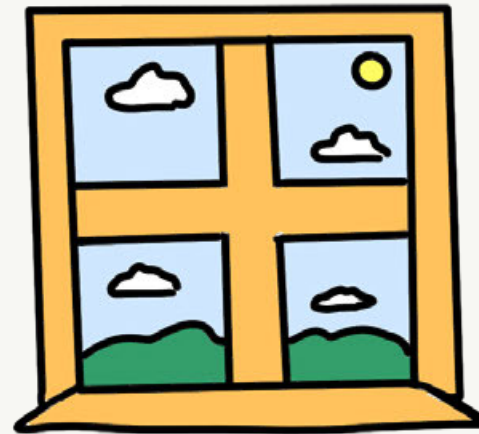
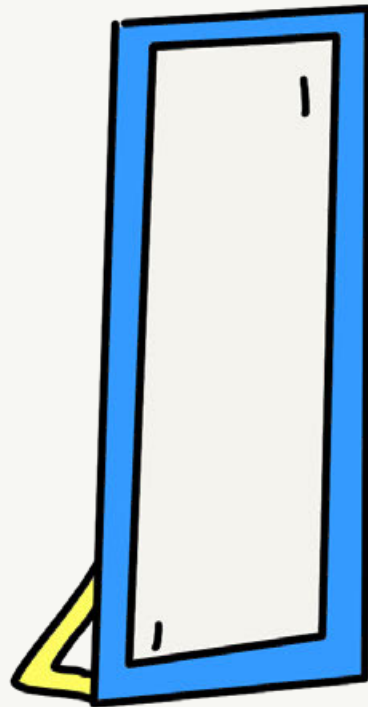
“I’ve never seen kids so focused. How do I bring this into my classroom?” It solved teachers problem: kids are actually engaged..”

–Jacy Edelman,
Scratch Foundation



Design curriculum as a function of mirror and window for students.

Leveraging global learning tools while ensuring that the learning experience is relevant to students in their specific context can be an overwhelming tension. Yet, if we consider the function of the curriculum as a mirror and a window into the world, then we can leverage this design principle to introduced play based learning with localized and global attributes.



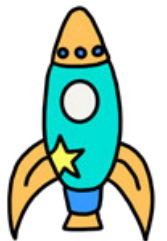
Experts in global education work talk about the design curriculum to function as mirrors and windows for students. This implies that the curriculum is here to reflect the multicultural world that children live in, exposing them to different things and enabling them to grow beyond

what they know, while also, being relevant to them and reflecting their own self. If it's too different, children might have a hard time relating to the content, but if it's too narrowly localized as well, there would be a missed opportunity to help children learn and grow.

Feeling inspired? Answer these questions to think about how YOU would use this recommendation:

How might we design curriculum and learning materials that act as mirrors and windows for students?

Which curriculum components need to be localized and which ones should remain global?



Don't know where to start? Here are some tips:

- **Propose curriculum experiments that mirror students' realities.** You can prompt students to work on a project of their choice, with their interest in mind, leveraging their unique talents. You can also prompt them to work on something relevant to their friends, family or community, or prompt them to think about their favorite hobbies, activities etc.
- **Propose curriculum experiments that expose students to different things.** Ensure that students have access to materials, ideas, images, sounds that are new and interesting to them. For example, you can prompt students to remix a Scratch project from someone in a different country.

Time to doodle your ideas...



Thank you

We are extremely grateful to:

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Fabio Zsigmond, *MundoMaker*

Peter Tabichi, *Primary School teacher*

for sharing their time and insights with us, as we learn more about the multifaceted experiences of playful learning through technology.

We would love to hear from you

We hope this was a useful resource that you and others can implement, remix and build on to introduce playful learning through technology to your community. We loved creating this guide and look forward to your feedback.

Send us an email at:
hi@humanswhoplay.com

or let us know your thoughts
(and how you used this guide!)
[@humanswhoplay](https://twitter.com/humanswhoplay) on twitter.