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CSE 170
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A1: Needfinding

My studio focuses on "Removing Barriers to Learning" and the approach which I took to this was learning a musical instrument. I asked three participants to describe their musical background and asked them to share some of the memories they can recall of learning an instrument and then placed them in a situation where I had them perform a song. This activity-study puts these three college-aged individuals with different musical backgrounds and tasks them with a situation where they had to figure out playing the song "What a Wonderful World" by Louis Armstrong with an instrument they own, a guitar, or a keyboard which I provided.

Charlie

Charlie is a college student studying Aerospace Engineering who, at one time, played the Baritone. He also plays a little bit of the trumpet, but it was 7th grade when he first picked up the instrument and stopped at the end of high school.

As I ask Charlie to explain his exposure to this instrument, he explained how the Baritone was not his first choice of instrument. His first choice was the trumpet, he forgot his second choice, but his third choice was the baritone. He was in a middle school music class setting with about 9 students. He went on to explain how his teacher did not let them pick up an instrument on their first day because he wanted to emphasize that the class needed to know each other well and the band was only good as each other. He recalled how much fun he had and explained how he didn't need to pay for the program and it was under the consent of his parents.

When tasked with playing "What a Wonderful World", Charlie ended up defaulting to the guitar because he had no access to the baritone. This is a breakdown for Charlie and he either needed to learn a new instrument for the task or he needed to get access to a baritone to perform the given task. During the interview with Charlie he mentioned "it (the baritone) was just not an instrument that you could pick up and play like the guitar" and that it was too expensive to bring it to school. The success in Charlie's case was that he still looked confident as he picked up the guitar and placed his fingers on the neck of the guitar using tabs.ultimate-guitar.com on the website.

Photo 1:



Caption 1: Charlie struggles to find space in his limited closet space and schedule in college to bring his baritone. He needs to give up space in his closet, find a way to get access to a baritone from someone, or attempt playing the song in a different instrument.

Samuel

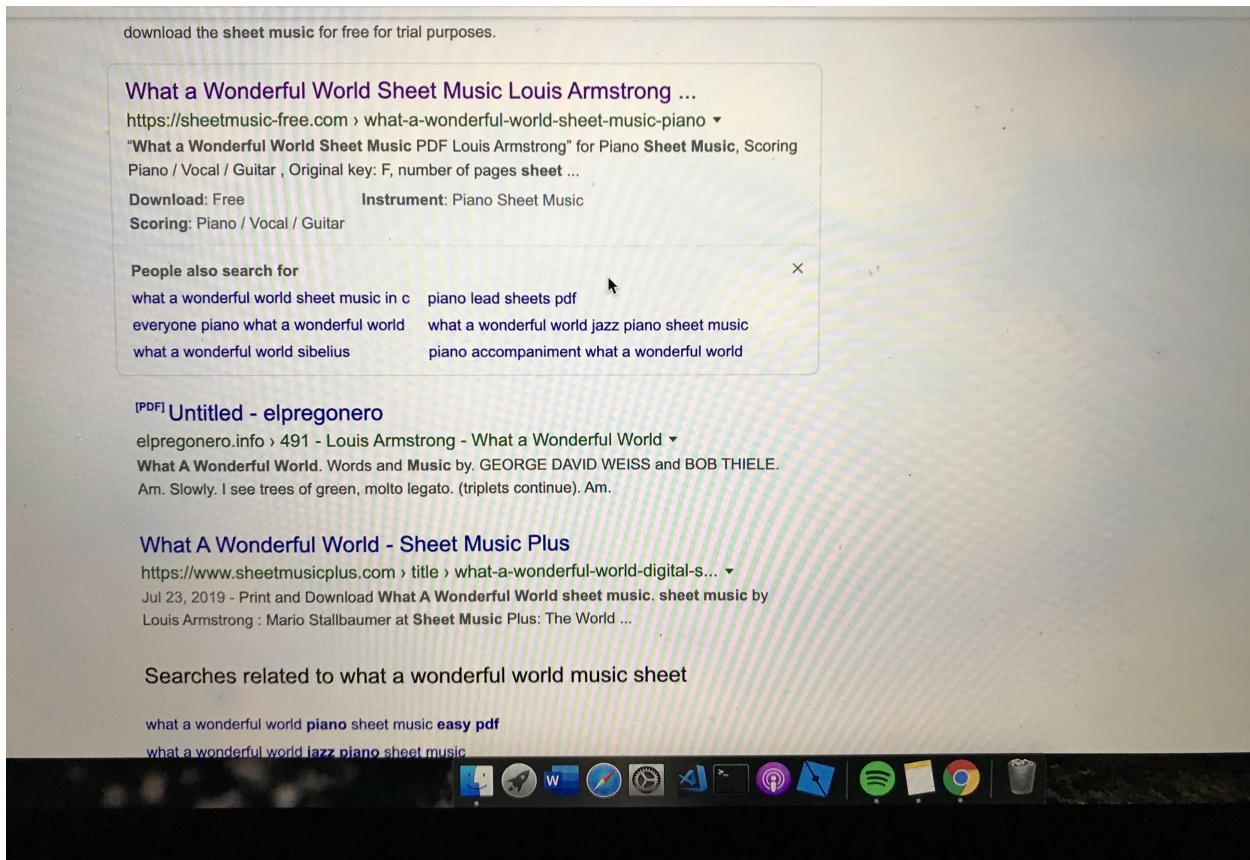
Samuel studies Mathematics and was a vocalist during his childhood and had recently picked up playing the piano. He did choir for five to six years and underwent voice lessons concurrently for some part of these years.

Samuel's musical background started when he started in the choir when he was 10 years old when he started choir and did choir up until he was 16 years old. He shared his first day where he was joined with about 40 kids in an audition where he was nervous of the big crowd and felt the pressure to impress the teacher, but he stated that it went well. His mom hired a voice lesson instructor when he was 12 year old and shared how he was a bit pressured to perform. Samuel slowly lost interest and eventually stopped participating in choir. The summer before his senior year of high school, he tried to learn how to play the piano, since his brother was really good at it and he had access to his brother's piano along with his brother's lessons so he taught himself the piano for four months. He shared how he enjoyed it but it was a bit unstructured because he admitted that being self-taught was not very structured and that he appreciated the structure the choir provided.

When tasked with playing "What a Wonderful World" he googled for sheet music. He visited 3 sites that asked for a payment before he found a website in "<https://sheetmusic-free.com/>" which was third from the bottom of the first google page. After finding this sheet, Samuel really struggled to play the instrument and was really overwhelmed when he saw the music sheet.

The positive in this experience was that Samuel did eventually find the sheet music and that there was a free version available. The breakdowns that can be identified from Samuel's situation, however, was that it was just harder to find sheet music for free and that he was just overwhelmed at the sight of the sheet because there was no step-by-step guidance.

Photo 2:



Caption 2: Samuel's search for the music sheet went all the way down to the third-to-last option in the google search page. Samuel needed step-by-step instruction to learn the piece and would have appreciated if the link to find free-access to the music sheet was easier.

Andrew

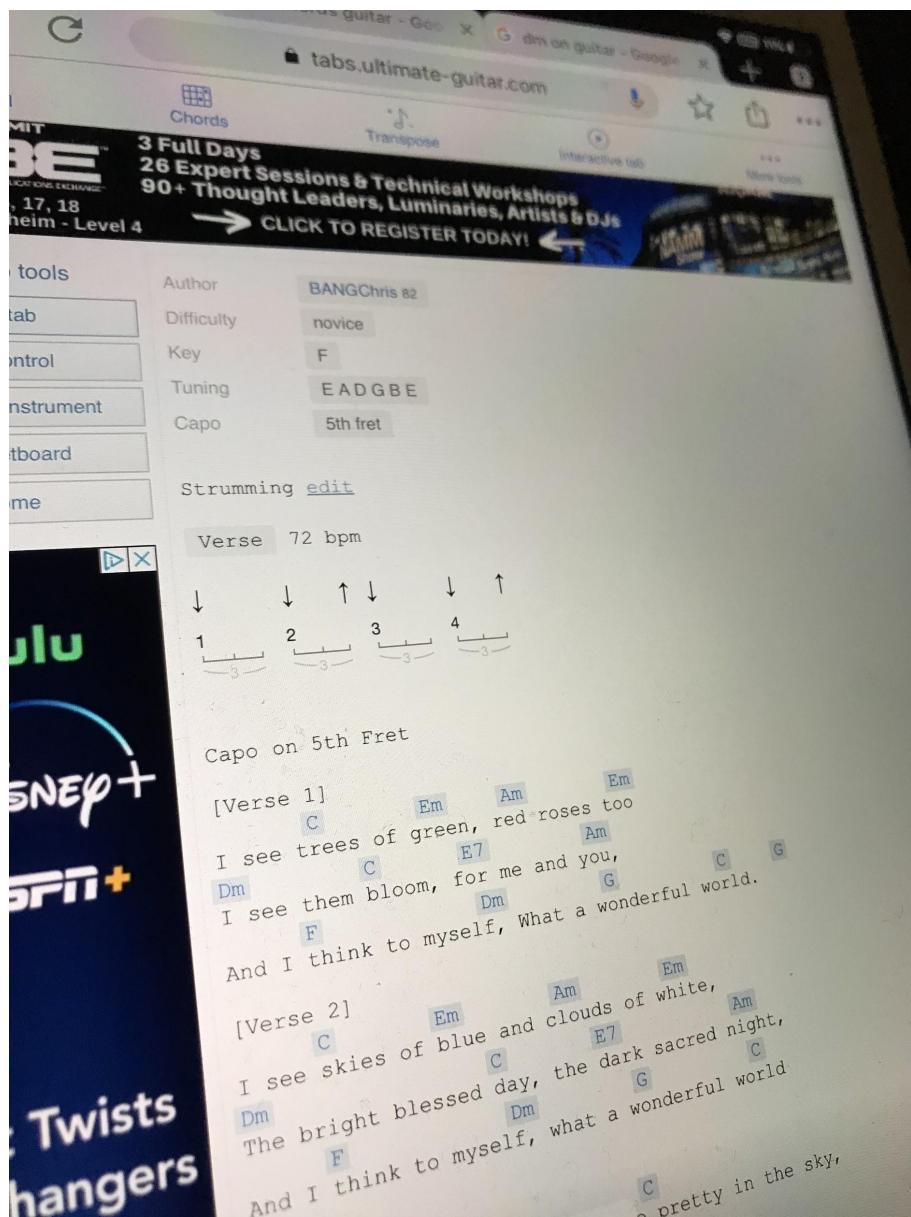
Andrew is a student from the History department and has attempted to learn the electric guitar through “justinguitar.com” during his time in college. He shared his experience trying to pick this hobby up because it was an outlet for him during stressful times at college.

He shared how he googled “how to learn guitar easy and quickly” and he landed at justinguitar.com after some searches. He shared how the course module had a beginner, intermediate, an advanced, and a super advanced level. Within these levels, there were subdivisions that were divided into individual lessons. He also shared that all the course material that he accessed was free. He said he practiced finger exercises and stated that play-alongs were common throughout the lessons. Andrew thought that the lessons catered to his learning speed and any confusion from the lessons were cleared up with a simple google search. He especially appreciated how the lessons gave him a heads-up when the course material was going to be harder and preparing him for what is ahead.

When Andrew was tasked with playing “What a Wonderful World”, he googled “what a wonderful world chords” on an iPad, he browsed the first website recommended which was “tabs.ultimate-guitars.com.“ He saw that the song required a capo and I provided him with it. Andrew continued to take a glance at the sheet of chords on the website and tapped on the “Dm” chord on the page which looks to be interactive which would give him the structure to the chord. However, this page led him to a page where he was asked to download the application. Andrew dismissed the application, but then proceeded to google the chord and how the chord structure looked like. After slowly placing his fingers on the neck, he proceeded to play chord after chord slowly.

The positive take from Andrew’s case was that the chords were much easily accessible and that it was possible to figure out what the chords looked like through some googling and switching the tabs back-and-forth. However, the breakdown for Andrew’s case is just having to task-switch between googling chords and figuring out what the next chord was going to be.

Photo 3:



Caption 3: Andrew was inconveniently tasked with going back and forth with looking up the chords because the buttons that looked interactive did not lead him to the chord structure of the song.

POV:

For Charlie's and Samuel's case, having a step-by-step guide for the song with clear placement of the fingers and form could have really improved their experience. For Samuel, if free-resources were available, why not link it to him directly in the first place. For the case of Andrew, why open a bunch of tabs and switch back and forth between them when he could listen to how the chords should sound like and compare it to how his chords sound like before resorting to opening a bunch of new tabs.

User Needs

1. Free music sheets need to be more easily accessible for music learners.
2. Music learners need a way to get easier access to instruments they play to not lose their practiced skill.
3. Music learners need a way to get help step-by-step when picking a foreign musical instrument.
4. Music learners new to musical instruments need a way to train their ears to be more successful learners
5. Music learners need to be able to be kept accountable towards their desired goal when learning an instrument.
6. Music learners learn at different speeds and have different schedules and need a way for their pace to be catered.
7. Music learners need to be encouraged with a review when they have fallen behind schedule
8. Music learners need to be kept engaged during each session with the individual's level of skill.
9. Music learners need a way to assess their progress without being discouraged or being overwhelmed.
10. Music learners need a network of people to stay connected in their interest for the instrument.
11. Music learners need to be able to trial an instrument first before fully committing into buying the instrument or never trying it at all.
12. Music learners need a fun way to understand the fundamentals of music and how it translates to, at least, a few instruments to build confidence and mastery.
13. Music learners need a way to be eased into an instrument through a step-by-step guidance before they feel overwhelmed and lose interest.
14. Music learners should not be hindered by the cost of the instrument, there needs to be a way for music learners to share and have access to an instrument that would have been too expensive with an individual owner.

15. Music learners need a way to feel rewarded for their progress in the learning to keep them motivated and not only a device they use to look up something, but rather a place to grow as an individual as well.

Needfinding talk:

I took the opportunity to Needfind for “removing barriers to learning” for musical instruments. I interviewed 3 individuals and they shared their musical backgrounds and the instruments they play or played. The activity I chose was to task them with playing “What a Wonderful World” by Louis Armstrong. They were allowed to bring the instrument of their choice; however, if they do not have one, I provide them with a guitar or piano. Two of them picked the guitar and one person picked the piano. After observing the three individuals and their experience with trying to play the song, there were some breakdowns and successes that I noticed. A success was that they all managed to find free music sheets for the song. However, there were some breakdowns including switching through different tabs to figure the chord structure of the chord they were trying to play and struggling through different paid-websites before landing on the free music sheet and just not having access to their preferred instrument at all.

Evaluation Rubric

Students earn one point for each binary criterion met.

1. The description clearly demonstrates relevance between activity observations and a design theme.
2. The observation description for each subject explains the concrete activity.
3. The observation description for each subject explains the actions the participants perform.
4. The observation description for each subject explains both successes AND breakdowns.
5. At least 8 needs were submitted, excluding redundant needs.
6. At least 15 needs were submitted, excluding redundant needs
7. Needs specifically address breakdowns found in observations.
8. Sketches or photos show subjects in the setting of the observed activity.
9. Photo captions clearly identify successes AND breakdowns found during the observation.
10. Point of view describes a core problem without offering a solution within 10 and 20 words.
11. Student gave a needfinding talk in studio.
12. Student's needfinding talk was well-prepared, explaining their observations and the successes/breakdowns found.