Mind Map & Individual Project

Project log

2020-4-15 [redo the mind map]
2020-5-10 [end the mind map]
2020-5-11 [start the protocol and evaluation]
2020-5-17 [end the protocol and evaluation]

Research

The domain I choose is behavior change, and the main area I focus is making young people put their phones down and focus on what they are doing. Briefly, putting down the smartphone.

Firstly, to research this area, I conducted the desk research.

What is the nature of the area?

I conducted the desk research. First of all, the data I collected is about the frequency of young people's mobile phone use (Carlos Roncero, 2019). According to the data, more than half of young people are troubled by excessive mobile phone use, and the average that person needs to swipe his or her mobile phone is more than 2,000 times a day. The average that a person uses a screen is at least three hours a day. Therefore, it is obvious that the frequency of young people using mobile phones is really high.

> Secondly, the psychometric properties of the MPPUS were confirmed: the prevalence, user categories, and cut-off points in the MPPUS were determined following the methodology developed by de -Sola et al. (30). Specifically, four categories were created: 5% of mobile phone users are problem phone users, 15% are at risk of being problem users, 65% are regular phone users, and 15% are occasional phone users. Differences by sex, age, education level, and mobile phone distracted driving among phone user categories were studied using ANOVA and correlation analyses.
>
> Thirdly, the influence of socio-demographic and mobile phone distracted driving factors on the user categories was studied using logistic regression, a statistical analysis which involves determining the probability of an outcome through its relationship to one or more predictors (33). The statistical model predicted associations with two user categories: normal phone users (the sum of casual and habitual and regular users) and users with problematic phone usage (including the sum of at risk users and problem users).

(The percentage of people about the frequency of phone use)

Second, I looked up some information about the various potential hazards of overuse of mobile phones (Andrew Campbell, 2018). The first is the bad vision, followed by physical fatigue. Other conditions such as mental decline and bad memory. In addition, excessive use of mobile phones can lead to a growing estrangement between friends and family. Therefore, it is clear that contemporary young people who overuse mobile phones are usually accompanied by some troubles.

> **Negative Consequences of Mobile Phone Use**
>
> Negative and adverse outcomes associated with problematic mobile phone use have caught the attention of researchers around the world. Most of the research in this area continues to assume that some individuals are having maladaptive relationships with their mobile phone devices. This phenomenon is evident in cases wherein certain individuals were reported to have endured feelings of stress or separation anxiety when they were unable to use their phone (13, 14). In addition, some individuals have also expressed difficulties in disconnecting from smartphone use particularly due to its utility and usefulness in filling gaps during the performance of mundane tasks (15). According to (11), problematic or excessive mobile phone use refers to an individual's inability to control their usage of their mobile phone which, in turn, leads to adverse consequences in their everyday life. On a personal level, such consequences may relate to financial problems, sleep disturbances, attentional and learning impairments in educational settings, excessive sedentary behavior, and the deterioration of personal relationships (11, 16–20). It should also be noted, however, that although certain parallels do exist between addiction/dependency syndromes and excessive mobile phone use, this paper will refrain from referring to this behavior as "addictive," as the core symptoms are vastly different from classically recognized and defined addictions such as substance-use disorders or gambling (6, 21). Nonetheless, it is apparent that in some instances excessive use of mobile phones can be problematic, with greater or more frequent use creating higher functional impairments (21).

(The problem that when people overuse smartphones)

What are people wanted and needed?

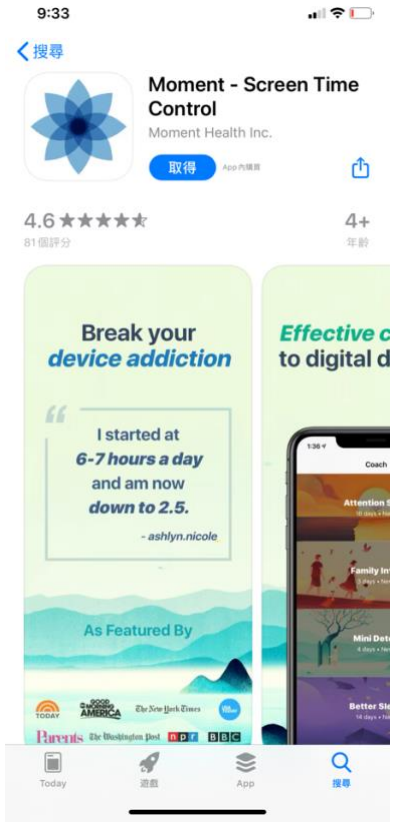
When some people begin to realize that overusing smartphone will take many bad consequences, some people hope to be able to get rid of the bad habit of overusing phone. According to the data (Jenna Woginrich, 2016), some people are trying to refrain using mobile phones. They take some methods, such as making the mobile phone is locked, mute, etc. However, they tend to give up when they insist on the relevant method for few days. Therefore, it is evident that people hope to get an effective way to control the excessive use of mobile phones.

(Some people want to control overusing the smartphone)

What the relevant application currently exists and how does it work?

According to the survey, there are some apps which are relevant for putting smartphones down, such as tomato clock, allow users to set the time period, and in this period of time the users cannot open the phone. If they open their smartphones and switch to other application, the time challenge will be cognized as fail. Besides, there is an application named offtime, when study mode is opened, this application will limit your other application use. Apart from that, there is an application named qualitytime, the application will record your phone use conditions, including frequency, time, etc. Another application is forest. The user can plant a virtual tree, you can't open your phone for a period of time until the tree growled up. Otherwise, the tree will be destroyed.

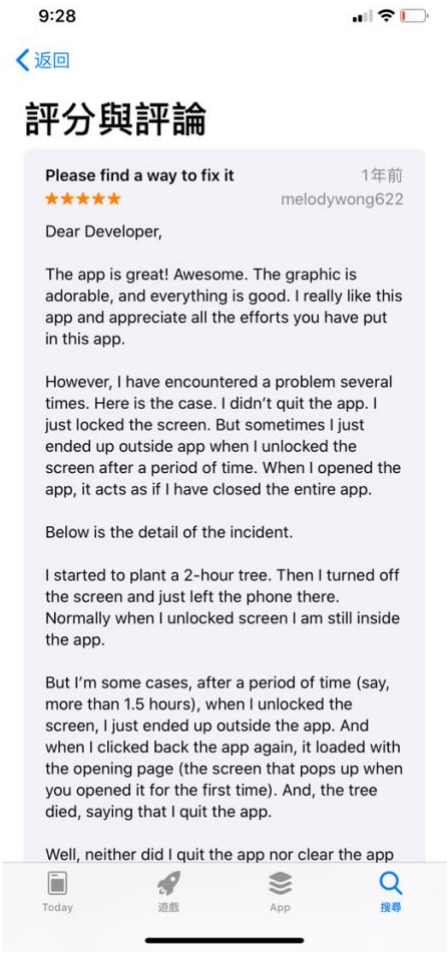
(One of the apps to stay focused – the forest).



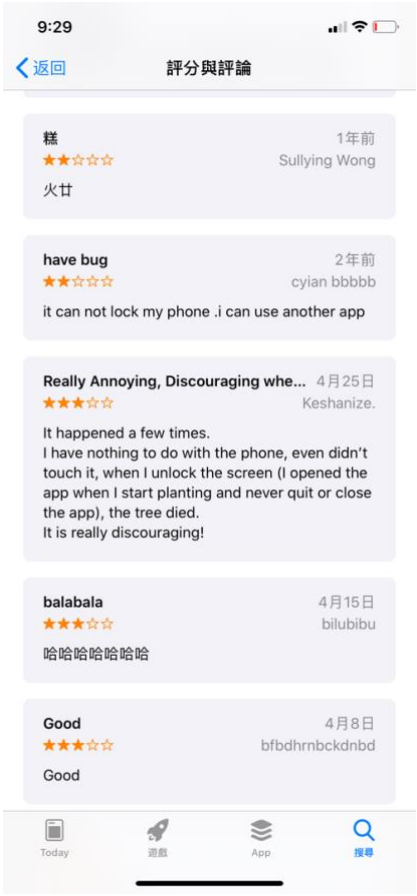
(One of the apps to stay focused – the moment).

What is the people's attitude for these applications?

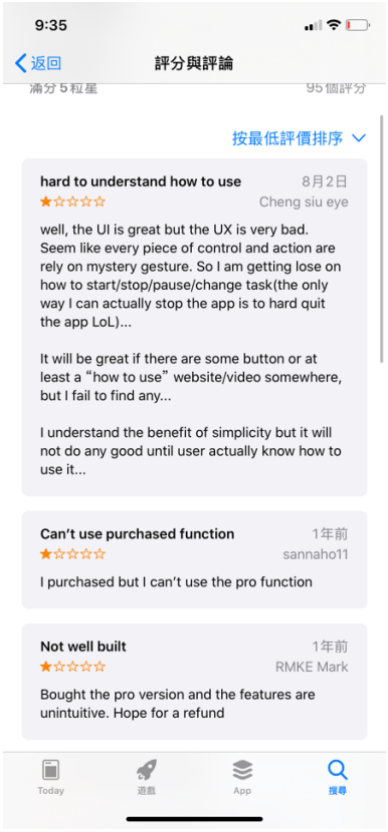
Judging from the reviews in the Appstore, people have different opinions about these apps. Most people and my interviewer (the transcript see appendix) think that planting virtual trees in the forest is a good way to put down your phone, because the application is fun, and you can get a reward at the end of the timer. As for the application named offtime, some people think that limiting the phone's function will cause some unnecessary troubles in the emergency condition, such as you can't use the phone to look up words. Additionally, there are some common comments among these apps, such as saying that these apps are simply not attractive enough for me to change using mobile phone habit, and I often stick to these applications for a few days and choose to give up the app.



(Some comments show that the forest is very fun)



(Some comments show that heavy problems exist in the forest)



(Some comments show that heavy problems exist in the moment)

After analyzing the above outcome, I made the following frame analysis.

What is normal?
Many young people today spend a lot of time on mobile phones.
What is extraordinary?
No matter in any environment, some people are always inseparable from their mobile phones, including eating, meeting and so on.
What is noticeable or visible?
Some people complain about spending too much time on their mobile phones and start trying to control this bad habit.
What is unsaid?
The excessive use of mobile phones shows that some people have insufficient self-control to mobile phones, which is probably because the method to control the use of mobile phones is not enough to attract them to do it. For example, the method is too difficult to implement, or the method is very boring.
What is the universal good or bad?
People can stay happy and not touch their phones after putting the phone down.
People get restless when they put down their phones and pick the phone up again.
What is the potential assumption and challenge?
Some people might think that some applications will make users feel embarrassed or angry in some urgent or necessary situations. For example, some applications make they can't open their smartphones to check dictionary or make phone calls, which actually affect their study. Some people might think they don't have enough self-control to use such time-control applications for a long time, and they may delete the application when they get bored after using this for a period of time.
Who is the agency?
People who think they use their phones too much.
Who is the victim?
People who don't use their phones very often and people who don't realize they need to control how much time they spend on their phones.

Through the above analysis, these may mean for my project:

1. I need to design an application that is interesting enough. When users put down the phone, they still think the application is interesting or valuable. Otherwise, as shown by the framework analysis, users may delete the software due to boredom.
2. My application interface is designed to cater to young people as much as possible, because many people who overuse smartphone are teenagers. Hence, the application should look high-end or lively.
3. In the application, some learning or study apps on mobile phones should not be restricted.

What is the user needs they point to?

Functionality: Limiting user to play smartphones; Tracking users 'habit of smartphone use conditions;
Interaction requirement: Making the user as happy as possible in the interaction; The interaction command should be simple, because the purpose of the application is to get the user involved in focusing rather than clicking the application frequently when users are doing other things.
Interface requirement: The interface should be lively, high-end, and feature button should be simple to get.
Application support level:
Level 1: Automictically reminding the user to put down the phone after using the smartphone for a long time according to track users use habit.
Level 2: Users can do some commands; the phone will be temporarily unavailable in period of time based on the user's setting.

System Concept Statement

First, to summarize the analysis above, the behavior I choose is the behavior change, and the focus area is putting down the smartphone. So, the first step is to understand the nature of the problem.

Domain:	Focus area:	Solution:
Behavior Change	Put down the smart phone	?

First of all, based on the analysis results, we can find that the following problems mainly exist in contemporary young people.
1. Using smartphones frequently for every day
2. People feel anxious when they don't use their phones
3. Young people are easily attracted to other mobile apps
Some extra human values mainly exist in young people.
1. Concentration; People want to focus on one thing.
2. Consideration; People are desirable that details problems should also be considered.
3. Love; People want to get fun and interesting things. People want to be taken care of and be aware of.

Some common ideas or interests in young people.
1. Most young people like games because they are interesting
2. Privacy concerns
3. Feel a sense of accomplishment
4. Feel relaxed

So, the solutions for three problems mentioned should be:

Domain: Behavior Change	Focus area: Put down the smart phone	Solution: Kindly reminding users not to open their mobile phones when they are tiring to open. Reminding users to put down their phones when they've been using the smartphone for a too long time.
Domain: Behavior Change	Focus area: Put down the smart phone	Solution: There are some features in the application that keep users happy when they put their phones away.
Domain: Behavior Change	Focus area: Put down the smart phone	Solution: Limiting the use of other mobile application such as entertainment application when the user opens their smartphone.

Identify problem processes

Problem1: Using smartphones frequently for every day
Key points:
Feel relaxed and happy
Track user habits
One sentence problem statement:
Design an app on the smartphone that the app can monitor your phone use and gently prompts you do not continue using your phone or to try to give some suggestions about relieving fatigue.
High-level description of system work:
The system is designed to tell users to put down their phones and focus on the things around them. The system will record users' mobile phone use time and frequency in order to remind users that they should take a proper rest or do other things.
Interaction paradigm:
Mobile
Interaction mode:
Instructing (Because the main function is to remind.)
Core interface metaphor:
Virtual assistants (The appearance looks good and the voice is sweet.)
Simulate the user's current working environment in the main interface (to make the user feel love.)

Design an app on the smartphone that the app can monitor your phone use and gently prompts you do not continue using your phone or to try to give some suggestions about relieving fatigue.		
The system is designed to tell users to put down their phones and focus on the things around them. The system will record users' mobile phone use time and frequency in order to remind users that they should take a proper rest or do other things.		
Mobile	Instructing (Because the main function is to remind.)	Virtual assistants (The appearance looks good and the voice is sweet.) Simulate the user's current working environment in the main interface (to make the user feel love.)

Problem2: People feel anxious when they don't use their phones

Key points:
Make users happy
Give users certain rewards and achievements
One sentence problem statement:
Design an app that allows users to put down the phone without paying attention to the phone's content, and some features and content can keep users happy.
High-level description of system work:
Users can set the challenge time as a mission. If users complete the mission, system will give users some virtual money or items as rewards, which can be used to unlock more functions of the app. In addition, the system can play some relaxing music to make users feel happy when users focus on doing. In addition, although the user can't switch to the other applications, but the user can interact with the virtual assistant in interface. The virtual assistant is able to say something fun to make the user feel happy and relaxed, like Siri, in order to make people relax and happy. At the same time, the virtual assistant will record the user's behavior. If users don't use the smart phone during the period of time, the virtual assistant will look like happy and sweet and give users rewards.
Interaction paradigm:
Mobile
Interaction mode:
Manipulate
Core interface metaphor:
Like Education Simulation game
Virtual assistant

Design an app that allows users to put down the phone without paying attention to the phone's content, and some features and content can keep users happy.		
Users can set the challenge time as a mission. If users complete the mission, system will give users some virtual money or items as rewards, which can be used to unlock more functions of the app. In addition, the system can play some relaxing music to make users feel happy when users focus on doing. In addition, although the user can't switch to the other applications, but the user can interact with the virtual assistant in interface. The virtual assistant is able to say something fun to make the user feel happy and relaxed, like Siri, in order to make people relax and happy. At the same time, the virtual assistant will record the user's behavior. If users don't use the smart phone during the period of time, the virtual assistant will look like happy and sweet and give users rewards.		
Mobile	Manipulate	Like Education Simulation game Virtual assistant

Problem3: Young people are easily attracted to other mobile apps

Key points:
Restrict other application
Retain learning application
One sentence problem statement:
Design an application that keeps users from opening other applications.
High-level description of system work:
The system is designed to make users turn off other entertainment apps. When users turn on other apps, the virtual assistant in the system will feel sad and the time challenge mission will be failed (this mission have motioned in the above problem). At the same time, the system can set up a white list, which users can add learning applications to the list so that the application will not check those learning applications states.
Interaction paradigm:
Mobile
Interaction mode:
Instructing
Core interface metaphor:
Like Education Simulation game
Virtual assistant

Design an application that keeps users from opening other applications.		
The system is designed to make users turn off other entertainment apps. When users turn on other apps, the virtual assistant in the system will feel sad and the time challenge mission will be failed (this mission have motioned in the above problem). At the same time, the system can set up a white list, which users can add learning applications to the list so that the application will not check those learning applications states.		
Mobile	Instructing	Like Education Simulation game Virtual assistant

Design guidelines

1. Fun
Users use the application like they are playing a game. Whether the application makes users happy and relax is an important goal.
2. Security
The security of user data is always the first priority. The application records the user's data but does not leak it to the public.
3. Simple and effective
The interaction must be simple, easy to use, and good at helping users solve problems.
4. Love
The application function can take care of the needs of people sincerely.

System requirement

The humorous assistant reminds users to put down their phones
You can actively set your challenge time period as a mission. In this time of period, you can't use your phone.
Rationale: The app will be used when the user plans to study or do other things that require focusing.
Note: This application should be very interesting, preferably in the form of a game. Users may be very tired when they insist to not use mobile phone for a long time. The application needs to remind users to continue to adhere to.

Sketch out possible solution (low fidelity prototype)

Introduction

Combined with the above analysis, I initially designed a low fidelity prototype of app for users, which interfaces styles are mainly like education simulation games. Users can set the length of time that your possible study or doing another thing time. After setting up the challenge, the virtual assistant will accompany you to study, play or do other things together. When the user completes the challenge, your cute virtual assistant can get the gold coin and the intimacy will increase. The user can use the gold coin to unlock more interesting functions. If the user opens another entertainment app. The challenge will be failed, your virtual assistant will be upset. The intimate will decrease, and your gold coin will be reduced as punishment.

Horizontal Prototype

Home (home page)	Shop	Data	Setting
Study (Core function)	Clothing	Pie chart of time distribution (For view)	Account
Relax (Core function)	Skirt	Time distribution histogram (For view)	Reminding service
Sleep (Core function)	Hat		White list
Setting length of time (Core function)	Emotion		Help
Time Bar (You can visualize how much time you have left)	Hair		Log out
Touch head (Just for fun)	Voice		
Communication with assistant (Just for fun)	Eye		
Gold (For view)	Accessory		
Current time (For view)			
Bag (holding your items you bought)			

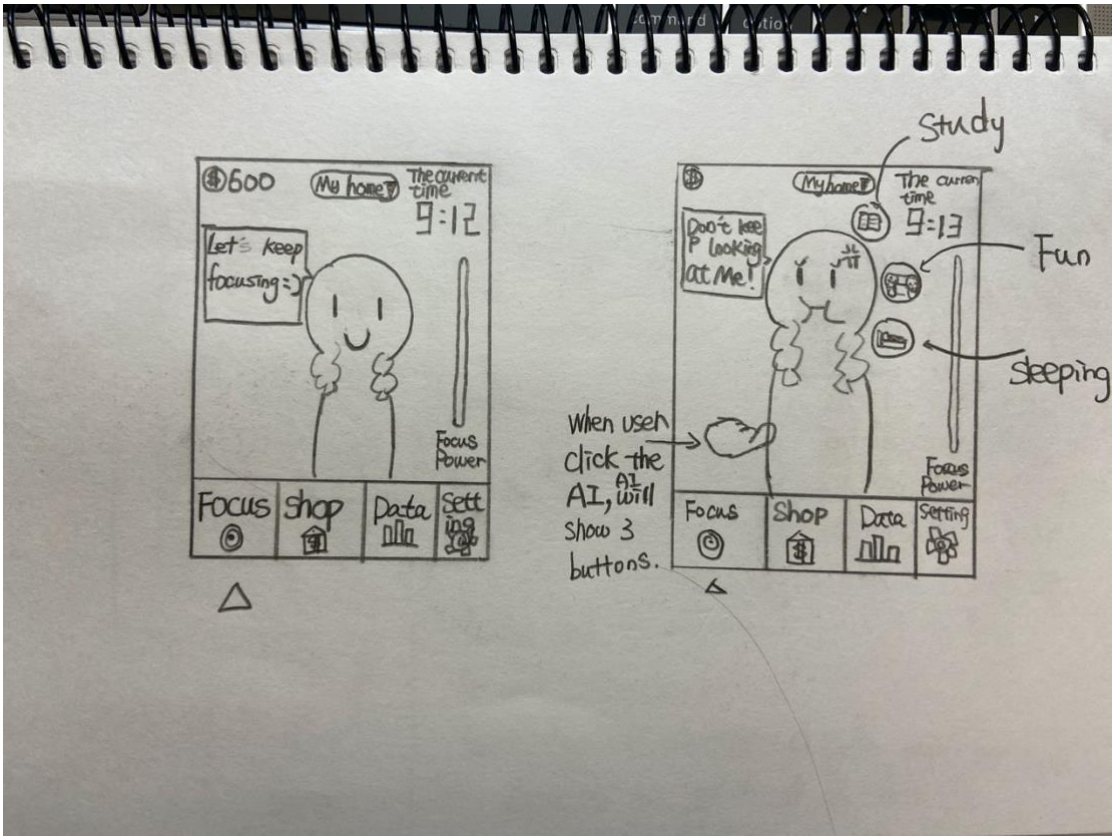
Vertical Prototype (For main functions)

To Study (Relax; Sleep)	Buying something in the shop	Viewing your smartphone use data	Add study applications to white list
Click the assistant	Click the clothing you favorite	Click the data button	Click the setting button
Choose the study (Relax; Sleep) button	Buy button		Click the white list button
Setting the length of time as a challenge	Equip the clothing to your assistant		Choose your study applications
Confirm			Click add button

Diagonal or Scenario Based Prototype

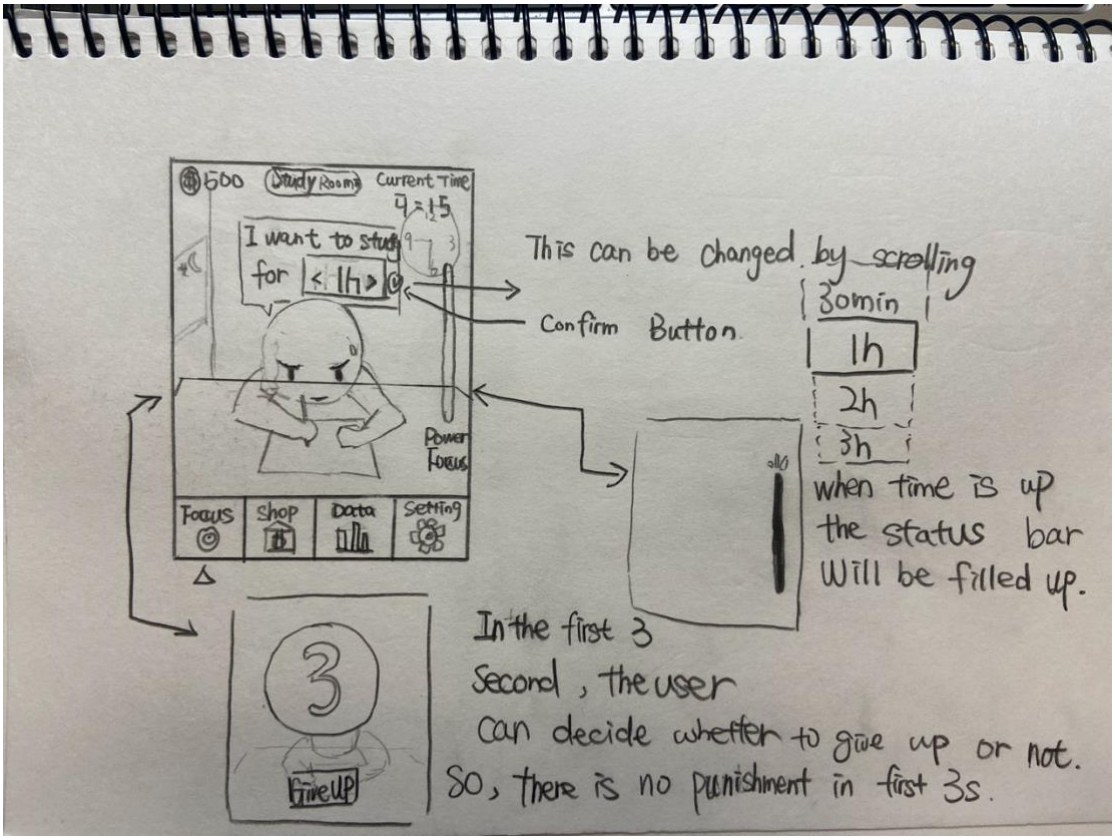
There are no feasible functions to explore in a low-fidelity prototype.

Paper Prototype(The app named iFocus)

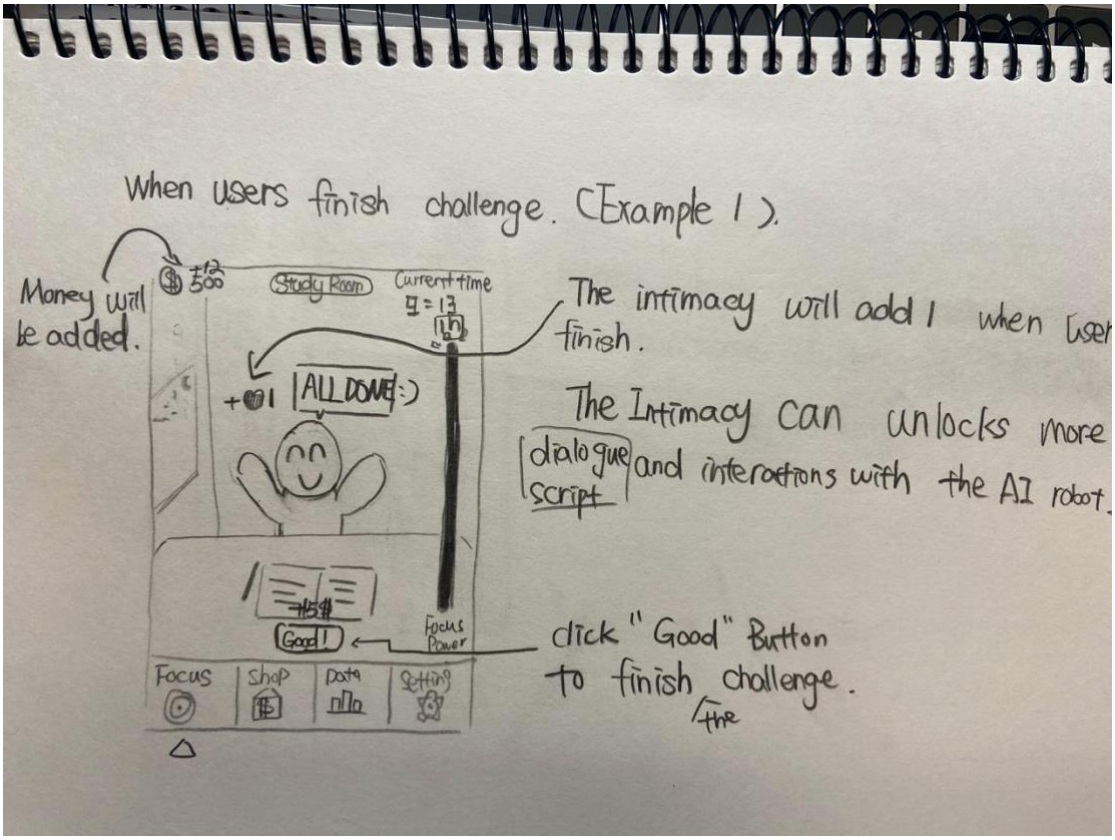


As shown above, on the home page, we can see a virtual assistant. The top of the screen describes how many gold coins you have, where you are, and the current time. The bottom of the interface is the menu bars including focus, store, data, and settings. On the right side of the screen you can see a time bar, which will automatically start filling in when the user sets the length of time, in order to remind the user of the remaining time. The virtual assistant can automatically make different emotions and actions, and it can also say some interesting conversations in order to make users happy.

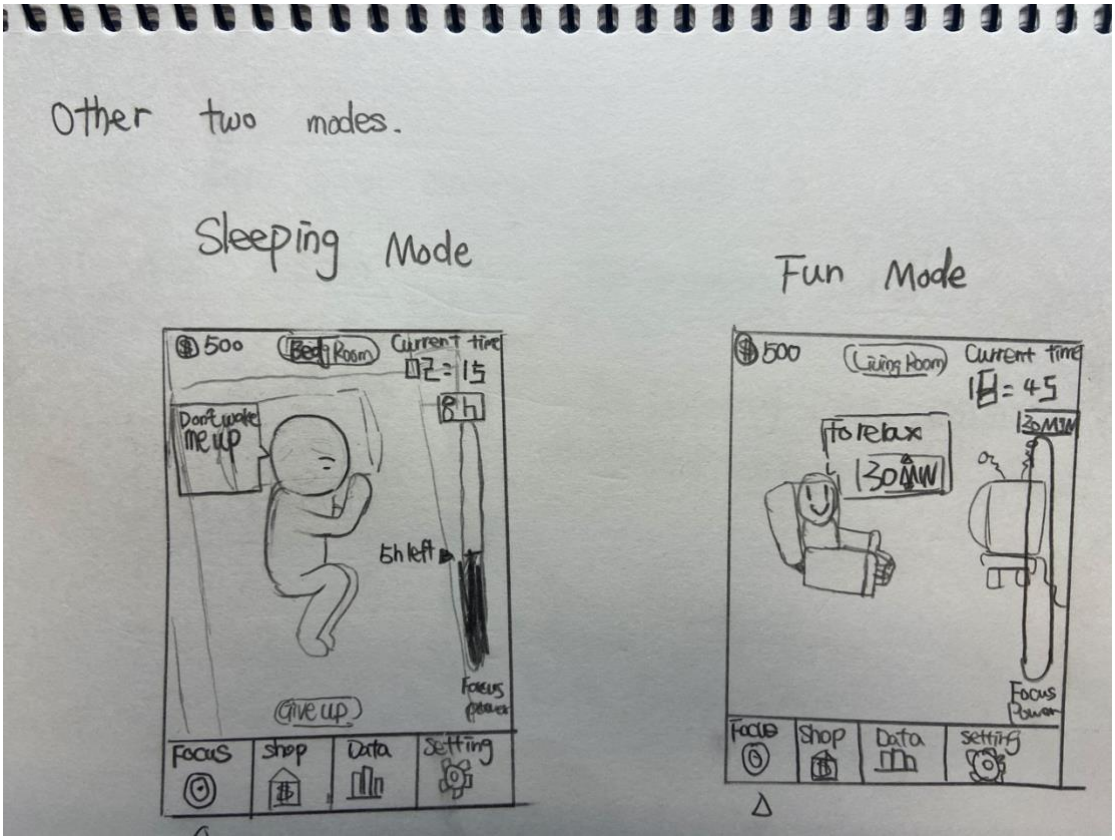
When the user decide that the user wants to focus on something, the user can click on the virtual assistant, and three buttons will appear to the right side of the virtual assistant (as shown in the picture on the right). You can choose between studying, playing and sleeping, which are the three main daily patterns of human behavior. The system will collect your records and eventually displays in the data panel, including how much time you spend in studying, playing, and sleeping in every day.



As shown in the picture above, when you select a focused behavior such as clicking the study button, the scenario of screen will switch to the virtual assistant's appearance of preparing to learn, and the virtual assistant will say how many hours I plan to study. Users can click on the time to drag and drop, thus choosing the length of time you want to focus on. After selecting the length of time, click the green confirmation button on the right, and the screen will start to count down for three seconds. You will not be penalized for canceling the challenge in first three seconds, but you will be penalized for canceling it after three seconds and your intimacy with the virtual assistant will decrease. After starting the time challenge, the user will see that the time bar on the right is gradually filled until the challenge is completed.

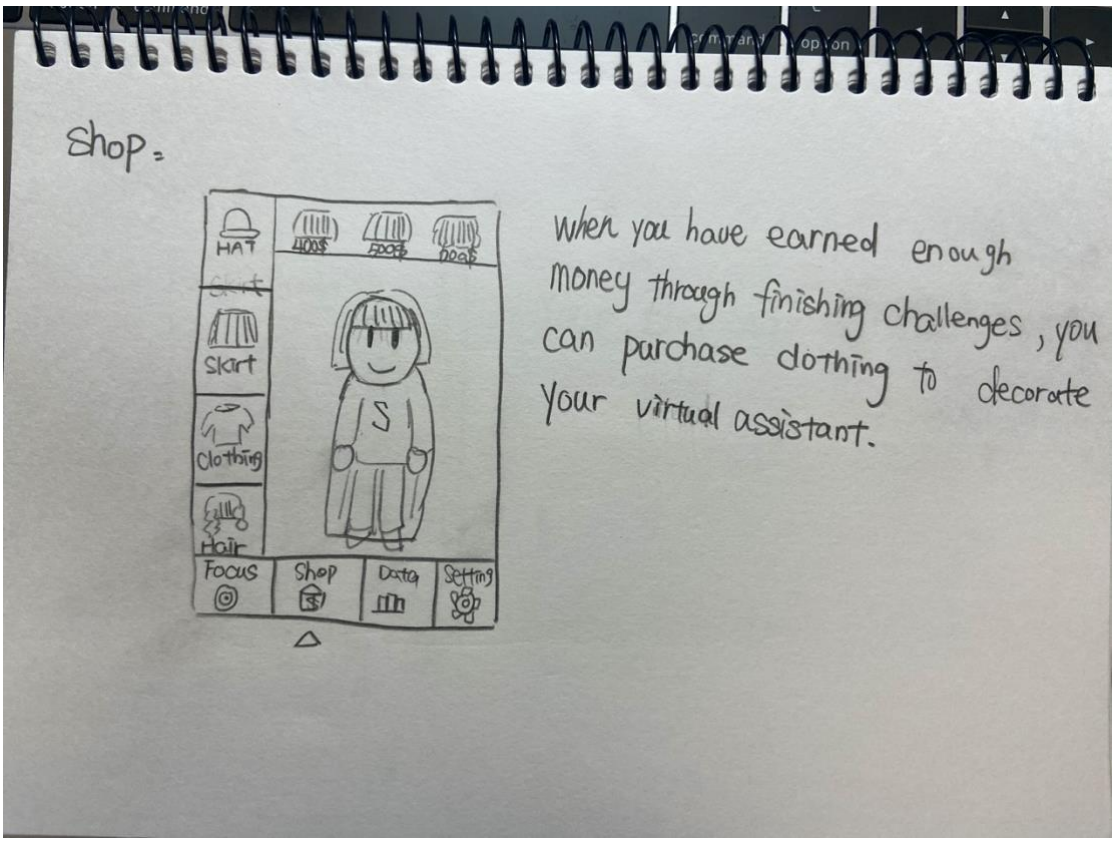


As shown in the picture above, when the time bar on the right is filled up, the virtual assistant will be very happy, your intimacy with the virtual assistant will increase, and you will be rewarded with some gold coins. After completing the challenge, the scene switches back to its original state a few seconds later.



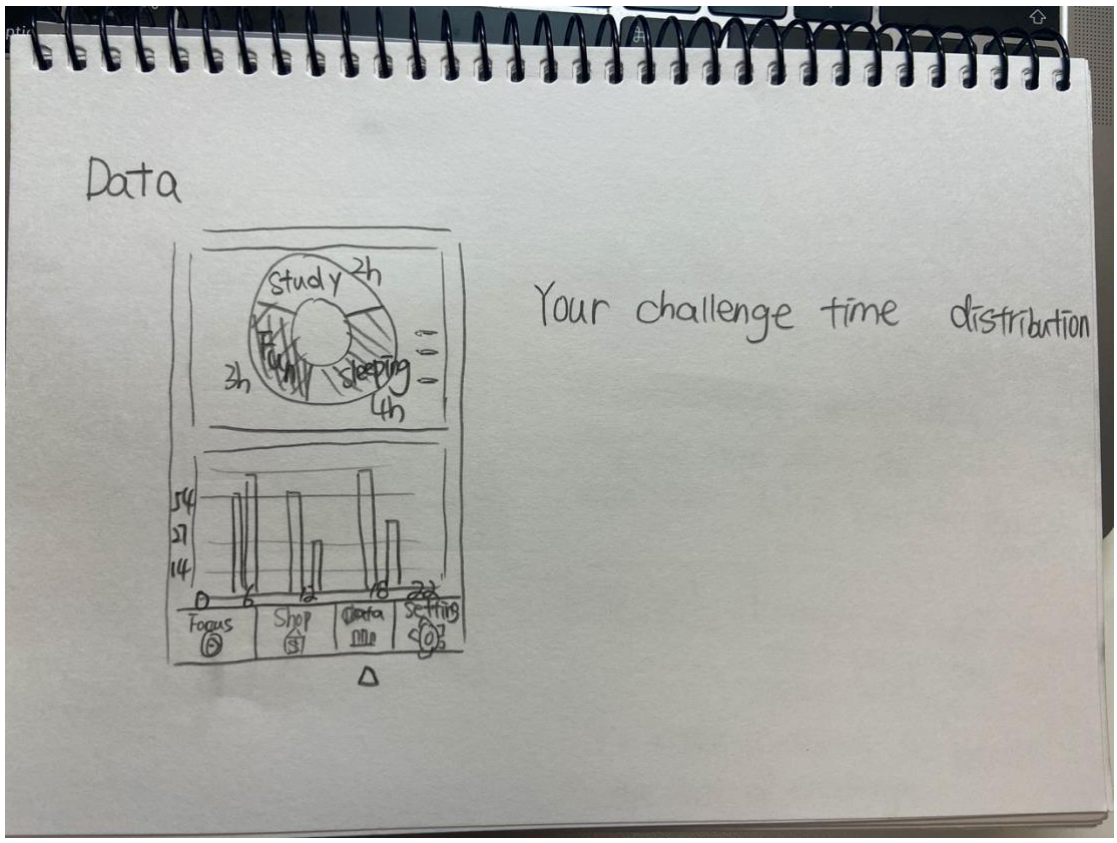
As is shown in the picture above, people not only need to stay focused in study or work, but they also need to stay away from their mobile phones when they are playing or sleeping, including when they are exercising, having a party, eating and other recreational activities. Similarly, in order not to affect the quality of sleep, using mobile phones should not be allowed during sleep. Also, the survey shows that most people play with their mobile phones while sleeping.

The operation logic in these two behavior modes is similar to that in the learning mode, and the final user data will be counted and displayed in the data bar.

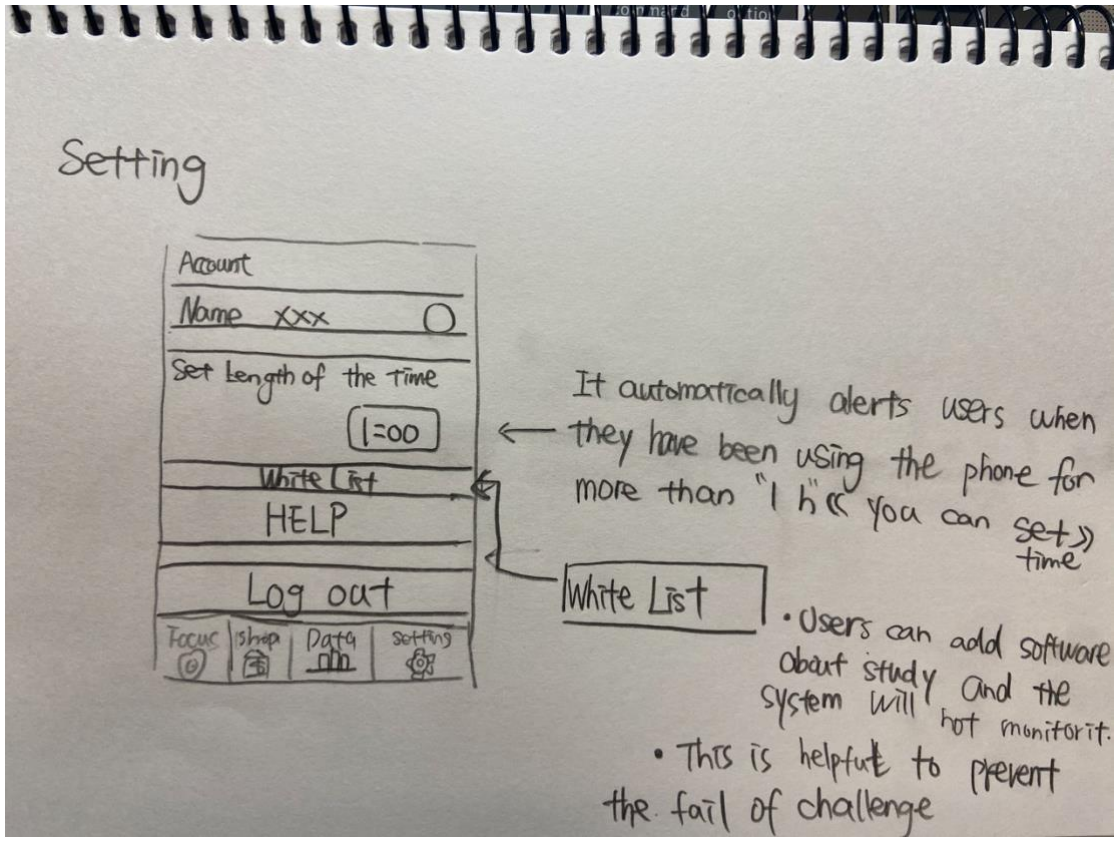


As shown in the picture above, this bar of store will not affect the main functions of the application. But as the results of the survey found, many people give up the application because it is not interesting enough, or it is too boring. So the store bar is designed to be fun for the user, and administrators can periodically forget to add new content to the store. The purpose of this bar is to keep users interested in the application.

Users can buy hats, clothes, dresses, gestures and other items in the store to dress up your own virtual assistant.



This data panel is mainly used to display users' habits in the form of images. Users can know their mobile phone use time, frequency and other data. Users can adjust their behavior based on the data.



The last one is the Settings bar, which includes your account number, reminder Settings (set length of the time), whitelist, software help and login buttons.

For the length of the time function, the feature that users can set a time. When users continue to use the phone for more than that, and users will receive a notification about putting the phone down. If the user clicks on the notification to enter the app, the virtual assistant will kindly give you some appropriate suggestions, such as doing sports.

References

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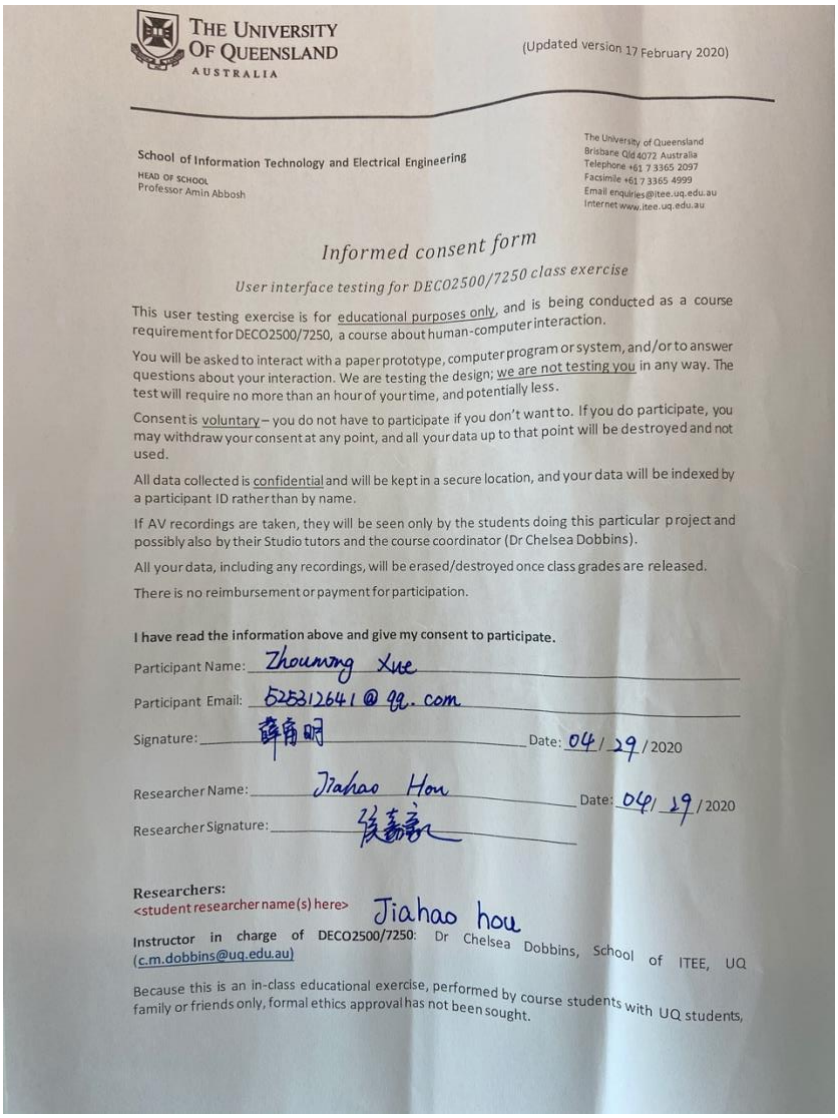
Appendix

Consent form



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(Updated version 17 February 2020)

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Informed consent form

User interface testing for DECO2500/7250 class exercise

This user testing exercise is for educational purposes only, and is being conducted as a course requirement for DECO2500/7250, a course about human-computer interaction.

You will be asked to interact with a paper prototype, computer program or system, and/or to answer questions about your interaction. We are testing the design; we are not testing you in any way. The test will require no more than an hour of your time, and potentially less.

Consent is voluntary – you do not have to participate if you don't want to. If you do participate, you may withdraw your consent at any point, and all your data up to that point will be destroyed and not used.

All data collected is confidential and will be kept in a secure location, and your data will be indexed by a participant ID rather than by name.

If AV recordings are taken, they will be seen only by the students doing this particular project and possibly also by their Studio tutors and the course coordinator (Dr Chelsea Dobbins).

All your data, including any recordings, will be erased/destroyed once class grades are released.

There is no reimbursement or payment for participation.

I have read the information above and give my consent to participate.

Participant Name: Zhouwng Xue

Participant Email: 525312641@qq.com

Signature: 薛宇明 Date: 04/29/2020

Researcher Name: Jiahao Hou Date: 04/29/2020

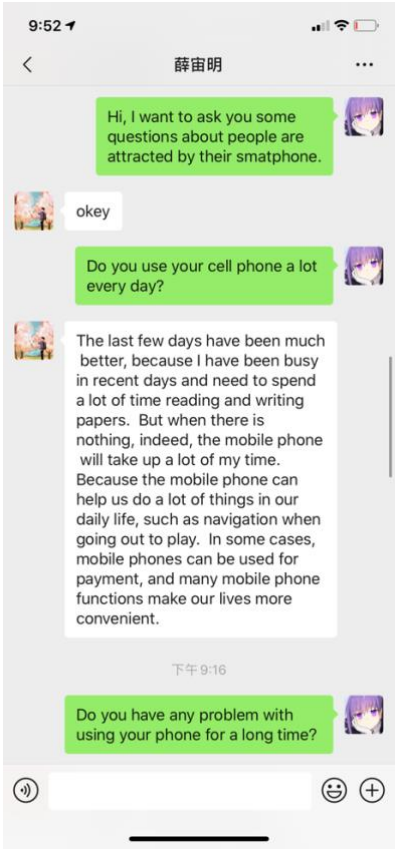
Researcher Signature: 侯嘉豪

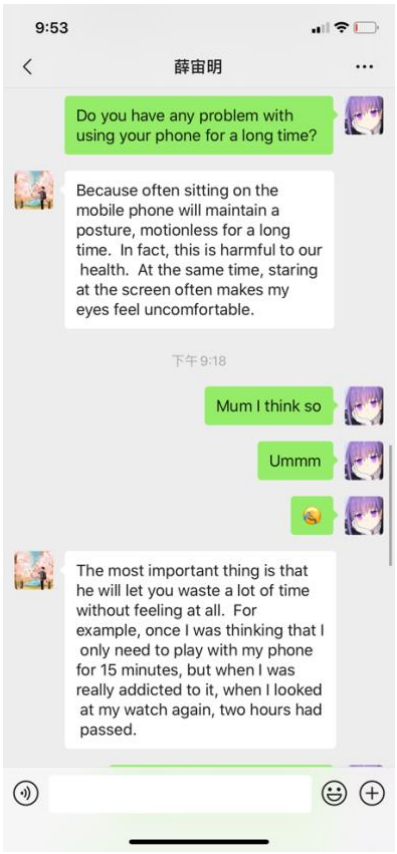
Researchers:
<student researcher name(s) here> Jiahao hou

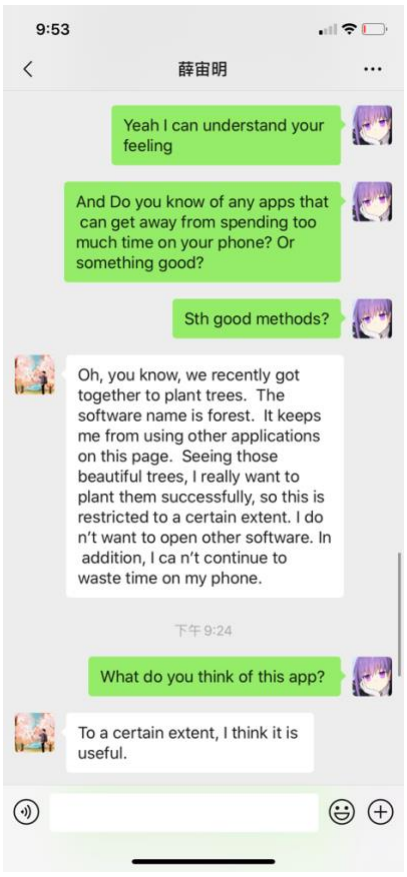
Instructor in charge of DECO2500/7250: Dr Chelsea Dobbins, School of ITEE, UQ (c.m.dobbins@uq.edu.au)

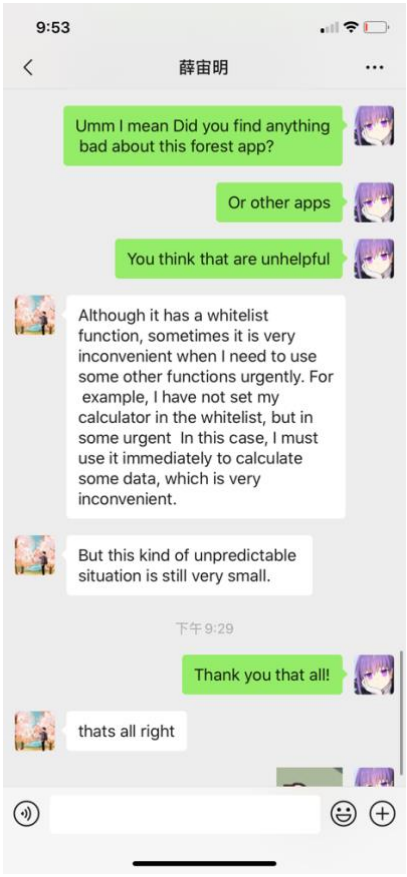
Because this is an in-class educational exercise, performed by course students with UQ students, family or friends only, formal ethics approval has not been sought.

Transcript


9:52
薛宙明
Hi, I want to ask you some questions about people are attracted by their smatphone.
okey
Do you use your cell phone a lot every day?
The last few days have been much better, because I have been busy in recent days and need to spend a lot of time reading and writing papers. But when there is nothing, indeed, the mobile phone will take up a lot of my time. Because the mobile phone can help us do a lot of things in our daily life, such as navigation when going out to play. In some cases, mobile phones can be used for payment, and many mobile phone functions make our lives more convenient.
下午9:16
Do you have any problem with using your phone for a long time?


9:53
薛宙明
Do you have any problem with using your phone for a long time?
Because often sitting on the mobile phone will maintain a posture, motionless for a long time. In fact, this is harmful to our health. At the same time, staring at the screen often makes my eyes feel uncomfortable.
下午9:18
Mum I think so
Ummm
The most important thing is that he will let you waste a lot of time without feeling at all. For example, once I was thinking that I only need to play with my phone for 15 minutes, but when I was really addicted to it, when I looked at my watch again, two hours had passed.


9:53
薛宙明
Yeah I can understand your feeling
And Do you know of any apps that can get away from spending too much time on your phone? Or something good?
Sth good methods?
Oh, you know, we recently got together to plant trees. The software name is forest. It keeps me from using other applications on this page. Seeing those beautiful trees, I really want to plant them successfully, so this is restricted to a certain extent. I do n't want to open other software. In addition, I ca n't continue to waste time on my phone.
下午 9:24
What do you think of this app?
To a certain extent, I think it is useful.


9:53
薛宙明
Umm I mean Did you find anything bad about this forest app?
Or other apps
You think that are unhelpful
Although it has a whitelist function, sometimes it is very inconvenient when I need to use some other functions urgently. For example, I have not set my calculator in the whitelist, but in some urgent In this case, I must use it immediately to calculate some data, which is very inconvenient.
But this kind of unpredictable situation is still very small.
下午 9:29
Thank you that all!
thats all right

Individual Project

Evaluation Protocol (L prototype)

EvaluationID	User Test 001 (Low-fidelity prototype)
Aims/Purposes	[The basic usability test of a low-fidelity prototype]
Date/s	5 May 2020
Creator	[Jiahao Hou]

General Notes

(The current stage is to conduct usability test on the low-fidelity prototype. The first part is to let users complete some commands I assigned, as well as the free exploration of the low-fidelity prototype, and then complete the TAM test. The second part is to answer several free response questions.).

The “you” in the following is the person who is the “tester”.

Preparation before the participant arrives

Notes: Prepare/layout materials for the participant so that everything is ready. In particular, don’t let the participant see the questions on the questionnaire until you hand it to them to fill out.

Prepare the material being used for the user testing session (Electronic):

1. Consent forms
2. Low-fidelity prototype
3. Free response question sheet
4. TAM task sheet

Introduction

Notes: Introduce yourself to the participant and give them a high-level idea of what they will be doing in their tasks today. In addition, tell them what is on the consent form (but don’t read it out to them).

> *[Introductions, thanking them for being there]. Today, I'll test the usability and user experience of low fidelity prototype (the iFocus).*
>
> *I am looking at how easy it is for you to use the application, how well you understand the process of interaction, and whether there are any problems with the interface.*
>
> *Now you get an electronic consent form that I need you to complete. It tells you what the purpose of this task is today and how the data will be used. This is a voluntary task and if you feel uncomfortable please feel free to stop the testing session. Through this process, I am not evaluating you in any way, I am evaluating the application and how effective the design is.*

Consent

User reads through, fills in and signs consent form. We fill in our parts as well. This process takes about ten minutes, and then the user needs to send the consent form to the zoom.

> *Thanks for providing consent. Just a reminder you can withdraw from this task at any time without any negative consequences to you.*

Task 1: Functions test and TAM survey (30min).

Notes: See if there are any questions from the participants before you get started., and answer questions.

Instructions

> *I would like you to follow the instructions below and complete the task. You will be given 30 minutes to work on the task.*
>
> *Please remember that we are not assessing you, we are assessing the software that you are using.*
>
> *Do you have any questions about the task you are about to complete?*
>
> *Today we would like you to complete the following tasks:*
>
> 1. *View the low-fidelity prototype.*
> 2. *Set a ten-minute study period.*
> 3. *Using the gold to buy decoration.*
> 4. *Set up an alert, which allow you to put down your phone when you use phone for a long time.*
> 5. *Free to view the low-fidelity prototype.*

Task Notes (10min)

Roles

Facilitator	Jiahao Hou

Task Details

When the participant is ready, ask the participant to start on the task:

1. Set a ten-minute study period.
    a. take note of how the user found the study button
    b. their opinions of this function.

    c. the process they went through to set a length of time
    d. the time taken to the process of set a length of time
    e. how many steps to complete this process.
2. Buy a hat in the shop and wear it.
    a. the time taken to this process
    b. how many steps to complete this process
    c. observe participant's emotion and opinions
3. Set up an alert.
    a. how many steps to complete this process
    b. observe participant's emotion and opinions
    c. the time taken to the process of set an alert

After the testing session, we will reassure them that "they are fantastic for volunteering their time and that we now have the information we need for that part of our session"

TAM survey (10min)

Note: Make sure you have this documented before you start.

Ask the participant to fill in the TAM survey in google forms.

> *It contains several questions to answer about the user experience and usability.*

We will check over the responses to make sure that all parts have been filled out, and that the answers are legible.

Free response question sheet (10min)

Note: do the free response question sheet. The process lasts about 20 minutes.

Ask the participant to fill in the free response question sheet in google forms.

> *It contains several questions to answer about what your feeling of the user experience and usability.*

We will check over the responses to make sure that all parts have been filled out, and that the answers are legible.

Closing

Tell the participant that the session is at an end. Remind them about consent being voluntary and that they can withdraw at any time.

> *Thank you for volunteering your time, and your data is valuable.*

Let participant know that they are free to go.

Data analysis (low-fidelity prototype)

Functions test

For the evaluation of the lo-fi prototype, I invited six participants who are from different major as participants to test my lo-fi prototype. I asked the six participants to view my low-fidelity prototype and participate in some functional tests, and then I recorded the results of their actions. According to the responses of the six participants, their first impression was more like a game. Participants initially unable to recognize where specific focus mode button to click, but four participants habitually click the virtual assistant. Three focus buttons are shown on the right side of virtual assistant. Every participant that the time for completing the first task for the first time is about 16 seconds. In addition, participants averaged about five clicks throughout the first task. During the challenge, one of the participants tried to turn on the phone's screen. The other features of the phone's applications became unavailable. He then switched out of the application, and when he returned to the application, he found that the time challenge had failed. He was very annoyed.

For the second test, most people were satisfied with the process of tasks, which took about 7 seconds for each participant and about 5 clicks for each participant. This basically fits my expectation. Participants also reported having fun when they bought fancy decorations for the virtual assistant.

In the third test, the average first-time user spent more than 30 seconds setting the time notification. This is probably because they didn't realize the function was in the Settings menu. Clicks of average are over 17 times. Almost everyone thinks there is something wrong with this time alert function.

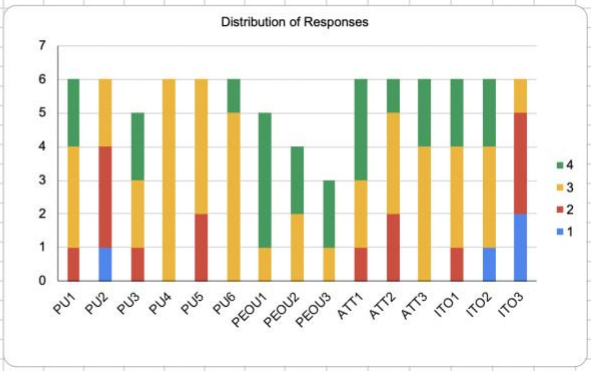
TAM survey

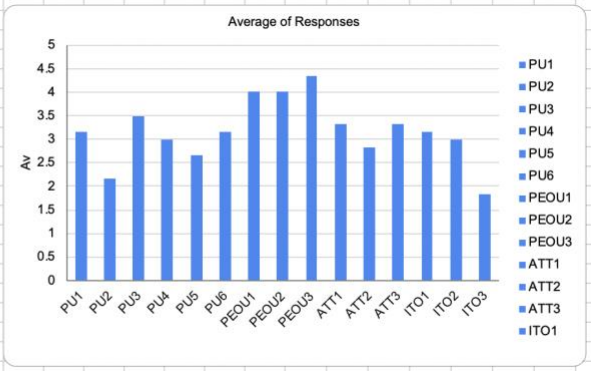
Dimension	Question						
PU1	I can set a length of time period more quickly using iFocus	3	3	4	2	3	4
PU2	I can set a time alert notification more easily using iFocus	2	2	3	2	1	3
PU3	iFocus enhances my effectiveness in setting a length of time	4	3	5	4	3	2
PU4	iFocus enhances my efficiency in utilizing data interface	3	3	3	3	3	3
PU5	iFocus enables me to make better decisions in utlizing study (relax, sleeping) mode	3	2	3	3	2	3
PU6	Overall, I find iFocus useful	3	3	4	3	3	3
PEOU1	Learning to use iFocus is easy for me	5	4	4	4	3	4
PEOU2	It is easy to use iFocus to focus study (relax, sleeping)	4	3	4	5	3	5
PEOU3	Overall, I believe iFocus is easy to use	5	5	4	5	4	3
ATT1	In my opinion, it is desirable to use iFocus	4	4	3	4	2	3
ATT2	I think it is good for me to use iFocus	4	3	3	3	2	2
ATT3	Overall, my attitude towards iFocus is favourable	4	3	4	3	3	3
ITO1	I will use iFocus on a regular basis in the future	4	3	4	3	2	3
ITO2	I will frequently use iFocus in the future	4	4	3	3	1	3
ITO3	I will strongly recommend others to use iFocus	2	1	3	2	1	2
Note: For [description of task] it needs to be one single task for the whole survey.							
1 = Strongly disagree							
2 = Disagree							
3 = Agree							
4 = Strongly agree							

First of all, my evaluation method for the low-fidelity prototype is TAM. By setting up a series of questions, users can select a number between 1 and 4 next to each question. 1 stands for strongly disagree, and 4 stands for strongly agree. As for the question in TAM, my question was set mainly based on the main functions included in my application, such as three focus modes, store interface, setting interface and data interface. The main criterion is to test whether these functions are effective, efficient, convenient and fun.

Dimension	R1	R2	R3	R4	R5	R6
PU1	3	3	4	2	3	4
PU2	2	2	3	2	1	3
PU3	4	3	5	4	3	2
PU4	3	3	3	3	3	3
PU5	3	2	3	3	2	3
PU6	3	3	4	3	3	3
PEOU1	5	4	4	4	3	4
PEOU2	4	3	4	5	3	5
PEOU3	5	5	4	5	4	3
ATT1	4	4	3	4	2	3
ATT2	4	3	3	3	2	2
ATT3	4	3	4	3	3	3
ITO1	4	3	4	3	2	3
ITO2	4	4	3	3	1	3
ITO3	2	1	3	2	1	2

	1	2	3	4		Av
PU1	0	1	3	2	PU1	3.167
PU2	1	3	2	0	PU2	2.167
PU3	0	1	2	2	PU3	3.5
PU4	0	0	6	0	PU4	3
PU5	0	2	4	0	PU5	2.667
PU6	0	0	5	1	PU6	3.167
PEOU1	0	0	1	4	PEOU	4
PEOU2	0	0	2	2	PEOU	4
PEOU3	0	0	1	2	PEOU	4.333
ATT1	0	1	2	3	ATT1	3.333
ATT2	0	2	3	1	ATT2	2.833
ATT3	0	0	4	2	ATT3	3.333
ITO1	0	1	3	2	ITO1	3.167
ITO2	1	0	3	2	ITO2	3
ITO3	2	3	1	0	ITO3	1.833





After analyzing the data of TAM, we can see that, first of all, from the response distribution, the scores of most dimensions are above 3, indicating that the main functions of the software are acceptable. What needs to be noted in this picture is the distribution of 1 and 2 scores. We can see that the score of ITO3 is very low, the score of PU2 is very low, and the score of PU5 and ATT2 is relatively low. Through the analysis, we can know that the function of time alert is not reasonable, and the mode of focus may have some defects.

As can be seen from the average of responses, PU2 and ITO3 are around 2. PEOU1 and PEOU2 and PEOU3 are at 4. Other data are mainly distributed around 3. Therefore, I analysis that the low-fidelity prototype of this software is relatively easy to use. And the function can also basically meet the use requirements. However, how to make a deep improvement plan, I proposed a few free response questions in the next session.

Free response questions

What is the key benefit you can see from this concept product?

The main thing I can do is put my phone down when I've set up the challenge. I can only control the assistant in this page, other menus cannot access. I think it's fun for my assistant to study with me.
I think the main pleasure is that the interface of the virtual assistant is simulating what I'm doing in the real world. Although the functions are similar to forest. I think it is quite interesting.
I think this application can help me limit my mobile phone habit.
I think the biggest benefit of this is that it combines the cartoon side of the game with the focus function.
I think the best thing about this is that it's fun.
I really don't want to open another app when I've set up the challenge.

From what you've seen today, which of these features will make you use the product?

Cute virtual assistant
The interface is nice and cartoon
I think this application can help me limit my mobile phone habit.
I just need to be able to have a button that limits other apps on the phone
Virtual assistants can be matched with clothing in stores
The interface is interesting

What feature would you want to use that you didn't see in the prototype?"

Note taking can be included after completing a challenge
There could be more focus patterns

How does this concept make you feel?

Fun
Interesting
Happy
Fun
Relax
Fun

If you feel that there is anything you can do to improve the design, feel free to correct and modify and comment.

I think the notification Settings in notifications should be put on the home page, which should be a major feature
There are more modes of concentration
I prefer to have more interaction with the virtual assistant, rather than just three function buttons after clicking on the virtual assistant
I think the focus mode function button should be more obvious
None
None

The answers to these questions reveal some of the participants' deeper views on the iFocus. According to the question that what is the key benefit you can see from this concept product; it can be seen from the answer that most people like the main functions in this application. They do not frequently hold the phone during the time challenge. However, they think that the main function of the application is limited because the iFocus only have the three focus modes - sleep, entertainment and learning. Apart from that, most people thought this virtual assistant is interesting. The virtual assistant can talk to you some tips, making emotion with you and doing same things with you, which probably adds a sense of belonging.

Summary
Based on the above analysis, I think the following aspects need to be improved.

Functions: add more focus mode functions or the user-defined function. Time alert should be placed on the home page rather than on the Settings page. After the completion of the time challenge, users can make a simple note of their previous challenge, so that they can have a clear review of what they have done.
Layout: important function buttons should be more clearly displayed on the home page. Another way is that the application adds a quick instruction viewing for new users who are using the software for the first time.
Interaction: users can interact more with the virtual assistant, such as clicking on the virtual assistant to trigger more conversations and do more actions.
Interface: when the user enters the phone interface during a time challenge, the app should remind the user to put down the phone or not open it.

Interation 2 – Medium Fidelity Prototype