[Helping Students Relieve Stress and Connect With Cook Counseling]

Phase I: Analyze

CS 3724: Introduction to Human Computer Interaction

Spring 2023

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[Tip: When you are finished with your report, use the "refresh" button to update the table of contents above. Some headers that you do not need will be populated, but you can delete them. You should only include from "System Concept Statement" down. You should not need any additional sections in the document with the exception of appendices. You may want to use multiple appendices to organize your raw data.]

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Record of Changes

Version	Date	Comment	Name
0.1	02/21 1200	Adding observations and interviews	Maguire, Riley
.2	02/21 1900	1st team meeting	Maguire, Michael, Riley
.2.1	02/22 1200	Introduction and Third interview	Michael
.2.2	02/23 1800	Finished interviews and working on DIMs	Michael Nick
.3	02/23 1900	WAN, WAAD, Finished DIM,	Michael Nick Maguire Riley
.4	02/25 1700	Final review and submission document	Maguire Michael

System Concept Statement

Our app, CookConnect, will be an extension of the current Cook Counseling Center website, by providing 24-hours-a-day access to recommended mental health exercises/interventions to members of the Virginia Tech community. Our app will also provide them with methods of getting in touch with one of the counselors at Cook Counseling Center.

Our app will take feedback from students and counselors of Cook Counseling Center to determine what the most effective mental health exercises and interventions are for students who are feeling stressed out and struggling mentally. Through a quick and private questionnaire, our app will be able to provide students with advice and mental health exercises that may normally be provided by a Cook Counseling Center counselor. A focus on receiving feedback from both counselors and students will allow us to gain more information of what exercises may be more effective than others.

Introduction

Students in colleges suffer from high levels of stress and mental anguish. A 2017 study on college students aged 18-24 showed that 79.3% of them suffered from psychological distress, anxiety, or depression(1). Studies show that causes for these mental health issues come from a variety of different factors such as an increase in divorce, violence, drugs, and alcohol (3). For our project, we seek to develop an app that can help provide Virginia Tech Students with mental health resources such as the various counselors at Cook Counseling Center, and provide easier access to the resources they possess for students here at Virginia Tech.

Students can definitely feel stressed out and unprepared for the struggles of a new environment, and sometimes they struggle with locating the resources that are available to them. Some of the stakeholders in our project are the stressed out students who are searching for the resources that they require, and the Cook Counseling Center, which hopes to help address the issues that these students may be facing and give students more access to the resources they have available.

We're hoping to get input from counselors and students on the mental health exercises that they feel have worked most effectively and least effectively for them in the past, before ranking them. In order to accomplish this, we have reviewed several articles on college students who struggle with mental health issues and what universities have done in the past to help address this. We have also conducted interviews with members of Cook Counseling, guidance counselors and students who have gone to Cook Counseling Center in the past, along with an observation of Cook Counseling Center. Finally, we have created Design Informing Models, and completed a Contextual Analysis using the results of our observations to identify some Interaction Design Requirements

Methods

Reference 1 - A study of 483 students aged 18 to 24 investigating anxiety, depression, psychological issues, and self esteem issues among other things. The staggering statistics show that more than a majority of college students suffer from high levels of stress and low self esteem.

Reference 2 - A collection of the last 30 years of data (written in 2012) about college students suffering from anxiety and depression. It investigates the effectiveness of counseling and awareness in college communities.

Reference 3 - A look at the history of counseling instilled into college campuses, their goals/mission statements, and how they have evolved since inception.

Reference 4 - The article explores the use of virtual reality technology for treating mental health issues, including anxiety and depression. It summarizes the different applications of VR in therapy and the limitations of the approach, providing suggestions for future research and practical use.

Reference 5 - The use of machine learning algorithms to identify mental health issues like depression, anxiety, and schizophrenia is explored in this article. The authors contend that machine learning has the potential to enhance the precision and efficacy of diagnosis and treatment, but they also draw attention to moral and practical issues including privacy and the requirement for interdisciplinary collaboration.

Reference 6 - A contextual examination of the relationship between academic achievement and mindfulness is provided in the essay. After looking at 27 studies, it was discovered that there is a marginally favorable relationship between academic success and mindfulness, with mindfulness training having the potential to improve academic achievements. The study underlines the need for more research into how well mindfulness therapies work in educational settings.

Observations and Interviews

*****Note: Cook Counseling Center made it abundantly clear that these observations could only occur if we did not take any pictures. They specified we take one of the dog, but insisted we take no more**

Maguire McMahon & Riley Jenkins - 02/21 1100 @ cook counseling

Maguire's observations -

- Lots of seating options
    - Couches facing each other, lounge chairs, two tables to sit at with four chairs
    - Comfort seems like a focus here, all chairs look clean and comfortable
- Lamps around the room not turned on
- Lots of blank coloring sheets and crayons scattered around the room
    - Filled in drawings of therapy dogs hanging on the walls
- Piano in the corner of the room
- Quiet but there is some form of white noise, not sure if running water or AC but sounds pretty calm
- Computers around the room for filling out forms or maybe for finding other resources?
- Water fountains and water bottle filling station along the wall
- Hardwood hallway and wooden + carpeted stairs to second floor in the hallway
- Can hear steps when people walk up the stairs, feels very "homey"
- Elevator in corner of the room for handicap access to 2nd story
- Charging station with all kinds of chargers right next to entrance to waiting room
- Fake plants around the room, looked very real had to touch them to know they were fake plants
- Really cool color coordination
- Floorboards along foot of wall but no wainscoting at the top, hard 90 degrees corner
- Front desk lady was busy when we first walked in
    - We had to wait in the lobby right by the front door
    - Another patient walked in behind us so there were 3 people now waiting for the front desk all in the lobby
    - Design idea - some kind of chair or seating area in the lobby right by the front door
- Front desk room was a lot larger than expected, extended
- Automatic lights in hallway went off and then back on one minute alter
- Remote on window sill next to television
- Cultural painting on the wall

- Half filled out puzzle on one of the tables, seems like a small group effort that comes together over time
- Massive building for how few people have come into the waiting room.
    - Been here 10 minutes and only one other patient has come in
- They just got a new dog Epcot
    - Black lab, see pictures
- Basketball hoop behind cook counseling in shadows
- Really nice view of the golf course, amazing natural lighting inside
- Second student came into waiting room
    - Put down water bottle on table - made loud metal noise
    - Didn't sit down, immediately walked into bathroom and closed the door
    - He grabbed his water bottle and walked back to close the bathroom door
    - Went to water fountain to fill up his water bottle
        - Riley was filling up hers at the same time
    - He had to wait, awkwardly sat on couch right next to it for a minute
    - Riley whispered sorry as she walked away and he began to fill up his water bottle
- Chalk board on the floor, collaborative project for everyone in the waiting room
    - Lots of different colored chalks along it
    - People filling out their names and encouraging phrases on the board
    - Feeling of togetherness
- Epcot's first day
    - Talked to admin at cook counseling about the dogs
    - Interview with counselor about the dogs
- Staff member walking out with her purse, maybe going for a lunch break as it's exactly 11:30am
- Another staff member walked in watching a video on her phone on full volume
    - Could hear cheering coming from her phone
- Staff member came in to call in a new patient
    - Could not pronounce their name correctly, said it 3 times and asked for clarification each time, still struggled
- Saying it again,this waiting room is wayyyyyyyy too big for the amount of waiting going on
    - Table is awkward height for coloring

Riley's observations -

- Front desk is private-ish
- There was a line for the front desk when we walked in
- Very quiet area
- Lots of coloring materials
- Comfortable seating
- Big piano

- Lots of green, and plants
- Puzzle
- Only one person in the waiting room
- Intention board with chalk to draw on
- Coloring with crayons
- Pictures of scenery
- Computers available
- Elevator accessible
- Bathroom in the waiting room
- Charges available for different types of devices
- Hand sanitizer and tissues available
- Couch's are all green
- Big couches and small chairs
- Desks with multiple chairs available
- Pictures that patients have colored on the walls
- Another room for another waiting room
- Sign informing patients to talk to the front desk if it's 10 minutes past their appointment
- Come to get patient from their appointment through the elevator
- Calls his name and then introduces herself as a provider
- Gentle colors throughout the room
- Lots of windows
- A little bit cold
- Sign informing about ways to relax with a QR code
- Sessions available to relax
- Remote sitting in the window sill
- Sign about how to get your flu shot
- Sign informing about the therapy dogs
- View of the golf course from the window
- Tables and basketball hoop outside
- Sticker with therapy dogs
- Lots of different chalks
- Small paper with timely care on it
- Unisex bathroom
- Peer recovery specialist sign on the wall

- A sign with an inspirational quote from Elisabeth Kübler-Ross
- A paper with a rhyme about the lost and found
- Stack of papers about timely care
- Magazine about colonial Virginia
- Water fountain with the availability to fill up a water bottle
- Person in waiting room fills up the water bottle
- One trashcan available for public use
- Therapy dog entered waiting room with owner Trent Davis
- Showed some tricks that Epcot, the therapy dog knew
- He answered our questions about Cook Counseling
- Epcot sniffed the crayons
- It was Epcot's first day as a therapy dog, came from New York
- Sign on the piano informing how to turn it down
- The sign says the front desk staff can't hear if the piano is too loud
- TV not plugged in in the corner
- Coloring pages with the vt therapy dogs instagram
- Lady walks through waiting room with loud cheering noise coming through phone
- Lady then walks to elevator
- Counselor comes through main entrance of waiting room to collect a patient
- Asks for clarification on how to say the patient's name
- Leads the patient on where to go
- Trail behind Cook Counseling

Interview with Trent Davis

Coordinator - Animal Assisted Therapy / Licensed Professional Counselor

- Brought out Epcot the new therapy dog
    - Epcot's first day
- Discussed the timeline of support animals and how Virginia Tech's system for therapy dogs works
    - They each live with a counselor, Derik and currently Epcot live with Trent
    - The dogs were trained at Guiding Eyes but let go for various reasons
        - Told us Epcot was let go because of an ear infection from being in the kennel too much
    - Epcot coming in at just under 2 years of age right now
    - Derik who is almost 7 is reaching the end of his career, will likely stop working full time at 8 and retire at 10
    -
- He asked us if we had any animals here after we asked him our questions, was a nice conversation, can tell he's a licensed counselor

- Told him I had a cat here and Riley told him she has a cat here and a dog back home

Interview with anonymous student who has been to Cook Counseling this semester -

1. How did you schedule your first appointment with Cook Counseling?
    a. I called them on the phone from the phone number on their website that I looked up on google on my phone
2. Have you ever used their website? (Yes, what for?)
    a. Yes
    b. Googled it to go to their website to make first appointment
    c. Had to fill out a questionnaire - revisit
    d. Vaguely remember using website
    e. Not negative or positive
    f. Went on looking for an appointment just to call them, could've started with calling
3. What was your least favorite part of your experience with Cook counseling and why?
    a. My least favorite would be their inability to schedule appointments effectively

**asked them to explore the website for 2 minutes on their phone and mark the things they liked and didn't like

Likes:

- Pushing "TimelyCare" right away - nice to know I have that option, didn't know they had before
- So much information about things

Dislikes:

- Almost too much information
    - Went to appointments tab expecting to make an appointment
    - Overwhelming amount of buttons and headers and info on every page, wish it was more spread out or easier to find what i'm looking for

Interview with anonymous student who went to Cook Counseling last semester -

1. How did you schedule your first appointment with Cook Counseling and how long did it take for them to get back to you?
   I'm not sure if it changed since then, but I called them every time I scheduled an appointment, which I think is not a great approach because some people struggle with anxiety and don't enjoy being on the phone. But it didn't take them too long to get back to me, I just had to fill out some paperwork the next day and had an appointment scheduled within the month after they got back to me.
2. Did you ever use their website in the past?

The only time I used it was to fill out the paperwork, and that was the only real time that I ever used their website

3. How would you describe your past experiences with Cook Counseling
   Once I get in, it's always good, it's a bit annoying to try and get in, especially later on in the semester, when they've rejected me once in the past. However, the staff there has always been really helpful for me and have done a great job.
4. What type of information did they provide you with that you felt was most helpful and least helpful?

The last time I went they gave me contact information for people/resources related to my issue that I could access over break, which I felt was the most helpful. The last therapist that I had was really helpful for me, but I felt that the one before didn't truly understand my issues and struggling with LGBTQ issues

Interview with Ryan Underwood, CS Guidance Counselor

1. How long have you been a guidance counselor at Virginia Tech? Have you had any experience prior to Virginia Tech?
   - Started at VT during the Fall 2018 semester, so ~5 years
   - Previously worked at UNC Wilmington for 11 years

2. In what ways are you involved with students and Cook Counseling?
   - "Advisors can't refer students directly", Cook needs the approval from that student
   - However they can strongly recommend Cook Counseling and other resources:
     a. Embedded counseling
     b. TimelyCare app
     c. Community resources
     d. Hokie tips (via email)
     e. Hokie Wellness

3. (This question was applicable because of her prior experience). How does your previous job compare to this one in terms of student wellness? Can you refer students there?
   - Same thing at UNC where you can't directly refer a student, however you can walk with them to counseling. But it still has to be voluntary.
   - **Noted that she's "seen more issues post-pandemic" and she "(needed) to recommend more than in previous years"**

4. Have students expressed any positives / negatives about their experience with Cook Counseling?
   - TimelyCare has had lots of positive feedback. It has someones on call 24/7
   - Kids are frustrated with wait time. She had someone who had to wait 3 weeks, but calling the office itself can get them on right away
   - Had some students who were happy with wait time and others frustrated by it

- **Notes that confidentiality could be another reason for students having to refer themselves directly (ex. Being embarrassed or family not approving are some reasons)**

5. Do you think you should have more say in referring students?
    - She “wish(es)” she can directly refer students, especially in more serious circumstances
    - Can send referrals to Dean of Students office, but that’s the closest thing
    - Was possible in the past, but no longer an option

Interview with an anonymous student who went to Cook Counseling during the 2022 Spring semester.

1. How did you schedule your first appointment with Cook Counseling, and how long did it take for them to get back to you? How would you describe the process of getting an appointment? Was it fast, slow, frustrating, easy?
   The process I cannot remember exactly how long it took, but I called them and set it up over the phone and I did not get an appointment for over a month or so, the process is normally very long. I think it would be helpful to schedule online especially when they’re not open/late at night.

2. Did you ever use the Cook Counseling Center’s Website in the past? If so, please describe your thoughts on it. Did you feel like you could access the information that you were looking for easily, or did it feel very difficult to find the information you were looking for?
   I have used it, I did find it a little difficult to use, I wasn’t sure about the specifics of getting set up, and they have a lot of information on what they require, and I think it was not clear about what they needed from me, but it became a bit easier after going over the phone.

3. What has been your experience with the Cook Counseling Center in the past? Do you feel that the experience was overall helpful or unhelpful? What do you think led to you feeling the way that you did about your experience with them? Would you be able to outline what you think they provided you with that was most helpful and least helpful?
   Overall, I personally did not have a good experience with Cook Counseling Center, which there are a couple of reasons for, I think the counselor I was with was not a good match for me. I think they understood the issues that I was facing, but I disliked the way they went about it with me. Ultimately, I think the reason I left was because the counselor was not a good fit for me, and trying to schedule anything with Cook Counseling was

incredibly difficult. A span of 2-3 months was not good enough for me during that time period, and it caused a great deal of stress and frustration. It's difficult to get a slot especially when there are a lot of students. It was very dangerous because of exams, and schools being incredibly stressful, but the slow moving process of the Cook Counseling Center was just too much for me to handle. While I don't think all the counselors there are necessarily bad, the amount of time it took for me to get any appointments with Cook Counseling ultimately led to my decision to not try and pursue another counselor.

4. Are there any aspects of your past experience with the Cook Counseling Center that you feel that they should look to change? Is there anything that you feel Cook Counseling Center can improve upon to help struggling students?
   I think like I mentioned, it would be the timing to expand upon that, giving students some way to have more help in the moment, that may not necessarily be a counselor, giving them access to resources or at least a person. While it may not have been me not doing enough research, it felt very difficult to get a hold of anyone, and with school and exams, it was a very stressful time for me where I felt like I couldn't find anything to help me.

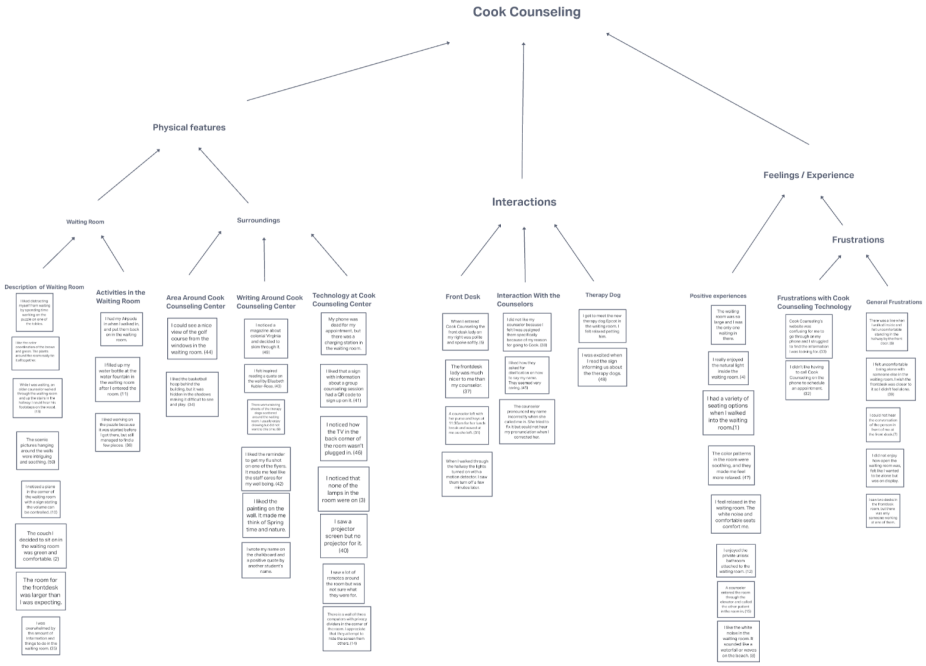
Contextual Analysis

Work Activity Notes

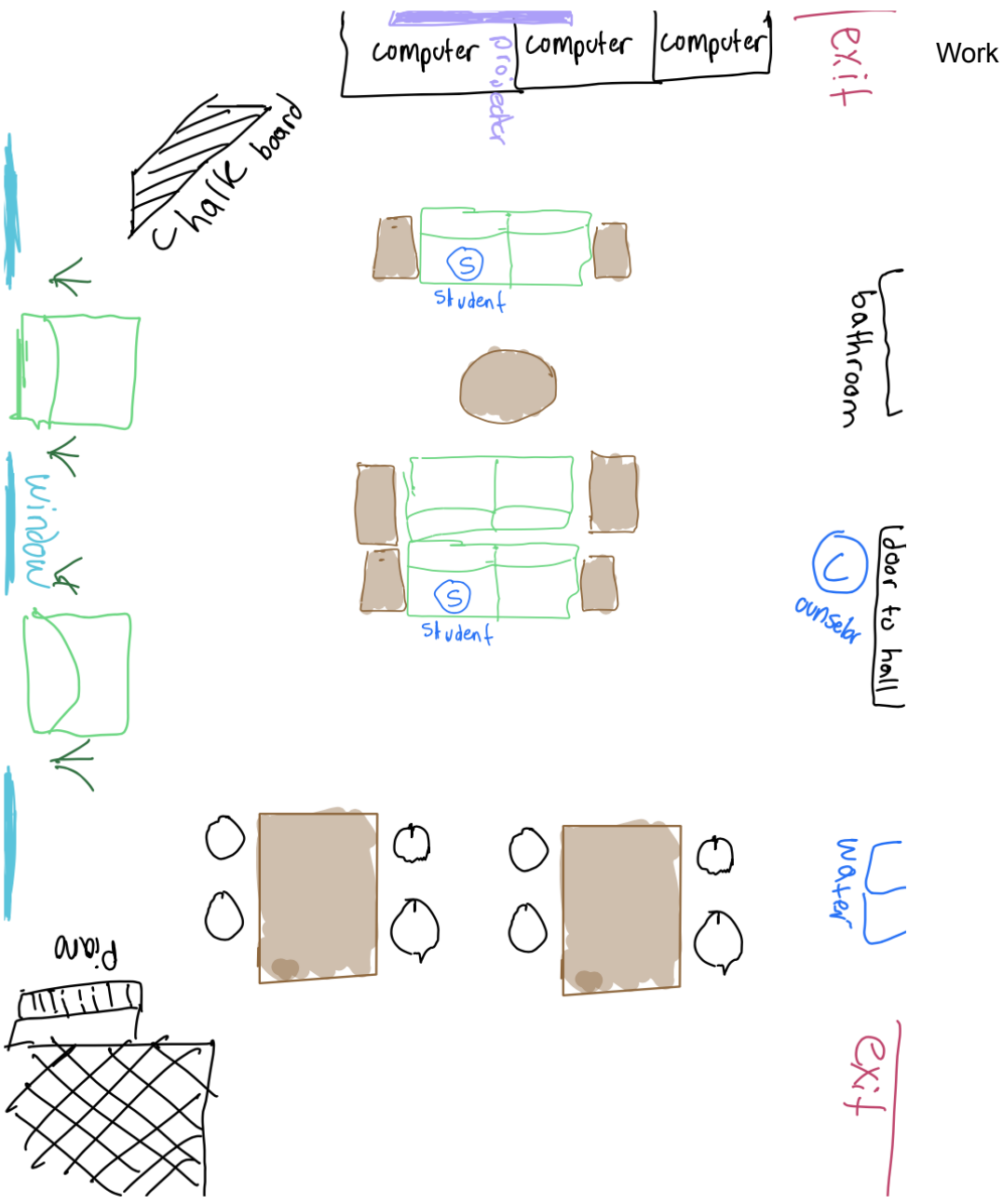
1. I had a variety of seating options when I walked into the waiting room.
2. The couch I decided to sit on in the waiting room was green and comfortable.
3. I noticed that none of the lamps in the room were on.
4. I really enjoyed the natural light inside the waiting room.
5. When I entered Cook Counseling the front desk lady on my right was polite and spoke softly.

6. There was a line when I walked inside and felt uncomfortable standing in the hallway by the front door.
7. I could not hear the conversation of the person in front of me at the front desk.
8. I like the white noise in the waiting room. It sounded like a waterfall or waves on the beach.
9. There were coloring sheets of the therapy dogs scattered around the waiting room. I usually enjoy drawing but did not want to this time.
10. I noticed a piano in the corner of the waiting room with a sign stating the volume can be controlled.
11. I filled up my water bottle at the water fountain in the waiting room after I entered the room.
12. I enjoyed the private unisex bathroom attached to the waiting room.
13. While I was waiting, an older counselor walked through the waiting room and up the stairs in the hallway. I could hear his footsteps on the wood.
14. There is a wall of three computers with privacy dividers in the corner of the room. I appreciate that they attempt to hide the screen from others.
15. A counselor entered the room through the elevator and called the other patient in the room in.
16. I like the color coordination of the brown and green. The plants around the room really tie it all together.
17. The room for the frontdesk was larger than I was expecting.
18. I saw two desks in the frontdesk room, but there was only someone working at one of them.
19. I did not enjoy how open the waiting room was, felt like I wanted to be alone but was on display.
20. When I walked through the hallway the lights turned on with a motion detector. I saw them turn off a few minutes later.
21. I liked distracting myself from waiting by spending time working on the puzzle on one of the tables.
22. The waiting room was so large and I was the only one waiting in there.
23. I saw a lot of remotes around the room but was not sure what they were for.
24. My phone was dead for my appointment, but there was a charging station in the waiting room.
25. I had my Airpods in when I walked in, and put them back on in the waiting room.
26. I liked the painting on the wall. It made me think of Spring time and nature.
27. I wrote my name on the chalkboard and a positive quote by another student's name.
28. I got to meet the new therapy dog Epcot in the waiting room. I felt relaxed petting him.
29. The counselor pronounced my name incorrectly when she called me in. She tried to fix it but could not hear my pronunciation when I corrected her.
30. I feel relaxed in the waiting room. The white noise and comfortable seats comfort me.
31. A counselor left with her purse and keys at 11:30am for her lunch break and waved at me as she left.
32. I didn't like having to call Cook Counseling on the phone to schedule an appointment.

33. Cook Counseling's website was confusing for me to go through on my phone and I struggled to find the information I was looking for.
34. I liked the basketball hoop behind the building, but it was hidden in the shadows making it difficult to see and play.
35. I was overwhelmed by the amount of information and things to do in the waiting room.
36. I liked working on the puzzle because it was started before I got there, but still managed to find a few pieces.
37. The frontdesk lady was much nicer to me than my counselor.
38. I did not like my counselor because I felt I was assigned them specifically because of my reason for going to Cook.
39. I felt uncomfortable being alone with someone else in the waiting room. I wish the frontdesk was closer to it so I didn't feel alone.
40. I saw a projector screen but no projector for it.
41. I liked that a sign with information about a group counseling session had a QR code to sign up on it.
42. I liked the reminder to get my flu shot on one of the flyers. It made me feel like the staff cares for my well being.
43. I felt inspired reading a quote on the wall by Elisabeth Kubler-Ross.
44. I could see a nice view of the golf course from the windows in the waiting room.
45. I liked how they asked for clarification on how to say my name. They seemed very caring.
46. I noticed how the TV in the back corner of the room wasn't plugged in.
47. The color patterns in the room were soothing, and they made me feel more relaxed.
48. I was excited when I read the sign informing us about the therapy dogs.
49. I noticed a magazine about colonial Virginia and decided to skim through it.
50. The scenic pictures hanging around the walls were intriguing and soothing.


Cook Counseling
Physical features
Waiting Room
Description of Waiting Room
I found distracting that there was no operating lamp working on my side of the room. It's broken.
I like the color scheme of the walls: mixed and green. The plants and green furniture really fit in with nature.
While I was waiting, an earthquake happened through the waiting room and all the items in the room were shaking. Nobody else in the room noticed this.
The scenic pictures hanging around the walls were intriguing and soothing. (S9)
I noticed a plant in the corner of the waiting room that was dead and the window can be controlled. (11)
The couch I decided to sit on on the waiting room was green and comfortable. (2)
The room for the frontdesk was larger than I was expecting.
I was unimpressed by the amount of information and pamphlets I saw in the waiting room. (C5)
Activities in the Waiting Room
I found my #puzzle in where I walked in and put them back on the waiting room.
I filled up my water bottle at the water fountain in the waiting room after I entered the room. (11)
I liked warming up the hands because it was scented before. I got there, but still managed to find the hand sanitizer. (S6)
Surroundings
Area Around Cook Counseling Center
I could see a nice view of the golf course from the windows in the waiting room. (I4)
I liked the basketball hoop behind the building. There was children in the classroom making it difficult to see and play. (I4)
Writing Around Cook Counseling Center
I noticed a magazine about cooking. Maybe cooking is a hobby I can do through it. (I6)
I felt inspired because of the quote on the wall by Elizabeth Kubler-Ross. (I2)
There were interesting pieces of the literally stage scenery/ decorations in the room. I could relate because I am in the arts. I'm in the 3D
I liked the reminder to get my flu shot on one of the flyers. It made me feel like the staff cares for my well being. (A2)
I liked the painting on the wall. It made me think of Spring time and nature.
I wrote my review on the chalkboard and a positive quote by another student's name.
Technology at Cook Counseling Center
My phone was dead for my appointment, but there was a charging station in the waiting room.
I liked that a sign was posted on the door about a group counseling session had a QR code to sign up on it. (I1)
I noticed how the TV in the back corner of the room wasn't plugged in. (A5)
I noticed that none of the lamps in the room were on (3)
I saw a projector screen but no projector for it. (A3)
I saw a lot of corectcs around the room but was not sure what they were for.
There is a wall of fake cork board in self-pull privacy dividers in the corner of the room. I like the idea but the purpose to hide the screws from. (Chris) (13)
Interactions
Front Desk
When I entered Cook Counseling the front desk lady on my right was polite and spoke softly. (9)
The frontdesk lady was much nicer to me than my counselor. (S7)
A counselor left with a client and walked to C1 (Room for 1 on 1) Inside and toward a the security cam. (S1)
When I walked through the hallway the lights turned on with a motion detector. I like them but off a few milliseconds.
Interaction With the Counselors
I did not like my counselor because I felt I was assigned to her because of the likelihood of my reason for going to Cook. (S8)
I liked how they asked for direct advice on how to help me. They was kept very caring. (A7)
The counselor pronounced my name incorrectly when she welcomed in. She failed to fix it but would not hear the end of it because I corrected her.
Therapy Dog
I got to meet the new therapy dog that was in the waiting room. It has relaxed petting fur.
I was excited when I read the sign informing us about the therapy dogs. (H6)
Feelings / Experience
Positive experiences
The waiting room was so large and I was the only one in the waiting in there.
I really enjoyed the natural light inside the waiting room. (4)
I had a variety of seating options when I walked into the waiting room.(1)
The color patterns in the room were soothing, and they made me feel more relaxed. (H7)
I feel relaxed in the waiting room. The white noise and comfortable seats comfort me.
I enjoyed the private artistic hallways to attached to the waiting room. (S10)
A counselor walked thru room through the hallway. A student in a other group in the hallway. (C6)
I like the white indoor in the waiting room. It reminded me a hospital or science on the beach. (I3)
Frustrations
Frustrations with Cook Counseling Technology
Cook Counseling's website was confusing for me to navigate. I had to call phone each in regards to find the information I was looking for. (C3)
I didn't like having to call Cook Counseling on the phone to schedule an appointment. (C2)
General Frustrations
There was a interior cackle of noise and felt uncomfortable. I was trying to focus during the intake. (S4)
I felt uncomfortable being alone with someone else in the waiting room. I was the frontdesk was closer to it so I felt safe. (A4)
I DON'T TAT TAP (Tapping) Sound of the ac room in. Seem of two at the time. (Note 7)
I didn't not enjoy the music in the waiting room was, felt like I wanted to leave. The music was un-chuckey.
I was not dedicated to the waiting room, and there was any entertainment. I was in a state of flaim.

Design Informing Models



Environment Model - physical model

We decided to make our first design-informing model an environment model, specifically a physical model of the waiting room at Cook Counseling on Oak Lane. This is because we were told we were not allowed to take pictures inside the building and wanted to be able to

reference where things were. The brown represents tables, filled with certain items ikand flyers as seen in our observations.

The barriers associated with this model are that the student does not always see the counselor calling them in. If they were to have headphones on they might not know they are being called. This would be an information obstruction barrier.

Another reason we chose this design-informing model is because of the important elements in the physical environment that are meant to make the patient feel calm. The natural light, white noise, comfortable chairs, and accessible mental health information around the user create an environment designed to destress and relax the patient.

User Model Diagram

User Personas-

Elton is a freshman at Virginia Tech, from Cedar Rapids Iowa. He has 2 siblings, a younger brother and a younger sister, and he has a dog and 2 cats at home. Elton plans to pursue a degree in Physics at the College of Engineering. However, Elton has been feeling especially homesick, he misses his family and his pets, and school has not made this any easier for him. He is struggling in several of his courses and he has several projects and exams due soon. While he's been talking to his advisor about his course load, he's also been trying to get in touch with Cook Counseling Center in order to try and talk to someone about how stressed and homesick he's been feeling.

Student

Katie is a junior at Virginia Tech, from Rockville Maryland. She has 1 sibling, an older brother, and no pets at home. Katie is currently pursuing a degree in Architecture at Virginia Tech. However Katie has recently been arguing with her roommates a lot, and has felt especially hurt when she found out that they planned to move out of their current apartment without her. She feels incredibly lost and alone, and feels that she has no one she can turn to for help in Blacksburg. While she has attempted to schedule an appointment with the Cook Counseling Center, they have not gotten back to her at all yet.

Counselor

John is a counselor at Cook Counseling Center from Roanoke, Virginia. He has been working at Virginia Tech for the past 5 years, and before that he worked as a counselor at University of Richmond for 3 years. While John is interested in reaching out to and having the ability to help students, he feels that there are so many students that it's difficult to get to know some students on a more personal level. John believes that there is more that Cook Counseling Center could be doing to help students get the help they need, that may not necessarily require a counselor.

Interaction Design Requirements

Mental Health Exercises
General Frustration with Cook Counseling Center
Users will be able to receive mental health exercises/interventions that they can perform in the moment, regardless of whether or not a counselor is available to meet with them. This is due in large part to the long wait times that Cook Counseling has for scheduling an appointment

Alternate forms of Scheduling An Appointment
Frustrations with Cook Counseling Center Technology
Users will be able to use a website or a form to try and apply for an appointment with a Cook Counseling Counselor instead of only by phone (32)

A way to prioritize more urgent situations
Interactions with the Counselors
One of the interviews noted the inability to “directly” refer students to The Counseling Center, and we feel that there should be an option for Guidance Counselors to highlight individuals who they believe are in dire need of counseling as soon as possible

Highlighting more ways Students can obtain help
Frustrations with Cook Counseling Center Technology
The Website itself feels rather cluttered and makes it difficult for students to find what they may be looking for. Highlighting certain tools and what they do can help students identify what type of help they may need and what those resources can do for them, in the case they might not be able to meet with a counselor.

Matching Counselors and Students
Frustrations with poor relationships between Students and Counselors
Users would be able to enter in data and information about themselves and see the highest matched counselor and available appointments. A consistent observation was certain students not loving their counselors and leaving Cook because of it.

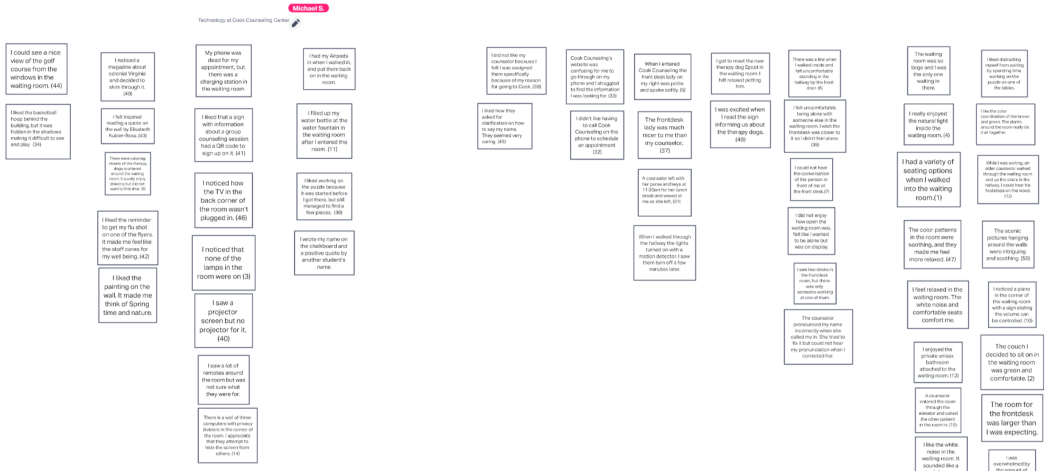
[Tip: To extract interaction design requirements, do a walkthrough of your work activity affinity diagram and any additional work activity notes. You are expected to have at least five well-formed requirements at the completion of this step. Reference the textbook and slides for examples of what these requirements should look like. Be sure to use different levels of headings in this section as needed to list your requirements.]

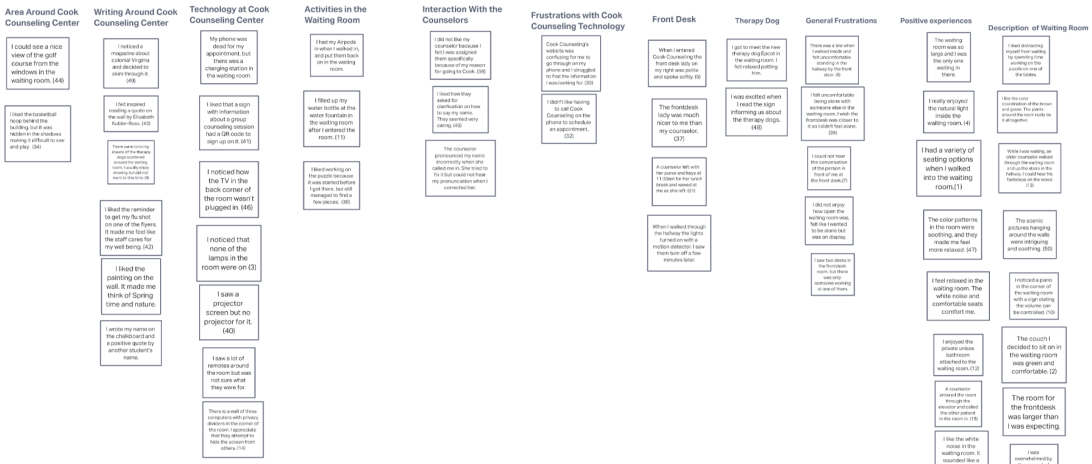
References

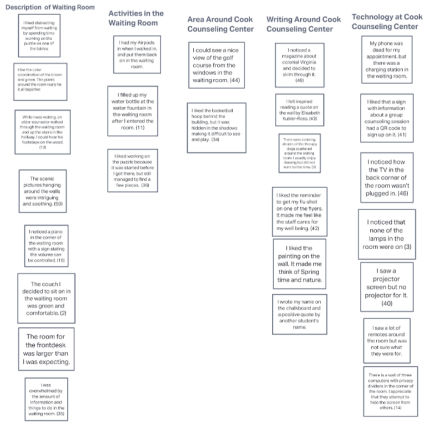
1. Saleh, D., Camart, N., & Romo, L. (2017). Predictors of stress in college students. *Frontiers in psychology*, *8*, 19. https://www.frontiersin.org/articles/10.3389/fpsyg.2017.00019/full
2. Kumaraswamy, N. (2013). Academic stress, anxiety and depression among college students: A brief review. *International review of social sciences and humanities*, *5*(1), 135-143. https://d1wqtxts1xzle7.cloudfront.net/31737829/12_IRSSH-libre.pdf?1392414859=&response-content-disposition=inline%3B+filename%3DInternational_Review_of_Social_Sciences.pdf&Expires=1675722793&Signature=P8Yz6jGLRC8nnCHJzAUoNN9S8XJivvHRljU5PHYJuM3IVM7TwpQmf6Uq~Xf8Kjff0qbLN-4Faiq-0AiZuQ4YTI69ggjsOjxjxcSBn5DfDuPf7Ci15KP-9ZmbxTXX6bIbts-aWxl9GAV9JrP2MGTjOduLlmFWsaH0zZ177HWkPbClp81wxrbJBYELbQioHrs4G~Hl8X~b56rzC~MNU41j6-Nq5FbQCewePMDxOPY8pePC~P3OF8FE9T49wdJIUAT2cOGq9zLYM3B0UbYxYPEiT0ynAkD6IiecTFrZz1LfpDdkc3rUn8jpuS2XwZF3lSutbX~CtB8QkvYbyOgmybapew__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA
3. Kitzrow, M. A. (2003). The mental health needs of today's college students: Challenges and recommendations. *Journal of Student Affairs Research and Practice*, *41*(1), 167-181. https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=1df3faecd8c333a7d00b50eea949a59fb266ecfb
4. Lattie, E. G., Lipson, S. K., & Eisenberg, D. (2019). Technology and college student mental health: challenges and opportunities. *Frontiers in psychiatry*, *10*, 246. https://www.frontiersin.org/articles/10.3389/fpsyt.2019.00246/full
5. Sontag-Padilla, L., Dunbar, M. S., Ye, F., Kase, C., Fein, R., Abelson, S., ... & Stein, B. D. (2018). Strengthening college students' mental health knowledge, awareness, and helping behaviors: the impact of active minds, a peer mental health organization. *Journal of the American Academy of Child & Adolescent Psychiatry*, *57*(7), 500-507. https://www.sciencedirect.com/science/article/pii/S0890856718302247?casa_token=vtHPUlwZ2rgAAAAA:W0_GHglRVpdo-9eb3pYUlePxM4G7HzBSxh7dpI6zlj59K4waYevWA9S28cBZl-_bhcs4Bu52aEE
6. Xiao, H., Carney, D. M., Youn, S. J., Janis, R. A., Castonguay, L. G., Hayes, J. A., & Locke, B. D. (2017). Are we in crisis? National mental health and treatment trends in college counseling centers. *Psychological services*, *14*(4), 407. https://psycnet.apa.org/doiLanding?doi=10.1037%2Fser0000130 (requires sign-in through VT email)

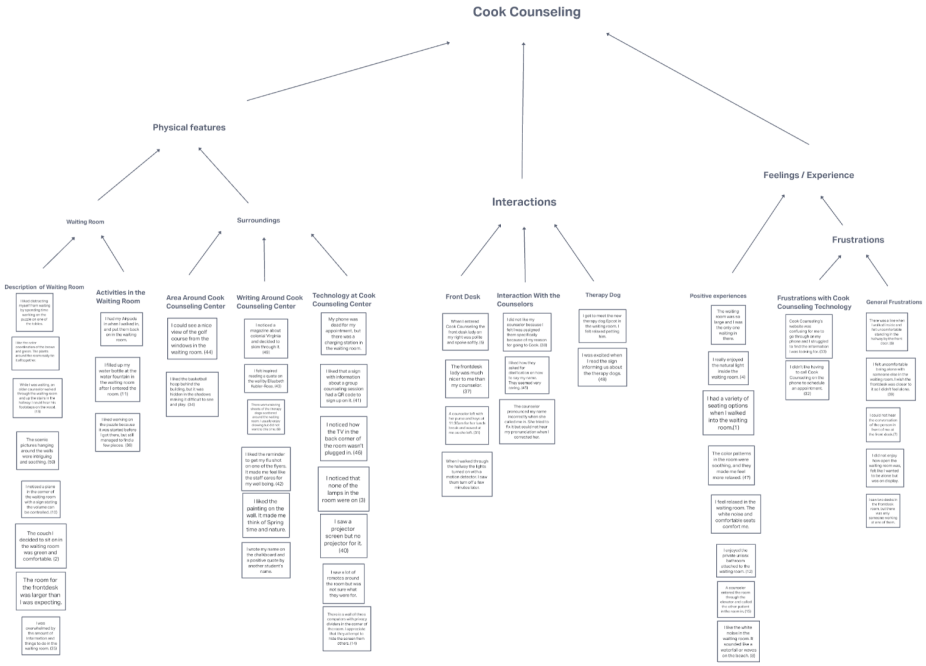
Appendix A

Drawn by riley


Michael S.
Technology at Cook Counseling Center
I could see a nice view of the golf course from the windows in the waiting room. (44)
I liked the basketball hoop behind the building, but it was hidden in the shadows making it difficult to see and play. (34)
I noticed a magazine about colonial Virginia and decided to skim through it. (46)
I felt inspired reading a quote on the wall by Elisabeth Kubler-Ross. (43)
There were coloring pages of different dogs scattered around the waiting room. It quickly drew my attention to the table it seems like they fit. (6)
I liked the reminder to get my flu shot on one of the flyers. It made me feel like the staff cares for my well being. (42)
I liked the painting on the wall. It made me think of Spring time and nature.
My phone was dead for my appointment, but there was a charging station in the waiting room.
I liked that a sign with information about a group counseling session had a QR code to sign up on it. (41)
I noticed how the TV in the back corner of the room wasn't plugged in. (46)
I noticed that none of the lamps in the room were on (3)
I saw a projector screen but no projector for it. (40)
I saw a bot of remotes around the room but was not sure what they were for.
There is a wall of three computers with privacy shutters in the corner of the room. I wonder if that they attempt to hide the screen from others. (14)
I had my Airpods in when I walked in, and put them back on in the waiting room.
I filled up my water bottle at the water fountain in the waiting room after I entered the room. (11)
I liked working on the puzzle because it was started before I got there, but still managed to find a few pieces. (36)
I wrote my name on the chalkboard and a positive quote by another student's name.
I did not like my counselor because I felt I was assigned them specifically because of my reason for going to Cook. (39)
I liked how they asked for clarification on how to say my name. They seemed very caring. (45)
Cook Counseling's website was confusing for me to go through on my phone and I struggled to find the information I was looking for. (35)
I didn't like having to call Cook Counseling on the phone to schedule an appointment. (32)
When I entered Cook Counseling the front desks lady on my right was polite and spoke softly. (9)
The frontdesk lady was much nicer to me than my counselor. (37)
A counselor left with her purse and keys on the front desk. She came back and waved at me as she left. (21)
When I walked through the hallway the lights turned on with a motion detector. I saw them turn off a few minutes later.
I got to meet the new therapy dog Epcot in the waiting room. I felt relaxed petting him.
I was excited when I read the sign informing us about the therapy dogs. (45)
There was a line when I arrived and I felt uncomfortable standing in the hallway by the front door. (6)
I felt uncomfortable being alone with someone else in the waiting room. I wish the frontdesk was closer to it so I didn't feel alone. (39)
I could not hear the conversation of the person in front of me at the front desk.(7)
I did not enjoy how open the waiting room was, felt like I wanted to be alone but was on display.
I saw two desks in the waiting room, but there was only someone working at one of them.
The counselor pronounced my name incorrectly when she called me in. She tried to fix it but could not hear my pronunciation when I corrected her.
The waiting room was so large and I was the only one waiting in there.
I really enjoyed the natural light inside the waiting room. (4)
I had a variety of seating options when I walked into the waiting room.(1)
The color patterns in the room were soothing, and they made me feel more relaxed. (47)
I feel relaxed in the waiting room. The white noise and comfortable seats comfort me.
I enjoyed the private unisex bathroom attached to the waiting room. (12)
A counselor walked through the elevator and called the other patient in the room in. (13)
I like the white noise in the waiting room. It sounded like a waterfall or waves on the beach. (8)
I liked distracting myself from anxiety by spending time working on the puzzle on one of the tables.
I like the color coordination of the brown chairs and the plants and of the room really tie it all together.
While I was waiting, an older counselor walked through the waiting room and so the stairs in the hallway. I could hear his footsteps and the noise. (12)
The scenic pictures hanging around the walls were intriguing and soothing. (50)
I noticed a piano in the corner of the waiting room with a sign stating the volume can be controlled. (10)
The couch I decided to sit on in the waiting room was green and comfortable. (2)
The room for the frontdesk was larger than I was expecting.
I was overwhelmed by the amount of information and things to do in the waiting room. (33)


Area Around Cook Counseling Center
I could see a nice view of the golf course from the windows in the waiting room. (44)
I liked the basketball hoop behind the building, but it was hidden in the shadows making it difficult to see and play. (34)
Writing Around Cook Counseling Center
I noticed a magazine about colonial Virginia and decided to skim through it. (49)
I felt inspired reading a quote on the wall by Elizabeth Rubber-Ross. (43)
There were relaxing, soothing colors and dogs scattered around the waiting room. I also liked the natural light that filled the room by the time. (9)
I liked the reminder to get my flu shot on one of the flyers. It made me feel like the staff cares for my well being. (42)
I liked the painting on the wall. It made me think of Spring time and nature.
I wrote my name on the chalkboard and a positive quote by another student's name.
Technology at Cook Counseling Center
My phone was dead for my appointment, but there was a charging station in the waiting room.
I liked that a sign with information about a group counseling session had a QR code to sign up on it. (41)
I noticed how the TV in the back corner of the room wasn't plugged in. (46)
I noticed that none of the lamps in the room were on (3)
I saw a projector screen but no projector for it. (40)
I saw a lot of remotes around the room but was not sure what they were for.
There is a wall of three cameras as well pointed in the corner of the room. I appreciate that they attempt to hide the screen from others. (14)
Activities in the Waiting Room
I had my Airpods in when I walked in, and put them back on in the waiting room.
I filled up my water bottle at the water fountain in the waiting room after I entered the room. (11)
I liked working on the puzzle because it was started before I got there, but still managed to find a few pieces. (38)
Interaction With the Counselors
I did not like my counselor because I felt I was assigned them specifically because of my reason for going to Cook. (38)
I liked how they asked for clarification on how to say my name. They seemed very caring. (45)
The counselor pronounced my name incorrectly when she called me in. She tried to fix it but could not hear my pronunciation when I corrected her.
Frustrations with Cook Counseling Technology
Cook Counseling's website was confusing for me to go through on my phone and I struggled to find the information I was looking for. (30)
I didn't like having to call Cook Counseling on the phone to schedule an appointment. (32)
Front Desk
When I entered Cook Counseling the front desk lady on my right was polite and spoke softly. (9)
The frontdesk lady was much nicer to me than my counselor. (37)
A counselor left with her purse and keys at 1 o'clock for her lunch break and waved at me as she left. (31)
When I walked through the hallway the lights turned on with a motion detector. I saw them turn off a few minutes later.
Therapy Dog
I got to meet the new therapy dog Epcot in the waiting room. I felt relaxed petting him.
I was excited when I read the sign informing us about the therapy dogs. (48)
General Frustrations
There was a line when I walked inside and felt uncomfortable standing in the hallway by the front door. (8)
I felt uncomfortable being alone with someone else in the waiting room. I wish the frontdesk was closer to it so I didn't feel alone. (39)
I could not hear the conversation of the person in front of me at the front desk.(7)
I did not enjoy how open the waiting room was, felt like I wanted to be alone but was on display.
I saw two desks in the frontdesk room, but there was only someone working at one of them.
Positive experiences
The waiting room was so large and I was the only one waiting in there.
I really enjoyed the natural light inside the waiting room.(4)
I had a variety of seating options when I walked into the waiting room.(1)
The color patterns in the room were soothing, and they made me feel more relaxed. (47)
I feel relaxed in the waiting room. The white noise and comfortable seats comfort me.
I enjoyed the private unisex bathroom attached to the waiting room.(12)
A counselor entered the room through the elevator and called the other patient in the room in. (15)
I like the white noises in the waiting room. It sounded like a waterfall or waves on the beach. (8)
Description of Waiting Room
I liked distracting myself from waiting by spending time working on the puzzle on one of the tables.
I like the color coordination of the brown chairs and the plants around the room really tie it all together.
While I was waiting, an older counselor walked through the waiting room and up the stairs in the hallway. I could hear his footsteps on the wood. (13)
The scenic pictures hanging around the walls were intriguing and soothing. (55)
I noticed a piano in the corner of the waiting room, with a sign stating the volume can't be controlled. (10)
The couch I decided to sit on in the waiting room was green and comfortable. (2)
The room for the frontdesk was larger than I was expecting.
I was overwhelmed by the amount of information and things to do in the waiting room. (35)


Description of Waiting Room
I had distracted by myself from waiting by looking at people working on the puzzle on one of the tables.
I like the color scheme of the room and a mix. The plants around the room carry life it all together.
While I was waiting, an older man/senior walked through the waiting room to the hallway. I could hear his footsteps on the wood. (1.9)
The scenic pictures hanging around the walls were intriguing and soothing. (5.0)
I noticed a piano by the (corner) of the waiting room. Along with a sign stating the volumes can be controlled. (15)
The couch I decided to sit on in the waiting room was green and comfortable.(2)
The room for the frontdesk was larger than I was expecting.
I was overwhelmed by the amount of information and things to do in the waiting room. (35)
Activities in the Waiting Room
I had my Airpods in when I walked in and put them back in as I was leaving the room.
I filled up my water bottle at the water fountain in the waiting room after I entered the room. (11)
I liked working on the puzzle because it was started before I got there and I managed to find a few pieces. (39)
Area Around Cook Counseling Center
I could see a nice view of the golf course from the windows in the waiting room. (44)
I liked the fountain/ bbasp behind the building, but I was hidden in the shadows making it difficult to see and play. (34)
Writing Around Cook Counseling Center
I noticed a magazine about conversion therapy and decided to avoid looking at it. (48)
I felt inspired reading a quote on the wall by Elisabeth Kubler-Ross. (43)
There were coloring pages on the table. Boja scattered around the waiting room. I decided to start coloring but didn't feel I had the time. (9)
I liked the reminder to get my fix shot on one of the flyers. It made me feel like the staff cares for my well being. (43)
I liked the painting on the wall. It made me think of Spring time and nature.
I wrote my name on the chalkboard and a positive quote by another student's name.
Technology at Cook Counseling Center
My phone was dead for my appointment, but there was a charging station in the waiting room.
I liked that a sign with information about a group counseling session had a QR code to sign-up on it. (41)
I noticed how the TV in the back corner of the room wasn't plugged in. (46)
I noticed that none of the lamps in the room were on (3)
I saw a projector screen but no projector for it. (40)
I saw a lot of remotes around the room but was not sure what they were for.
There is a wall of three computers with privacy dividers in the corner of the room. I appreciate that I couldn't see into the screen from others.(14)
Front Desk
When I entered Cook Counseling the front desk lady on my right was polite and spoke softly. (9)
The front-desk lady was much nicer to me than my counselor (37)
A counselor left with her purse and keys at the front desk. I found it kinda and scared of me as she left. (35)
When I walked through the hallway the lights turned on with a motion detector. I saw them turn off a few minutes later.
Interaction With the Counselors
I did not like my counselor because I felt I was assigned to her because I am Vietnamese of my reason for going to Cook. (39)
I liked how they asked for pronunciation on how to say my name. They seemed very caring. (45)
The counselor pronounced my name incorrectly when she called me. I felt embarrassed to fix it but could not hear my pronunciation when I corrected her.
Therapy Dog
I got to meet the new therapy dog Spoot in the waiting room. I felt relieved petting him.
I was excited when I read the sign informing us about the therapy dogs (48)
Feelings / Experience
Frustrations
Positive experiences
The waiting room was so large and I was the only one waiting in there.
I really enjoyed the natural light inside the waiting room. (4)
I had a variety of seating options when I walked into the waiting room.(1)
The color patterns in the room were soothing, and they made me feel more relaxed. (47)
I feel relaxed in the waiting room. The white noise and comfortable seats comfort me.
I enjoyed the private unisex bathroom attached to the waiting room.(12)
A counselor entered the room and called another and called the other patient in the room in. (18)
I like the white noise in the waiting room. It sounded like a waterfall or sa/ves on the beach. (8)
Frustrations with Cook Counseling Technology
Cook Counseling's website was confusing for me to navigate on my phone and I struggled to find the information I was looking for. (33)
I didn't like having to call Cook Counseling on the phone to schedule an appointment. (12)
General Frustrations
There was a line where I wished words and had to wait for a while before being in the hallway by the front door. (6)
I felt uncomfortable being alone with everyone else in the waiting room. I like the frontdesk was closer to it so I didn't feel alone. (39)
I could not hear the conversation of the person in front of me at the front desk.(7)
I did not enjoy the music in the waiting room was, felt like I wanted to be allows but was on display.
I saw two studio in the frontdesk. I assume one was a counselor working at one of them.


Cook Counseling
Physical features
Waiting Room
Description of Waiting Room
I found distracting that there was no operating lamp working on my side of the room. It's broken.
I like the color scheme of the walls: mixed and green. The plants and green furniture really fit in with nature.
While I was waiting, an earthquake happened through the waiting room and all the items in the room were shaking. Nobody else in the room noticed this.
The scenic pictures hanging around the walls were intriguing and soothing. (S9)
I noticed a plant in the corner of the waiting room that was dead and the window can be controlled. (11)
The couch I decided to sit on on the waiting room was green and comfortable. (2)
The room for the frontdesk was larger than I was expecting.
I was unimpressed by the amount of information and pamphlets I saw in the waiting room. (C5)
Activities in the Waiting Room
I found my #puzzle in where I walked in and put them back on the waiting room.
I filled up my water bottle at the water fountain in the waiting room after I entered the room. (11)
I liked warming up the hands because it was scented before. I got there, but still managed to find the hand sanitizer. (S6)
Surroundings
Area Around Cook Counseling Center
I could see a nice view of the golf course from the windows in the waiting room. (I4)
I liked the basketball hoop behind the building. There was children in the classroom making it difficult to see and play. (I4)
Writing Around Cook Counseling Center
I noticed a magazine about cooking. Maybe cooking is a hobby I can do through it. (I6)
I felt inspired because of the quote on the wall by Elizabeth Kubler-Ross. (I2)
There were interesting pieces of the literally stage scenery/ decorations in the room. I could relate because I am in the arts. I'm in the 3D
I liked the reminder to get my flu shot on one of the flyers. It made me feel like the staff cares for my well being. (A2)
I liked the painting on the wall. It made me think of Spring time and nature.
I wrote my review on the chalkboard and a positive quote by another student's name.
Technology at Cook Counseling Center
My phone was dead for my appointment, but there was a charging station in the waiting room.
I liked that a sign was posted on the door about a group counseling session had a QR code to sign up on it. (I1)
I noticed how the TV in the back corner of the room wasn't plugged in. (A5)
I noticed that none of the lamps in the room were on (3)
I saw a projector screen but no projector for it. (A3)
I saw a lot of corectcs around the room but was not sure what they were for.
There is a wall of fake cork board in self-pull privacy dividers in the corner of the room. I like the idea but the purpose to hide the screws from. (Chris) (13)
Interactions
Front Desk
When I entered Cook Counseling the front desk lady on my right was polite and spoke softly. (9)
The frontdesk lady was much nicer to me than my counselor. (S7)
A counselor left with a client and walked to C1 (Room for 1 on 1) Inside and toward a the security cam. (S1)
When I walked through the hallway the lights turned on with a motion detector. I like them but off a few milliseconds.
Interaction With the Counselors
I did not like my counselor because I felt I was assigned to her because of the likelihood of my reason for going to Cook. (S8)
I liked how they asked for direct advice on how to help me. They was kept very caring. (A7)
The counselor pronounced my name incorrectly when she welcomed in. She failed to fix it but would not hear the end of it because I corrected her.
Therapy Dog
I got to meet the new therapy dog that was in the waiting room. It has relaxed petting fur.
I was excited when I read the sign informing us about the therapy dogs. (H6)
Feelings / Experience
Positive experiences
The waiting room was so large and I was the only one in the waiting in there.
I really enjoyed the natural light inside the waiting room. (4)
I had a variety of seating options when I walked into the waiting room.(1)
The color patterns in the room were soothing, and they made me feel more relaxed. (H7)
I feel relaxed in the waiting room. The white noise and comfortable seats comfort me.
I enjoyed the private artistic hallways to attached to the waiting room. (S10)
A counselor walked thru room through the hallway. A student in a other group in the hallway. (C6)
I like the white indoor in the waiting room. It reminded me a hospital or science on the beach. (I3)
Frustrations
Frustrations with Cook Counseling Technology
Cook Counseling's website was confusing for me to navigate. I had to call phone each in regards to find the information I was looking for. (C3)
I didn't like having to call Cook Counseling on the phone to schedule an appointment. (C2)
General Frustrations
There was a interior cackle of noise and felt uncomfortable. I was trying to focus during the intake. (S4)
I felt uncomfortable being alone with someone else in the waiting room. I was the frontdesk was closer to it so I felt safe. (A4)
I DON'T TAT TAP (Tapping) Sound of the ac room in. Seem of two at the time. (Note 7)
I didn't not enjoy the music in the waiting room was, felt like I wanted to leave. The music was un-chuckey.
I was not dedicated to the waiting room, and there was any entertainment. I was in a state of flaim.