

## Interview Top Line Report

### Goal and Context:

The purpose of this study is to understand why students behave as they do while waiting on a bus and how the built environment affects their action. This was studied to gain a better understanding of how we can increase student's comfort levels while they wait for a bus at a bus stop.

The data collected during interviews builds off of the field research done by validating, or discrediting, the observations that were made. During field observations there were many students hyper focused on their phones and the interviews allowed me to understand what users were doing while interacting with their phones. The interviews focused on where and why students chose to focus their attention while at a bus stop and student's reasoning behind not only where they are positioning themselves at the bus stop but how they will change this behavior based off of the presence of others.

I interviewed 3 of my classmates for around 30 minutes each. The interviews were conducted on the UW Seattle campus in both libraries and outdoors to accommodate the interview participant's schedules. The main limitation of this study was time. I was only able to interview three participants for a short period of time. Another limitation of this study was the interview questions themselves having a slight bias. I was unaware of the interview questions bias until after two of the three interviews had taken place and chose to keep the same questions for the third interview in order to keep the data consistent.

### Results and Recommendations:

The key findings were focused on trends noticed and support by data collected during interview. Based on the three interview session the main key findings are as follows.

#### Key Finding 1

Label: External factors such as weather and daylight that affect student's behavior and safety

Result: Based on the interview data found in the following proof section, one key finding is that student's behavior will be affected by the weather. Because we are in an urban area students do not feel safe walking alone in the dark regardless of race or gender.

Proof:

- Because we are in Seattle it is often raining. When it is raining she prefers to ride the bus as to minimize how much she gets rained on.

- If it was raining and dark she would take a bus regardless of wait time and she commented that she would hope that there were not many people under the structure so that she could wait under it comfortably.
- She has had many negative experiences with strangers at bus stops. Because of this she hates walking around in the dark, whether or not it is raining, and feels significantly safer when she has her phone and the ability to call someone..

### Key Finding 2

Label: Students motivation and purpose when choosing to wait for and to ride the bus

Result: Based on the interview data found in the following proof section, one key finding is that students generally have a set of predetermined factors that influence if they will wait on the bus to arrive. There are also a small range of factors that go into their decision to ride the bus over other means of transportation.

Proof:

- She rides the bus to get to and from campus for class and work
- She chooses to ride the bus for many reasons including if it is dark out, if it is raining, how lazy or tired she is feeling, and how far she is from home
- An unlimited bus pass is part of the tuition as a UW student. Because he is already paying for it in his tuition he wants to use the bus whenever possible.
- He would also check the bus schedule and if there was a bus scheduled to arrive he would wait. If there was not a bus scheduled for any time soon he would not wait.

### Key Finding 3

Label: How technology and prior knowledge play a role in students comfort levels and affect their actions

Result: Based on the interview data found in the following proof section, one key finding is that students will rely on their prior knowledge when getting to a bus stop. When at the bus stop they will rely on technology to check the bus schedule as well as to pass the time.

Proof:

- When she is unfamiliar with the route she is taking she will use google maps on her phone to route herself where she is going before switching to one bus away to track the bus schedule
- She will use her phone to check bus schedules on one bus away and then keep it running in the background while she browses the internet and listens to music
- She often will spend the bus rides home after class talking on the phone with either her boyfriend or family
- For bus stops that she is familiar with she knows the options for the busses that she can take and is relaxed about getting to the bus stop at any given time.

The three key findings were prioritized as key finding 1: external factors such as weather and daylight that affect students behavior and safety, key finding 2: students motivation and purpose when choosing to wait for and to ride the bus, and key finding 3: how technology and prior knowledge play a role in students comfort levels and affect their actions. They were ordered in this manner due to the prevalence of data found in

the interviews that supported each finding, as well as the importance of the finding to the interview participants. The focus of this study is to improve students experience and comfort, while at a bus stop. The priority of these key findings is supported by the data collected during the interview sessions.

Based off of these key findings i would recommend the following to improve not only student comfort but safety while at a bus stop. First, students feel unsafe when at a bus stop and out in public at night. Because of this i would recommend installing more lighting at bus stops and on the paths that students walk to get to the bus stop. Second, I would recommend increasing the amount of surface area covered by bus stop shelters in order to accommodate more students. Students may choose to wait at the bus stop during inclement weather and need space to not make others uncomfortable while staying dry. Lastly, I would recommend bringing bus stops into the future. Students will rely on their own personal technology and prior knowledge to use the bus system efficiently. Increasing the technology provided at bus stop would decrease the burden on its users. The recommendations above were presented in order of importance. Importance here being determined by ease of implementation, practicality, and direct impact on user's daily life.

### **Next Steps:**

The next step of this field research study is to conduct a survey. During the interview portion I found that external factors affect student's behavior and safety, students have similar motivations to ride the bus, and technology and prior knowledge affect student's actions. I am going to use the survey portion to see if a sampling of my population will validate or disprove these key interview findings. To increase participation of the survey I will keep it limited to quantitative data in which participants will not be required to enter data, only chose responses. This is a limitation because it will not allow me to understand the why behind responses but it will allow me to gain a larger amount of data.

### **Reflection:**

In future field research studies I will schedule my interviews earlier before they are due to allow more time for analysis. The analysis of these interviews were slightly rushed due to lack of time. What surprised me about my field research study was how often follow up questions were answered before I had a chance to ask them.

## Appendices

### Appendix 1. Questions and Protocol

#### Goal:

Design Question: How can we alter the built environment to increase student's comfort levels while they wait for a bus at a designated bus stop on a college campus?

I am choosing to focus on students experience while waiting for a bus on campus, specifically how to provide them with a space that can be adjusted to improve their comfort. A bus is "invisible until it's right in front of you." This means that students have to be vigilant monitoring bus schedules to make sure that they do not miss it and that it does not pass them while they are rushing to the bus stop. When waiting for the bus our environment affects how we perceive how long we have been waiting. As show by researchers in 2014, riders at a "no-shelter stop, riders perceived a 5-minute wait to feel longer than that" and riders at a stop with shelter perceived "a 5-minute wait felt closer to 3 minutes." The built, natural, and digital environments affect our experiences while waiting on a bus.

To begin studying this topic I conducted a field study which resulted in three key findings that will be used to drive forward an interview study, see Appendix 3 for the full field study report. The first key finding that will be used is that students tended to shift where there were standing and or sitting to accommodate others. When a large number of people were present at a bus stop they tended to stand in front of instead of sit on the bus stop benches. When another person moves to sit on a bench that is already occupied the current occupant shifts to provide more room. The second key finding that will be used is that students spend a majority of the time of spent at a bus stop actively engaging with their phone. Many students would occasionally glance at their surroundings before re-engaging with their phone. The third, and final, key finding that will be used is that students would check the route sign or occasionally look up from their current activity and glance around. Some students would spend time looking in the direction of oncoming traffic. Based off of these key findings I am interested in exploring the various factors that go into people's behavior at a bus stop. Particularly if my interview participants have ever chosen to wait somewhere other than the bus stop, such as indoors, for their bus and walk to catch the bus as it is arriving.

#### Research Questions:

The research questions that I am focusing on are as follows:

How long are people waiting at the bus stop?

What are people doing to pass the time while at the bus stop: use their phone, listen to music, read a book, etc.?

Where at the stop are people waiting: closer to the posted route, under shelter, etc.?

How often are people shifting where they are to accommodate others; to provide others room under the shelter, to provide others with more personal space, etc.?

What is the general attitude or mood of people waiting on a bus?

How often are people leaving the bus stop without getting on a bus?

### **Participants:**

My ideal participant is a student at the University of Washington Seattle Campus. They will be between the ages of 18 and 25 and will be a mix of genders, races, and backgrounds. The general user, people who wait for buses at bus stops, is a very diverse population and therefore my participants will be as diverse as possible in the scope of this course. The ideal participant rides the bus at least 5 times a week and spends at least 5 minutes waiting at a bus stop at least twice a week. This is important because it will allow the participant to have fresh experiences to talk about and have a pattern of use to talk about.

To be included in the study participants must fit the following criteria:

- Be a student actively enrolled in classes
- Ride the bus 5 times a week

Study participants will be excluded from the study if they all in the following criteria:

- Is not currently a student enrolled in classes
- Has gone a week without riding the bus in the last two months
- Does not spend at least 5 minutes at a bus stop at least once a week

In order to find participants that fit my exclusion and inclusion criteria I will be recruiting interview participants through personal connections. My ideal participant fits closely with my classmates, so I will be using them as my participants. If I cannot find enough of my classmates to act as participants I will ask my friends that fit the criteria for participation. Once I have the participants I plan on conducting the interviews over coffee in the HUB or in a reserved booth in the Allen Research Commons.

### **Method:**

A semi-structured interview approach is going to help me learn about my design space because it will allow me the opportunity to steer the conversation in a way that will help answer my design question while allowing room for new insights. By having some questions laid out before the interview I will have a clear sense of direction and will not seem unprepared. Because the interview is only semi-structured I will be able to follow the natural direction of the conversation and allow for new discoveries to be made. For example, I may start by asking the participant about what they do when at the bus stop expecting them to respond with something along the line of play on their phone. But, the conversation may lead into a new discovery about what the participants do when they see the bus coming.

Due to the nature of my relationships with the people I will be recruiting to participate the interviews will all be friendly in nature. I know all the participants well so I will begin

the interview with some slight chatting as to catch up with the participant and get that out of the way before the interview. Once we are caught up I will ask them to sign a consent and confidentiality agreement as well as get their permission to record the interview. During the interview I will make sure to keep the conversation on track and not resort into chatting like friends. I am going to follow the order of the questions as written below because they are ordered to begin with intent questions, then go into specific questions, and end with validation questions. That being said if a question feels redundant because the participant answered the question during an earlier question I will skip it. I will also room for any questions that may come up from points made by the participant. I will end the interview by asking the participant if they have any questions for me or if they have anything they would like to say that was no touched on. The biases that I will be dealing with during these interviews is the fact that the participants are my friends. Because they are my friends I will have to work on conducting the interview professionally and not bias the results by assuming I know how my participants would answer. To keep unexpected or accidental biases at a minimum I will ensure to keep an open mind during the interviews and not sway the conversation to how I want the results to look.

Question: Why do you ride the bus?

Rational: To understand the user's goals when deciding to use the bus.

Follow Up Questions:

- How often would you estimate you ride the bus in a single school week?
- What goes into your decision to ride the bus, say over walking or riding a bike to your destination?

Question: Tell me about the last time you waited at a bus stop for a bus.

Rational: To establish and understand what actions the user is doing while at a bus stop.

Follow Up Questions:

- Walk me through your decisions on where you stood or sat.
- Would you say that the bus stop is regularly crowded?
- How long did you wait for the bus before leaving either on a bus or on foot?

Question: Walk me through your decisions when choosing when to go to the bus stop.

Rational: To understand if the user is checking the bus schedule before they go to the bus stop and what platform the user is checking the bus schedule on.

Follow Up Questions:

- Do you check the bus schedule before arriving at the bus stop?
- How would your familiarity with this bus stop and its affiliated routes affect your decisions?

Question: Walk me through what you did during a time in which you spent around or above 5 minutes waiting at a bus stop.

Rational: To establish what students are doing while at a bus stop and be able to ask question as to why they are doing those things.

Follow Up Questions:

- If you used your phone would you mind walking me through what you used your phone to do?
- Would you check, on any platform, when your desired bus was coming? If so how would you, on what platform, check the bus schedule?

Question: Given a situation where you had gotten out of class after dark, it was raining, and your phone had 5% battery. What would you decide to do in regards to waiting for a bus?

Rational: To validate design decisions made during the field study report. Also, to understand what the participant would do during inclement weather after dark.

Follow Up Questions:

- How would you use a power outlet if it was provided under the bus stop shelter would you use it?
- Walk me through how the rain and darkness together would affect where or if you waited on the bus.

### Work Back Schedule:

	Monday	Tuesday	Wednesday	Thursday	Friday	Sat/Sun
April	23	24	25	25	27	28,29
			Interview Session One	Transcribe Session One Notes	Interview Session Two	Transcribe Session Two Notes
May	30	1	2	3	4	5,6
	Interview Session Three	Transcribe Session Three Notes		Write Interview Report	Write Interview Report	Write Interview Report
	7	8	9	10	11	12,13
		Finalize Report	Interview Report Due 11 AM			

### Data Collection:

I will conduct three separate approximately thirty-minute sessions of semi-structured interviews. During which I will be conversing with participants while following a basic list of questions and taking notes on a laptop. With permission, I will be audio recording each interview session as to be able to focus more on the interpersonal interaction and less on noting every word said. I will ensure that my participants sign consent and confidentiality agreements before conducting the interview as to maintain an ethical study. After the interview is complete I will listen to the recording of the interview and take detailed notes of the participants answers to my various questions.

## Appendix 2. Interview notes

### Participant 1:

#### Question:

- Why do you ride the bus?
  - She rides the bus to get to and from campus
  - Riding the bus is typically a faster means of transport than walking
  - She is often leaving her house later than she would like and takes the bus in order to get to campus on time. If she were to walk to campus at the time she usually leaves the house she would be late to class
  - She prefers to not have to walk in the rain. Taking the bus provides her the option to be outside in the rain for a shorter period of time.

#### Follow Up Questions:

- How often would you estimate you ride the bus in a single school week?
  - She has classes 4 days a week and rides the bus roughly 7 times a week
  - She rides the bus mostly in the morning on her way to class and will often ride it home as well
- What goes into your decision to ride the bus, say over walking or riding a bike to your destination?
  - Because we are in Seattle it is often raining. When it is raining she prefers to ride the bus as to minimize how much she gets rained on.
  - She does not mind walking places but is often running late and does not have the time to walk to her destination
  - She does not own a car or bicycle therefore making buses her main means of transportation
    - She also noted that she does not like bicycling

#### Question:

- Tell me about the last time you waited at a bus stop for a bus.
  - The last time she had spent time waiting at a bus stop was the day before the interview took place
  - She was coming home from being out of town and therefore had both a suitcase and backpack with her
  - She rode the link light rail to Husky Stadium where she then walked to a bus stop nearby
  - She was aware that many of the buses that stopped at that stop went in the direction of her house
  - When approaching the bus stop one of the buses she could take was pulling away
  - Because she had luggage with her she chose to wait on the next bus no matter how long it took
  - Both One Bus Away and the physical display at the bus stop had the next buses arrival time off by 3 to 4 minutes

#### Follow Up Questions:

- Walk me through your decisions on where you stood or sat.
  - She almost never chooses to sit. Stating that the seats are often gross and wet.

- The bus stop in this instance was crowded and because she had both a suitcase and backpack she chose to neither sit or stand under the shelter
- She chose to stand near the route sign and proceeded to recount a time in which she was waiting at the bus stop when a the bus she was waiting on drove pass without stopping.
- Would you say that the bus stop is regularly crowded?
  - Depends on the bus stop that she chooses to go to
  - Often about 5 people at the bus stop with her so she would not consider it crowded
  - When at these bus stops she often chooses to stand to the side of the shelter near the route sign as to not stand too close to someone
  - She state that standing too close to someone makes her uncomfortable
- How long did you wait for the bus before leaving either on a bus or on foot?
  - It differs based off of the time of day
  - In the mornings when she is on her way to class she will not wait more than 5 minutes for a bus
    - If she sees that the bus will take more than 5 minutes she will start walking and possibly catch the bus at a later stop on her route
  - In the afternoons when she is on her way home she is often tired and much more willing to wait 10 or more minutes for a bus

#### Question:

- Walk me through your decisions when choosing when to go to the bus stop.
  - She stated that she never bases when she goes to a bus stop on the bus schedule
  - In the mornings she has three bus stops close enough to her house that she finds it to be more efficient to leave her house when she is ready then to leave for a specific bus.
    - She will check the local bus stops to see which has a bus arriving soonest and then walk to that bus stop and catch that bus

#### Follow Up Questions:

- Do you check the bus schedule before arriving at the bus stop?
  - Yes, she will check the bus schedule on the one bus away app after leaving her house
- How would your familiarity with this bus stop and its affiliated routes affect your decisions?
  - Due to her familiarity with the set of bus stops she uses she can leave her house when ever she is ready to go. When unfamiliar with a bus stop she is more conscios about when she leaves to get to the bus stop.
    - she is familiar enough with specific route that she knows if she sees the bus leaving one stop she will have enough time to walk to its next stop and catch it there
  - While she was becoming familiar with the bus stops she frequently uses she would leave with 20 minutes to spare and plan on walking.
    - If a bus was nearby and convenient for her to take while she was walking she would get on

- this is how she became familiar with the current routes that she uses

Question:

- Walk me through what you did during a time in which you spent around or above 5 minutes waiting at a bus stop.
  - This main question was answered during the second main question asked during the interview

Follow Up Questions:

- If you used your phone would you mind walking me through what you used your phone to do?
  - When she is unfamiliar with the route she is taking she will use google maps on her phone to route herself where she is going before switching to one bus away to track the bus schedule
  - during a typical encounter she will use her phone to check bus schedules on one bus away and then keep it running in the background while she browses the internet and listens to music
- Would you check, on any platform, when your desired bus was coming? If so how would you, on what platform, check the bus schedule?
  - She stated that she uses the one bus away app every time that she rides the bus
  - She will occasionally use google maps and will almost never check the printed route schedule available to the bus stop itself

Question:

- Given a situation where you had gotten out of class after dark, it was raining, and your phone had 5% battery. What would you decide to do in regards to waiting for a bus?
  - Her first instinct would be to not go to the bus stop but to go somewhere inside on campus to get a plan of action together
    - her plan of action would then be to go to a bus stop that she is familiar with
    - she would chose to wait for the 67 bus because she is most familiar with it and knows that it does not route through the ave and comes at least every 20 minutes
  - She would try to rely on prior knowledge but if a bus that she is familiar with does not come within 20 minutes she would take out her laptop and attempt to check bus schedules online

Follow Up Questions:

- How would you use a power outlet if it was provided under the bus stop shelter would you use it?
  - When asked this question she raised her eyebrows while enthusiastically saying “yeah!”
- Walk me through how the rain and darkness together would affect where or if you waited on the bus.
  - If it was dark and not raining she would chose to take a bus for safety reasons

- if it was raining and not dark she would likely try to take a bus but would not spend much time waiting at the bus stop before choosing to walk
- if it was raining and dark she would take a bus regardless of wait time and she commented that she would hope that there were not many people under the structure so that she could wait under it comfortably

## Participant 2:

### Question:

- Why do you ride the bus?
  - She rides the bus to get to and from campus for class and work even though she does not live that far from campus she chooses to bus instead of walk
  - She does not have a car and finds ride sharing services to be too expensive so the bus is her main form of transportation

### Follow Up Questions:

- How often would you estimate you ride the bus in a single school week?
  - She has class 3 days a week and rides the bus to and from class as well as work
    - She rides the bus at least twice a day which totals about 10 times a week
- What goes into your decision to ride the bus, say over walking or riding a bike to your destination?
  - In the mornings she chooses to ride the bus because it takes less time to get to campus meaning that she can sleep in longer
  - In the evenings, after school, she chooses to ride the bus for many reasons including but not limited to if it is dark out, if it is raining, how lazy she is feeling, and how far she is from home
  - She has had many negative experiences with strangers at bus stops and therefore feels safer taking a bus home when it is dark

### Question:

- Tell me about the last time you waited at a bus stop for a bus.
  - The last time she had waited on a bus was the morning of the interview
  - She was eating breakfast and listening to music while standing at the bus stop
    - she will often listen to music or at least have her headphones in to reduce the amount that strangers attempt to interact with her based off of negative and unsafe past experience
  - She noted that she is able to tell when a bus has come based off of the crowd at the bus stop. When there is no one at the bus stop a bus came recently and she tries to find a different bus. When there is a crowd at the bus stop she hurries to the stop because a bus is likely to come soon.

### Follow Up Questions:

- Walk me through your decisions on where you stood or sat.
  - This is her usual bus stop so she is familiar with the bench

- The bench is melted on one side so there is only room for one person on the bench
- When she arrived on this specific day there was already someone sitting on the bench so she chose to stand near the bench
- Would you say that the bus stop is regularly crowded?
  - She is often at the bus stop during peak times in the mornings so there are often 5 or more people at the bus stop, which she considered crowded
    - she noted that at this bus stop when there are 5 or more people at the bus stop everyone lines up to get on the bus
  - She noted that when it is raining people tend to try and crowd under the bus shelter
- How long did you wait for the bus before leaving either on a bus or on foot?
  - If she is on her way to class then she chose to not wait for a bus and will check if any buses nearby are going in the same direction

Question:

- Walk me through your decisions when choosing when to go to the bus stop.
  - She stated that she is very disorganized, has no idea what the bus schedule is, and does not plan on learning it
  - During a typical morning she will leave her house 15 to 20 minutes before class and check one bus away as she walks to the bus stop
  - She is not someone who becomes anxious about being late so she will go to her typical bus stop and wait on her bus, even if she is late “it is okay”
  - If one bus away says that the bus is coming within 3 minutes she will run to the bus stop to try and make it on time

Follow Up Questions:

- Do you check the bus schedule before arriving at the bus stop?
  - Almost every time she is on her way to the bus she will use one bus away to check the bus schedule
- How would your familiarity with this bus stop and its affiliated routes affect your decisions?
  - For bus stops that she is not familiar with she will make a point to leave to get to the bus stop in a timely manner. She is unfamiliar with the options for busses to be taken from the stop so she will put effort into getting to the bus stop with time to catch a bus.
  - For bus stops that she is familiar with she knows the options for the busses that she can take and is relaxed about getting to the bus stop at any given time. She is knowledgeable of the frequency of the busses that come to the bus stop and will not take time to look up or memorize the bus schedule

Question:

- Walk me through what you did during a time in which you spent around or above 5 minutes waiting at a bus stop.
  - She said that she has to wait at a bus stop for more than 5 minutes pretty frequently.
  - The last time that she remembers waiting on the bus for over 5 minutes was last week.

- She sat at a bus stop to wait on a bus and when it arrived she went to look for her husky card. she could not find her husky card in time to board the bus and therefore had to wait for the next bus. She did not see this as a problem because one bus away showed a bus scheduled for 2 minutes later. The bus scheduled for the following 2 minutes never showed and she therefore had to walk to campus.

Follow Up Questions:

- If you used your phone would you mind walking me through what you used your phone to do?
  - In the mornings she is often too tired to do anything but eat breakfast and look around
  - She is not from washington and is very close to her family in california so she often will spend the bus rides home after class talking on the phone with either her boyfriend or family
- Would you check, on any platform, when your desired bus was coming? If so how would you, on what platform, check the bus schedule?
  - She dislikes finding directions so if she is going somewhere she is unfamiliar with she will use google maps to get directions and then follow up with one bus away
  - When she is familiar with the route that she is going she will check on the one bus away app because she finds it to be the most accurate app

Question:

- Given a situation where you had gotten out of class after dark, it was raining, and your phone had 5% battery. What would you decide to do in regards to waiting for a bus?
  - This is a “pretty typical” situation for her
  - Assuming she is heading home she would head to a bus stop that she is familiar with
  - She is familiar with multiple routes that can take her to where she lives and knows that most all of them stop at quite a few stops near her classes.
    - because of this familiarity with the routes and stops she can assume that a bus that can take her home will come in a decent amount of time

Follow Up Questions:

- How would you use a power outlet if it was provided under the bus stop shelter would you use it?
  - She was unsure on this question in the beginning. She answered yes then maybe then went on to say that it would depend on if she had a phone charger with her
  - She also commented on how someone at the bus stop would likely be using the outlet before her anyways
  - If she is at an unfamiliar bus stop then she would want to access to an outlet to allow her to stay safe
    - She has used a random power outlet near a tree before to charge her phone before going to a bus stop so that she could feel safe

- If she is familiar with the bus stop and planning on going home then she would not feel the need to charge her phone. She knows that it is a short bus ride and the bus comes often enough that the effort to plug in a charger is not worth the time.
- Walk me through how the rain and darkness together would affect where or if you waited on the bus.
  - She has had many encounters at bus stops and on busses that make her feel unsafe after dark.
    - Because of this she hates walking around in the dark, whether or not it is raining, and feels significantly safer when she has her phone and the ability to call someone
    - When she is having to go home after dark she feels safer at a bus stop with people at it or at one on a busy street
  - Even in the dark and rain she would chose to wait at a bus stop for the bus to come for up to an hour

### **Participant 3:**

#### Question:

- Why do you ride the bus?
  - He rides the bus because he has no car, bike, or other forms of transport.

#### Follow Up Questions:

- How often would you estimate you ride the bus in a single school week?
  - He has classes four days a week and rides the bus to and from school so he rides the bus at least 8 times a week
- What goes into your decision to ride the bus, say over walking or riding a bike to your destination?
  - An unlimited bus pass is part of the tution as a UW student. Because he is already paying for it in his tution he wants to use the bus whenever possible.
    - If he had to pay for a bus pass then he would likely use the bus less often
    - "I'm already paying for it so why not use it"
  - He is also motivated to use the bus because it is a faster means of transportation then walking. He is often late to class and the bus gets him to class faster then he could get there is he walked

#### Question:

- Tell me about the last time you waited at a bus stop for a bus.
  - The last time that he had waited at a bus stop was the day before the interview
  - He had gone to the bus stop with the intention of catching a specific bus but it never showed
    - he then checked one bus away and saw that the following bus was delayed by 10 minutes so he decided to wait for it

#### Follow Up Questions:

- Walk me through your decisions on where you stood or sat.

- Because he is familiar with the bus stop he has a general idea of where the bus stops and opens its doors so he generally stands in that spot while waiting for the bus
- When it is raining and there are not many people at the bus stop he will occasionally sit on the bench or stand under the shelter
- Would you say that the bus stop is regularly crowded?
  - He said that the bus stop is not normally crowded, meaning that there are typically 3 to 4 people at the bus stop
  - The bus stop tends to be more crowded if the buses have not come in a while
- How long did you wait for the bus before leaving either on a bus or on foot?
  - he would wait between 8 and 10 minutes for a bus to arrive, but if it is raining he would wait even longer
  - he would also check the bus schedule and if there was a bus scheduled to arrive he would wait. if there was not a bus scheduled for any time soon he would not wait.

Question:

- Walk me through your decisions when choosing when to go to the bus stop.
  - The first thing that he does in the mornings is check the bus schedule on one bus away
  - because he is familiar with his morning route he leaves about 5 minutes before the bus is scheduled to arrive
  - if he has to catch a bus other than his regular bus then he will try to leave to get to the bus stop as early as possible

Follow Up Questions:

- Do you check the bus schedule before arriving at the bus stop?
  - He checks the bus schedule before leaving the house. he said that the bus schedule is the biggest factor as to when he plans to leave to get to the bus stop
- How would your familiarity with this bus stop and its affiliated routes affect your decisions?
  - His familiarity with the bus stop does not really affect his decisions. The only thing that he links familiarity with the bus stop to is remembering where the bus doors open when it stops

Question:

- Walk me through what you did during a time in which you spent around or above 5 minutes waiting at a bus stop.
  - on the specific, most recent, day that he remembered waiting at a bus stop he was attempting to be early to class. He checked the bus schedule on one bus away and left to get to the bus stop 5 minutes before the bus was scheduled to arrive but the bus never arrived.
    - when at the bus stop he checked one bus away at least once a minute and noted that there was another bus arriving in 17 minutes

- because he was nervous about being late to class he checked if there was another bus coming sooner at another bus stop but decided to wait at the bus stop he was already at

#### Follow Up Questions:

- If you used your phone would you mind walking me through what you used your phone to do?
  - When at a bus stop he will put on music then look at his surroundings, mainly focusing his attention on oncoming traffic.
  - He will check one bus away at least once a minute and will occasionally browse the internet after checking one bus away
- Would you check, on any platform, when your desired bus was coming? If so how would you, on what platform, check the bus schedule?
  - He mainly uses one bus away

#### Question:

- Given a situation where you had gotten out of class after dark, it was raining, and your phone had 5% battery. What would you decide to do in regards to waiting for a bus?
  - in this situation he would walk to the bus stop that he usually takes to get home. Once at the bus stop he would check one bus away to get an estimate of when the next bus that he could take to get home was.
    - if the bus was arriving within 10 minutes he would wait at that bus stop
    - if the bus was arriving later than 10 minutes he would check what other busses were coming to nearby bus stops and go wait there
  - if no buses were arriving within 30 minutes then he would chose to walk home
    - He would feel slightly unsafe walking home but due to his stature he would walk home
    - he would feel slightly scared and would often check over his shoulder while walking home

#### Follow Up Questions:

- How would you use a power outlet if it was provided under the bus stop shelter would you use it?
  - He would use it if he had a phone charger with him. he is not typically the type of person to carry a phone charger with him.
  - He would want to use the outlet but only carries a usb cable with him, not a power adapter. if he had the ability to use the power outlet he would
- Walk me through how the rain and darkness together would affect where or if you waited on the bus.
  - He is more inclined to catch a bus if it is dark outside but will not bother to try and stand under the shelter because he does not mind standing
  - if it was raining he is more likely to try and wait under the bus shelter but would not be opposed to walking
  - when both dark and raining he will be more willing than usual to wait for a bus for a prolonged period of time

## Appendix 3. Images of Data Analysis

Weather - Purpose - student actions - comfort - possessions/technology usage - opinions/feelings/prior knowledge

Question:

- Why do you ride the bus?
  - She rides the bus to get to and from campus
  - Riding the bus is typically a faster means of transport than walking
  - She is often leaving her house later than she would like and takes the bus in order to get to campus on time. If she were to walk to campus at the time she usually leaves the house she would be late to class.
  - She prefers to not have to walk in the rain. Taking the bus provides her the option to be outside in the rain for a shorter period of time.
  - She rides the bus to get to and from campus for class and work even though she does not live that far from campus she chooses to bus instead of walk
  - She does not have a car and finds ride sharing services to be too expensive so the bus is her main form of transportation
  - He rides the bus because he has no car, bike, or other forms of transport.

Follow Up Questions:

- How often would you estimate you ride the bus in a single school week?
  - She has classes 4 days a week and rides the bus roughly 7 times a week
  - She rides the bus mostly in the morning on her way to class and will often ride it home as well
  - She has class 3 days a week and rides the bus to and from class as well as work
    - She rides the bus at least twice a day which totals about 10 times a week
  - He has classes four days a week and rides the bus to and from school so he rides the bus at least 8 times a week
- What goes into your decision to ride the bus, say over walking or riding a bike to your destination?
  - Because we are in Seattle it is often raining. When it is raining she prefers to ride the bus as to minimize how much she gets rained on.
  - She does not mind walking places but is often running late and does not have the time to walk to her destination
  - She does not own a car or bicycle therefore making busses her main means of transportation
    - She also noted that she does not like bicycling
  - In the mornings she chooses to ride the bus because it takes less time to get to campus meaning that she can sleep in longer
  - In the evenings, after school, she chooses to ride the bus for many reasons including but not limited to if it is dark out, if it is raining, how lazy she is feeling, and how far she is from home
  - She has had many negative experiences with strangers at bus stops and therefore feels safer taking a bus home when it is dark

- therefore feels safer taking a bus home when it is dark
- An unlimited bus pass is part of the tuition as a UW student. Because he is already paying for it in his tuition he wants to use the bus whenever possible.
  - If he had to pay for a bus pass then he would likely use the bus less often
  - "I'm already paying for it so why not use it"
- He is also motivated to use the bus because it is a faster means of transportation than walking. He is often late to class and the bus gets him to class faster than he could get there if he walked

Question:

- Tell me about the last time you waited at a bus stop for a bus.
  - The last time she had spent time waiting at a bus stop was the day before the interview took place
    - When approaching the bus stop one of the busses she could take was pulling away
    - Because she had luggage with her she chose to wait on the next bus no matter how long it took
    - Both One Bus Away and the physical display at the bus stop had the next buses arrival time off by 3 to 4 minutes
  - The last time she had waited on a bus was the morning of the interview
  - She was eating breakfast and listening to music while standing at the bus stop
    - she will often listen to music or at least have her headphones in to reduce the amount that strangers attempt to interact with her based off of negative and unsafe past experience
  - She noted that she is able to tell when a bus has come based off of the crowd at the bus stop. When there is no one at the bus stop a bus came recently and she tries to find a different bus. When there is a crowd at the bus stop she hurries to the stop because a bus is likely to come soon.
  - The last time that he had waited at a bus stop was the day before the interview
  - He had gone to the bus stop with the intention of catching a specific bus but it never showed
    - he then checked one bus away and saw that the following bus was delayed by 10 minutes so he decided to wait for it

Follow Up Questions:

- Walk me through your decisions on where you stood or sat.
  - She almost never chooses to sit, stating that the seats are often gross and ...