

APPENDICES

Appendix A

Thematic Analysis

Below is a more detailed figure of the thematic analysis codes and themes.

Theme	Sub-theme
Community	<p>Awareness of issues and importance of issues</p> <p>Belonging in the community</p> <p>Empathy for others in the community or imagined experiences of others</p> <p>Past experiences in the community</p> <p>Feeling disconnected from community</p>
Reflection	<p>Feeling the data represents what you expected</p> <p>Learning</p> <p>Personal experiences with mental or physical health</p> <p>Positive feelings on app or design</p> <p>Applications or usefulness of the app and the experience</p>
Hindrances to participation, use or interpretation	<p>Being initially confused but finding it easy to use later</p> <p>Blaming themselves for finding the app difficult</p> <p>Bugs or missing information</p> <p>Desiring non-implemented features</p> <p>Features perceived as hard to use</p> <p>Wanting alternate mode of information visualization</p> <p>Not paying attention to content due to interface being too distracting</p> <p>Perceiving app as inefficient for information retrieval</p> <p>User error</p>

Table A.1: Thematic analysis main themes and sub-themes

Appendix B

Survey Tools

Below are the complete survey tools used. Please find the citations for each here Community Connectedness Scale [33], Reflection Inventory[11], and the Microsoft Desirability Toolkit [10]

B.1 Adapted Community Connectedness

1. You feel you are a part of the Waterloo community.
2. Participating in the Waterloo community is a positive thing for you.
3. You feel a bond with the Waterloo community.
4. You are proud of the Waterloo community.
5. It is important for you to be aware of issues others face in your community
6. I feel aware of issues that others face in my community

B.2 Adapted Reflection Inventory

1. The experience gives me ideas on how to overcome challenges
2. I learned from exploring the data

3. I enjoyed exploring the data
4. I reflected on my own experiences with mental health
5. The app would help me discuss mental health and resources with others

B.3 Demographics Questions

1. What is your Participant ID
2. Please select your gender (Man, Woman, Non-binary, Prefer not to disclose, Prefer to self-describe)
3. Please select your sex (Male, Female, Prefer not to disclose, Prefer to self-describe)
4. Please enter your age
5. Please select the highest level of education you have completed (12th grade or less, Graduated high school or less, Some college, no degree, Associate degree, Bachelor's degree, Post-graduate degree, Prefer not to disclose)
6. Are you or have you been a college or a university student?
7. What is your relation to the University of Waterloo? (Undergraduate Student, Graduate Student, Alum, Faculty, Other)
8. How many years would you consider yourself to be part of the University of Waterloo Community?
9. What is your occupation?
10. Do you have experience with Headset AR/Headset VR?
11. If yes, please describe your experience
12. Do you have experience with mobile AR?
13. If yes, please describe your experience
14. What smartphone do you have?

B.4 Desirability Toolkit

Below are all 25 words from the desirability toolkit for participants to choose from.
“Select all words that you think apply to your AR experience“

- Annoying
- Boring
- Compelling
- Confusing
- Creative
- Cutting edge
- Easy to use
- Empowering
- Engaging
- Hard to Use
- High quality
- Impersonal
- Innovative
- Irrelevant
- Meaningful
- Not Valuable
- Overwhelming
- Patronizing
- Personal

- Poor quality
- Relevant
- Slow
- Stressful
- Too Technical
- Useful

Appendix C

Ethics Application

PROTOCOLS



#43374 - Fostering Community Connectedness Through Interactive Augmented Reality Information Visualization

Protocol Information

Review Type	Status	Approval Date	Renewal Date
Expedited	Approved	Oct 21, 2022	Nov 15, 2023
Expiration Date	Initial Approval Date	Initial Review Type	
Dec 07, 2023	Dec 06, 2021	Expedited	

Feedback

Approval Comment

Renewal approved. Study may continue for another 12 months- JE

Protocol Renewal Form

Renewal form

What kind of application are you renewing?

Standard Application/Imported Record

What is the status of the study?

Participants are being recruited or participation is ongoing

Approximately how many participants are left to recruit?

We are awaiting reviews for a paper on this study and anticipate more participants may be needed. Potentially 10-20 more participants may be required.

In the past 12 months, have any participants withdrawn from the study?

No

In the past 12 months, have any of the following issues occurred, but have not been reported to Research Ethics?

No unreported events/changes

Does your project involve [research with Indigenous people](#)?

No

Does the study involve the delegation of a [controlled act](#)? (e.g., venipuncture, ultrasound, x-ray, etc.)

No

Renewal Confirmation

By submitting this renewal application I am requesting to extend the study another 12 months

The following list outlines project changes that typically need to receive ethics clearance through an amendment to the project prior to implementing the change.

General Information

Only the Principal Investigator/Faculty Supervisor can submit the application. This acts as a signature indicating approval of the application.

Principal Investigator / Faculty Supervisor

James Wallace

Department

School of Public Health Sciences

Study title

Fostering Community Connectedness Through Interactive Augmented Reality Information Visualization

General Questionnaire

Indicate the type of application you would like to complete

Standard application *

* The Standard application is for faculty level research and thesis level research.

** The course project application is for (non-thesis) course based research and can be completed by students or the course instructor

Please confirm:

I understand that the type of applications listed above determine the form I am about to complete. If I have chosen the incorrect form I acknowledge that I may need to complete a new application.

People

University of Waterloo research team

Person

James Wallace

Waterloo Department

School of Public Health Sciences

Email Address

jrwallac@uwaterloo.ca

Phone

Researcher Role

Principal Investigator

Permissions

Full Access

Has this person completed the CORE (TCPS2) tutorial?

Yes

Date of completion on TCPS2 certificate (Required)

January 21, 2013

Upload a copy of the TCPS2 certificate (Highly recommended, optional at this time)

[TCPS2_CORE_CERTIFICATE.PDF](#)

As per the Waterloo policy on [mandatory research ethics training](#), if you completed the TCPS2 tutorial more than 5 years ago, you may be asked to update your training within the next 6 months. You will be notified by email if this is the case.

Person

Rachel Woo

Waterloo Department

School of Public Health Sciences

Email Address

r3woo@uwaterloo.ca

Phone

Researcher Role

Student investigator

Permissions

Full Access

Has this person completed the CORE (TCPS2) tutorial?

Yes

Date of completion on TCPS2 certificate (Required)

May 8, 2021

Upload a copy of the TCPS2 certificate (Highly recommended, optional at this time)

[TCPS2_CORE_CERTIFICATE.PDF](#)

As per the Waterloo policy on [mandatory research ethics training](#), if you completed the TCPS2 tutorial more than 5 years ago, you may be asked to update your training within the next 6 months. You will be notified by email if this is the case.

Person

Daniel Harley

Waterloo Department

Stratford School of Interaction Design and Business

Email Address

daniel.harley@uwaterloo.ca

Phone

Researcher Role

Faculty supervisor

Permissions

Full Access

Has this person completed the CORE (TCPS2) tutorial?

Yes

Date of completion on TCPS2 certificate (Required)

May 6, 2021

Upload a copy of the TCPS2 certificate (Highly recommended, optional at this time)

[HARLEY_CORECERTIFICATE-MERGED.PDF](#)

Do you have any investigators external to the University of Waterloo

No

General details

Is this new study related to any previous application?

No

What is the estimated start date and end date for the study?

Start Date

August 1, 2021

End Date

July 31, 2022

Does this research require approval from a UWaterloo departmental committee?

Not a department requirement

What is the level of the research to be conducted? Choose one.

Master's thesis

Will this study involve Wilfrid Laurier University, Western University, Conestoga College or Local hospitals covered by the Tri-Hospital Research Ethics Board (Cambridge Memorial Hospital, Grand River Hospital and St. Mary's General Hospital)?

No

Has a version of this study been disapproved or rejected by any Research Ethics Board/Committee?

No

Special Instructions RE: [Research During COVID-19 Pandemic](#)

Are you proposing in this application a study that involves in-person (face-to-face) research activities either on-campus or off-campus?

No

Study description

State your research question(s)

Information visualization is an essential field in order to discover how to best communicate information. However, information visualization is not well explored for the domains of location based data, augmented reality (AR) as well as community data. Therefore, this study will visualize data relevant to the University of Waterloo community using AR to investigate the following questions. 1. Is location related AR visualization an effective and useful way to display information? 2. Can data visualization make an individual feel more connected to their community? 3. Does the amount of time spent on a visualization affect feelings of community connectedness?

Provide a clear, detailed description of the purpose, hypothesis, aim, and objectives of this study

The purpose of this study is to assess the viability and usefulness to the community of augmented reality visualizations. While some work has been done on how different interaction techniques can result in bonding with data, research hasn't investigated how visualizing data related to a community affects feelings of belonging within the community. To explore this we will design an interactive AR application based on information about and related to the University of Waterloo. This visualization will potentially explore data related to the University of Waterloo such as demographics and mental health. Participants will screen records as they experience the visualization and be observed through a online meeting. The participants will participate in the visualizations and answer questions to ensure the participant is understanding the information. Afterwards, participants will fill out surveys related to demographic information, a survey/semi-structured interview on community connected adapted from Connectedness to the LGBT Community Survey. Participants will also assess application usability from the Desirability Toolkit and answer general questions on if the tool was effective, . The main goal is to assess the viability of this mode of information visualization and its potential benefit to the broader community. We hypothesize that users that participate in the visualization may feel more connected and informed of

their community. This study will contribute to the field of data driven narratives and assess how AR can be used to educate and inform a community.

Provide background information, a rationale, and justification for conducting this study. Describe why the research is being done and what research has already been done in this area. Be sure to explain why this research is important.

Increasingly, people are becoming more and more immersed in the virtual world. Virtual environments are rapidly becoming a pervasive high fidelity means of interaction. The COVID19 pandemic has brought this fact into stark relief. Already there is increased adoption of online technologies and all aspects of our lives have become entangled in the question of how to create collaborative and efficient spaces for people to live their lives. Although immersive technologies are not yet commonplace, it will become normal for people to interact and learn through augmented reality (AR) which merges 3D visualizations with the real world. As 5G and lidar mobile devices emerge onto the market, visualizations will become more common and high fidelity. Even now AR is ripe for exploration as in 2017, 92% of Americans aged 18-29 had a smartphone. One largely unexplored aspect of AR is community driven information visualization. While currently, ordinary people are not creating AR environments, eventually tools will be made to lower the barrier of entry enough that ordinary people will be creating and exchanging location based AR. This boom will open up the possibility for a community created and driven narrative. Our work will explore how AR location based visualizations about a community can make a people feel more connected to their virtual and physical environment. While much work has been done on location based AR in the education, construction, and medicine there is a dearth of research looking into how information visualization and AR interact to foster community. Participants will consent to be involved in the study. Then, they will be asked to book a time to participate, download the app and fill out demographic and initial questions. During the online study participants will experience visualizations about the Waterloo community. Afterwards, participants will fill out surveys on community connectedness, usability and questions if the tool waseffective. Afterwards, there will be a semi-structured semi-structured interview. The main goal is to assess the viability of this mode of information visualization and its potential benefit

to the broader community. We hypothesize that users that participate in the visualization may feel more connected and informed of their community. This study will contribute to the field of data driven narratives and assess how location based AR can be used to educate and inform a community. Through our research we will validate AR information visualization techniques and explore belonging in a physical and virtual environments. Our research additionally contributes by adapting existing community connectedness paradigms to the field of human computer interaction.

In a maximum of 250 words, provide a non-scientific lay language description that summarizes the project outlining the purpose, anticipated benefits, and basic procedures. Write this summary as if it would be read by members of the general public who are not familiar with academic terms or acronyms. Use language suitable for a media release.

Purpose: Augmented reality (AR), or projecting 3D visualizations into the real world on smartphones is becoming more common. While currently, lay people are not creating augmented reality environments for themselves, eventually tools will be made to lower the barrier of entry. When this happens, we think location based AR will become more common and people that often are at a particular location will make AR associated with the location and their own identity. The community based AR will provide a new paradigm for community collective identity and information dissemination. **Basic Procedures:** For this study we will be looking into how to show graphs and charts about a community and how it makes people feel a part of the community. We think that interacting with information about your community could increase feelings of belonging to your community, awareness of its issues and collective identity. We will specifically learn about how universities can show information to promote information spread and community connectedness. To test if these methods work we will have participants experience our visualizations, then have them fill out surveys on ease of use, and community connectedness and conduct interviews. **Benefits:** Broadly, our research will contribute to AR information visualization and increase our knowledge of how to use data to tell a story. Academically, our research additionally adapts existing community connectedness surveys from the field of psychology and health to the field of human computer interaction.

What is the study design?

I will be conducting a mixed methods study including qualitative and quantitative metrics. These metrics include the Desirability Toolkit (users choose words that represent their user experience), screen recordings of tool usage to determine the length of time spent, a semi-structured interview as well as likert scale questions on community connectedness and reflection.

Is this a pilot study?

No

Sample Size

What is the expected sample size? Outline the number of participants anticipated to take part in the study.

30

Was a formal sample size calculation completed?

No

Provide a rationale for the number of participants specified

This number is fairly standard for the field of human computer interaction.

Study sites

Where is this study taking place?

University of Waterloo

Are there any permissions required to conduct this study on campus?

Funding

Is the study funded/will it be funded?

Yes

Funding

List all funding sources that are new or ongoing

<p>Funding status Ongoing funding</p> <p>Funding source is Tri-agency / Canadian Government sponsor</p> <p>Canadian Government agency NSERC - Natural Sciences and Engineering Research Council of Canada</p> <p>Program name if applicable Discovery</p> <p>Work-order or award number, if known 50503-10006</p> <p>What is the expected period of funding</p> <p>Funding from August 1, 2021</p> <p>Funding to July 31, 2022</p>
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Conflict of interest

the research team in undertaking the proposed research?

No

Benefits

Are there direct benefits of the proposed research to the study participants?

No

What are the scientific and/or scholarly benefits of the proposed research?

Our research will benefit the scientific community as we will assess the viability of this AR-location based information visualization in the context of community. This approach is novel and we adapt existing community connectedness paradigms to the field of human computer interaction. In doing so, we will validate a novel survey technique. We will also contribute to the field of data driven narratives and assess how location based AR can be used to educate and inform a community. Our research broadly assesses how participating in a virtual physical community hybrid will affect feelings of belonging, which is novel in the field.

Participants

Participant general categories

University of Waterloo undergraduate and/or graduate students

University of Waterloo staff and/or faculty

Adults (age 18-64 years)

Are you conducting research in classes with students as your participants to evaluate a teaching method or object?

No

Describe the sample in detail and list any specific inclusion/exclusion criteria for the study

Inclusion Criteria: Consenting adults in Waterloo region with a compatible smartphone (has a camera, current operating system, compatible browser)

Exclusion Criteria: Not fluent in English, not a member of the University of Waterloo Community

If you are excluding people on certain characteristics provide a justification for the exclusion.

Those not fluent in English are excluded because of the use of certain survey tools. Specifically, the Desirability Toolkit requires participants to select from 118 English words to describe their product experience.

Will a screening process be used to determine eligibility in the study based on the inclusion and/or exclusion criteria identified above?

No

Recruitment

Identify from where/what sources potential participants will be recruited.

Database or Participant Pool
Through email/internet (e.g., social media networks)

Indicate the Database or Participant Pool that will be used in the study.

Potentially e Waterloo HCI SONA system (<https://waterloohci.sona-systems.com>)

Indicate what email listing, internet site or network you intend to recruit from

We will use university department and institution mailing lists such as the games institute mailing list. We may also email/message potential friends or acquaintances and ask if they can forward the approved email to those who may be interested.

What recruitment materials will be used?

Email script
Social media

Describe how social media will be used

We will post the study detail to relevant social medias such as Facebook and Slack. We will only every post in research relevant groups, use of lab social media or get permission from the administrators of the groups. We will use our social media recruitment letter and poster for these purposes. Relevant groups include but are not limited to Facebook, Facebook messenger chats, and uWaterloo Slack channels.

Upload your recruitment materials

Upload your recruitment materials

[RECRUITMENTEMAILREVISED_REVISION2.DOCX](#)

Study group

Upload your recruitment materials

[RECRUITMENTSOCIALMEDIA_REVISION2.DOCX](#)

Study group

Upload your recruitment materials

[RECRUITMENT_POSTER_3RDEDIT.JPG](#)

Study group

Recruitment Poster

Will potential participants be recruited through pre-existing relationships with members of the research team (e.g., employees, students, or patients of research team, acquaintances, own children or family members, colleagues, etc.)?

Yes

Outline the relationship between the researchers and potential participants (e.g., professor-student, colleagues)

Participants could include but are not exclusive to friends, acquaintances,

colleagues. Anyone who meets the eligibility criteria and has seen the recruitment materials are considered.

Could this relationship compromise the potential participant's freedom to decline participation?

No

Explain

There are no consequences to not participating and everyone has the ability to accept or decline the invitation to participate.

Methods and procedures

Which of the following will be conducted for this study?

Surveys/questionnaires

One-on-one interviews

Observation

Other

Describe the other procedure

Screen-recordings from participants' phones from when they go through the visualizations.

How will the survey(s) or questionnaire(s) be administered?

Online or web

Provide the URL of the survey, if available

In study materials.

How will the one-on-one interviews be conducted?

Online – Video Chat

Will quotations be used in the write-up of the study

Yes

What type of quotations will be used?

Anonymous

What type of observations are planned?

Participant observation (where the researcher engages in, and observes, the action; participant knows they are being observed)

Will the people being observed have an expectation of privacy?

No

Explain why there will not be an expectation of privacy

Participants will be in a recorded online meeting. They will also be told that they will be observed and recorded beforehand.

For each of the procedures indicated above, provide a detailed, sequential description of how they will be used in the study.

Participants will be asked to read the consent form which will explicitly outline the following: what materials we will collect, privacy, if they have a compatible device, as well as study procedure. Participants will complete the consent form and information letter and then proceed to being able to book a time to participate and fill out demographic information.

Participants will also be asked to pre-download the app needed to use the visualization. Instructions will be given on how to add and remove the app.

Participants will be asked to appear in the online meeting the pre-booked time. A reminder email will be sent a few days in advance to remind participants and will contain the information letter again. Participants will be asked to fill out an initial demographics and connectedness questionnaire before participation.

Visualizations Section: Participants will be asked to turn on airplane mode or do not disturb to ensure privacy. The screen recording will be done using their phones native software.

Participants will be provided with the visualization cards and how to use

zappar instructions, the pdf will be viewed on a computer. Then, using the Zappar app on their mobile device they will scan the ZapCode (similar to a qr code) to access the visualization. In the visualization (on their smartphone) they will have the opportunity to answer questions in GoogleForms about comprehension and offer additional comments. For the final visualization the accompanying website will be access through their computer. Video demonstrating this workflow was emailed to vbuote@uwaterloo.ca. The screen recording of viewing resource websites is not relevant because participants would open the website on their computer and not their phone. They will then go through our visualization as well as participate in some by going through specific actions such as answering questions to ensure comprehension. The goal of the questions and example questions have been uploaded. The answers to the questions will be used in the study but will only be shown within the research team. Participants will be self-directed but able to ask questions to the researcher if needed. Participants will be asked to "think aloud." Participants will screen record their experiences using the visualizations, researchers may also note down behaviour and reaction to the visualization such as perceived confusion. The expected completion time is approximately 30 minutes for this section. Survey and Interview: The participants will then fill out the community connectedness survey, asked usability questions and complete the desirability toolkit. Participants will also be asked to send the screen recording to the research team via email. Participants will then do a semi-structured interview. This interview will be recorded. The interview will follow up on survey metrics as well as ask broadly what participants liked, did not like and what they would change. Zappar Privacy and Screen recording concerns: The Zappar app privacy policy can be found outlined here: <https://www.zappar.com/privacy/> . The most relevant part of the policy can be found here: "When you use the Zappar App, the ZapBox App or our WebAR, our servers will automatically access or collect information from your device (e.g. smartphone), including the following: an Installation ID (see below); the IP Address linked to the device: we will process this to infer coarse user location (Country and City), and then discard the IP Address; the time; the make and model of your device (including operating system version); the version of the application being used; and information about your use of the application (we call this information "Zapalytics"). Information collected is not personal as it is

simply the user looking at the visualizations. Providing website: I have added the website to the follow up email. Amendment 2: Screen recordings will be collected via OneDrive (through my personal University of Waterloo account (r3woo@uwaterloo.ca)). Participants will have edit access to one folder named after their participant ID where they can upload their screenrecordings. Amendment 3: We are amending to record the entire Teams meeting (audio and visual) including the visualizations section. Participants are not saying personal information, notes may be taken as stated above.

Please upload any study materials related to the procedure(s)

<p>Study material</p> <p>DEMOGRAPHICS_REVISED4.DOCX</p>
<p>Study material</p> <p>SURVEY QUESTIONS2.DOCX</p>
<p>Study material</p> <p>INTERVIEW GUIDE_REVISED2.DOCX</p>
<p>Study material</p> <p>NAME_ID_LIST.DOCX</p>
<p>Study material</p> <p>DESIRABILITY TOOLKIT_V2.DOCX</p>
<p>Study material</p> <p>ADDING OR REMOVING APPLICATION.DOCX</p>

Study material

VISUALIZATION DESCRIPTIONS_REVISED3.DOCX

Study material

EMAIL SCRIPTS_REVISION2.DOCX

Study material

HOW TO USE ZAPWORKS2.PDF

Study material

ALLSURVEYS_FINALFORM_ANDWEBSITE_REVISION3.DOCX

Study material

HOW TO USE ZAPWORKS(1)-MERGED.PDF

Study material

VISUALIZATION SPECIFIC SURVEYS AND WEBSITE SCREENSHOTS.DOCX

Study material

PRE-STUDY MATERIALS SCREENSHOTS.DOCX

Study material

POST-VISUALIZATION SURVEY SCREENSHOTS .DOCX

Do you plan to use any pharmaceutical drug or natural health product?

No

Will you be collecting any biological specimens?

No

Will you be creating or contributing to a bio-bank, bio-repository, registry, as part of the study?

No

Will you be doing any genetic testing or analysis?

No

Incidental and secondary findings

See [Guideline for reporting incidental and secondary findings to study participants](#)

Are any of the methods or procedures used likely (i.e., a real possibility and probability) to reveal an incidental finding (i.e., discoveries made in the course of research but that are outside the scope of the research and/or results that are outside the original purpose for which a test or procedure was conducted)?

No

Are any of the methods or procedures used likely to reveal a secondary finding (i.e., findings that are not the primary target of the test or procedure; rather, it is an additional result that is actively sought)?

No

Equipment use

Will there be any equipment used as part of this study?

Yes

Please list all equipment being used in this study

Full name of device or equipment

Participant's Personal Smart Phone

What type of device or equipment is this equipment or device that is approved for sale or use in Canada to be used with participants

Is this a medical device?

No

Select how you will be providing more information on the device/equipment

Please ensure your SOP explains the following:

Deception

Does the study involve deception or partial disclosure?

No

Risks and safeguards

Considering each method or procedure to be used in this study, indicate if participants might experience any of the following risks or harms

Psychological or emotional risks or harms (e.g., feeling demeaned, distressed, embarrassed, worried, upset, loss of self confidence, regret over the revelation of personal information, disruption of family routine)

Risk details

For each risk identified above, please add additional details describing that risk

Describe the risks or harm

There may be visualizations related to sensitive topics such as mental health. This information may be triggering for some participants. However, we will only be showing data related and relevant to the University of Waterloo community, of which the participants will be a part. Given this, it is likely that the harm is not more than the users will experience in their everyday lives.

Are any of the risks or harms identified above greater than those the participants might encounter in their everyday life?

No

A determination will be made, upon receipt of the application, if the research can be reviewed by [delegated review](#) or must be reviewed by one of the two [Research Ethics Committees](#).

Describe the safeguards (or procedures) to be put in place to mitigate each of the risks or harms identified above.

There will be several parts of the visualization and participants will be know the topic of each visualization before they open it. Participants will be told ahead of time that they can opt out of any specific visualization. The topic of the visualization will be prominently displayed before participants open it.

For the risks or harms identified above, is there any monitoring that will need to be undertaken during the study?

No

Outline the criteria for stopping the study early due to safety concerns/other issues.

~~The study participant can stop the study at any time.~~

For the risks or harms identified above, is there any monitoring that will need to be undertaken following the study conclusion?

No

Privacy

Will demographic and/or background information be asked of participants?

Yes

What demographic/background information will be collected?

- Age
- Gender
- Sex
- Occupation
- Education
- Other

Describe what "other" demographic/background information will be collected.

Experience with Smartphones, which smartphone they have, experience with AR, experience with mobile AR, experience with VR. Relationship to University. major, program if relevant. We also ask the community contentedness questions with the demographics questions to get a baseline please see "Survey Questions 2" under methods and procedures for more details.

Will demographic/background information be collected separately from names and other identifying information?

Yes

Participant identification

Participants will be assigned an ID number.

If applicable how will the key/list that links participants' codes with their actual name and/or consent forms be stored and protected?

The document that links participant IDs and their names is stored separately from the data on a password-protected secure network.

Are there any limitations to the promise of confidentiality?

No

Will any study data be leaving the University of Waterloo, the province, or country (e.g., member of research team is located in another institution, province, or country, etc.)?

No

Will any collected data or information be entered into a database for future use?

Yes

Where will the data or information be stored?

The data collected from the study will be maintained on a password-protected computer database in a restricted access area at the University of Waterloo.

Who will be the custodian of the data or information?

The principle investigator will be the custodian of the data.

Who will have access to the database?

Researchers associated with this study will have access.

Indicate the measures in place to protect the confidentiality and security of the database.

The database will be password protected.

Are there other members of the research team who are not named on this application (e.g., co-op students, research assistants, or other temporary personnel) who may carry out specific tasks involved in your study?

No

Will individual participant identities be confidential in the publication or release of the study findings?

Yes

Data storage

What type(s) of data will be collected for this study?

Video-recordings
Electronic files

If identifiable features are captured, ensure this is described as part of the procedures section

For each type of information collected, identify where the data will be stored

The virtual records will be on a password protected computer, or password protected cloud account. After interview transcription has occurred and been manually verified the video recordings will be deleted.

For each type of data collected, identify the minimum retention period

All data will be archived after completion of the study and maintained for at least 8 years and then erased. After interview transcription has occurred and been manually verified the video recordings will be deleted.

Data Management

Are there plans to link the data collected with other data sets, databases, or registries?

No

The [Tri-Agency Open Access Policy on Publications](#) and some journals are requesting that research data be provided to an open access repository to promote the availability of findings, to enhance transparency and share with the widest possible audience.

Do researchers plan to make the anonymized data-set available in an online repository?

Yes

Identify the repository or database. If this is not yet know please state this.

Unknown.

Do you have a data management plan?

No

Data management planning is necessary at all stages of the research project lifecycle, from design and inception to completion. Data management plans are key elements of the data management planning process. They describe how data is collected, formatted, preserved and shared, as well as how existing datasets will be used and what new data will be created. They also assist researchers in determining the costs, benefits and challenges of managing data.

Consent and Withdrawal

Consent and withdrawal

What member(s) of the research team will be responsible for obtaining informed consent?

Rachel Woo

Is there a relationship between the potential participant(s) and the person obtaining consent?

Yes

Explain the nature of the relationship (e.g., professor/course instructor, teacher, supervisor, employer, health care professional/physician, etc.)

Potentially friends, acquaintances and colleagues could participate in the study.

Describe how undue influence and/or authority to participate will be mitigated.

There is no undue influence, participants will not be obligated to participate there are no consequences to personal relationship or work relationship. The risk will be mitigated through not personally contacting anyone, they will have to voluntarily come forward to participate.

How will consent be obtained

Online consent (e.g., click one of two radio buttons)

Upload Information and Consent Materials

Upload Information and Consent Materials

[CONSENT_FORM_REVISED5.DOCX](#)

Study group

Upload Information and Consent Materials

[INFORMATIONLETTER_REVISED5.DOCX](#)

Study group

Do you anticipate that you will need to make special accommodations for your participant group?

No

Do you anticipate needing to put in place any special procedures when obtaining informed consent?

No

Will consent need to be re-documented throughout the life of this study?

No

Describe how participants will be informed of their right to withdraw from the study.

Participants will provide consent via the consent form which will provide details on how to withdraw their consent. Consent can be withdrawn until their data is anonymized for data analysis.

Outline what will be done with the participant's data if they withdraw from the study.

The participant's data will be permanently deleted.

Will any individuals taking part in this study be unable to provide their own informed consent?

No

Remuneration

Will there be remuneration provided to show appreciation for a participant's time, effort, skills, etc. to take part in the study?

Yes

Type of remuneration

Gift card

Identify the retailer(s) and dollar amount
\$15 CAD gift card from Amazon

If a participant withdraws from the study will remuneration be pro-rated?

No, participants will receive maximum remuneration

Will participants incur any expenses by participating in the study?

No

Feedback and Appreciation

How will you show appreciation to participants for taking part in the study?

Participants will be remunerated as described above and thanked for their participation in the remuneration email.

When will feedback/appreciation be provided to participants (e.g., immediately after the session, at the end of a survey, mail results at time X.)?

We will provide feedback immediately after participation in the survey portion of the study as well as in the remuneration email.

Upload Feedback/Appreciation materials

Upload Feedback/Appreciation materials

FEEDBACKLETTER_REVISED4.DOCX

Study group

Upload Feedback/Appreciation materials

FOLLOW_UP_EMAIL_3.DOCX

Study group

Upload Feedback/Appreciation materials

[5. HG - REMUNERATION AND SELF DECLARATION.DOCX](#)

Study group

How can participants learn about the study results/obtain a summary of the findings if interested?

Participants will have the researcher's contact information and be able to reach out after completion of the study.

Other Details

Provide any other information relevant to this study you wish to explain to the Research Ethics Committee reviewers or to the staff in the Office of Research Ethics.

Other Attachments

Upload any additional study documents

Attachments

Attestation

As the Principal Investigator/Faculty Supervisor/Local Investigator, I attest to the following:

- I will ensure all co-investigators, collaborators, and student investigators listed on this application have reviewed the application contents and will conduct the study according to the application/protocol.

- I am aware that any changes made to the research must be reviewed and provided clearance before the changes are implemented. Change requests (i.e., an amendment) are to be submitted through the system. I am also aware ethics clearance for this study is valid for only 12 months unless I renew the study prior to the ethics clearance expiry date. If an annual renewal report is NOT submitted through the system prior to the expiry date, the study will be suspended, all work on the study must stop, and Research Finance will be notified which will result in a hold being put on the funds associated with this study.
- I agree to comply with the [Tri-Council Policy Statement \(TCPS2\)](#) for conducting research with human participants and with University of Waterloo policies and guidelines when conducting this study (e.g., [statement on human participant research](#), [IST policies](#), etc.).
- I confirm I have read the [University of Waterloo Research Integrity guidelines](#) and I agree to comply with the policies and guidelines of my profession or discipline regarding the ethical conduct of research involving humans.

By submitting this application I agree to the above attestations and will ensure the research is conducted accordingly

Only the Principal Investigator/Faculty Supervisor can submit the application. This acts as a signature indicating approval of the application.

This is the end of the application form. Click submit in the right menu if you are ready to send it to the Research Ethics Office.