Pulse on The Principles S2E1 Final Audio Transcript

Allana: Ask any development or humanitarian practitioner. Education is a foundational driver to economic improvement and self-reliance. Quality education encourages changes in knowledge, skills, values, and attitudes to enable a more sustainable and just society. It transforms individuals and by extension, communities, creating pathways to improve livelihoods, health, and well being. In order to expand access to quality education, many education initiatives have begun incorporating digital technologies into their programming. This has become even more urgent in 2020, as COVID-19 has shut down schools the world over. Because of this global movement to remote learning, the United Nations has warned of a global education emergency, as 483 million students still lack access to online schooling with those from lower-income households being more likely to face greater barriers to learning, lack of access to the internet, the relatively high costs to purchase computers and tablets, poor security resources, and limited availability of adult support in home environments means that the most vulnerable children in our communities are being left behind. How can we ensure our children don't lose access to one of the most impactful resources available to them? It is becoming ever more apparent that rethinking education for all means rethinking digital education for all. This is Pulse on the Principles.

Welcome to Pulse on the Principles a podcast series that gives you a live look at putting the principles for digital development into practice. I'm Allana Nelson, your host for our mini-season on the the digital principles and education. In many parts of the world, the fall is associated with going back to school, a time when parents, teachers, schools, and students gear up for a season of education. Yet, in relation to wealth, location, gender and investment disparities in education remain even in many middle and high-income countries. Other factors such as disability and language barriers are even more rarely measured and reported despite their direct correlation to equity gaps. According to UNESCO's 2020 Global Education Monitoring Report, fewer than 10% of the world's countries have laws that help ensure full inclusion in education.

The advent of the internet and expansion of technology use and development has provided some aid in promoting education programs that are both cost-effective and accessible. In addition to helping learners develop essential skills for the 21st century, digital resources pose an opportunity for different types of learning and different context. An example of an early-adopter is the nonprofit ConAcademy, which offers free online math tools for students. And they're content has been translated into several languages with close to 20,000 subtitle translations. As digital education resources like this grow and more

people access them, it's crucial to consider diverse needs and characteristics for all your users.

To do this, we must overcome institutional barriers to equal education such as cultural norms, public policy, and educational standards to ensure resources and systems are usable and accessible for learners of all backgrounds. This will require a reformed education system where the potential of all learners is recognized and their participation and contributions are valued and integrated into program. Developing the technology system that can be used easily, efficiently, and effectively, improves the learning process. What starts as a good user experience becomes a good learning experience. So while collaborations amongst NGOs, policy makers, governments, civil society and the private sector is necessary to build inclusive education, engaging users in the design process is key to unlock the potential of digital education. Before we get to our guests today, I want to remind you that for the latest news and resources, be sure to visit digitalprinciples.org. And follow us on Twitter @DigiPrinciples. That is, @-D-I-G-I-principles. You can also use the hashtag #DigitalPrinciples. don't forget to leave a 5-star rating and subscribe wherever you get your podcasts for more episodes. Now, to our guests.

With us today to talk about innovation and digital education technologies, overcoming access barriers, and designing user-centered programs are Simon Mutabazi and Nour Khoudary. Simon is the Social Innovations Advisor at the Human Development Innovation Fund where he focuses on ecosystem capacity building activities. He has worked on the Tanzanian innovation ecosystem since 2013 and has managed various ed tech projects through organizations such as She Codes for Change, Powering Potential, and the SCRATCH Educators Meetup. Simon shares his passion for development technology and innovation through his membership at the Global Shapers Hub in Dar es Salaam and other platforms. Welcome, Simon.

Simon: Hello. I'm glad to be here.

Allana: Our other guest today is Nour, the Diversity and Inclusion Coordinator at Gaza Sky Geeks. A leading coworking space, startup accelerator and technology education hub in Gaza. Two years ago, she launched Banat Geeks Summer camp, a program that supports high school girls up skills and life skills in technology and inspires them to pursue STEM-related majors in university. Thanks for being here, Nour.

Nour: Thank you very much. I'm really excited for this.

Allana: So whenever the Digital Principle team talks about the principle design with the user, many are quick to say that it is something we already do. But to really understand the design for different learner characteristics on top of different contexts and obstacles is actually pretty complex. When trying to reach more people but having to account for divergent needs, there's quite a bit of adaptation and innovation that has to be done. Simon and Nour, the two of you work in very different contexts, Tanzania and Gaza. Let's kick off the conversation by discussing the unique barriers to education in your communities. How has technology and digital resources helped or hindered access to education or the number of children being educated? Nour, let's start with you.

Nour: So it would be good to start, first, talking about Gaza context. Gaza, being closed off from the rest of the world, traveling from Gaza or visiting Gaza is a hard process for anyone like even the people who live there. And the thing is having your own laptop connected with internet is your window to the world. This is like a lifeline for people in Gaza to outside world and economy. On the other hand, it would be good to mention that Gaza has high rates of education. We have around five universities in Gaza City alone. Literacy rate is high. And female education rate is also high. And also like technology-related fields allows Gazans to participate in their digital economy and overcome blockade and get a job.

Allana: Thank you for that context. I do think it's very interesting that you say that having access to your own laptop means that you have access to the world and that's really critical in communities that are quite isolated. Simon, what's your perspective? Have you experienced any similarities or significant differences to what Nour shared?

Simon: I will borrow examples from the COVID-19 situation in Tanzania. So on 17th, March, the government announced they will close all schools due to the COVID-19 pandemic. Since then and during that time many schools and students were at risk of not learning, not passing their exams. And I think for most of them, dropping out of school, completely. This was especially true for those who did not have independent access to learning materials. Either because their parents didn't have access to a smartphone, a computer, or TV or radio to access any of this content that was being shared out there. So this in a way posed a risk around equity.

Most of the students that were out of school, especially the girls, faced risk of violence at home, and faced the risk of early pregnancies. And, technology has been used to ensure continuative learning for most of these students. And we've

seen this where some schools have deliberately gone out and shared curriculum for pre-primary, primary, and secondary school students to learn while at home. So teachers have sent through Google Drive, through email, and parents have downloaded and given to students to learn.

But also I think the other thing that has happened during this pandemic where technology has come in to help is to ensure equity. So ensuring all children can access learning material even those in rural areas. And I have examples to share for this. We have at my job, at HDIF, we have a couple of grant tiers. One of them is called Schule Direct that has managed to offer learning material through the mobile phone. Tanzania has 32% of mobile penetration and so they've managed to utilize this platform to share e-learning material, to share questions and answers through USSD apps and SMS. And the other one is Ubungo, which has managed to utilize the radio and the TV medium very well to share learning materials for children to learn while at home.

Allana: Thank you for sharing that context. I think it's really important as we all consider, how do we ensure children are still getting a quality education given most schools are now closed. And you raise an important point around equity and access and having organizations that provide learning resources through mobile phones is definitely one of the ways that we can address this because a lot of families do have mobile phones so thank you for sharing that. I would like to unpack the difference and linkage between usability and learnability for a moment. Too often, education programs whether digital or in the classroom, are made through a system design rather than a user-centered framework. When a system's function and interfaces are not designed with users, it generates more frustration and takes the focus away from learning. Simon, can you tell me how you consider usability and learnability when designing education resources?

Simon: So apart from my full-time job, I also host a monthly weekend STEM program for teachers exploring STEM. It's called SCRATCH Educators meetup. We often explore new tools and resources for the teacher subjects on the Tanzanian syllabus. So we introduce new tools and courses to teachers. And, personally, for me, I normally want them to be astonished when they experience those tools and have fun while they use them. Of course, on top of them using the tools, we want them to learn and meet their learning objectives for that weekend, right?

So in order to achieve the goal, there's always that period when the teachers, when they come in, they want to use the resources that we teach them. So we make sure the tools are easy to use, they're easy to figure out, and easy to learn, especially for the first-time visitors, the first-time teachers who come to the

meetups. There are other things that you really need think about when designing resources and I'll pose these as questions to anybody designing any resources, right? So after the users have learned how to use for example, your app or your curriculum, how quickly can they use it to achieve whatever objective you've given them? That's one of the questions we pose when designing these resources. The other one is, when users stop using for example, the app, or they stop coming to the meetup for a couple of months, when they come back, how quickly can they remember? How quickly can they easily use the tools? The other thing that we usually ask around when designing our weekly meetups is how many times does the software, does the books, come up with errors, right? How many icons do we misplace? How many wrong translations do we have? We try to minimize that such that it's easy and understandable for them. Most importantly, I would say in our meetups is we want to make the experience enjoyable for the user.

Allana: Nour, Simon just gave us a lot of good considerations on designing education tools with users in mind, in this case, teachers. How do you think we can better ensure user-centered design in education resources rather than systems design? What do you think it will take for us to achieve this?

Nour: I would say that being intentional and specific with the audience of the program or intervention is a must, here. For example, like when we started designing Banat Geeks Summer Camp, we were targeting a very, very specific group. Not just a general like female group. It was like, girls who are finished high school and they didn't get any trainings before and they didn't know that much about coding or technology. We brought a lot of criteria of those girls and specify the segments.

And then, we build on some research we did about studying technology in the university versus like the rate of get a job. We realized that 80% of people who study technology in the university, they get a job. And this is like a very good indicator that we take it from there to make a very clear objective for our summer camp. That we need 80% from both, girls, who graduate from the summer camp choose a technology a STEM-field in the university. Along with like 100% of them say that the summer camp helped them choose the university specialization. So being very specific in the targeted group and building all of that intervention or the program based on a clear study and needs will really make the user-centered design something that work with you. And you can have more agile approach to improve day-by-day all the activities that you do. And this is what we were doing. Like day-by-day, we receive feedback from the participants about each session and about even the logistics and other stuff. So this helped us improve everything day-by-day, not just waiting until the

program finished, and just do these improvements for the next year, for example.

Allana: Now, both of you have experience working with innovation startups and introducing learners to coding as a career. Gaining an empathetic understanding of learner needs and challenges is necessary to maximize impact. Many leaders and organizations are keen to develop new ideas but often miss this vital first step. Nour, in your work with startups, how do you help them to address this key skill and empathizing and understanding the user, in this case, learners?

Nour: Pretty much all of our programs at Gaza Sky Geeks include an in-person, verbal interview in addition to a written application. So spending face-time with a user is a key to understanding the motivations and whether or not GSG is the right fit for what they are looking for in life. There's also a chance to do market research and validate whether our programs are meeting a real need or if we have a blind spot on our assumptions and can benefit our program to better serve or adjust what we are doing. So having like these one-on-one interviews or interaction with people is really improving this very much.

Allana: Simon, when you're working with future coders, engineers, and innovators who are interested in the education field, what advice do you give them about creating inclusive education resources? And, what do you think is most critical for them to focus on?

Simon: First of all, for Tanzania, only one in every 29 houses has a computer. Some of the biggest coverages is like for example, mobile penetration which is at 72%, and radio, which is at 87% of households. So apart from all the other principles that you could use to design educational resources, especially for coders and innovators, I think the most important one of them is to develop context-appropriate resources for learners but also for teachers. And, design tools that are informed by the user's priorities and needs. Considers the location and environments where these tools are going to be used. And, sometimes you'll find that digital tools are not the best fit for some of these areas, right? So after you have identified your diverse coders, so the teachers that are going to be using your tools. But also after you've identified the gaps that your solution is going to fill, I think what follows next is just to keep iterating from there. Take their feedback and put it back into the process of designing this appropriate tool for whatever context you want to fit in.

Allana: I really like that you brought up that point that sometimes the digital tools are not the answer. And we talk about that a lot with the principles for digital development that almost a zero principle is first deciding if technology is

actually the appropriate solution. Because people often see it as the silver bullet but sometimes it isn't actually the right approach to reaching a community. You know, inclusive education needs to be accountable to the stakeholders. This requires the active engagement of local communities by means of including their participation in building, sustaining, and monitoring educational initiatives. Representation in this way is a central aspect to ensuring accountability and good governance. Simon, we talk a lot about collaboration between governments, NGOs, policy makers and local leaders to design inclusive tools and programs. But let's talk a bit about the learner participation. How important is it that there are mechanisms for student participation at all levels in the education system? Can you tell me about specific mechanisms you have utilized that seek iterative feedback or input from learners on how to design enriching, inclusive programs?

Simon: I think it's very important, both, male and female use digital education tools, both students in rural and in urban areas use digital education tools. So I think at the core of designing solution with the user, especially for the students, feedback needs to play an important role in improving the usability, you know, and buy-in for these resources in the schools. In our SCRATCH meetups, we start each session with either the students or the teachers setting the agenda for what they want to learn with the tools we have put for them in the room. And this intentional by design.

We start each meetup without having a plan of what we want to learn but we have all the tools around us. During the implementation of each meetup, teachers then use sticky notes or they just put up their hand and voice to the facilitator what they want to learn for the day, and then we'll write it on the board. So then we move, instead of just delivering what we have prepared for them, the role of the facilitator changes to include assisting during the learning, helping the students or the teachers how to use the tool. And, most importantly, listening to the feedback of the teachers. So each implementation of the meetup is unique because the agenda is not pre-designed. Although we look for the tools beforehand but the agenda is not designed before the meetup so you find that its unique. But the feedback that you get from the teachers every now and then, every meetup that you design after becomes improved and better in delivering that objective of learning how to use tools in the classrooms.

Allana: You know, we've been talking a lot about the design with the user principle and another digital principle I'd like to discuss is reuse and improve. And it actually intersects really nicely with design with the user, for this context. The best technology solution can be a mature product as opposed to some shiny and new thing. We know that it can save time and money when we

improve upon existing products and adapt them to user needs an example of this can be simply investing in translating an online training course so that it can serve a new community of learners instead of developing brand new curriculum. So gathering information and feedback for both learners and teachers is extremely relevant to strengthening educational tools and services. Nour, can you give us an example of how you identify existing resources that best tie into your user needs and steps that you take to adapt those resources for different learning styles for students that require learning accommodations?

Nour: This is totally what we did when we, for example, designed the summer camp for high school graduates, to help them know more about technology, coding, and entrepreneurship. So let me just give you a small context about what we're doing in Gaza Sky Geeks. So we have three main programs. The first is the Code Academy, which is six months of teaching how to be full stack developers. And then, we connect them with several companies that are looking at developers to have a job. The other thing that we have a Freelance Academy featuring people who have any skill, how they can get job from the freelancers' websites. And the third program is the Startup Program, which is like anyone who have any idea, we help him or her to just launch the product, connecting them with mentors or investors. So this is like the three main programs we have. And also, we have a crosscutting program like a professional and soft skills program and other mentorship related programs. We actually build the curriculums we have from a light version from everything we do for NGSG. So I believe that this is an example how we use the current resources we have from like 10 years ago to develop another new program but totally depends on these resources or program with a different audience, with different outcomes but we use these things.

Allana: So we know from UNICEF's human rights-based approach to education report that there are a significant number of children today who are being taught in a language different from their native tongue, which poses a major obstacle to learning. For example, the Laos People Democratic Republic is incredibly ethnically and linguistically diverse. There's a high dropout rate at the primary-level and almost all children in secondary school are students with Lao as the first language. In early education you learn to read but in the next phase of education, you must be able to read to learn. There's no simple solution to the challenge of providing education in countries like Laos, where there are multiple languages spoken. Do you think there is an opportunity for technology to adapt to different ways children learn to accommodate challenges like language barriers? Or do you think technology is equally as limited? Simon, let's start with you.

Simon: Just like Laos, Tanzania is also very divers, very many languages, very many cultures and very many different local contexts where technology could be applied. Already, we are seeing organizations like Ubungo passing some of their learning content such as tips and timetables for teachers and parents to be accessed via SMS. And, now, they're exploring the use of WhatsApp bots to deliver the same content. Other technologies that have been implemented include IVR, which is Interruptive Voice Response, USSD, web, and mobile platforms, radio, and TV. So I think technology can adapt. I think for any social change maker, or innovator in this world, technology is an important tool that can be crafted for any and all purposes, including solving the challenges you've mentioned about like language barrier. Other challenge could be like cost of providing quality education or cost of accessing quality education. But I believe knowing how to do so ethically, sustainably and implementing values of the community, of life, at the core of designing this requires to be a constant practice. It requires also a clear and updated understanding of the context. But also a continuous iteration of the feedback of whoever is using the tools that you design, the technology that you use. For me, personally, for the work that I do at the Human Development Innovation Fund, walking with grantees. The principle provided that blueprint for us to get practices that could help us design safe tools. So I think all young developers, all young coders, or anybody who's actually using technology to address challenges of education, they should really look into the PDDs and see how to use them in designing their solutions.

Allana: Thanks for that Simon. And for listeners, we do partner with HDIF quite a bit. A few years ago, we partnered with them for our first major international event in Tanzania. And they've been really great partners for the principles ever since. Nour, what do you think based on your experience? Is technology too limited to overcome learning barriers that maybe socially are culturally institutionalized.

Nour: So I believe that technology is a tool that enable young people to learn new stuff out of the traditional classrooms. There are so many tech-enabled educational games and tools, and the internet allows for exposure to so many cultures that are otherwise impossible to come by in a place like Gaza. On the other hand, we can't replace technology solutions to be replacement of education or face-to-face mentoring, coaching because mentorship or coaching always be the extra invaluable element that makes learning a social experience with people. The other thing we can consider also in a context like Gaza that the electricity situation is not that much feasible, sometimes it comes four hours a day. Sometimes it come eight hours. Sometimes it come two hours a day. So sometimes like even this resource and even these great technology resources, sometimes it may shut down for a while. And, also, for example, now, here, in

Gaza, we are in a total lockdown. Due to COVID-19, all the schools are closed. We are back to working from home again and, also, we are using all of these technology for our kids or even for ourselves to continue our programs and classrooms for our participants, and community, and also supporting our kids doing their homeworks and connecting with teachers so it's really a great tool. But all the time being with other people in the same place and feeling the vibes, that's really the best thing, I believe.

Allana: Nour, you brought up some great points, there. And I kind of want to go back to revisit a few of them. So first, online learning and technology resources cannot replace one-on-one interactions and that the context you get from in-person mentorship or in-person engagement and instruction is so critical and that's something that we have definitely found over the last year, as we've been working on developing training resources based on the digital principles. That there's this high-demand for context-appropriate in-person engagement around learning and having facilitators or instructors that understand culturally relevant approaches to technology and this is so important. And you're absolutely right, like you cannot just automate education. It's not as simple as sitting a student in front of a computer and just saying, "Go through the modules." Because they might need more context, they might need more assistance and it's so wonderful that you brought up that point because that's really important. I think this is a really great place to end our conversation today. I think we're leaving our listeners with a lot to think about and a lot to consider when it comes to their own approach to education. Simon and Nour, it was such a pleasure having you both, here, and learning more about education initiatives in Tanzania and Gaza. Thanks for kicking off our second mini-season with me today.

Simon: Thank you so much. It was a pleasure.

Nour: Thank you very much and have a good day.

Allana: And to those of you listening, if would like to give us feedback on this episode or any other topic in our episode lineup, you can reach out to us at principleadmin@digitalimpactalliance.org. You can also visit us any time at digitalprinciples.org. Or follow us on Twitter @digiprinciples. That's @-D-I-G-I-principles. You can also use the hashtag, #digitalprinciples. I'm Allana Nelson. Thanks for listening.

Pulse on the Principles is made possible by the Norwegian agency for development cooperation and is produced by Claudine Lim, Allana Nelson, and Abigail Shirley of the Digital Impact Alliance. Special thanks to Podcast Village for recording, sound mixing, and graphics. See you next time.