

Kigali Public Library Maker Lab

With Support of the 5280 Super-Creative NGO

Laurel Schwaebe

Department of Library and Information Science, University of Denver

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Professor Josh Davies

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Introduction

Creativity is not restricted to the white western world, and should also be especially offered to those who have experienced great trauma as a means of creative outlet. It is for that reason that the 5280 Super-Creative NGO is partnering with the Kigali Public Library to furnish the Kilgali Maker Lab. This lab will help the community develop lifelong skills and bolster confidence, creativity, technical literacy, and entrepreneurial drive. This lab will also drive patrons to this space and provide additional support for the library as patrons become more aware of what the library has to offer.

Considerations

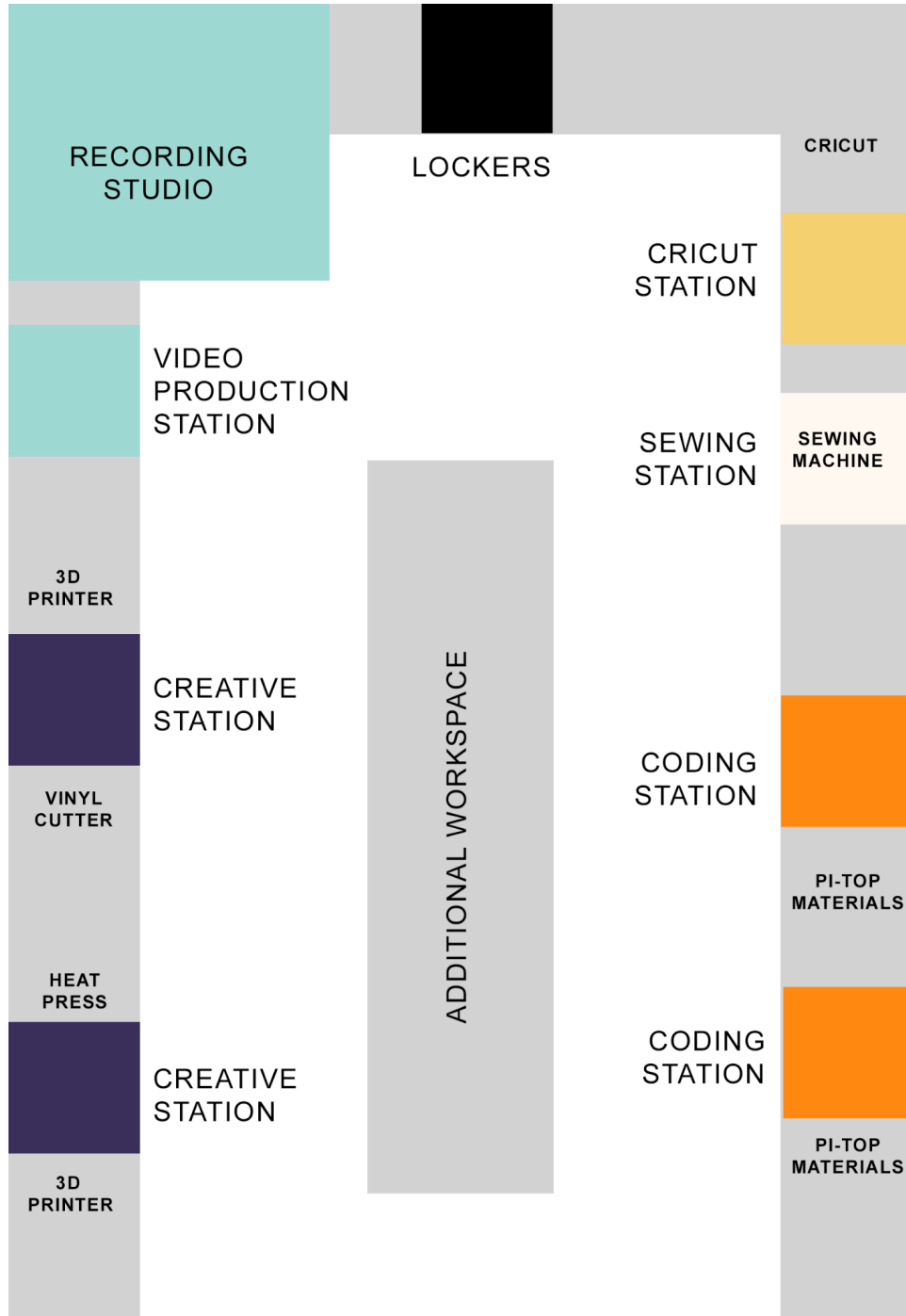
Following a thorough needs assessment, we will hone this proposal to further meet the needs of the library's patrons. Our initial estimate is that the space will largely appeal to youth patrons between the ages of 10 and 17 filled with creative and entrepreneurial spirit. We do not anticipate that this lab will need to accommodate professional level editing or printing, but will need to withstand years worth of youth handling.

Our initial budget will be \$50,000, and should include costs for equipment, training, assembly and installation, and the first year of maintenance and subscriptions. We will create a buffer for up to the first five years of subscriptions. The equipment and software should be up to standards for international makerspaces, but should also be durable enough to last several years, and it will be difficult to replace.

We will work on the assumption that staff have some level of technical training on creative technology, but will need specialized training for specialized equipment. Patrons are expected to have all levels of computer and technology literacy that staff will need to account for in the

space. Safety trainings will be required for all relevant equipment and all patrons will be required to sign safety waivers prior to using the equipment.

Space Layout



Equipment Selection

Coding Stations

- [HP EliteOne 800 G6 All-in-One Desktop, Core i5-10500, Windows 11](#) - The lab will house three of this basic PC computer, two of which will support beginning coding and provide access to a Windows system. One of these computers will also house the [Photoshop Elements 2022 and Premiere Elements 2022 Bundle](#). This bundle is discounted through TechSoup and the license expires on November 30th of 2026, a much more generous license than usually offered by Adobe. This license can be shared across the one of computers in this station and one in the Cricut Station. These computers are not suitable advanced video editing or more advanced graphic design, but will suit basic Photoshop and simple video editing.
 - Computer Cost - \$1,199.99 x 2
 - Program Cost - \$30.00
- [pi-top Robotics & Electronics Superset](#), [pi-top \[4\]](#) - Scalable coding tools help kids see tangible results of their efforts. These two kits offer fun ways to tie Raspberry PI coding skills into small robots with different uses. Paired with the computer and the laptop found in a later section, multiple patrons can utilize these tools at one time and can spread across the open workspace.
 - Costs - \$449.00; \$199.95

Creative Stations

- [Apple 27" iMac with Retina 5K Display \(Mid 2020\)](#) - The creative stations will each house one of these iMacs. This slightly older, stronger Apple computer is an industry standard for creative work in the United States and may represent a safe introduction to the operating system for youths in Rwanda. The computer is still fairly new and should last

for many years, but should be watched carefully and handled with care by patrons as much as possible. These computers will be equipped with [Blender](#), a free open-source 3D modeling software, [MeshLab](#), a free open-source mesh editing software, and the [Adobe Creative Suite](#), which is the industry standard for creative work. This license can be shared across the two iMacs in these stations.

- Computer Cost - \$2,463.95 x 2
- Program Cost - \$239.88 first year plus \$5 admin fee
- [Lulzbot Mini 2 3D printer](#) - LulzBot offers durable 3D printers that allow users to print many of the parts for home repair. This Education Starter Bundle contains 2 printers with a selection of non-toxic PLA filaments. While the printers may not be large enough or sophisticated enough for advanced printing, these machines are very reliable, very durable (due to their metal frame), and come with the easy-to-use [Cura](#) software. While this machine is unlikely to hurt anyone, the nozzles do heat up past 200° F and can burn to the touch. Users should be informed of this risk and watched closely when using these machines.
 - Cost - \$7,997.99
- [P28 PrismCut Vinyl Cutter](#) - The creative stations will both be able to connect to the vinyl cutter. This vinyl cutter is fairly simple and is bundled with a starter kit, software that is compatible with Mac and PC, and additional blades. Reviews indicate that it is a popular and reliable starter model, and if placed on a countertop or table instead of on the optional legs, is unlikely to fall and harm a patron. The blades do present some risk of injury, though once attached to the cutter, are unlikely to injure. Patrons should be warned of the blades and instructed to keep their fingers away from the blade at all times, especially while the head is in motion.
 - Materials
 - [Greenstar Outdoor Vinyl Starter Kit](#): vinyl material - \$175.49

- [RTape Clear Choice AT65 100 Yard General Purpose High-Tack Application Tape](#): vinyl backing tape - \$97.99
- [Carl DC-250 25" Heavy Duty Rotary Disk Cutter](#): paper cutter - \$144.47
- Cost - \$989.92
- [HPN Inkjet and Vinyl Craft Heat Transfer Package for T-Shirts](#) - A small heatpress starter kit for shirts and other flat materials will likely cover the basic needs for this space. This kit also comes with a small printer for use with the heat press. This heatpress is noted for its durability and ease of use, which both saves on space and ongoing costs, as it will likely not need to be replaced in the near future and should not cause injuries. However, it is worth noting that any machine that uses heat to adhere designs to materials may cause burns, so patrons should be informed of the risks and should be carefully monitored during use.
 - Materials
 - [Siser TTD Easy Mask - 8.5" x 11" 50 Sheets](#): heat press material - \$35.00
 - [HPN Pro Grade Protective Gloves](#): safety gloves - \$7.95
 - Cost - \$908.22

Cricut Station

- [HP EliteOne 800 G6 All-in-One Desktop, Core i5-10500, Windows 11](#) - The lab will house three of this basic PC computer, the third of which will support Cricut Station. This computer will also house the [Photoshop Elements 2022 and Premiere Elements 2022 Bundle](#) found on one of the Coding Station computers.
 - Computer Cost - \$1,199.99
- [Cricut Maker® 3 + Everything Materials Bundle](#) - This bundle features the Cricut Maker®3 machine and all of the starting materials and tools. The bundle saves money

on resources for the machine. Like any machine that cuts materials, there is some risk of injury, so patrons should use with caution.

- \$429.99

Sewing Station

- [Brother SE600 2-in-1 sewing and 4x4 embroidery machine](#) - This station does not necessarily need a dedicated computer, but can make use of a laptop or be moved to connect to an unused computer station as needed. The selected sewing machine is small and easy to use, but there is enough money left in the budget that this machine can be replaced if it proves not to be up to the demand. The space needs assessment may prove that sewing and embroidery is in far higher demand than it is in western maker spaces, and in that case, we would recommend a far more industrial machine. For the time being, this is a fairly standard machine that one might find in an American maker space. The space would supply the needles and thread, but other materials would need to be supplied by patrons.
 - Materials
 - [New brothreads 63 Brother Colors Polyester Machine Embroidery Thread](#)
[Kit](#): thread - \$27.89
 - Cost - \$399.99

Video Production Station

- [Apple 27" iMac with Retina 5K Display \(Mid 2020\)](#) - The video production station will house one of these iMacs with the [Adobe Creative Suite](#), and [Final Cut Pro](#). Final Cut Pro is one of the most popular video editing softwares, which, when paired with the Adobe Creative Suite and Apple's iMovie, offers a spectrum of video editing capabilities. Patrons will be able to edit videos from beginner to advanced level in this

space at one station, with beginners able to work at other stations and more advanced patrons dedicated to the Video Production Station.

- Computer Cost - \$2,463.95
- Adobe Program Cost - \$239.88 first year plus \$5 admin fee
- Final Cut Pro Program Cost - \$299.99
- [iPad Air 10.9](#) - A library maker space has no reason to offer commercial grade cameras, so unless the needs assessment indicates otherwise, iPads should serve this need instead of DSLR cameras or other video cameras. Because this maker space will not feature cameras for video, iPads will be used for video recording. The key difference between the iPad Air 5th ge and the iPad Pro 6th gen is the M1 versus the M2 chip, which is unlikely to make a significant difference in small scale video production, nor will the standard versus XDR display, making the Air a more cost effective choice. These 64GB wifi iPads will be eligible for checkout and can be utilized for video shooting, minor video editing, and use of the mobile version of the Adobe Creative Suite.
 - Cost - \$549.00 x 2
- [TFT Office Phone Booth, Soundproof Music Studio Room](#) - Instead of building out an entire recording booth, this prefabricated soundproof booth will allow patrons to have a space to record audio and video and also allow for some division of the space. This space will also host the [Podcaster Studio](#), which contains a tripod, lavalier mic, headphones, teleprompter, lens for the recording iPad, greenscreen, and other tools useful for video production. There is no need to have commercial grade equipment for this space, but this inexpensive bundle should be able to handle the needs of the community's patrons. These tools can leave the small studio as needed to create mobile film production sites. Some of these tools may be fragile, so they will need to be checked out with individuals held responsible for their care.
 - Booth Cost - \$5,650.00

- Padcaster Cost - \$1,799.00

Additional

- [Google Workspace for Nonprofits](#) - this cloud-based productivity software may not be necessary, depending on the technology integration already in place at the Kigali Public Library. We only mention it here in the instance that that the library needs assigned email addresses from its domain name, security tools, and cloud space.
- [First Aid Only® 4-Shelf Industrial First Aid Station](#) - a first aid kit is essential for any maker space. While few tools in this space are likely to cause serious injuries, it would be best to have supplies for a full spectrum of wounds in a fully stocked kit that will last for years to come.
 - Cost - \$192.95
- [Connect10 Locker](#) - this security locker system can store and charge iPads, laptops, and other small devices. It offers secure storage for expensive electronics, which reduces replacement costs, and allows for more effective space usage and better organization.
 - Cost - \$910.00
- [Microsoft Surface Laptop 4, Core i5-1035G7, Windows 10](#) - Having a mobile PC station will help free up some space in the lab and can allow patrons to take their work to the open workstation or around the library. This laptop can be used with the coding station, the sewing station, the Cricut station, or wherever needed, provided it does not need to do any heavy lifting.
 - Cost - \$809.00

Training

Library professionals may be tempted to hire librarians for this space, but we would like to discourage instinct. Creative and IT professionals are generally better suited to working with the

technology found in a maker space due to the unique nature of the equipment and software found in the space. Some of the more difficult skills to train will be advanced proficiency in troubleshooting and in Adobe Suite programs. It is for this reason that we suggest that the library hire looking for this skills to start with. However, we understand that this is not always possible. These vendors do not have locations in Africa, which would make direct support difficult advanced needs came up. We would suggest that one of our 5280 Super-Creative NGO support staff work in the Kigali Public Library during set up, as this is something our organization specializes in, but naturally it would be difficult to keep a staff member in Rwanda long term for all troubleshooting needs.

The Adobe Creative Suite offers trainings on all of their programs through their [website](#) that vary from beginner to expert skill levels. [Lulzbot](#), [Cricut](#), [Blender](#), and [pi-top](#) offer much the same. Organizations like [TechSoup](#) offer tech trainings for nonprofits that may help fill in some of the gaps and would be wildly beneficial for the library. Additionally, we may need to partner with local companies, like [FabLab](#) and the [Kigali Film School](#) to train the lab's staff on the equipment. This may also require part time staff in the form student workers from local schools. This is something that will need to be more fully addressed in the needs assessment.

Conclusion

The cost of the equipment and software, with a buffer of around 30% for shipping, handling, taxes, and so on, spent \$44,374.68 of our \$50,000 budget, leaving \$5,625.32 for additional years of software subscriptions and repairs for the equipment. Setting up such spaces rarely goes smoothly, so leaving a small amount of budget will is not so much leaving extra money as ensuring there's cash left when something inevitably goes wrong. This proposal is only tentative, as much of the suggested equipment hinges on a needs assessment, but this should

provide a solid framework from which to establish the shape of the maker space. All questions should be directed to the 5280 Super-Creative NGO. A full outline of the budget can be found [here](#).