Audiac

ITSC 3130 Design Project

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I.   Needfinding

Figure 1

Tech Savvy Sally:

- Female
- 20
- Computer Science Major
- Rich
- Aspires to be a web developer for big companies.
- Can afford anything because of their rich family and is very familiar with technology.
- She has many devices for media consumption and learning.
- She tends to be outspoken and can give useful insights on technology.
- In class she is one of the top students.

  <u>Story:</u>

  o With her parents being so successful, Sally feels obliged to follow through and become the indisputable number one in technology. Her aspirations are great, but because of the success surrounding her, she can maintain steady grades to reach her goals.

Figure 2

Poor Polly:
- Female
- 21
- Computer Science Major
- Poor
- Works multiple jobs to pay for tuition.
- Aspires to make money to help family.
- Cannot afford expensive things so buying the bare minimum is necessary.
- She is not too familiar with technology but can adapt to new things.
- She can give good insights as a user not used to technology.
- In class she is one of the top students.
  - Story:
    - Polly grew up in a harsh circumstance in which her only family is her mother and 2 younger siblings. Her mother does not make a lot of money; therefore, it is difficult for Polly to be accustomed to current technology. However, her study skills are second to none, and she came into the field knowing that technology would allow her to make money and support her family.

Audiac distributed a survey to multiple college students who are currently taking remote learning classes. The survey included queries on how the students felt about remote learning as opposed to in-person learning. Additionally, the survey tried to gauge the difficulties the students faced with the tools they used for the semester. In summary, many students, from both spectrums of the income scale, preferred in-person learning as opposed to remote learning. When prompted to elaborate, many stated that the workload has significantly increased with less time to focus on much else. There is also less communication and less engagement in classes, making it hard to

retain the information necessary to build within the courses. For a more in-depth look at the survey and results, navigate to the *Appendices* section of the report, located at the end.

II.   Design Goals

The characteristics of Audiac's intended population of users are college students who are working or learning from home. Individuals can find usage in the app with its easy and reliable tools for interacting with students and teachers, making it more efficient in communicating and collaborating with others in addition to learning the material at anytime with the use of prerecorded and server-stored lecture videos by both their professors and others around the country.

Audiac's design is centered around storing information for later reference or usage. It aims to allow the user to easily study and explore more about the topic they are learning with different lecture suggestions by more than just their professors. Audiac can help its users succeed in classes by also keeping track of their averages and projected GPA at the end of the semester to let them know exactly where they stand at any point.

Audiac's four design goals are as follows:
- o Reduce the stress and difficulty of remote learning
- o Promote remote learning to education systems around the world through the usage of informational lecture that are available to all users of Audiac
- o Connect students with additional sources of information to improve the success of students during remote learning
- o Provide seamless methods and tools to help students understand the material and get the required work done

In these following scenarios, they will aim to illustrate potential user actions before and while using Audiac:
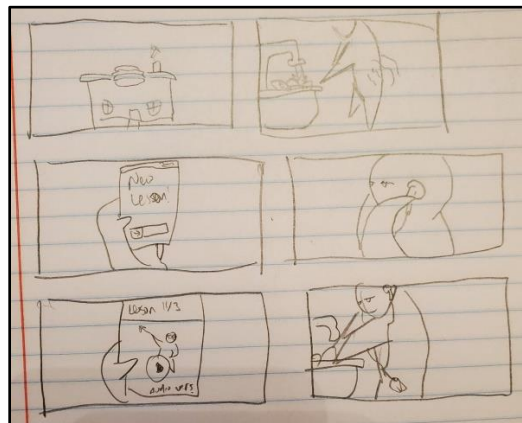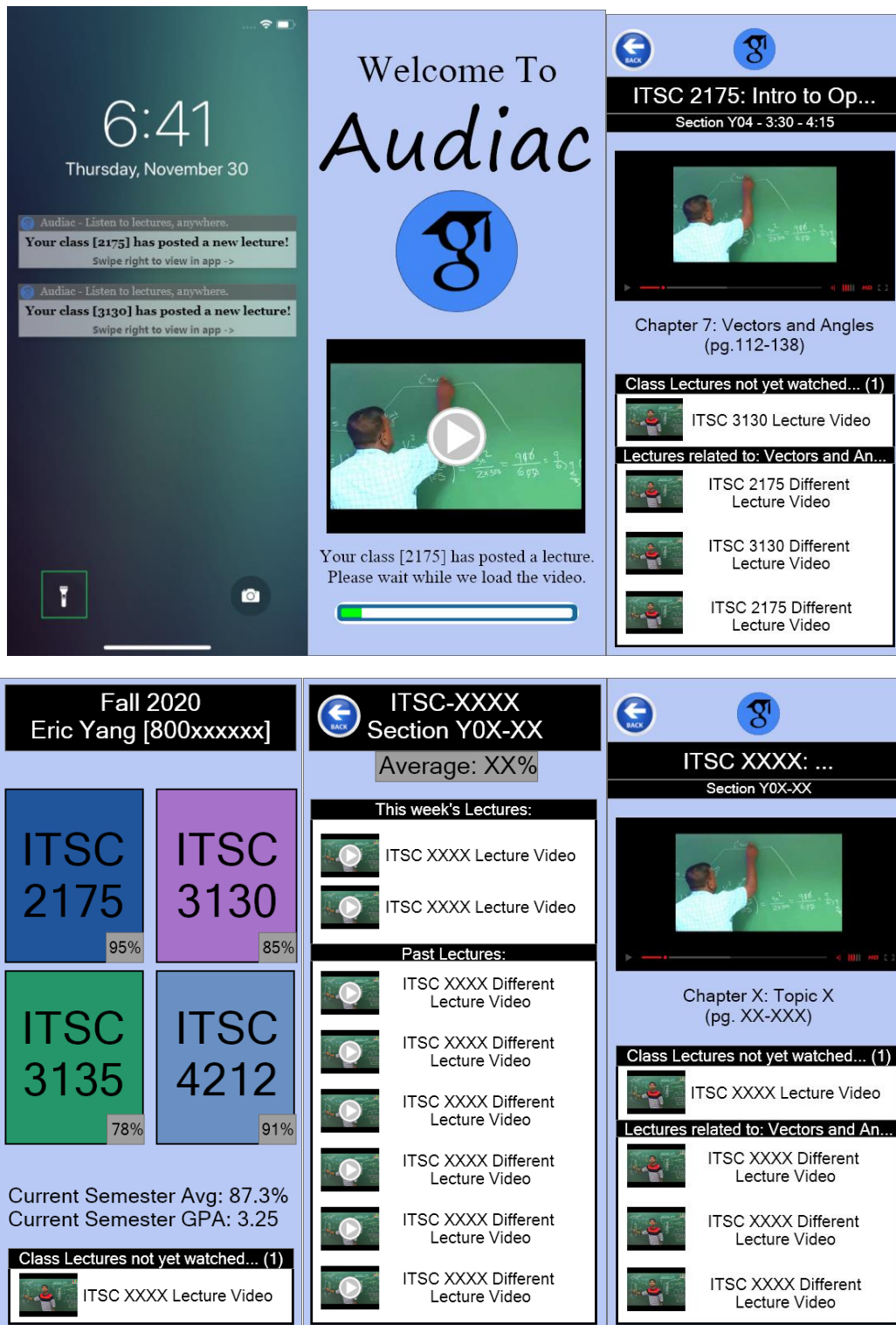

Figure 3

- o Due to unforeseen circumstances, their university has proclaimed that remote learning will take the place of in-person learning for the rest of the year. This poses a problem for them however, since they have a very old laptop. However, their phone is new and is fully capable of handling an app like Audiac, and so they utilize their phone to learn the material instead. With this app, they can listen to lectures and examples while doing housework or even during their other jobs as there are many lectures that don't require visuals to learn.

III.   Design Description

Design Concept:

The design concept of Audiac is a simplistic and easy video retriever and player. The main components of the application are its class selectors and its respective lecture videos, followed by recommended videos by other professors on the same topic. Professors can pre-record lectures and dictate Audiac to release it at a certain time, in which their students will be notified that there is a new lecture out. When pressed, it will navigate them straight to the video in which the class and section will be displayed at the top, with the video player at the middle and the related videos below. If the user has lectures from their professors that they have not yet watched, it will also display above the recommended videos as such. There is a back button on the top left that will bring you to the main board in which you can see the classes you are enrolled in as well as your grades for each. At the top of the page, you can see your information and on the bottom is your current average of the classes and the projected GPA. When clicking a class, it will take you to their library of videos in which you can re-watch old lectures when necessary.

Design Prototypes:

6:41

Thursday, November 30

Audiac - Listen to lectures, anywhere.
Your class [2175] has posted a new lecture!
Swipe right to view in app ->

Audiac - Listen to lectures, anywhere.
Your class [3130] has posted a new lecture!
Swipe right to view in app ->

Welcome To
Audiac

Your class [2175] has posted a lecture.
Please wait while we load the video.

BACK

ITSC 2175: Intro to Op...
Section Y04 - 3:30 - 4:15

Chapter 7: Vectors and Angles
(pg.112-138)

Class Lectures not yet watched... (1)
ITSC 3130 Lecture Video

Lectures related to: Vectors and An...
ITSC 2175 Different Lecture Video
ITSC 3130 Different Lecture Video
ITSC 2175 Different Lecture Video

Fall 2020
Eric Yang [800xxxxxx]

ITSC 2175   95%
ITSC 3130   85%
ITSC 3135   78%
ITSC 4212   91%

Current Semester Avg: 87.3%
Current Semester GPA: 3.25

Class Lectures not yet watched... (1)
ITSC XXXX Lecture Video

BACK
ITSC-XXXX
Section Y0X-XX
Average: XX%

This week's Lectures:
ITSC XXXX Lecture Video
ITSC XXXX Lecture Video

Past Lectures:
ITSC XXXX Different Lecture Video
ITSC XXXX Different Lecture Video
ITSC XXXX Different Lecture Video
ITSC XXXX Different Lecture Video
ITSC XXXX Different Lecture Video
ITSC XXXX Different Lecture Video

BACK
ITSC XXXX: ...
Section Y0X-XX

Chapter X: Topic X
(pg. XX-XXX)

Class Lectures not yet watched... (1)
ITSC XXXX Lecture Video

Lectures related to: Vectors and An...
ITSC XXXX Different Lecture Video
ITSC XXXX Different Lecture Video
ITSC XXXX Different Lecture Video

Example 1: Icons, buttons, color palette, and slider

Signifiers, affordances, and modalities:

Signifiers:

- Play button, Back button, HD/Fullscreen buttons, Loading, Book icons

Affordances:

- Slider
- Buttons
- Recommendations

Modalities:

- Touch

Applicable metaphor:

Device

Description of mapping between metaphor and signifier/affordance/modality:

The buttons are operated through taps like actual buttons. The video player is very similar to the YouTube video players that many are familiar with.

The recommendations are generated automatically through the usage of key words within the title. This is like AI.

The icons are essentially buttons but with a design to mimic the opening of a book to engage the user in learning and productivity time.

IV.   Usability and Evaluation

Audiac's four design goals are:
- o Reduce the stress and difficulty of remote learning
- o Promote remote learning to education systems around the world through the usage of informational lecture that are available to all users of Audiac
- o Connect students with additional sources of information to improve the success of students during remote learning
- o Provide seamless methods and tools to help students understand the material and get the required work done

When conducting the usability study, the goals were to explore the ease of use of the UI and to explore the usefulness of watching lectures at their leisure. For the study, the

participants were all students and there were 4 of them for each session. The data collected will focus on how easy the participants found it to navigate the application and if students could find this useful to use at any given time. I facilitated the study as both the note taker and the facilitator. The participants were each tasked with a set of instructions to carry out. The order of these tasks are listed from simple to complex:

- o Swipe the notification to navigate to the app
- o Play the lecture in full screen
- o Do a chore or set of actions while listening and see if the information was retained
- o Navigate to the main page and read aloud the average and the GPA

Swiping the notification to navigate to the app will measure how easy it is to access. Playing the video will measure how intuitive the UI of the video player is. Doing an action and asking if they still remember the information will test how retainable the information is for multitasking. Navigating to the main page will again test the intuitiveness of the UI and application design and reading aloud the preset scores will see if the user's eyes can distinguish the important information to ensure there is no clutter.

Usability Study Protocol:

- o Greet the participant.
- o Hand them the consent form.
- o Explain to them that I will be conducting the study through the observation method, as well as a documented interview at the end.
- o Verbally tell them the task, as well as hand a sheet of paper with each task listed.
- o If the participant finds the task difficult, write on the paper what was difficult and why.
- o After the participant is finished with the tasks, I will ask them the following and document it on paper:
  - ▪ How hard was it to navigate to the lecture?
  - ▪ Did the convenience make you listen more carefully or distract you instead? Why?
  - ▪ Did you feel the information was retained?
  - ▪ Do you feel this could be useful for learning subjects in school?

Results (*the raw data is located at the Appendix section of the report*):

The goal of the study was to evaluate the ease of use of the UI and to explore the usefulness of watching lectures at their leisure.

In terms of ease of use:

- The UI was consistent and not hard to navigate due to the constant back button allowing the user to return to the main page when needed. It was not hard to watch the lecture and find other lectures. Navigating to the main page and reading the average and GPA was not difficult.

In terms of usefulness:

- Some found it difficult to retain information the first time, but when watching another time, the information was more likely to stick with the user. Nonetheless, it was useful to listen to the lectures while multitasking and felt that they could potentially use this as a tool to aid in remote learning. Some of the participants noted that the related videos section was very useful.

It is apparent that Audiac is not yet complete, and that many changes could drastically improve its usability and effectiveness. Some future changes could include:

- A better way to relay information or test information with the inclusion of post-video quizzes
- A navigation bar to avoid confusion with the different pages
- A more modernized UI to entice more users
- A class chat where students from the same class can discuss and cooperate with each other
- Put labels on the buttons instead of a generic back icon

V. Summary

The design concept of Audiac is a simplistic and easy video retriever and player. It aims to help students by allowing them to reference both their professor's lectures and other lectures from other teachers. This would give students access to more information and different ways to learn subjects the way it makes sense to them. The app allows the user to navigate with a touch modality. With it, they can drag and tap the icons to go to the classes and lectures. Overall, Audiac's prototype was a success in terms of evaluation its potential usefulness as well as its weaknesses in its navigation and practicality. Some options to improve this is to find a way to test the user on the lecture afterwards, include a navigation bar for the application, modernize the UI, include a chatroom for students,

and label the buttons instead of using the back icon. With these changes, Audiac will be improved drastically.
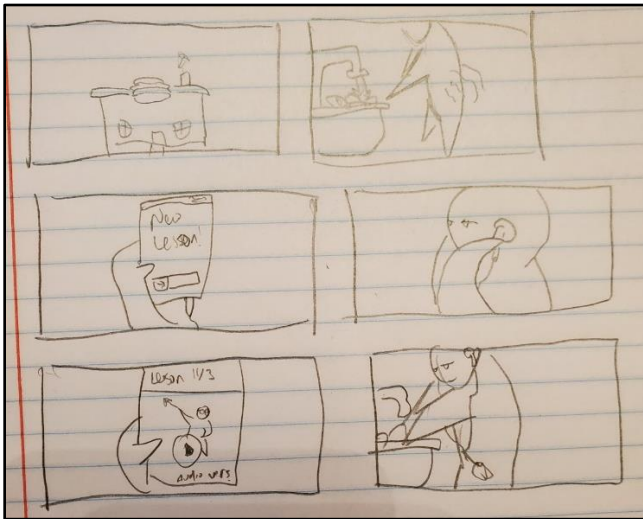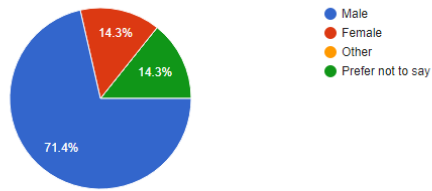
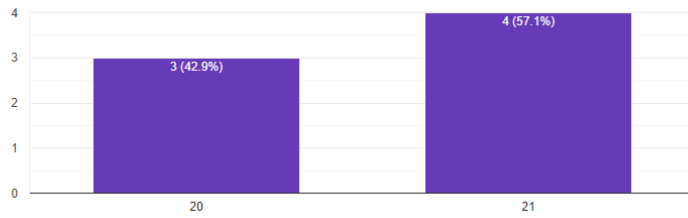**VI.   Appendix**

Figure 4
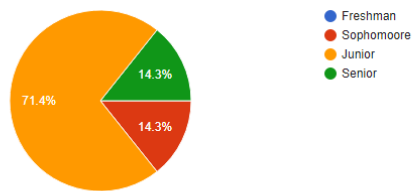
Figure 5

Figure 6

What is your gender?
7 responses

- Male
- Female
- Other
- Prefer not to say

14.3%
14.3%
71.4%

What is your age?
7 responses

3 (42.9%)	4 (57.1%)
20	21

What class are you in?
7 responses

- Freshman
- Sophomoore
- Junior
- Senior

14.3%
71.4%
14.3%

Where are you on this spectrum?
7 responses

- I struggle to afford some things
- I can afford what I need with little conflict
- Helicopters for everybody!

57.1%
42.9%
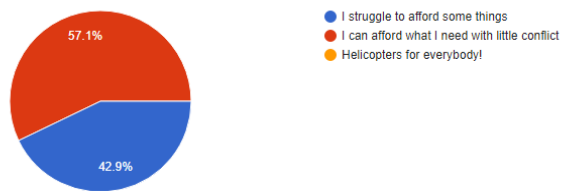
How would you rate your experience with remote learning?
7 responses

1 (14.3%)	1 (14.3%)	2 (28.6%)	2 (28.6%)	1 (14.3%)
1	2	3	4	5

Survey Results:
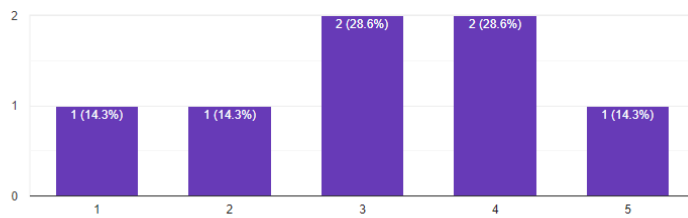
Do you prefer remote learning or in-person learning?
7 responses

- Remote Learning
- In-Person Learning
- Either

57.1%
14.3%
28.6%
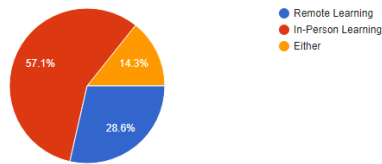
Has remote learning affected the balance between school, work, and home activity? if so please explain how.
7 responses

No
it has
yes! with online learning i spend all of my day doing school work, everyday
Not for me
Remote learning has increased my workload which has thrown the balance between my school and work time.
Yes. Feel as if there is more work to do for classes. Feel as if assignements are due every day.

Describe what a typical in-class session is like when using remote learning.
7 responses

| |
|---|
| You log onto zoom and talk about what the lesson is |
| We usually just talk over zoom and discuss what we are doing for the day |
| We talk over zoom and talk about what we are going to do. |
| it varies, but in my experience the professor will have a short lecture (less than 50 minutes) and then maybe a breakout group and set us free, or the professor just lets us know what we have due for the week, answers questions (if any) and lets us go |
| You join a zoom call go over the lecture for the day get put into a breakout room and work on class work for said class |
| Pre recorded lectures or a Zoom meeting |
| Sitting in on a zoom lecture |

What features would you add to remote learning if you could?
7 responses

none
None
None
more structured classes.
Helpful resources for assignments
more pre recorded lectures, more information available to students.

Did you have any difficulties navigating remote learning tools, and/or struggled to get where you needed to be?
7 responses

- Yes
- No

71.4%
28.6%
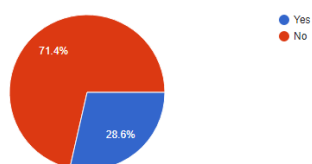
What are the benefits of remote learning? if any?

7 responses

It's convenient

There really are not any benefits, unless if you understand what you are doing

You have more free time.

getting to work at your own pace

For me personally I'm able to stay more focused and do stuff during the say where as if I was on campus the time between classes I probably wouldn't work on much course work

The flexibility that is provided with remote learning.

Being able to sit in on lectures

What are the negatives of remote learning? if any?

7 responses

missing face to face time

not being able to focus

It's less engaging.

getting to work at your own pace

I would say communication is a negative for some people

The workload that is assigned I feel has increased since changing to remote learning.

Harder to retain attention

What are the benefits of in-person learning? if any?

7 responses

easier to ask questions and get to know peers

being able to focus and participate

You are more engaged and can interact physically.

classes have way more structure, i get to listen to lectures everyday, i can work within smaller groups and ask questions when necessary

Being able to get your question answered then and there

In person allows students to better understand material than prerecorded lectures. There is the ability to ask questions as well.

Easier to learn and retain attention

What are the negatives of in-person learning? if any?

7 responses

convenience

not being able to focus

Less time

there are none

I find it hard to focus sometimes because in class I'm in the one place I don't want to be

The negatives would be commuting everyday.

Class times, skipping class

Enter any additional comments you have here:

2 responses

https://youtu.be/dQw4w9WgXcQ?t=42

n/a

Participant A:

Tasks:

Swipe the notification to navigate to the app

- o No difficulties.

Play the lecture in full screen

- o No difficulties finding the full screen button.

Do a chore or set of actions while listening and see if the information was retained

- o Participant chose to do jumping jacks for a minute and retained information afterwards with no difficulty.

Navigate to the main page and read aloud the average and the GPA

- o No difficulties finding the main page and reading the information.

Interview:

How hard was it to navigate to the lecture?

- o Not hard at all.

Did the convenience make you listen more carefully or distract you instead? Why?

- o It helped me listen more carefully because I focused on the lecture more than the action.

Did you feel the information was retained?

- o Yes.

Do you feel this could be useful for learning subjects in school?

- o Yes, being able to learn while doing other things is very helpful.

Participant B:

Tasks:

Swipe the notification to navigate to the app

- o No difficulties.

Play the lecture in full screen

- o No difficulties finding the full screen button.

Do a chore or set of actions while listening and see if the information was retained

- o Participant chose to walk around for a full minute and had retained the information afterwards.

Navigate to the main page and read aloud the average and the GPA

- o No difficulties finding the main page and reading the information, however stated that there was some confusion with the back buttons taking them to different places.

Interview:

How hard was it to navigate to the lecture?

- o Not hard.

Did the convenience make you listen more carefully or distract you instead? Why?

- o It made me listen more carefully because I was only walking, and my attention on the video.

Did you feel the information was retained?

- o Yes.

Do you feel this could be useful for learning subjects in school?

- o Yes, but I think the navigation needs some work to reduce confusion.

Participant C:

Tasks:

Swipe the notification to navigate to the app

- o No difficulties

Play the lecture in full screen

- o No difficulties finding the full screen button

Do a chore or set of actions while listening and see if the information was retained

- o Participant chose to wash dishes while listening and was able to retain most of the information.

Navigate to the main page and read aloud the average and the GPA

- o No difficulties finding the main page and reading the information.

Interview:

How hard was it to navigate to the lecture?

- o Not hard.

Did the convenience make you listen more carefully or distract you instead? Why?

- o Listen more carefully because I had to do something, so listening to the lecture was easier.

Did you feel the information was retained?

- o Yes.

Do you feel this could be useful for learning subjects in school?

- o Yes, it will let students learn whenever so there are no excuses.

Participant D:

Tasks:

Swipe the notification to navigate to the app

- o No difficulties.

Play the lecture in full screen

- o No difficulties finding the full screen button.

Do a chore or set of actions while listening and see if the information was retained

- o Participant chose to game while listening to the lecture, they retained a little of the lecture but not as much as necessary.

Navigate to the main page and read aloud the average and the GPA

- o No difficulties finding the main page and reading the information.

Interview:

How hard was it to navigate to the lecture?

- o It wasn't hard to navigate.

Did the convenience make you listen more carefully or distract you instead? Why?

- o I listened at first but then I got distracted from playing, so I couldn't remember some of the information.

Did you feel the information was retained?

- o Somewhat

Do you feel this could be useful for learning subjects in school?

- o Yes, but you still have to focus on it to fully utilize the lectures.