

Project Manus - Democratize Access to Practical Science in Haiti

Wilhem Hector (Haiti), Massachusetts Institute of Technology

May-August 2023 | Haiti

Overview

Project Manus is a makerspace that promotes peace by democratizing access to tools of scientific invention and innovation in Haitian high schools.

Relevance to Peace

In the past few months, increased gang violence and political turmoil has rocked Haiti. The complexities that have led to the current state of affairs make achieving peace a project that extends beyond the scope of not just our project, but any single initiative. However, there are indications that the violence is decreasing in the main arteries of Port-au-Prince, and some analyses indicate that the current state of insecurity will be brought under control by the responsible authorities in the coming months. Only then will Project Manus become instrumental.

Peace is a fragile state whose maintenance requires constant investment and attention. It especially runs the risk of being transient when the underlying structures responsible for preserving it are weak or non-existent. Project Manus aims to tackle one of the most vulnerable links in the peacekeeping chain in Haiti: education. We want to strengthen the education system so that it lives up to its promises as a tool for social mobility, for motivating youth engagement and allowing more social cohesion through interactions between classes. We want to create attractive alternatives to violence for young people, the demographic group most targeted for recruitment by armed gangs. The project will strengthen the technological innovation scene in Haiti which, as expressed in other parts of the project presentation, is full of potential. It will not only provide resources for students and educators, but will also serve as a hub for collaboration among learners from different subsets of society across education level, socio-economic background and geographic region. Our goal is to build an innovation hub that democratizes access to technology and creative tools in a country that has lacked them for too long.

In short, our contribution to peace will be twofold. First, we will inspire young people to engage with technology and therefore make alternatives such as violence and crime less attractive. Second, we will encourage collaboration and democratize access to knowledge and the means of creation so as to strengthen the social fabric of the country.

Project Description

Project Manus is a makerspace that aims to promote peace by offering science and engineering opportunities to high schools in Haiti. I will conduct the project through the Hector Foundation, an educational NGO that I co-founded three years ago. Our goal is to create an inclusive space for all aspiring scientists where they can gain confidence in problem solving and express their creativity through hands-on projects.

Every week, students from across the capital will gain access to the space through a membership program between the Hector Foundation and their respective institutions. The membership will grant a given school a one-time workshop pass for 50 students. The workshop will be held by volunteers at the Hector Foundation on Saturdays and will consist of safety and equipment training. The latter includes but is not limited to maneuvering 3D printers, laser cutters, CNC machines, electronics, and hand tools. After obtaining a training certification, any student will have access to the manual equipment of the space during opening hours or by appointment.

Project Manus will be the first open makerspace in Haiti. We wish to lay the foundations of hands-on science in the Haitian educational curriculum. Every year, we hope to train 1800 students whose science education has been hampered by the lack of resources in high schools in Haiti.

Feasibility

We already established a number of crucial partnerships to ensure the feasibility of Project Manus. First, we chose Institution Saint-Louis de Gonzague (SLG) as our community partner. They are a renowned high-school with a safe and centralized campus in Haiti's capital. They have agreed to provide us with a 600 square feet space to house the machinery. They will also cover any expenses related to the infrastructure such as electricity, water supply, etc. Moreover, they will hire a trained shop manager to look after the equipment during open hours. In return, the space will be solely available for their students during the weekdays but remain open on the weekends for our workshops and other related events (training, conferences, etc).

The Hector Foundation currently has 20 volunteers including 4 engineering undergrads from Faculte des Sciences, a pioneer engineering university neighboring SLG's campus. These 4 students have agreed to be our workshop mentors on Saturdays as long as they can also use the equipment for their personal projects.

Other partners that are supporting our cause include the MIT Physics Department, which has donated \$2,000 towards our project. The [N51-160 Woodshop](#) has provided us with a [bandsaw](#) and a [circular saw](#) (\$750 value). The FabLab Network at MIT is providing three [Sindoh 3D printers](#) from [Cambridge Science Park](#) (\$1,500 each). Last but not least, we collaborated with multiple makerspace experts at MIT to come up with a comprehensive list of tools needed for a high school makerspace as well as a [3D layout of the space](#). These partnerships, together with the Davis Peace Fund, will provide enough materials to create a [minimum-viable makerspace](#) that is easily expandable as we receive more support.

There is a need for Project Manus. Over the past 8 months, we conducted a survey with high school principals in the capital. 97% of them declared their willingness to encourage their students to attend our Saturday's workshops, and 80% declared being willing and able to pay for the membership program.

Timeline

Task	Deadline
Coordinate with partners	February-April 2023
Purchase and ship equipment	April-May 2023
Refine makerspace training curriculum	May 2023
Install equipment	June-July 2023
Train volunteers	July 2023
Open the makerspace	August 15, 2023

Sustainability

A majority of Project Manus's sustainability concerns are covered by mutually beneficial partnerships such as SLG providing the space and utilities in exchange for being able to use the makerspace during the week. The chief sustainability concern is consumable materials such as 3D printer filament, lumber, fasteners, software licenses, and so forth. The money from this grant would be used to stock the makerspace for its opening and subsequent inventory refills will come from the fee charged to institutions in our membership program. We are also prepared to sell individual memberships to students that don't belong to a member institution to keep up with overhead and increase accessibility. Lastly, we will also build relationships with machinery manufacturers in Haiti as the tools will require maintenance at some point to ensure the continued function of the makerspace for years to come.