

Digital Tool Education

BY JENNY ZHANG

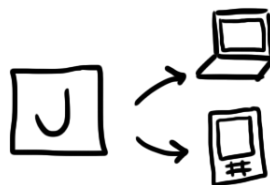
ABSTRACT

Most of the developing world is smartphone-literate, but smartphones can only do simple tasks—you can't develop software on them yet, manipulate financial documents in detail, etc. These are complex tasks that are only accessible through computers and computer-literate communities. There's a strong correlation between computer literacy and income, so I believe the ability to do complex tasks leads to more income opportunities.

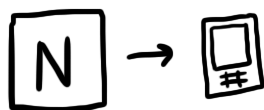
I'm a digital interface and experience designer, and one of my life goals is to help as many people as possible have more income opportunities. To merge these parts of me, I want to understand what factors influence the ability to do complex tasks, whether it's an interface problem, education problem, both, or something more. What I learn will educate a potential product, curriculum, strategy, or other proposal to increase digital literacy in developing countries.

INTRODUCTION

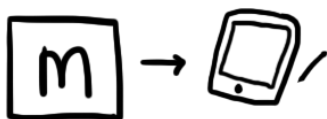
If people are comfortable with what they're familiar with, then I'm very comfortable on the computer. I've spent the bulk of my life plugged in and learning what I know through a cursor. I also grew up with a smartphone. As a result, most digital functions, whether desktop or mobile, feel innate. I can efficiently do "complex tasks" like "web development" and "experience design" because I'm familiar enough with a computer.



In high school, I made friends my age in Villarrica, Paraguay during a summer exchange trip. We still regularly talk, so over winter break, I visited them. One evening, my friend Nacho and I were on my laptop and he was browsing through Spotify. He was familiar with Spotify on mobile, but not on a desktop. This piqued my UX side. His hesitant hovering over certain icons revealed his confusion. It was an unfamiliar interface.



For our D&M project for Adobe, we interviewed Marjorie, a 9-year-old girl who was a digital art enthusiast. However, she hated laptops and computers. Because that reaction seemed at odds with her digital interests, we probed why. Apparently, she did all her digital art on a tablet and hated laptops because she hated cursors. It was an unfamiliar interface.



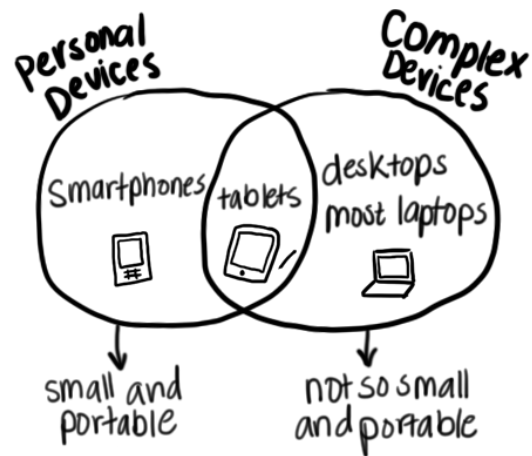
I grew up with a mouse and small smartphone. I'm still a bit uncomfortable with a tablet.



If people are comfortable with what they're familiar with, then not everyone can be expected to be comfortable with every device. "Exposure to tech" could mean something different depending on where in the world you are, how much money you have, how old you are, what your parents were like, etc. Not everyone can be expected to understand a phone. In fact, there's a [gap in smartphone understanding between younger and older generations](#). Not everyone can be expected to understand a computer, either. [The median global computer ownership is only 38%](#).

One thread in this "exposure" conversation I'm specifically interested in is the relationship between what devices a community is familiar with and their understanding of "complex tasks." I'm especially curious about it in developing contexts like Latin America and Africa.

Types of Digital Tools



Tasks of Digital Tools

Personal Devices

- Small, portable tasks
- Sending texts/emails
- Simple content editing
 - Photo filters
 - Writing notes, captions
- Streaming music
- Digesting content

Complex Devices

- Tasks that require full mental attention
- High quality content editing
 - Video/graphic creation
 - Developing software
 - Complex systems design, simulation, or computation
- Tasks possible on a personal device but with higher fidelity, comfort and a dedicated environment

PROBLEM

Currently, “web development” and “experience design” are not culturally or colloquially understood tasks in many places around the world. I want to learn the correlation between the types of tools people are exposed to and their ability to do complex tasks, because there is a correlation between complex tasks and income.

Ultimately, one of my life goals is to help as many people as possible have more income opportunities. Perhaps by uncovering the relationship between the devices people know and their ability to do complex tasks, I can learn how we might shift the distribution and education of different devices to different places. It's clear that [income and access to digital tools is correlated](#). Understanding the link between the specific, most common tools across the globe might shed light on how to increase their access to tech that promotes complex tasks.

This idea might provide strategies to tackle digital tools education in developing countries. Understanding this problem could assist struggling digital economies, enable more people to do complex tasks, and provide more opportunities.

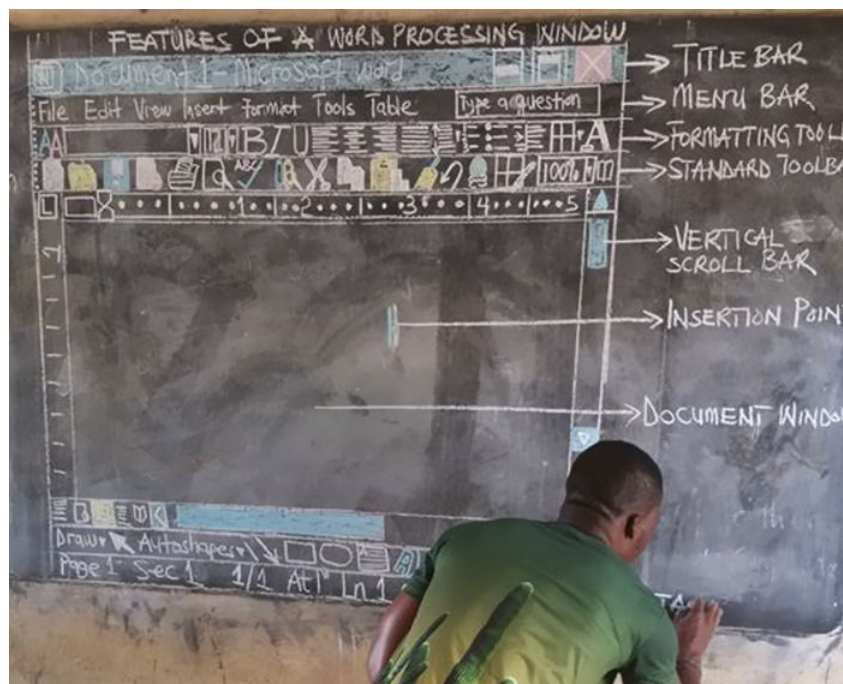
I'm currently curious about Latin America and Africa primarily because many countries in these places have less of a digital culture. If they do, it's smartphone-dominant, with less emphasis (though increasing) emphasis on computer use.

ACADEMY-NESS

I'm not positive what I want to do yet, but I know it will involve my deep understanding of digital tools, and my skills in interviewing, interface design, primary research, and writing. These are all things that I've lived for a while now and can commit to for a long time effortlessly.

NOVELTY

March 1, 2018 headline on NPR: "Computer Teacher With No Computers Chalks Up Clever Classroom Plan"



This is how Owura Hottish teaches his middle school students about Microsoft Word in Ghana.

[Many education startups today](#) focus on subject literacy (like in math or other languages) or

improving communication between teachers and students. In the U.S., technology education programs are still a developing concept. In places where technology for professional use and complex tasks barely exists, technology education programs are virtually undeveloped—or in chalk.

POSSIBLE FORMS

I've thought about making a tool that makes complex tasks—like making websites or 3D modeling—more accessible to those who only grew up smartphone-literate. I'd target the natural grain usage of a smartphone. I imagine a website builder that lets you to make webpages like you would create and organize notes on a phone. A 3D modeling app enabled by augmented reality through a mobile “magic window.” A simple way to design, organize, and project a presentation or pitch on the go. There are a million complex tasks out there that might be accomplished with mobile devices.

Another avenue might be to create a tech education curriculum tailored to a community based on its specific digital tools exposure and access. This could be implemented as a General Assembly-esque studio space, purchasable curriculum in K-12 or higher education, or in an existing community hub. I'm very open to other possibilities.

RESEARCH

The first thing I will do is find and map out the distribution of different devices across the globe. Then, I will research:

1. The income distribution, top industries, etc. of the countries with both computer and smartphone literacy
2. The income distribution, top industries, etc. of the countries with just smartphone literacy

I want to validate my hunches about the correlation between digital literacy and income opportunities first, and then pinpoint a couple of interesting communities in the world to do targeted research on their:

1. Technology habits (personally and professionally)
2. State of education, including access

3. Use of the internet

Then, I will compare this research with Los Angeles. My favorite part of D&M was interviewing students, teachers, and administrators to learn about how technology education is developing, and existing classroom strategies. I'll continue this, but specifically focus on why certain developments are unique to Los Angeles, and what catalyzes different strategies.

THE BIG PLAN

This Garage Experience fits into a bigger narrative for my professional and personal life. I want to:

1. Start the research project in Garage Experience, specifically focused on understanding technology education globally and comparing it to Los Angeles.
2. Continue after college with research through Fulbright or another grants-based program. I'd live in one of the communities I researched and do similar interviews and tests, and perhaps pilot a studio space, curriculum, or product.
3. Bring my work into another community to continue testing hypotheses or whatever it is I might create. This community could be another interesting place around the world, or the research arm of a company like Adobe (where I'll be interning this summer), or both.
4. Finally end my journey in a graduate program (MIT Media Lab? Stanford d.school?) where I publish my research and finalize my space, curriculum, or product as a business.

Committing to this idea means committing to a bigger plan for myself. I'd want to apply for Fulbright as a Garage Experience deliverable. Doing my due diligence involves eventually traveling and practicing different languages. It involves learning new methodologies.

I'm genuinely intimidated, but I realize now that I shouldn't hedge. I want to pursue a project with complete faculty support on something I'm experienced with and passionate about. This idea is honest and curious.

Sorry that the past month has involved a lot of idea-hopping. I think I needed to write and talk them out, though, to get here. I'm genuinely excited now.