

# ASSIGNMENT 2

## POVS and Experience Prototypes

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### Introduction:

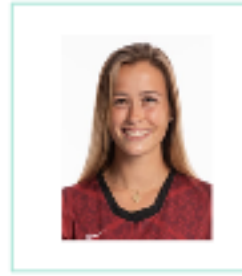
#### Our Team



Caroline W.



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### Problem Domain

Our problem domain is **increasing accessibility**. People have trouble accessing and using areas of technology because they are limited in other areas of their lives, whether that be knowledge or physically.

### Preliminary POV

“We met...Michael, a former lawyer from Stanford, who struggles with the learning curve of technology. We were amazed to realize...that he loves learning but doesn't want to spend time learning new technology. It would be game-changing to...make the process of learning new tech easier.”

## Additional Needfinding results

In order to further test and explore our POV, we went back into the field to conduct more interviews in order to garner better insight. Below are the key findings from an additional four interviews.



We talked with Mike, an anesthesiologist from Australia. Mike explained how he feels trapped by his constant use of technology in how he is locked into his phone and oblivious to the real world. However, he uses technology as a means of communication and reference for his work when inputting patient data and their electronic records.



We met with Patty and Steve, two retirees from Orange County. They explained how the easier technology is to use, the more helpful it is to them. They felt that the blending of technology and the real physical world

is exciting and that it is important to embrace change, especially as it allows them to be more independent.



We met with Jordan Barry, a University student with ADD. Jordan talked about how she is extremely busy, goal orientated and very much values her time. Yet, she finds she goes down a distractive and time consuming rabbit hole with the nitty gritty small details in her projects and presentations, such as entering and manipulating data in spreadsheets and graphs, which becomes a side track from actual project.

# Revised POVs, HMW Statements and Prototypes

## POV 1: Luke

### **We met:**

Luke, a first year university student, who is a quadriplegic and has limited mobility.

### **We were amazed to realize:**

He uses voice interaction a lot for schoolwork but has to ask for help each time he wants to create something that is beyond just written words.

### **It would be game-changing to:**

Allow those with disabilities the ability to work on creative and visual projects independently.

## Sample POV 1's HMWs

How might we...

- Use technology to help Luke feel more independent and less reliant on others?
- Help Luke regain the use of his hands?
- Use technology to assist in visual tasks?

## POV 2: Michael

### **We met:**

Michael, a retired lawyer at Stanford, who has a love of learning and reading.

### **We were amazed to realize:**

That despite Michael's love of learning, he struggles with the time commitment necessary to pick up new technologies.

### **It would be game-changing to:**

Create easy and accessible ways to learn new technologies.

## Sample POV 2's HMWs

How might we...

- Decrease the learning curve of technology
- Make learning new tech exciting and not feel like a chore
- Build better tutorialization into new tech

## Revised HMWs:

From these HMWs, we selected three to address and attempt to resolve in more detail.

1. How might we use technology to assist in visual tasks? (POV 1)
2. How might we decrease the learning curve of technology? (POV 2)
3. How might we make learning new tech exciting and not feel like a chore? (POV 2)

## Revised Solutions:

1. Use VI to manipulate and create graphs. (HMW 1)
2. Give people with different preferences of learning style options; don't make everyone just read directions, maybe offer visuals also, or videos, or FAQs. (HMW 2)
3. Allow user to ask chatbot questions when learning new tech. (HMW 2)

## Experience Prototype 1

HMW: How might we use technology to assist in visual tasks?

Proposed solution: Suppose that instead of having to physically draw out a graph, the user could simply speak commands to create and edit the graph.

Assumptions:

- 1) People will use the easier, less effort method of doing a task.
- 2) People don't enjoy doing the small nitty gritty details in entering data and would rather focus on the bigger picture.

Constructing the Prototype:

For this experience prototype we wanted to test our previous two assumptions. So therefore we decided to test our user in two different segments. First we would get them to draw a graph by themselves. Second we would ask them to draw another graph, but this time they had the option of drawing it themselves or instructing someone else to draw it.

Testing the Prototype:

First we instructed our user to draw a simple graph (the hours of sleep per week night). We watched and observed how our user went about this, beginning with drawing the axis, labeling the axis and then finally filling out the data. After the user had done this we asked him about the experience. He responded saying that "it had been easy to draw the graph as [he] know what [he] wants and can execute it." We then proceeded to tell him that we wanted him to draw another graph, but gave him the choice of drawing it himself or instructing someone else to draw it. He chose to instruct someone else. When asked why he made that decision he simply said that he "didn't want to draw another, it was too much effort." He then instructed Emma how to draw the graph, first by stating the type of graph she would be drawing and then moving forward. There was one or two misunderstanding in the instructions given, but this was quickly solved by more in depth or exact instructions. It was interesting that instead of saying the exact

dimensions on the x and y axis he gave a broad overview, for example “x-axis days of week.” Afterwards we again asked the user about the experience. He said that it was both “simpler and easier to describe the graph than it was to draw by hand.” He also said that it “wasn’t too complicated to explain it out loud.”

User drawing graph



Findings:

We found that the user would rather explain out loud how to draw a graph than draw a graph themselves. The user seem to find that instructing someone else to draw the graph was less cumbersome than doing it by hand.

Reassessing our Assumptions:

Based on our testing, we felt that our assumptions were validated. The reasoning behind the users decision to instruct someone else how to draw the graph over drawing it themself showed that they would prefer to use the easier, simpler and less taxing method in completing a task. The point that the user also brushed over specific small details that could be inferred (such as the days of the week) also showed how the user was more focused on the bigger picture than the small details.

## Experience Prototype 2

HMW: How might we decrease the learning curve of technology?

Proposed solution: Suppose that instead of having to learn to use new tech by reading instructions on a screen or watching a video, the user could just speak to a chatbot and ask it any questions they had.



User trying to learn to use a new app

#### Assumptions:

- 1) People would rather learn by asking questions when they come up, than simply have information fed to them.
- 2) New technology (apps, software, devices, etc.) needs better tutorialization for the general public.

#### Constructing the Prototype:

Our goal was to test our two assumptions about the learning process with new technology. Therefore, we decided to test a user by introducing them to two iPhone apps, app A and app B. Our prototype was very simple; it consisted of apps A and B, used on an iPhone, and our “chatbot,” Austin, who would try to answer some of the user’s simple questions during the testing phase.

#### Testing the Prototype:

We wanted to observe the user’s first interactions with a new app and how they best learned to use it. With app A, we only allowed them to use the written instructions and tutorialization built into the app, while with app B, we allowed them to ask us questions as they would the chatbot described in the proposed solution. We chose app A because it involved use of both a physical device and an app that the user wasn’t familiar with. We hoped this would prompt the learning curve to be more difficult, so we could see how the user interacted with the tutorialization built into the app. We chose app B because it had limited to no tutorialization, which we hoped would prompt the user to have to ask the chatbot questions.

#### Findings:

With app A, the user had to pair a bluetooth device to activate the app, then had to perform some operations on the app, specified by our team. Because of the tutorialization built into the app, our user didn’t seem to have any problems learning to use it, even though it was her first time seeing the app and using the device.

With app B, the user had to perform a set of operations given by the team, but could ask our “chatbot” questions if they came up. App B had no tutorialization or instructions built into it, which is why we used it, so we could easily identify when the user had questions and how they were resolved. In this case, however, the user’s only questions were to clarify her task, not to request assistance in using the app.

Reassessing our Assumptions:

Based on our testing, we decided that for the demographic we tested (young, tech savvy), our two assumptions were wrong. In this case, the user liked her experience with app A more than with app B and didn’t mind learning to use app A from its built in tutorials. Despite not having any built in tutorials, app B proved to be intuitive enough that the user didn’t feel the need to ask questions about how to use the app. In fact, we found that this may not be a need area for the given demographic, since we can achieve the same (or a better) outcome by simply making apps that are intuitive and have straightforward, effective tutorials.

Assumption 1, therefore, was shown to be invalid for the young, tech savvy demographic, although it still may hold some validity in an older demographic.

Assumption 2 was also shown to be invalid for the tested demographic, however this is where we think work could be done with an older demographic. If new technology needs better tutorialization, we can either try to fix this with better built in instructions (stick with the current system), or try to incorporate a chatbot aspect so the user can ask questions when they come up. However, if we look at the effort to benefit ratio, it seems that we could achieve more benefit from the same amount of effort by focusing efforts on creating intuitive apps with good instruction, rather than by attempting to create a multi-purpose chatbot that can provide struggling users with useful advice.

Conclusions:

Neither of our assumptions held up to testing, which prompted us to wonder if there is a need for a solution to our proposed problem. With the general public trending towards more tech savvy, effort may be better spent making intuitive apps that work similarly to how people now expect them to. This would make apps easier to learn in general. The only reason we would need the addition of a chatbot to help teach technology is if the technology itself is inherently difficult to use, which we should instead try to prevent in the first place.

## **Experience Prototype 3**

HMW: How might we decrease the learning curve of technology?

Proposed solution: Create a platform with many different ways to learn how to use common pieces of technology/apps

Assumptions:

- 1) People feel that they have better things to do than sit down and learn new technology
- 2) People like to learn in their own way, but dislike other methods of learning

### 3) People want to engage in new tech if they had the time

#### Constructing the Prototype:

For this experience prototype we wanted to test our previous three assumptions. To test our assumptions we would present the user with two different options. We would give him the choice to continue to play a game on his phone for 5 minutes, or take the time to download the Starbucks mobile app (a place he goes to many times a week, but chooses to stand in line). To test our second and third assumption, we would give him choices between different modes of education: (reading an article, watching a video, listening to a podcast) and downloading the Starbucks mobile app.

#### Testing the Prototype:

We needed to test our prototype on a person who ordered at Starbucks regularly, but did not own the new Starbucks mobile ordering app (relatively simple to learn to use). We told him that our test would take approximately 20 minutes, so he knew he had this time block reserved. We then asked “would you rather take the next 5 minutes to continue playing a game on your phone or download the Starbucks mobile app”. He responded “phone”. After 5 minutes had passed we continued asking him to choose how he would rather spend his next block of time. We asked if he would rather read an article on Hurricane Michael or download the app. He responded for the article and then read the article. We asked if he would rather watch a Ted Talk or download the app. He responded the Ted Talk. We asked if he would rather listen to a podcast or download the app. He responded the podcast. He said “ I just don’t see what is wrong with the way I always have ordered Starbucks”.



User playing game on phone

## Findings:

We found that our subject would rather spend his time doing almost anything else than downloading the mobile ordering app, even though theoretically, it would be something that he would use and would assist his daily life. “Learning” how to use it was not the problem. It was the effort and the time that it would take that was the issue.

## Reassessing our Assumptions:

One of our assumptions was that people want to engage in new tech. We found this assumption to be incorrect and that a platform that we would potentially create would not be used. People, even ones who are around new technology constantly, do not want to waste their time with technology that they feel will not be of use to them, even if it will end up saving their time in the future. We found that people do like to learn, but people are not overly adverse to particular platforms.

## Key Takeaways/New Assumptions

We decided that the most promising prototype was prototype 1, which we used to test the assumptions that 1) people will use the easier, less effort intensive method of doing a task, and 2) people don't enjoy doing the small nitty gritty details in entering data and would rather focus on the bigger picture.

Prototype 2 seemed like it wouldn't lead to a very promising product because we disproved our assumptions. We still believe that having a chatbot-like solution to help people learn new technology could be effective, but only in demographics that struggle significantly more than the average user when learning new technology. In these populations, intuitive design and built-in tutorials might not be enough to help teach them to use the tech, so a tutorial assistant might be necessary. Therefore, time and effort would probably be better spent designing good products that are easy to learn, rather than designing chatbots that could help as a band-aid solution to poorly designed products.

Prototype 3 also disproved many of our assumptions and we felt that it would not be used. People do not want to engage with new tech that they do not know and our instruction app would fall under this category.

Therefore, we'll probably be moving forward with prototype 1. This prototype proved to support our assumptions, even when using a test subject that doesn't necessarily need assistance in drawing visuals. This is promising, because in pursuing this idea we wouldn't be pigeon-holing ourselves into a product that is only applicable to those with certain disabilities, and it could be useful to the general public too.