

STEAM Punks : Fostering Creativity and Curiosity

Kabul , AfghanistanNew York City , United States



Kristen Kersh



Year Founded:
2013

Organization type:

hybrid

Project Stage:

Start-Up

Budget:

\$1,000 - \$10,000

Website:

<http://steampunks.cc>

Facebook:

<https://www.facebook.com/STEAMPunkskits>



- [Recycling](#)
- [Education](#)
- [Play](#)
- [Youth development](#)

Project Summary

Elevator Pitch

Concise Summary: Help us pitch this solution! Provide an explanation within 3-4 short sentences.

STEAM Punks have created a set of kits that allow for children in Kabul to explore technology and design through making. These electronic kits support the development of critical thinking skills, creativity, curiosity and most importantly to ask 'what if'.

WHAT IF - Inspiration: Write one sentence that describes a way that your project dares to ask, "WHAT IF?"

What if students in Kabul could imagine and accomplish what might currently feel impossible?

About Project

Problem: What problem is this project trying to address?

Currently 42% of Afghans are between the ages of 0-14 and there is a continual increase in student enrollment in schools. The pedagogical approach in Afghanistan's public schools is rote memorization. Based on this knowledge the creator of the School for Leadership Afghanistan (SOLA) asked the following question: "How will you develop the next generation of leaders and thinkers if you are teaching them through rote memorization?"

Solution: What is the proposed solution? Please be specific!

After researching the impact of using rote memorization as a pedagogical approach a second challenge emerged; How might we provide an educational experience that supports the development of critical and creative thinking skills for young Afghans? STEAM Punks have created a set of kits that allow for children in Kabul to explore technology and design through making. These electronic kits support the development of critical thinking skills, creativity, curiosity and most importantly to ask 'what if'. 'What if' means for children to imagine and accomplish what might feel impossible. These kits are a part of a complete eco-system that aims to train teachers, support inquiry into design and technology, and promote learning through making.

Impact: How does it Work

Example: Walk us through a specific example(s) of how this solution makes a difference; include its primary activities.

Currently Afghanistan's population is mostly young. The country is investing in the development of a free public education system in an attempt to support the development of the next generation. As this system currently teaches through rote memorization it is also important to teach how to create, how to dream, and how to bring ideas to fruition. If a person is able to experience thinking creatively and being able to see what they have made this has the ability to open many doors to help the next generations of leaders and thinkers develop new economies that can participate within the international market in technology, innovation or creative problem solving.

Impact: What is the impact of the work to date? Also describe the projected future impact for the coming years.

The immediate impact of this project is to provide an opportunity for children to explore new materials and mindsets. It is also to allow for children to experience feelings of creativity, accomplishment and curiosity. Lastly is to allow for the opportunity to learn through making and play. The kit was tested with two groups of Children at the Women for Afghan Women (WAW). Both groups of children were between the ages of 5-12. To create the basic circuit children had to connect pieces using the wires, battery, switch and light. 90% of the children were able to do it with the simple visual instructions. 80% of the participants who had no prior knowledge have met the educational objectives. 90% expressed excitement or joy during the exploration of the kit or the making period during the workshop. 70% of the participants wanted to continue, once the allotted two hour time period was up.

Spread Strategies: Moving forward, what are the main strategies for scaling impact?

STEAM Punks will be testing in Kabul in the fall of 2014. We will know the kits are successful if we continue to see similar results and create new ways to measure, critical thinking, creativity and joy. The long term impacts will be social and educational through the use of the complete ecosystem. It will support a paradigm shift of learning through rote memorization to inclusion of learning through making. The project allows for the collaboration between technologists, designers, teachers, community members and Afghan students as well as access to fabrication machines and teacher training.

Sustainability

Financial Sustainability Plan: What is this solution's plan to ensure financial sustainability?

STEAM Punks has received three grants to test the kits and workshops in Kabul. Continual fundraising is being pursued through grants, partnering with existing organizations, as well as exploring a give one get one business model. This funding will be used to develop curriculum, kits, training and community center. In the future we imagine that the ecosystem will be financially sustainable through the distribution of kits and other products.

Marketplace: Who else is addressing the problem outlined here? How does the proposed project differ from these approaches?

STEAM Punks researched many kits and projects to inform and to identify the unique competitive advantage. Some of the precedents analyzed were: Little Bits introduction kit, Squishy Circuit, MIT High Tech Low Tech, Snap Circuits, Light Up, DIY Africa, Hacker Scouts, One Laptop Per Child, Legos, Spark Fun Education Workshops, and Skatestain. In comparison STEAM Punks starts by identifying the desired educational and experience objectives first. We then identify how to assess if the goals were reached. This allows for the focus on the design of the assessment of education and experience first.

Team

Founding Story

In the summer of 2013 Mehdi Salehi and Kristen Kersh found themselves reflecting on their experiences about the role that education has played within their own journeys. Mehdi, who is originally from Bamiyan Afghanistan, was explaining how grateful he is to his father for the support he gave Mehdi when Mehdi showed interest in basic electronics. At one point Mehdi said "I believe those two LEDs really changed my life." At that point Kristen wondered how she could have created the same environment for her students when she was a Special Education Teacher. After their conversation in June they decided to investigate the current educational system that is in place in Afghanistan and the developmental importance that those two LEDs had.

Team

STEAM punks is made up of a diverse team that brings an emic perspective to both the educational landscape within Afghanistan, various practices of education pedagogy, design and technology. The team includes the co-founders Kristen Kersh and Mehdi Salehi. The team was able to partner with two different organizations: School for Leadership Afghanistan (SOLA) located in Kabul, Afghanistan and Women for Afghan Women (WAW).

About You

Organization:

STEAM Punks

About You

First Name

Kristen

Last Name

Kersh

Twitter URL
Facebook URL

https://www.facebook.com/STEAMPunkskits?ref=br_tf

About Your Project

Organization Name

STEAM Punks

How long has your organization been operating?

Project

Organization Country

, NY, New York City

Country where this project is creating social impact

, Kabul

What awards or honors has the project received?

Funding: How is your project financial supported?

Foundations.

Supplemental

Awards

The New School New Challenge Award. : <http://blogs.newschool.edu/news/2014/04/new-challenge-winners-go-up-up-a...>

Michael Kalil Smart Award: <http://sce.parsons.edu/michael-kalil/>

Hearst Foundation Award.

Primary Target Age Group

6 - 12.

Your role in Education

Teacher.

Please specify which of the following best applies:

I am applying on behalf of a particular program or initiative.

The type of school(s) your solution is affiliated with (if applicable)

Intervention Focus

Does your project utilize any of the innovative design principles below?

Actively Designing Space & Culture as Essential Elements for Learning: Creating cost-effective methods to infuse a school with habits, language, and materials needed for learning through play.

Is your project targeted at solving any of the following key barriers?

One size fits all fits none: Students are disengaged and not being prepared for "real life."

Need

We are always looking for educators, students and partners interested in STEAM Punks.

Offer

We are happy to provide design thinking, user experience testing / design and curriculum development support.

What key learning outcomes does your work seek to improve?

STEAM Punks have created a set of kits that allow for children in Kabul to explore technology and design through making. These electronic kits support the development of critical thinking skills, creativity, curiosity and most importantly to ask 'what if'. Some of the educational objectives are ; Students will be able to identify and create a basic circuit. Students will be able to analyze the problems and create solutions to fix electrical circuits. Students will be able to apply their knowledge to create novel implementation of various hard wear components.

Secondary Form

PROGRAM DESIGN CLARITY: We are hungry to know more about what exactly your model consists of. Please succinctly list a) what main activities are you doing with your beneficiaries, b) where you carry out the activities? c) how often? d) for how many hours? e) who delivers the services? and f) any other brief details

This past Spring STEAM Punks worked with two partners to test the workshops with the target user group, test the kits, and are currently working on the development of the community content created website. The partner Women for Afghan Women(WAW) allowed STEAM Punks to test the first two kits and workshops with two groups of children within the target population. The goal of the tests were to identify if students met the educational objectives, engagement, usability and if kits facilitated group work? At total of 24 hours were spent testing over a month. Both teams facilitated the sessions.

INSPIRATION: What do you consider the most important trends or evidence that inspire you to believe the world is ready to Re-imagine Learning? Please elaborate.

Teaching through rote memorization does not support the development of higher level thinking skills such as critical thinking and creativity, or skills associated with the 21-century economic needs. This claim stems from the combination of findings from cognitive neuroscience studies, learning scientists and practitioners as well as the forecasted future international workforce needs. It has been shown that through free play children are able to develop higher order thinking skills as well as be immersed into tasks that teach skills associated with the new economy.

LEARNING THROUGH PLAY: What does "learning through play" mean to you and why it is a must-have, instead of a nice to have?

Learning through play is learning while exploring something physically and mentally in a hypothetical state. When people are at play they feel safe to explore in what some call the magic circle. Learning that occurs within this space gives an individual choices, challenges, and engagement opportunities that are all within their reach but do not have preset societal pressures or expectations. This allows for risk taking to occur. Play is essential for learning because it produces a safe space that supports high engagement levels, which have been found to lead to long-term retention of an event.

SUSTAINABILITY: Please list a quick breakdown of your funding, indicating the percentage that comes from each source.

The New Challenge Grant from The New School: 40%
Michael Kalil Foundation Smart Design Award: 40%
Hearst Foundation Grant: 20%

MODEL: How does your mission relate to your business model (i.e. Non-profit, for-profit or hybrid)?

We believe that by focusing on a hybrid business model we will be able to appeal to the larger market. This will allow us to not have to rely on continually looking for grants and non-profit funding for the development of the workshops, kits and community centers.

FUNDING PRIORITIES: If your organization were given \$20K in unrestricted funding today, how would you use it? Why?

40% to the production of kits and the testing of those kits in seven different schools and centers in Afghanistan. Changes would be made and then a final kit would go to market. Production of website and marketing 30%. Based on sales schools would receive kits and workshops. The remaining costs R&D.

PARTNERSHIPS: Tell us about your partnerships that enhance your approach.

Women for Afghan Women (WAW) is dedicated to securing and protecting the rights of disenfranchised Afghan women and girls in Afghanistan and New York... and focus on cultivating leadership in women and young girls.
School for Leadership of Afghanistan (SOLA) is a boarding school outside of Kabul that houses about forty girls ages thirteen to eighteen.

COLLABORATIONS: Have you considered or initiated partnerships with any of the other Challenge Pacesetters? If so, please share.

Yes! There have been many people that I have been in touch with through this platform. One of which is Skatestain.

VISION: If you had unlimited funding, and you could fast forward 15 years to when your program has been able to achieve wild success - what will it have achieved?

Development of a fabrication center in Afghanistan. Expanding into a couple more countries with similar needs. Multiple kit offerings, education practitioners networked and sharing similar kits and learning through play resources. Fully self funded through sales and partnerships.

IMPACT - KEY METRICS: Please list the key data points that you would cite as evidence that you are able to achieve lasting learning outcomes. Please also share one data point for which you most hope to see better results over time

Based on the current research 80% of the participants who had no prior knowledge met the educational objectives. 90% expressed excitement or joy during the exploration of the kit or the making period during the workshop. 70% of the participants wanted to continue. It is imperative that over time the understanding of the concepts learned is evaluated to measure retention rates. In the future pre/post assessments of critical thinking skills.

IMPACT - REPORTING SAMPLE: Please attach any examples of your impact reporting. [optional]:

RESEARCH AND EVIDENCE: Please link or attach any research or evidence resource you are open to sharing more widely [optional]. Building research and evidence is a key aim of this initiative, and the resources you share may be chosen for listing in the [Center for Education Innovations library](#):

SOURCE: If applicable - who created the research or evidence you are choosing to share? :

IMPACT - REACH: How many people did your project directly engage in programmatic activities in the last year?

Not Applicable - yet! (we are at the idea stage or start-up)

STUDY: Has an external evaluation or study been conducted of your organization?

No

Other (please specify)

Number of Employees:

Fewer than 10

Number of Volunteers:

Fewer than 10

APPROACHES: Given the complexity of play, it is not surprising that there have been numerous research attempts to categorize the different types and approaches! Please indicate which of the following your project focuses on.

Play with Objects, Creating a Supportive Socio-Emotional Environment, Providing a Range of Opportunities (providing the equipment and materials needed for various types of play), Educational Structuring (developing playful projects within educational contexts), Adults Participating (Ensuring adults are able to play alongside children), Challenging Play (play that disrupts - where rules are disregarded and levels of imagination are high).

Other (please specify)

AFFILIATION: Please specify if your organization has any existing affiliations with the LEGO Group.

Source URL: <https://www.changemakers.com/aprenderbrincando/entries/steam-punks>