Team4Tech White Paper

Building the Context for the Team4Tech Solutions Roadmap

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The Big Picture

Team4Tech uses human-centered design strategies to impact two different albeit connected groups of stakeholders - nonprofit organizations working in education, and corporations that engage and inspire their employees through social impact. As an impact accelerator, our strategic nonprofit portfolio is made up of education-focused nonprofit organizations directly impacting learners in under-resourced communities.

What We Do

Team4Tech works to advance the quality of education for learners in under-resourced communities by engaging pro bono consultants and aligned educational technologies to support non-profit organizations (NPOs) who have a vision for how technology can amplify their organizational impact on teaching and learning. Our goal is to build capacity for NPO organizations and their staff, so that teachers and learners can use technology to accelerate knowledge acquisition and master skills for lifelong learning.

At the core of our work is a commitment to all learners having access to quality learning that leverages the power of digital technologies. This commitment lays the foundation for all learners to engage in a global knowledge economy where they can equitably leverage economic opportunity.

Our Theory of Change

Since Team4Tech launched in 2013, we have continued to finetune our intervention strategies, levers of change, and ultimately our efforts in strengthening and scaling education-focused nonprofit organizations directly serving learners in under-resourced communities. We believe that these community-based nonprofit organizations are the change agents necessary to influence educational innovation and, through partnership with governments and multilateral development organizations, to deliver quality educational experiences that all learners deserve at scale.

> We believe that learning happens through authentic experiences that are empowered by technology. And the skills developed through those experiences are essential to meeting the needs of a global economy.

We support these nonprofit partners with pro bono capacity building projects engaging corporate volunteers, and with annual technology grants, tools and resources. Our work ensures that we are strengthening local educational capacity, improving access to quality

learning experiences, developing employability skills, activating change-makers, and sharing our knowledge, experiences, and model on a global stage.

> *Through implementing our solutions roadmap with strong partners and a global audience, our organization can amass evidence to demonstrate the effectiveness of our model.*

Figure 1: Team4Tech's Theory of Change
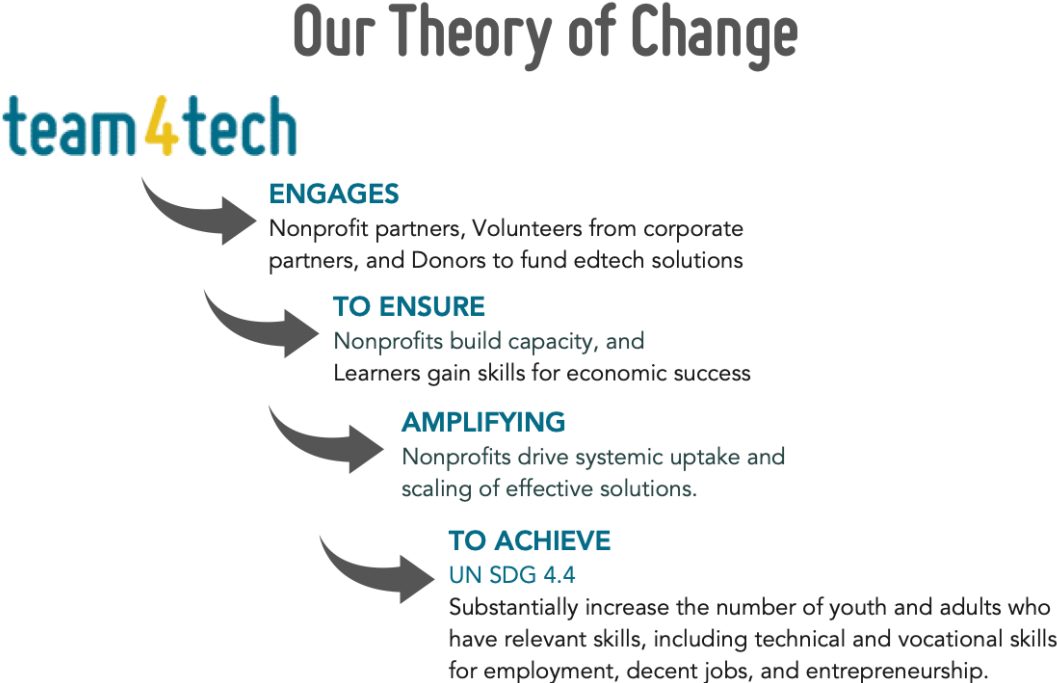
This Solutions Roadmap summarizes Team4Tech's approach to partnering and building capacity for local NPOs, while providing perspective on our phases of collaboration.

Our Global Context

In the early 2000s the international community rallied together to end poverty by setting the Millennium Development Goals (MDGs) and Education for All (EFA) goals.[1] Focused on designing the future, this was a call for stakeholders to rally around key goals to improve our future world-state.

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[1] The complete list of goals, targets and indicators is available at http://mdgs.un.org.

Future goals focused on eradicating poverty and hunger, addressing long-term environmental needs, upholding human rights, strengthening international collaboration, and ensuring access to skills and knowledge to sustain communities.

Since 2015, stakeholders have used the seventeen Sustainable Development Goals (SDGs) as a shared blueprint for peace and prosperity for all people. Guided by the Division for Sustainable Development Goals in the United Nations Department of Economic and Social Affairs (UNDESA), the SDGs are continually being nurtured and addressed by a global network. Of particular interest to Team4Tech is Sustainable Development Goal number four, which is focused on ensuring inclusive and equitable access to quality education that promotes lifelong learning opportunities for all.[2]

The 2022 progress report[3], produced by the United Nations Secretary General noted continued concerns over the percentage of young people completing upper secondary school, the number of young children who are developmentally on track, the ongoing issues around accessing and developing skills with technology, and the lack of training for the world's teachers.

UNESCO suggests that nearly 10 years into the work, there are still gaps in access, participation, and outcomes. There has been some success, such as the increase in 2020 enrollment surpassing 90% in primary, 85% in lower secondary and 65% in upper-secondary education. However, we have also seen some unacceptable and continuous struggles, such as nearly 60% of young people aged 15-25 in low-income countries being unable to read a simple sentence.[4]

The 2030 Agenda for Sustainable Development[5] recognizes students' needs to consider a wide range of converging solutions to the problems that they face - solutions that are grounded in local context, problem solving, designing, thinking, and service. Given this, there is a renewed call for stakeholders to create a shared focus on education as an opportunity for problem solving, community collaboration, engaging teachers in continuous learning, and developing the skills necessary to thrive. These pedagogical commitments embed purposeful learning, applied problem solving, use of technologies, and a new degree of digital literacy as well as digital citizenry.

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[2] Secretary-General, U., 2017. *Progress towards the Sustainable Development Goals : report of the Secretary-General*, UN. United States of America.
[3] Secretary-General, U., 2022. *The Sustainable Development Goals Report 2022*. United States of America.
[4] UNESCO, 2021. *Reimagining our futures together: A new social contract for education.* Paris: UNESCO.
[5] United Nations. (2015) General Assembly Resolution A/RES/70/1. Transforming Our World, the 2030 Agenda for Sustainable Development.

"Curricula should support teachers and students to act together on technology and help determine how it is used and towards what purposes" - UNESCO 2021[6]

Compared to 2015, today's global educational solutions must empower learners, engage individuals, leverage learner agency, and inspire self-directed learning.[7] No longer can we focus on developing unique skills (like those referenced in the 1998 iteration of the International Society for Technology in Education's initial student standards that focused on spreadsheets, presentation tools, word processing, etc.), rather we must develop learners with skill sets and critical capacities to identify, use, and maximize technologies that are locally relevant and personally empowering.

At Team4Tech, we know that technology cannot be extrapolated from learning if we are to prepare all learners for their unique futures.

Today more than ever before, localized context matters. As UNESCO pointed out in their 2022 report, "Innovations are most likely to be successful when they are designed to meet the particular needs and characteristics of students in specific contexts."[8] Three key factors of education to address the needs of the global economy are teacher autonomy, authenticity, and personalization. Underlying each of those factors is the capacity of learners to understand, experience, and master key employability skills such as growth mindset, tolerance for ambiguity, evidence-based decision making, communication, and collaboration.[9]

Team4Tech exists to connect key skills, technology, teachers, learners, technology-rich organizations, and volunteers so that localized efforts are supported, accessible, and sustainable.

Guiding Research

Team4Tech's human-centered design approach to capacity building within global education-focused non-profit organizations is guided by research at the intersection of technology, teaching, and learning.[10] With the end-goal of our work being improved

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[6] United Nations. (2015) General Assembly Resolution A/RES/70/1. Transforming Our World, the 2030 Agenda for Sustainable Development.

[7] Talreja, V. (2017), *"Learner Agency: The Impact of Adversity" section of Education 2030 - Conceptual learning framework: Background papers*, OECD

[8] Carney, S. (2022) Reimagining our futures together: a new social contract for education,Comparative Education, 58:4, 568-569

[9] Dweck, C., Walton, G. M., & Cohen, G. L. (2011). Academic tenacity: Mindsets and skills that promote long-term learning. Seattle, WA: The Gates Foundation.

[10] Henriksen, D., Creely, E., Henderson, M. *et al.* (2021). Creativity and technology in teaching and learning: a literature review of the uneasy space of implementation .*Education Tech Research Dev* 69, 2091–2108).

educational outcomes and expanded economic opportunities for all learners, we rely on a cross-section of evidence to inform our own best practice.

Figure 2: Team4Tech's Guiding Research
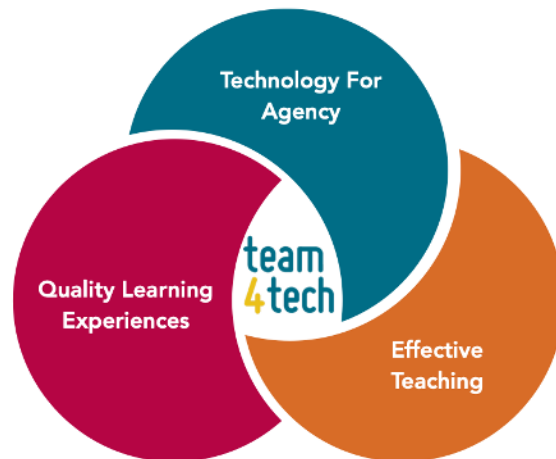
Quality Learning Experiences

We know more today than ever before about how individuals learn and what environments and opportunities deepen that learning. Research on quality learning experiences demonstrates that it is essential that students have a connection to the content they are learning.[11] That means that locally relevant learning, with applications in real-life contexts, is a necessity. Further, research suggests that students need natural and increasingly important opportunities to use, reuse, practice, and make meaning of content with which they are engaging.[12] This demonstrates that critical thinking, problem solving, and a general tolerance for ambiguity are key to deepening skills, understanding, and application.

> *Quality learning experiences engage students, help them feel a connection to learning, and push learners collectively towards using what they know to make their world better for themselves and for others.*

Effective Teaching

Across high-performing education systems worldwide (and within-country disparities), what matters most is effective teaching. High-quality teachers are the key ingredient to long-term learner success, with research demonstrating that the most powerful ways to improve learning

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[11] Pashler, H., Bain, P., Bottge, B., Graesser, A., Koedinger, K., McDaniel, M., and Metcalfe, J. (2007) *Organizing Instruction and Study to Improve Student Learning* (NCER 2007-2004). Washington, DC: National Center for Education Research, Institute of Education Sciences, U.S. Department of Education.
[12] Linda Darling-Hammond, Lisa Flook, Channa Cook-Harvey, Brigid Barron & David Osher (2020)Implications for educational practice of the science of learning and development, Applied Developmental Science, 24:2, 97-140

are directly linked to teachers.[13] While the education field historically viewed teachers as solo-practitioners responsible for content delivery, today the role is much more dynamic. Today's teachers are facilitators and connectors who bring their world into the classroom and create joyful experiences where both they and their learners are trying, failing, exploring, creating, and engaging with local contexts.

> *"Individual talents and abilities of teachers need to be bolstered by collaboration and support." - UN Secretary General*

Paramount to effective teaching is access to continuous learning opportunities for teachers. Today, these opportunities allow for global connections, access to robust professional learning communities, reflection, and conversation about their work. Professional learning of yesterday focused on a traditional grade-level classroom in a typical school context. Today, we now know that informal, reflexive, and responsive learning environments engage learners at increasing rates, and teachers within those environments deserve the same flexibility and purpose in their own professional growth. New and traditional environments benefit from the use of technology to ignite teaching *and* professional learning.

> *"When teachers have the preparation they need, and learn how to use the technology to close those gaps, amazing things start to happen." - Richard Culatta, ISTE CEO*

Technology for Agency
Deep learning that is relevant, purposeful, and has meaning in local contexts is the target experience for every learner. The integration of technologies creates a foundation for learners that can move them in powerful, personally meaningful ways. Today, technology allows for student and teacher agency in creative ways that we may not have even imagined a decade ago.

> *"Agency is the capacity for students to take purposeful action in learning." - Jody Britten*

The UN Secretary General positions technology in education as a tool for inquiry that is led by humans to both extend and support human potential.[14] We know that technology skills are lacking in our global learners and there must be a scaffold from access, experience, mastery, and agency in both formal and informal learning environments. We also know that technology alone is not transformative and access does not shift learning outcomes.

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[13]

[14] United Nations (2022). Transforming Education: An urgent political imperative for our collective future. Transforming Education Summit, New York, NY.

In today's educational ecosystem, technology should be available, support self-directed learning, and inspire creation and production that serves locally and inspires globally. Technology has gifted our learners access to foundational learning and opportunities to develop dispositions and skills that make lifelong learning achievable. For over a decade we have known that technology for interactive, authentic learning holds the most impact.

> *Coupled with effective teaching (and continuous professional learning), technology can transform the learning outcomes for learners.*

For over a decade, Team4Tech has seen evidence that technology can shift learning opportunities for under-resourced populations that lead to learning attainment. During the height of the COVID-19 pandemic, learners in remote locations demonstrated that access via simple tools like WhatsApp could keep interaction and access even during the most challenging times.

We know that access to quality hardware and software is critical, and we know that personalized learning via technology is challenging in under-resourced areas. We no longer have to question if technology can result in learning gains. Today, our focus must be on ensuring all learners have access to technology so that they can develop the skills and competencies necessary to make a personal impact.
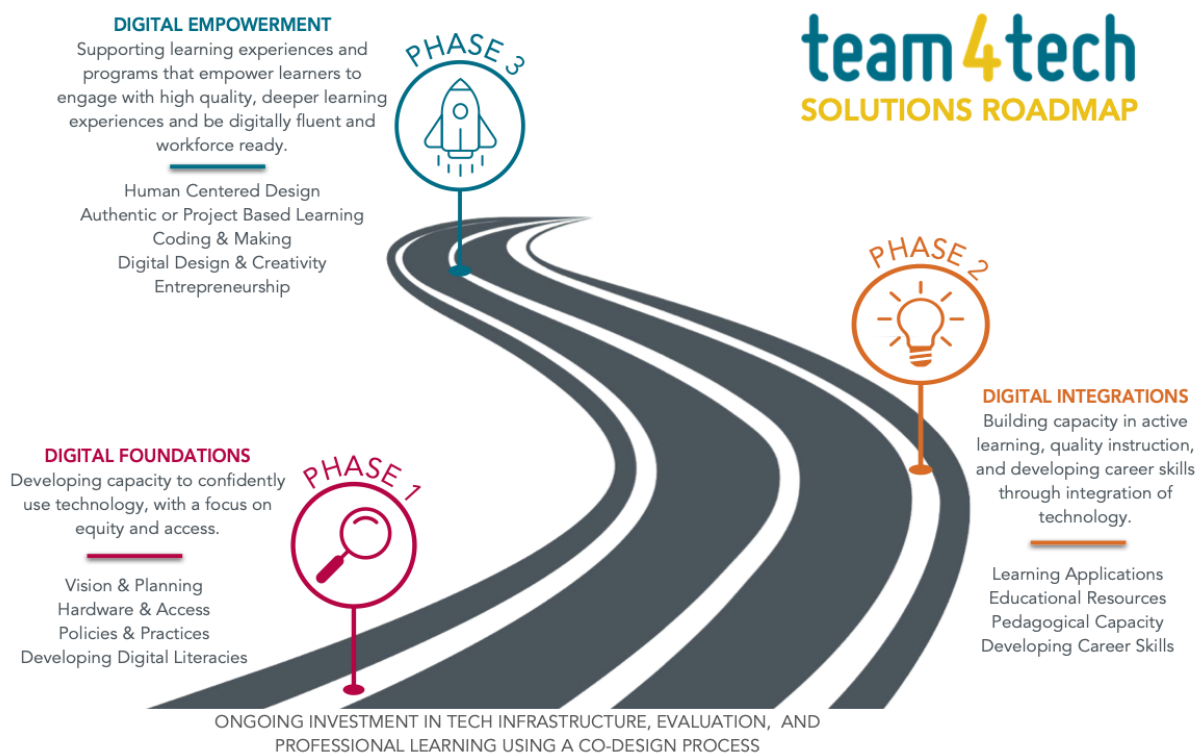
Using our guiding research as an organizational northstar, Team4Tech is focused on enacting the promise of technology in education and linking that technology to capacity building for nonprofit organizations supporting learning in low resource areas. We do this through a human-centered design process that results in localized solutions that leverage technology, empower local sustainability, and focus on equalizing access to quality educational experiences.

Solutions Roadmap for Long-Term Partnerships

Technology adoption, acceptance, and sustained use is predicated on individual and organization perceptions of both ease of use and usefulness toward individual and organizational goals. Given the predictive validity of these factors on the long-term and meaningful use of technologies in learning contexts, Team4Tech has built long-term partnerships along a continuum. This continuum ranges from digital foundations, through digital integrations, and ultimately into digital empowerment. Consistent with research on specific technologies and their alignment with resulting pedagogical choices (i.e., authenticity, complexity, and instructional model), this continuum scaffolds partnerships to result in high quality, relevant learning experiences for global learners.

Team4Tech's skilled team is able to utilize this continuum in collaboration with NPOs to create unique, locally contextualized, and sustained (3-5 year) partnerships. As part of our overall organizational strategy, we have articulated our Solutions Roadmap. [See Appendix Table 1 for detailed objectives, focus areas, and success metrics for each phase of this programmatic model.] This roadmap is grounded in educational change literature (especially that related to educational technologies), and articulated in this Solutions Roadmap is how Team4Tech supports education-focused nonprofit organizations serving learners in under-resourced communities. Team4Tech's support intentionally moves nonprofit organizations toward use of technology that advances agency, empowerment, and engagement of all learners.

Figure 3: Team4Tech's Solutions Roadmap

DIGITAL EMPOWERMENT
Supporting learning experiences and programs that empower learners to engage with high quality, deeper learning experiences and be digitally fluent and workforce ready.

Human Centered Design
Authentic or Project Based Learning
Coding & Making
Digital Design & Creativity
Entrepreneurship

DIGITAL FOUNDATIONS
Developing capacity to confidently use technology, with a focus on equity and access.

Vision & Planning
Hardware & Access
Policies & Practices
Developing Digital Literacies

DIGITAL INTEGRATIONS
Building capacity in active learning, quality instruction, and developing career skills through integration of technology.

Learning Applications
Educational Resources
Pedagogical Capacity
Developing Career Skills

ONGOING INVESTMENT IN TECH INFRASTRUCTURE, EVALUATION, AND PROFESSIONAL LEARNING USING A CO-DESIGN PROCESS

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Phase One – Digital Foundations

The focus of Phase One is to empower the NPO to 1) build leadership capacity, 2) develop teacher digital literacy, and 3) lay the necessary foundational technology infrastructure.

> *At Team4Tech we define digital literacy as having the skills necessary to live, learn, work, and thrive in a digital society.*

Team4Tech supports capacity building of NPO leadership teams by supporting the transformation of their organization with policies, infrastructure, and practices that positively impact learning outcomes. Capacity building involves pro bono consulting from corporate volunteers, skilled facilitators of human-centered design from Team4Tech, and the critical voice of nonprofit partners. These collaborative efforts are facilitated as consulting projects, with outcomes and artifacts that can be used directly by local nonprofit organizations.

Sample outcomes of a Phase One project include:

- NPO leadership has conducted an initial needs assessment for their technology infrastructure, and identified pathways to developing and supporting digital literacy.
- NPO leadership and staff are able to demonstrate foundational digital literacy, including the operation of laptops, devices, and peripherals, navigation of the web, use of productivity software including email and document creation.
- Facilitators and staff are able to use technology to plan and deliver lessons, including presentation software and overhead projectors.
- Learners acquire basic digital literacy, including how to operate computers and conduct basic web research.
- The NPO has considered available technologies and devices and has data necessary to commit the budget, staffing, and training necessary to advance the organizational capacity and digital literacy skills for staff, facilitators, volunteers, and learners.

Phase Two – Digital Integrations

The focus during Phase Two shifts from laying foundations and supporting basic digital literacy to the strategic integration of technology through tactical planning for implementation. Planning centers around incorporation of locally relevant ed tech solutions and digital resources to accelerate student learning outcomes in core subject areas.

> *At Team4Tech we define digital integrations as the tactical implementation of technologies to advance NPO impact on learning outcomes.*

Team4Tech supports the tactical implementation of technologies through staff training, process mapping, project planning, organization and management of resources, and developing additional infrastructure to fully implement and maintain progress in digital literacy, create pathways to develop digital fluency, and create organizational systems for privacy, security, and device management.

> *At Team4Tech we define digital fluency as having the experience and knowledge base necessary to select, adapt, contextualize, and use technology responsibly.*

Sample outcomes of a Phase Two project include:

- Creating a resource library or knowledge base to ensure access to continuous help and tutorials for existing and new staff and learners that empower troubleshooting and streamline organizational "lessons learned."
- Developing a training program with aligned learner outcomes and staff expectations for meeting those outcomes.
- Address internal policies of safety, privacy, use, and device management.
- Designing a review process for current programs to identify areas where use of technology can be advanced to develop additional skills and competencies for learners.
- Having processes in place to evaluate, select, and implement new digital tools and technologies.
- Curating project-based learning opportunities that move the use of technology beyond consumption and basic skills.

Phase Three – Digital Empowerment

The focus of Phase Three is to empower the NPO to leverage technology for deep, authentic learning that has real-world relevance and engages learners in higher order thinking skills.

> *At Team4Tech we define digital creations as those user generated materials that move students beyond consuming and skill building, into skill using to produce, analyze, create, share, solve, and communicate in highly engaging, purposeful ways.*

Team4Tech supports this high level use of technology through supporting strategies and tools for developing evergreen skills (e.g., critical thinking, collaboration, communication, creativity, etc.), designing new programs and approaches that develop applied capacities of learners, developing organizational capacity to design new partnerships and collaborations for staff and learners, and developing design skills within the NPO to enable problem identification strategies at the local level.

Sample outcomes of a Phase Three project include:

- Creating and implementing access plans to ensure reliable access.
- Integrating hands-on STEAM activities in staff training.
- Developing lessons for learners to practice and master digital citizenry skills.
- Identify target partners that can act as real-world partners for learner projects.
- Design a digital portfolio system to help learners demonstrate and share their knowledge and skills.

The Solutions Roadmap outlines our commitment, expected progressions, and long-term goals of nonprofit organizations in our strategic portfolio.

Partnership Highlight: Building Capacity for Teachers in South Africa

With about 22 million young people currently in its education system, South Africa continues to be one of the most unequal societies in the world, as a legacy of its apartheid system of government (1948-1991). For over six years, Team4Tech partnered with LEAP Science and Maths Schools to invest in enhancing the digital infrastructure at each of their six schools. This partnership also focused on providing ongoing teacher training to effectively integrate technology into student programs and learning experiences. Because there was disparities among LEAP staff specific to pedagogical readiness to effectively integrate technology, our collaborations with LEAP developed pedagogical readiness and a system to sustain and continuously develop teacher skill.

2014 focus	2015 focus	2016 focus
Priority: Infrastructure and building a digital foundation	Priority: Infrastructure and organizational capacity building	Priority: Infrastructure and increased digital literacy
- Deployed teacher laptops - Introduced teachers to productivity tools (MS Office)	- Deployed more teacher laptops and set up school server - Introduced teaching staff to integrating technology into core curriculum	- Deployed teacher laptops, student tablets, projectors, and printer - Advanced teacher confidence and collaboration through digital literacy (Google Suite)
2017 focus	**2018 focus**	**2019 focus**
Priority: Advancing teacher capacity and introducing students to maker mindsets	Priority: Infrastructure upgrade and expanding maker education	Priority: Infrastructure updates and integrating technology into the core curriculum
- Advanced teacher productivity skills using technology - Introduced maker education through various introductory projects and beginner coding platforms	- Virtualized main server and updated school computer lab - Integrated more advanced coding kits into a maker-curriculum and project-based learning	- Upgraded school servers and improved network - Provided adaptive math software for all schools - Advanced students understanding of robotics

As with many of our projects, our team experienced pivotal moments of reflection. LEAP's Founder and Executive Director, John Gilmour remarked on one major component of the Team4Tech approach: placing their local nonprofit partners in the driver seat by always asking "What do you want? What is your strategy?" rather than driving the conversation and telling partners what they needed.

Collaboration Model

Team4Tech's core strategy as an impact accelerator is to strengthen relationships, build capacity, and empower education-focused non-profit organizations to achieve sustainability. Team4Tech identifies high performing, relevant NPOs and works with them to design capacity-building projects that can allow them to reach sustainability and scale. Through long-term collaborative partnerships with NPOs, Team4Tech provides coaching, facilitation, curation of resources, and project management services to support the continual progress of NPOs.

As a key part of the organizational collaboration model, Team4Tech recruits, trains, and manages teams of pro bono consultants from global impact-focused corporations to provide capacity building support through facilitated projects. These projects support the progression of NPOs from digital foundations to the digital empowerment phase of our solutions roadmap.

At Team4Tech we define impact acceleration as efforts (including knowledge sharing, community building, funding access, support services, and thought leadership) that are provided to scale the impact of multiple social enterprise organizations connected by a common goal: improving access to quality learning.

Partner Selection and Program Development

The selection of quality NPOs to engage in a long-term partnership and make the most of their time with Team4Tech is critical to the success of our collaboration model. Over the past decade we have refined our partner selection process so that we now focus on three primary criteria including: (1) demonstrated, sustainable education impact, (2) alignment of program goals with Team4Tech's mission and pro bono consulting skills; and (3) commitment to monitoring and evaluation around program impact.

At the core of our successful collaborations, is our use of a human-centered design model that supports each nonprofit partner that Team4Tech engages in long-term partnerships. This approach provides a collaborative, creative framework for Team4Tech and our NPO partners to explore and address issues with a new perspective, and to design innovative solutions that work in the local context.

When you understand the people you're trying to reach—and then design from their perspective—not only will you arrive at unexpected answers, but you'll come up with ideas that they'll embrace. - IDEO Field Guide to Human Centered Design

Informed by the research on human-centered design, we use a three stage process to shape our NPO support and build a foundation for our partnership.

Stage 1: Discovery
Occurring at least six months prior to the engagement of Team4Tech consultants, the Team4Tech program team works with the NPO to explore needs and define program goals and sequential scopes of work.
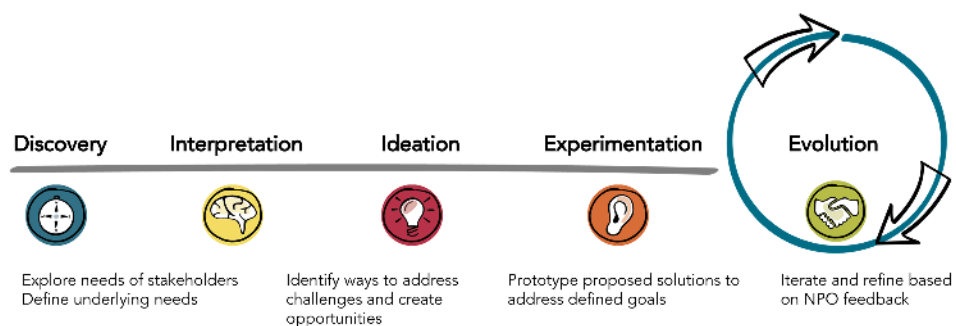
Stage 2: Interpretation and Ideation
With insights, needs, and program goals defined, the NPO and Team4Tech consultants enter an ideation phase where teams brainstorm, identify new and creative ways to address both real and perceived barriers, co-create initial opportunities, and come up with possible solutions, prototypes, and mockups.

Stage 3: Experimentation and Evolution
During this phase, NPOs and Team4Tech consultants refine prototypes and mockups of possible solutions to ensure that goals are being achieved. Ultimately prototypes are refined, validated, and completed to the fullest extent that the project allows. Often teams use this phase of the process to outline what comes next, how plans will be implemented, and how those plans will be sustained over time by the NPOs.

Figure 4. Team4Tech's Human-Centered Design Process

Discovery	Interpretation	Ideation	Experimentation	Evolution
Explore needs of stakeholders Define underlying needs	Identify ways to address challenges and create opportunities		Prototype proposed solutions to address defined goals	Iterate and refine based on NPO feedback

Long-term partnerships with NPOs ensure that needs are identified, goals are refined, implementation and infrastructure resources are addressed, external relationships are cultivated to promote sustainability and scale, and measurement and evaluation metrics and tools are developed to ensure that the NPOs are staged to make data driven improvements to their organizations and outcomes.

The Team4Tech Community of Practice

In July 2022, Team4Tech re-launched our online Community of Practice as a scalable platform that allows for events, working groups, courses, conversations, and a space for making sense of the challenges and opportunities that come with the intersection of technology and learning. We know that addressing global learning challenges can be more fully supported through networked communities that can engage, support, learn, and encourage this often difficult work. Our hope is that through intentional design, the Team4Tech Community of Practice will enable knowledge sharing that ignites better use of technologies, more access to research on learning, and design tools that empower member organizations to do great things for learners.

Our Solutions Roadmap creates a pathway for our Community of Practice to support our members and our strategically-engaged partners. As we have laid the groundwork for our Community, we have intentionally built space that can support engaged NPOs in learning and collective knowledge sharing around each of the three phases of our roadmap. The Community of Practice allows us to continuously engage with and support NPOs with support, carefully curated resources, and opportunities to engage with others.

Sample supports for solutions roadmap phases in the Community of Practice include:

- To support the policy making as part of Phase One of our Solutions Roadmap, there is a Community of Practice course in creating your acceptable use policies.
- To support the integration goals of Phase Two of our Solutions Roadmap, there is a group dedicated to sharing training materials for nonprofit staff, volunteers, and facilitators of programs that integrate technology.
- To support the integration goals of Phase Three of our Solutions Roadmap, there is a resource library of freely available assessment tools that can be used to demonstrate impact and capture data around learner trajectory and mastery of key skills.

Partnership Highlight: Iterations from Vietnam

With more than 10 million students in Vietnam's education system, returns to schooling are rising and the labor markets for youth are rapidly changing. The population of 20-24 years old in Vietnam has 8.6 years (on average) of schooling compared with 7.5 years of schooling in the working-age population, and job prospects for graduates are high - with increasingly high returns to additional years of schooling. Over the last six years, Team4Tech has partnered with Kidspire Vietnam to provide after-school educational technology classes to 500+ children growing up in Vietnamese orphanages. A major priority of this project was to expand university and life opportunities for these learners. Across nine orphanages, Team4Tech provided hardware, software, and training to support Kidspire Vietnam staff, volunteer teachers, and students to increase student self-confidence, develop critical thinking, and enhance communication and creativity:

2014 focus	2015 focus	2016 focus
Priority: Infrastructure and building a digital foundation	Priority: Infrastructure and organizational capacity building	Priority: Infrastructure and lifelong learning
- Deployed student laptops - Fostered 21st-century skills in students through the introduction of coding and robotics	- Deployed more student laptops, classroom projectors, and WIFI routers - Introduced teaching staff to human-centered design concepts	- Deployed more student laptops to additional orphanages - Developed LeadVN (Kidspire's career preparation program) with career planning tools

2017 focus	2018 focus	2019 focus
Priority: Foundations for Maker education	Priority: Expanding Maker education	Priority: Advancing Maker education and empowering learners
- Introduced maker education through various robotic and coding kits	- Integrated more advanced coding kits into maker curriculum	- Established student digital portfolios to showcase their work - Introduced positive storytelling into the curriculum for building students' socioemotional health - Embedded 3D designing and entrepreneurship into Maker curriculum

As Team4Tech utilized the human-centered design process in planning and supporting Kidspire staff, the leadership of Kidspire started implementing this same process into their own teacher and student program development.

As with many of our projects, our team experienced pivotal moments of reflection. When Team4Tech started partnering with Kidspire Vietnam, Kidspire was ambitious, hoping to reach and engage as many Vietnamese orphans in their after-school program as possible. During the design process it became clearer to the leadership of Kidspire that the underlying need was not simply educational technology, but also personal mentorship and the socioemotional needs of these children. Kidspire scaled down their work into just 9 orphanages but increased or maintained their teacher-to-student ratio as well as increased the number of class hours per student. And in addition to educational technologies, Team4Tech sought to support Kidspire through socioemotional curricula and technology scaffolds.

Kidspire had amassed a critical set of technology tools for their maker curriculum and yet, their lessons felt disjointed. The solution was no longer "more tools" but rather, sustainability, instilling a maker mindset, and connecting the technologies into a cohesive curriculum.

Outcomes

As an organization we are focused on four measurable outcomes: learner engagement, learner growth, teacher effectiveness, and organizational sustainability and scale. Our nonprofit partners commit to collecting, monitoring, evaluating, and reporting back on data twice per year. This data sharing allows Team4Tech and the NPOs with whom we work to learn, improve, and make a sustainable impact together.

The Team4Tech model is predicated on the belief that NPOs are the best lever for demonstrating and influencing learning at scale. Our efforts are focused on amplifying the impact of nonprofit organizations, so that we can collaboratively address the absence of quality learning in low-resource areas.

To date our outcomes have been high touch, high impact. As we continue to innovate around our model and magnify our own impact, we are developing continuous engagement tools through our Community of Practice and our regional hub coordinators in Sub-Saharan Africa and South Asia.

> Our Community of Practice will allow us to co-design a digital space where NPOs working in low resourced areas and focusing on solving local issues around access to quality learning can connect. In this space we can empower and help facilitate learning with and from peers, engaging with carefully curated resources, and interacting with leaders in the field.

> Our regional hub coordinators, who live in target areas, will nurture local networks in low resourced areas, bringing localization of support and Team4Tech connections to a new level.

As an impact accelerator Team4Tech is continually monitoring our organizational efforts to scale the impact of multiple NPOs that are connected by the common goal of improving access to quality learning.

Conclusion

Since 2013, Team4Tech has implemented this phased support model to help 50+ partner NPOs integrate technology to advance teaching and learning for over 130,000 learners in 20+ countries. Our work has catalyzed over $19M in pro bono consulting services and technology grants for these local NPO partners.

While each partnership has been tailored to local needs, the long-term journey has proven relevant across all contexts and partners. Team4Tech will continue to adapt the model to incorporate new learnings and best practices from future projects as they are implemented. As we have iterated around our Solutions Roadmap, we have carefully examined how each of the projects has demonstrated progress and how those natural, unique progressions of NPOs have modeled that effective teaching coupled with technology local organizations can transform outcomes for all learners.

Appendix

Digital learning develops competencies that enable students to fully participate and thrive in an increasingly complex world. Effective implementation can improve academic achievement, digital literacy and career opportunities. The goal of technology implementation is to meet the technology demands of digital learning and assess progress.

Team4Tech supports capacity building of NPO leadership teams by strategically supporting the transformation of their organization to put in place digital infrastructure, policies, and practices that can positively impact learning outcomes. By progressing from Phase 1, through Phase 2, and ultimately to Phase 3, NPO teams can arrive at the stage of digital empowerment which is the end goal for each of our partnerships.

> *At Team4Tech we define digital empowerment as having the skills necessary to live, learn, work, and thrive in a digital society.*

The following table provides a more detailed description of our Solutions Roadmap.

Table 1. Team4Tech Solutions Roadmap - NPO Journey to Empowered Digital Learning

	Phase 1 Digital Foundations	Phase 2 Digital Integrations	Phase 3 Digital Empowerment
	Learning to use technology	*Using technology to learn*	*Transforming learning with technology*
Overview	Leadership teams begin to put in place digital infrastructure, policies and practices that can positively impact learning outcomes. Staff, teachers and learners develop basic digital skills, including digital communication and collaboration tools.	The focus supports strategic integration of technology through tactical planning, implementation and training. Staff, teachers and learners use digital skills to expand learning opportunities throughout core programs and curriculum.	The organization expands access, uses technology to transform teaching and learning experiences, and develops long term sustainability. Learners produce, analyze, create, share, solve, and communicate in highly engaging, purposeful ways.
Phase Goals	The focus of Phase One is to empower the NPO to: 1) build leadership capacity and plans for digital learning 2) lay the necessary foundational technology infrastructure 3) develop staff and teacher digital literacy 4) begin introducing digital learning into program(s) 5) create organizational systems for privacy, security, and device management.	The focus of Phase Two is to support the implementation of technologies to accelerate core learning outcomes through: 1) curation and implementation of relevant educational software 2) staff and educator training 3) developing additional infrastructure to fully implement and maintain progress in digital literacy 4) create pathways to develop digital fluency.	The focus of Phase Three is to support educators in integrating student-centered, project-based methods to build deeper learning through: 1) further developing plans to ensure reliable technology access. 2) integrating hands-on STEAM activities in staff training on project-based learning. 3) developing lessons for learners to practice and master digital citizenry skills. 4) designing a digital portfolio system to help learners demonstrate and share their knowledge and skills.
The focus of each Phase is to empower the NPO to achieve the following:			
Leadership & Planning	Build leadership capacity, innovation culture and vision for digital learning. Assess internal technology capacity. Set goals and develop a plan for technology infrastructure and educational technologies to support these organizational goals.	Create a technology plan for the organization that supports implementation of programs and training for digital learning. Support the implementation of technologies and training to accelerate core learning outcomes.. Organize and manage resources.	Support educators in integrating student-centered, project-based methods to build lifelong learning skills. Implement educational technology plan that can sustain and scale impact. Develop and deploy tools and platforms to build 21st century skills. Policies are empowering and supporting, with less attention on compliance and regulation.

	Phase 1 Digital Foundations	Phase 2 Digital Integrations	Phase 3 Digital Empowerment
Technology Implementation and Support	Build out the necessary foundational technology infrastructure & support. Develop internal policies and commitments for technology use. Create organizational systems for privacy, security, and device management.	Select, procure, and implement technologies to accelerate core learning outcomes. Develop additional infrastructure to fully implement and maintain progress in digital literacy across programs.	Expand technology infrastructure to sustainability support programs as they expand and scale. Create and implement access plans to ensure reliable access. Empower use of technology by all users to achieve personal and organizational goals. Select and implement technology to support project-based learning (coding, making, emerging technologies).
Professional Learning for Staff, Trainers and Educators	Develop digital literacies, innovation culture and mindsets. Create pathways to develop digital fluency. Explore professional development options.	Provide professional development opportunities to support integration of digital learning into core programs and curriculum. Provide learner-centered, culturally relevant instruction.	Support educators in integrating student-centered, project-based methods to build lifelong learning skills, with a focus on student agency, empowerment, and deep/authentic learning.
Learning Experiences and Programs	Introduce digital tools and digital learning for students. Experiment with new ideas, tools and methods.	Expand programs through digital learning, to accelerate core learning outcomes. Develop lessons for learners to practice and master digital citizenry skills. Introduce personalized learning and formative assessment through curated software.	Transform teaching and learning using robust technology and deeper learning methods including project-based learning and human-centered design to empower learners.