

### **Homework 3: Contextual Inquiry**

For my contextual inquiry, I decided to conduct the inquiry on a Northwestern student who is currently a senior in the McCormick School of Engineering. The specific activity that I observed was the student playing a song on the guitar. In order to get a better context of what I was observing, I decided to ask him to first explain his history with playing the guitar so I could get a baseline of his expertise with the instrument. He grew up playing the piano and sees music as a fun hobby because it relieves stress and helps him bond with other people. I asked him how he felt playing the guitar specifically bonded him with people and he described the first time he played the guitar was when his friends introduced it to him in freshman year of high school. After that, he went out and bought his own acoustic guitar and began to put more time into learning the instrument. Once he felt more comfortable playing it, he then bought an electric guitar but his engagement in this activity was very on and off leading into college. His first year of college, he only played when he went back home to Maryland because his guitar was there so he decided to buy one in Evanston to practice while attending Northwestern. Currently, he plays the guitar about once a week depending on how much free time he has. When I asked how much time he needs in order to practice, he stated that he needs more than 30 minutes minimum because it takes time for him to get into rhythm; if he knows he has less than 30 minutes to play, he does not bother trying. Furthermore, when asked what is the maximum amount of time he plays in one sitting, he responded by saying one and a half hour or “if my fingers start to bleed because sometimes I don’t use a guitar pick”.

#### **Process:**

Before I had the participant go into the process of accomplishing the task of playing a song on the guitar, I wanted to understand what they had already accomplished before the contextual inquiry. In terms of playing songs, he was comfortable playing ones that were specifically geared towards mainly guitar play instead of mixed with lyrics. One thing he emphasized was that he has difficulty remembering what songs he learned previously. I followed up by asking him to pinpoint the main reason for his lack of remembrance and he felt that not practicing often was why. He even said he reached out to other friends who played the guitar for tips on remembering songs to which he was advised that guitar playing requires a lot of muscle and finger memory practice. In other words, if you do not use it, you will lose it! When I questioned if he had any workarounds to remembering what songs he has played before, his only solution was having a physical list of what he has practiced before but this still did not address the problem of remembering the actual song itself.

Now that I had a basic understanding of what he had accomplished before the contextual inquiry, I asked him to go through the process of playing a song on the guitar. He decided to play “Photographs” by Ed Sheeran because he recently heard it on the radio. Before he moved onto the next step of actually playing the guitar, I quickly asked him if he has a general process when choosing what songs to learn on the guitar. The participant broke down his song choosing process by (1) hearing the song “on the radio or a YouTube cover”, (2) the song has to be a genre that he can emulate on the guitar in some way and some genres like “EDM would be impossible for me”, and (3) looking up the song to find the song chord or tablature through websites such as *songster.com* or *ultimateguitar.com*.

**Photograph Intro tab by Ed Sheeran**

1,730,893 views, added to favorites 39,504 times

Difficulty: intermediate  
Tuning: **E A D G B E**  
Capo: 4th fret  
Key: C

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C|-----1-0-1-----1-0-1-----1-0-1-----1-0-1-----|
G|-----0-----0-----0-----0-----|
D|-----3p2-----3p2-----3p2-----3p2-----|
A|-3-----3-----0-----0-----|
E|-----|-----|-----|-----|

e|-----|-----|-----|-----|
B|-----1-0-1-----1-0-1-----1-0-1-----1-----|
G|-----0-----0-----0-----0-----|
D|-----3p2-----3p2-----3p2-3-----|
A|-----|-----|-----|-----|
E|-3-----3-----1-----1-----|

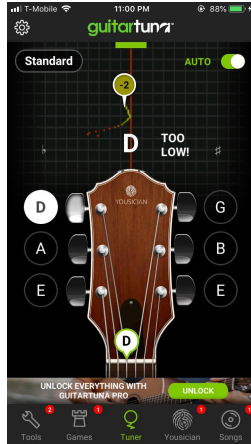
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p = pull off

Tablature music sheet showing how to play (intermediate version)

Since I do not have any musical background, I dove deeper into what chord versus tablature was in terms of playing the guitar. As the participant explained, “chords are basically associated with strumming. Tablature is better for fingerpicking in my opinion”. I did not want to lose focus on the guitar playing but I also wanted to make sure I had a solid understanding of these terms such as strumming versus fingerpicking. Therefore, I asked him which he preferred; the participant did not have a preference because most of the songs he has played or currently plays has a mixture of strumming and fingerpicking. I followed that up by reiterating step 3 of finding a song to play. I stated that he finds the song on either website before playing to which he corrected me by stating that not every song he wishes to play is on the websites especially the “not-so-famous” songs. For example, he found a cover of a rendition of “All of Me” by a YouTuber named Sungha Jang but the chords/tablature for this specific rendition were not available on either site. Going back to the current goal, however, he found a tablature version of “Photographs” by Ed Sheeran.

After finding the song he wanted to play, he opened up a mobile app on his phone called “GuitarTuna” and began to tighten or loosen strings at the top of his guitar handle. When I asked him what exactly the app does, he played a note and showed how sharp or flat the note should sound according to GuitarTuna. The participant followed this up by saying how he loosens the string after every session because it “takes tension off the guitar strings and I want to preserve it for a long time since it was expensive.”

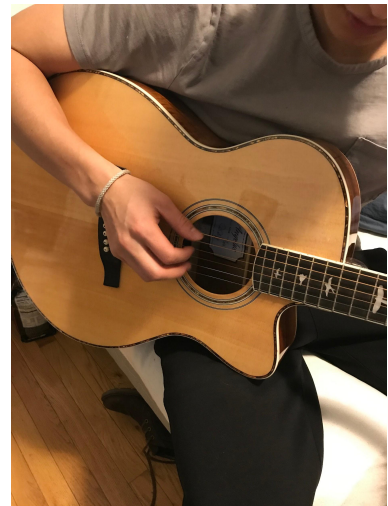


GuitarTuna app shows when the string is properly tuned



Participant tuning guitar based on GuitarTuna feedback

After about five minutes of tuning the strings, he began to play the song very slowly. One thing I noticed instantly was he would replay a portion of the song several times before moving onto the next section in the music sheet. I watched him do this over and over again for what seemed to be about 3-5 seconds of a specific part of the song. I interpreted this as him just getting the muscle memory (as mentioned before) and taking mental notes of how each part should sound. Just to be sure, I asked him why he was replaying small portions at a time and he noted some things that seemed very subtle to the untrained eye. Specifically, he was breaking the goal of playing a song into smaller subgoals e.g. playing one measure in a line (approximately 4 measures equate to 1 line on a music sheet) at a time until he is very comfortable with the notes of the song. Furthermore, he pointed out that being comfortable with each line was more than just remembering how it should sound but also where his finger placement was for each measure. I questioned what he meant by finger placement so he showed me how he could play the second measure in line one using the index and middle finger. Then, he repeated the same measure using the middle and ring finger. By playing the same measures with different finger placements, he was able to figure out which placements felt the most natural for him so that he could play the measures without messing up. He began to play again from the first line, and this time, I paid close attention to his finger placement and another thing I noticed was the finger placement would change from measure to measure. Again, I brought up how the finger placements would change because I thought he would carry on a specific finger placement he felt most comfortable with consistently throughout the song. However, he corrected my assumption by stating that he applies this subgoal of finding the most efficient finger placement for every measure.

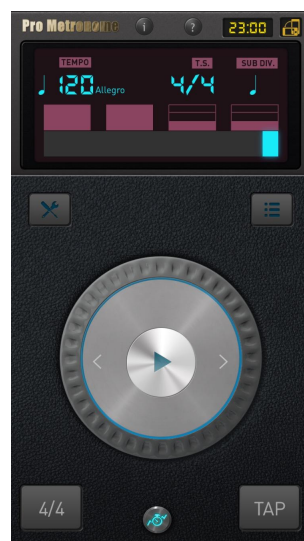


Participant showing fingerpicking method

He said some measures felt more comfortable with just the index finger and others felt more comfortable to play with a couple fingers. I also wanted to know if he has a dominant finger and

the participant said that when he first began playing the guitar, he would keep using his index finger. During his explanation, he realized the main reason he wanted to switch to using other fingers was because he noticed how much smoother the songs sounded.

The participant went back to practicing his fingerpicking and placement for every measure. After playing each measure over and over, he would move onto the next one and play the measure that came before followed by the one he was currently practicing. As I observed him execute this routine for several lines, I asked him if he remembers the finger placement of the song when he plays it again after sometime, and if not, does he repeat this routine once again to relearn the placements of a song he already practiced. He claimed that he annotates the song by what finger placement he had used the previous time. For this specific session during the contextual inquiry, he did not annotate any measures because he felt that it was a lot simpler than other songs he has practiced. I watched the participant continue to practice measure by measure, line by line, finger placement by finger placement until he felt that he had a good chunk of the song down. Next, he pulled out his phone and opened up another mobile app called “Pro Metronome”. At this point, he knew I would ask what the app was for so he explained that he used this app to keep the rhythm of the song (beats per minute - bpm). He went back to his tablature and pointed out that every sheet of music tells you how many beats per minute it should be played and you can set the Metronome app to play the correct beats per minute. To do so, I asked him to walkthrough how he sets up the app. First, he opened the app and clicked on the ‘practice mode’ button and set the beats per minute to 120 bpms because the sheet said intermediate range (90-150 bpms). Next, he put it in warm up mode where it asked for the maximum tempo which he put to 120 bpms again and set the duration speed to be half the tempo so he set it to 60 bpms. According to the participant, he set it to half the original tempo because he wanted to start at a slower speed and if he felt comfortable, he could work his way to 120 bpms which was the maximum tempo he set on the app. To see the app in action, he clicked the start button and began to play the song from the first line again.



Metronome app displays the BPMs and small blue bar follows beat

On the app screen, there were four bars that were brown colored and one small blue bar that constantly looped under the four bars to show which beat he was on. For example, if he was on

the second beat out of four, the second bar would turn blue because the small blue bar was right under it. As he played the song with the help of the Metronome app, I saw that he would move his head back and forth with the beat and tap his right foot to match the rhythm of the song. When I asked why he was rocking his head back and forth along with his foot, he said that it helped him get into the flow and build a natural feel for playing the song. I also asked if he always used the Metronome app when he plays the guitar and he said that he always does because he wants to see how he is progressing when trying to play the notes with the correct beat. Towards the end, he was able to play about half the song at half the speed until he felt he had played enough.

### **Opportunities**

Before even observing my user play the guitar, I saw several different opportunities when it came to his process for remembering songs he played before and choosing a song to play. As he mentioned, one of the biggest pain points he has when playing the guitar is trying to remember what songs he has practiced before. Since he only plays once a week at most, he has not invested in any apps that can save music sheets he has looked at before. He usually has to look up the music sheets again if he wants to play the same song. Based on this observation, I think one idea to look into would be having an app that allows you to save music sheets such as chord charts and tablatures from any website online onto your phone. Another issue he faced as mentioned above was having difficulty finding music sheets for specific songs that are not popular. While this may be difficult to implement, this app could also have a “Shazam” type of feature where you can press a button and it listens to a song that is then converted into an accurate music sheet. This would require some sort of machine learning and artificial intelligence training but it would definitely help resolve the difficulty of having to manually search for a song in hopes of finding a music sheet. The “Shazam” like feature could also have the music sheet be accurate to a specific rendition because one song can be played in several ways. Finally, the biggest difficulty that I saw the user have while playing was having to stop to scroll the music sheet to the next page. This gave the song a choppy feel because he would play one page, stop to scroll to the next page and start again from the top of the new page. If this new app has a feature that can hear the user playing the notes and scroll the sheets to the next page as they get near the end of a page, it will help the user play smoothly without any breaks between the song. Outside of these features, integrating a guitar tune up and metronome feature would help reduce the number of apps a user has to download in order to improve their guitar playing.

### **Surprises:**

I think the biggest surprises from my contextual inquiry were understanding the little nuances and subtleties that a guitar player goes through when practicing a song. Even though my participant was not an expert in playing the instrument, it was surprising to see how many little steps and subgoals he made for playing even one line of the song. Nothing truly shocked me throughout his process but there were several times where I had made assumptions based on how I interpreted his actions. For example, when he kept playing a measure over and over, I thought it was because he kept missing a specific note or maybe did not know how to transition from one note to another. However, through collaborative interpretation, I saw that I was paying attention to the wrong details. After all, it was him trying to find the correct finger placements to make sure the song sounded as smooth as possible.

**Impressions:**

After conducting this contextual inquiry, the biggest lesson I took away was learning how to ask the right questions and asking them at the right time. There were many instances where I found myself trying to ask questions instead of just observing because I felt the need to understand every little action the user was taking. It was hard finding the balance of when to ask the question also because I did not want to interrupt the user's flow when playing. It was also challenging trying to adjust from the interviewer-interviewee method to a partnership but as we both become more comfortable, it felt more like a learning experience for me. I was learning how someone who plays the guitar sees every action such as finger placement versus someone who has never played. It was also interesting to see how the partnership built as time went on because the user could sense I needed an explanation for a certain action and would take the initiative to explain it without me interrupting.

Another difficulty I had was making sure the inquiry's focus did not go off on a tangent. Several times, I caught myself asking too many questions related to music theory which I realized were not important for understanding the basics of guitar playing. As the interview went on, though, I improved in the ways I was asking and I noticed this because the user would begin to realize why he was performing certain actions e.g. learn to use more than just the index finger to make the song sound smoother. Overall, I think the contextual inquiry technique was very effective in helping me immerse myself into an activity I have never participated in but would like to do. I definitely see myself conducting another contextual inquiry in the future, specifically when it comes to designing applications because I can learn the little subtleties users go through when interacting with the application.