

**Willian Prado**  
**Cybersecurity Student**  
**at**  
**City of Refuge**

**Tech Fixes That Changed My Thinking**

**Date:** July 16, 2025

**Location:** Inspiredu Tech Center, Atlanta, GA

**Participants:** Willian Prado and Brian Ayiteyfi (City of Refuge students)

**Mentors:** Mario Alexander and Tyran Johnson (Inspiredu Technical Team)

**Title:** Building Digital Equity: Hands-On Device Imaging, Quality Assurance, and Hardware Repair Training

**Introduction:**

On July 16, 2025, my classmate Brian Ayiteyfi and I volunteered at Inspiredu, a nonprofit organization located approximately 15 minutes from City of Refuge. Inspiredu is dedicated to bridging the digital divide by providing refurbished laptops to under-resourced communities in Atlanta. As part of Inspiredu's Tech Team volunteer program, we engaged in a multi-step technical project focused on refurbishing donated laptops for community use. This hands-on experience was both instructional and transformational, providing us with applied IT skills while also allowing us to contribute meaningfully to a greater social mission.

**Project Scope and Goals:**

The aim of today's project was to prepare decommissioned laptops for redistribution through three main technical operations:

1. Imaging: Installing a clean version of Windows 11 using a bootable USB device.
2. Quality Assurance (QA): Testing laptops for performance, usability, and completeness.
3. Hardware Repair: Diagnosing and replacing internal components, specifically a malfunctioning Wi-Fi card.

**Detailed Process:**

**Phase 1: Windows 11 Imaging Using Rufus**

Our mentors guided us through the process of creating a bootable USB drive using a tool called **Rufus**, which enables the installation of Windows 11 onto wiped systems. We learned how to:

- Enter BIOS to select USB as the boot device

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- Delete unnecessary SSD partitions while preserving system files
- Complete the OS installation with personalized configurations

Following installation, we ran a pre-written command line script designed by Inspiredu to:

- Set up the Windows environment with Inspiredu branding
- Install essential applications like Google Chrome and Zoom
- Adjust system settings such as time zone
- Generate a battery report to assess health metrics

This imaging phase provided a foundation in operating system deployment, BIOS navigation, and scripting-based configuration.

**Phase 2: Quality Assurance Testing**

We conducted QA checks to ensure each refurbished laptop met Inspiredu's standards for usability and safety. Our tests included:

- Visual inspection for cracks, dents, and screen integrity
- Verifying webcam, microphone, and speaker functionality
- Checking battery performance using the battery report from Phase 1
- Confirming system defaults (e.g., Chrome as the browser)

Brian completed this stage successfully on his assigned laptop. I supported him by referencing the Inspiredu SOP manual, helping him navigate each test step-by-step.

**Phase 3: Hardware Diagnosis and Wi-Fi Card Replacement**

The laptop I was assigned had no wireless connectivity. Under Mario Alexander's guidance, we conducted a full teardown to troubleshoot the issue. We learned to:

1. Power down and safely open the device
2. Disconnect the battery and locate the Wi-Fi card
3. Remove and replace the card using ESD precautions
4. Connect antenna cables (black and white) to the correct ports

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5. Reassemble and test for signal

We cycled through three used Wi-Fi cards before identifying a functioning one, which taught us about the variability in refurbished parts and the importance of diagnostic accuracy.



Replacing the Network work card.

**Skills Acquired:**

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- Operating system installation and automation scripting
- BIOS configuration and boot device management
- Structured quality assurance procedures
- Physical laptop disassembly and reassembly
- Troubleshooting and replacing internal components
- Peer mentoring and team collaboration

**Mentorship Impact:**

Both Mario Alexander and Tyran Johnson demonstrated high levels of professionalism and patience. They adapted their teaching to our experience level, ensuring we understood not just the steps but the reasoning behind each action. Their leadership was pivotal in fostering a safe learning environment.

**Reflection and Future Vision:** Today's experience reinforced the power of learning by doing. I gained confidence in practical IT support tasks and took the initiative to assist Brian through his first imaging workflow. This inspired me to begin documenting the entire Inspiredu workflow to create an open-source, beginner-friendly learning kit for other volunteers new to the tech field. I believe structured guidance paired with mentorship can transform communities, one laptop at a time.