

Elements of Inclusion

ELEMENTS OF INCLUSION

A journey through inclusive design in practice

OCAD U 2022 INCLUSIVE DESIGN (MDES) COHORT



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WELCOME



Hello and welcome to Elements of Inclusion: A journey through inclusive design in practice presented by OCAD U's 2022 Inclusive Design cohort.

About the Exhibition

This interactive exhibition features the preliminary research reflecting the diverse and inclusive practices of our cohort. Join us as we explore inclusive practices from spaces and communities to workplaces and systems.

Our individual exhibits have been classified into five categories, inspired by the 'Five Elements' in Taoism. The belief is everything in the universe is made of five elements: metal, wood, water, fire, and earth. These elements are interconnected and fluid. The focus is on 'energy' and 'process' and how all things can be inclusive and unified. In many ways, the journey to inclusion is reflective of this interconnected, fluid process.

Elements of Inclusion Categories

1. Designing better products and experiences – Metal
2. Creating better spaces – Wood
3. Shifting practices – Water
4. Educating others – Fire

5. Affecting systemic change – Earth

About the Inclusive Design Program

The [Master of Design in Inclusive Design](#) program at OCAD University offers graduate students an opportunity to learn to think differently and to break through societal barriers to address the growing demand for access and inclusion. Graduate students explore equity and access issues through the lens of design thinking, leveraged by the application of inclusive digital technologies. This program is the only one of its kind in Canada. It prepares graduates to become global leaders in the emerging field of inclusive design in information and communication technologies (ICT) and other practices.

About our Cohort

The Inclusive Design 2020/2022 cohort consists of individuals from all over the world, with diverse backgrounds and experiences. Our differences lead to diversity of thought which makes for a rewarding and enriching experience.

We started on the life-changing, graduate school path during unprecedented times; in the middle of the global COVID-19 pandemic. As a cohort, we have experienced the challenges of online education. For the first time ever, the program was delivered completely online due to these unprecedented times. Typically, the program kicks off with a two-week summer intensive in Toronto, where students and professors get a chance to meet, make connections and form bonds. In a completely virtual world, our cohort didn't quite know what to expect. There were feelings of anxiety and even feelings of greater isolation in the beginning. Now, one year in, we are more confident in the fully online space, we rely on one another to overcome challenges as a team, and have formed lasting bonds.

Accessibility

Inclusive Design encompasses the full range of human diversity, advances accessibility, and recognizes that we aren't all the same. Design must be usable, flexible, and customizable among other qualities to be truly inclusive. Providing an inclusive, accessible experience that enables all individuals, including individuals with disabilities, to participate fully is the leading priority. To request an accommodation or for inquiries about accessibility, please contact christine.woolley@student.ocadu.ca

LAND ACKNOWLEDGEMENT

The OCAD U 2022 Inclusive Design cohort would like to acknowledge the physical indigenous lands that connect us all while we are engaging in a virtual space. We ask visitors to take a moment to identify and acknowledge the indigenous land(s) they are joining us from.

Our cohort acknowledges the Indigenous lands on which we live and study across Turtle Island. OCAD University as well as many of our cohort are located in Ontario. Toronto is located on the ancestral and traditional territories of the Mississaugas of the Credit, the Haudenosaunee, the Anishinaabe and the Huron-Wendat who are the original owners and custodians of the land on which they stand. Ottawa is located on the traditional unceded territory of the Algonquin Anishinabe Nation. Durham Region is located on the lands and people of the Mississaugas of Scugog Island First Nation. These lands are covered under the Williams Treaties and the traditional territory of the Mississauga, a branch of the great Anishinaabeg Nation, including Algonquin, Ojibway, Odawa and Pottawatomi.

Edmonton, Alberta is located on Indigenous land in Treaty 6 territory. Land occupied, travelled, and cared for by Indigenous peoples since time immemorial. This place – ?????????, amiskwacîwâskahikan, Edmonton – is a traditional meeting ground, gathering place, and travelling route of the Nêhiyawak (Cree), Anishinaabe (Saulteaux), Niitsitapi (Blackfoot), Métis, Dene, and Nakota Sioux.

On the west coast, we would like to acknowledge the unceded territories of the x̱məθkʷəy̓əm (Musqueam), Skwxwú7mesh (Squamish), and Sel̓il̓wítulh (Tsleil-Waututh) Nations in Vancouver, British Columbia, and the traditional land of the Coast Salish people around Seattle, Washington.

We would also like to recognize the Indigenous lands and peoples in which the digital platforms facilitating this exhibition specifically impact. Pressbooks is headquartered in Tiohtià:ke/Montréal on the unceded lands of the Kanien'kehá:ka/Mohawk Nation. Zoom is headquartered in San Jose, California, on the traditional lands of the Ohlone and Tamyen peoples. YouTube is headquartered in San Mateo, California, on the traditional lands of the Ohlone and Ramaytush peoples.

If you would like to learn more about land acknowledgments or the history and present contexts of Indigenous Peoples in Canada, we invite you to follow the links below as a starting point:

About Land Acknowledgements: <https://native-land.ca/territory-acknowledgement/>

Truth and Reconciliation Commission of Canada: Calls to Action: https://ehprnh2mwo3.exactdn.com/wp-content/uploads/2021/01/Calls_to_Action_English2.pdf

National Inquiry into Missing and Murdered Indigenous Women and Girls Report: <https://www.mmiwg-ffada.ca/final-report/>

VISITOR GUIDE

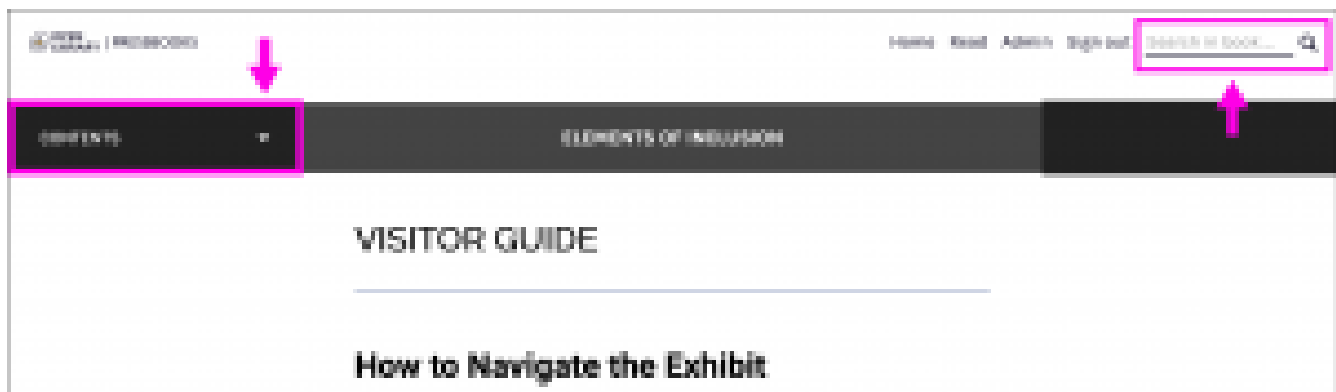
Visitor guide adapted from the [INCD 2019/2020 Inclusive Spectrums Exhibit](#)

How to Navigate the Exhibit

Our exhibit can be accessed in a few ways and is available in a variety of formats. The webbook can be accessed on a computer, tablet, or mobile phone through a browser (Chrome, Edge, Safari, and Firefox, etc.) by going to the following link: [Elements of Inclusion: A journey through inclusive design in practice](#). The exhibit can also be downloaded as a PDF or eBook for offline viewing. Download the book in one of these formats from the exhibit's homepage by clicking “Download this book” under the cover image.

Although this exhibit is organized in a linear fashion, there is no “one” way to explore. You can go from beginning to end or jump to the specific projects that catch your interest.

If you want to start at the beginning and go page by page, you can use the “Previous” and “Next” arrows that appear at the bottom corners of your screen.



You may prefer to search for a specific project or topic that fits your interests. All projects in this exhibit are grouped into themes. The themes are as follows:

Metal – [DESIGNING BETTER PRODUCTS & EXPERIENCES](#)

Wood – [CREATING BETTER SPACES](#)

Water – [SHIFTING PRACTICES](#)

Fire – [EDUCATING OTHERS](#)

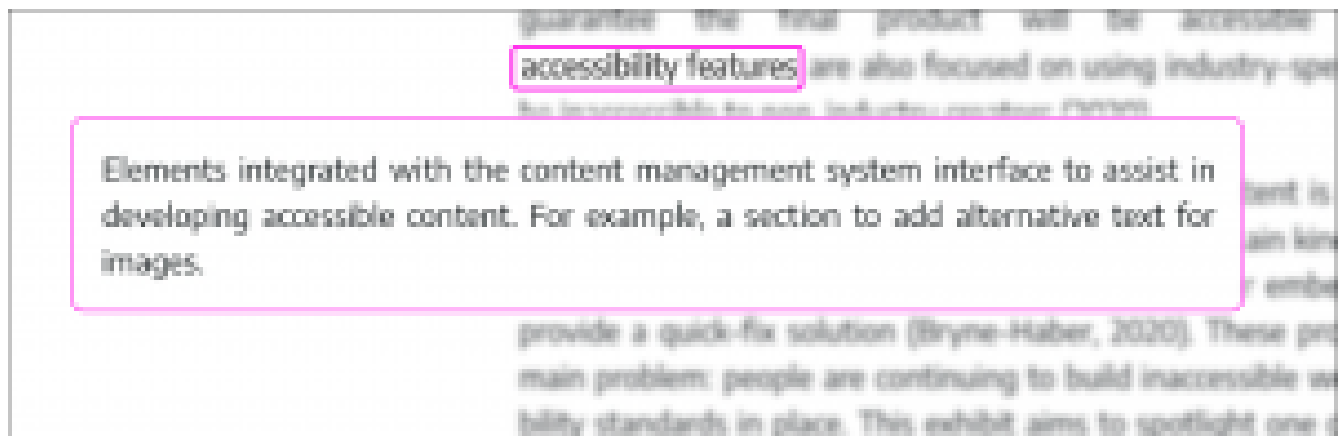
Earth – [AFFECTING SYSTEMIC CHANGE](#)



On the top of each page, there is a link called “Contents.” When you select “Contents,” you will see a full list of themes and projects. Select a project from the list to go directly to that project page. There is also a search bar that will allow you to search the entire exhibit at once.

Glossary Terms

There may be some terms that are unfamiliar to you in the exhibits. If a word is bolded, you can click on it to reveal the definition.



Leaving Feedback

Some exhibits may have comment sections as small forms on the last page. Leaving feedback is optional but we'd really appreciate your input! Your submission is anonymous and will only be seen by the individual exhibit author.

If you have any questions regarding the overall exhibit, please contact us at christine.woolley@student.ocadu.ca.

METAL – DESIGNING BETTER PRODUCTS & EXPERIENCES

The element of metal has inherent ‘shaping’ energy. It is typically seen as the element that can be used to shape objects for everyday life. In this section, you’ll see how students are using inclusive design as the tool the shape better products and experiences for people.



Metal

DESIGNING SENSORY YOGA PLAY KIT FOR HYPERSENSITIVE CHILDREN WITH SENSORY PROCESSING DISORDER | CHAN MYAE (CINDY) KHIN

Welcome

Hello, and thank you for taking the time to join me in my virtual exhibit. My name is Chan Myae Khin (Cindy). I am a freelance graphic designer currently based in Toronto, ON. My previous work examines the intersection where design meets practicality but is also aesthetically pleasing. However, as I continued for my Master of Inclusive Design, I began to design with inclusion in mind. I have grown interested in designing for hypersensitive children with Sensory Processing Disorder (SPD). My Major Research Project (MRP) will examine designing a sensory yoga play kit for Hypersensitive children with SPD. During the pandemic, the idea came to me where everyone is taking care of themselves by working out, keeping themselves moving, or doing yoga at home, I thought about how individuals with sensory overload would work out or even participate in any fitness activities when fitness environments, workout materials, or even yoga mats are not designed as sensory-friendly as we think. I have also noticed a lack of consideration and promotion of sensory Yoga and its benefits for SPD, even though Yoga is promoted as an accessible self-care practice. So, the question arises that shouldn't we all deserve to feel safe and have an enjoyable time while self-caring? Moreover, how come sensory Yoga activities are not implemented as part of children with sensory issues daily routine at a very young age with all the yoga benefits are promoted for the rest of us?

Introduction

Sensory Processing Disorder (SPD) is a neurological disorder that impairs the processing of sensory information in the brain from our senses. It can cause an inability to properly orient the body, poor fine motor skills, hypersensitivity to sound for children, and difficulty processing incoming information (Bunim, 2013). Unlike visual impairment or hard of hearing, which is described as not receiving sensory input, an individual with SPD perceives senses abnormally (Singer, 2015). SPD affects the brain to process sensory information in a distressing and confusing way (Sicile, 2010). The prevalence of sensory processing issues is around 1 in 20

to 1 in 6.25 children in the US general population. A new study in Finland found the majority of sensory abnormalities to be approximately 8.3% in an epidemiological group of 8-year-old children (Crasta, Salzinger, Lin, Gavin, & Davies, 2020).

Sensory processing disorders affect 5 to 16 percent of school-aged children (Bunim, 2013). In the case of the child with SPD in a classroom, not only do they struggle during the class, they will likely have difficulty in other aspects of their daily lives. It could include struggling on the playground in terms of being frightened of equipment or sounds in the cafeteria, where the sounds and visual stimulations can cause emotional distress. SPD can affect an art class, where a student may exhibit clumsy behaviour or appear uncoordinated and bang into peers and objects (SPD Foundation, 2021). Therefore, parents, teachers, and support workers need to consider surroundings that may not involve class time. Sensory Processing Disorder formerly referred to as sensory integration dysfunction, is not currently recognized as a distinct medical diagnosis (Goodman, 2012).

Yoga is a mind-body-focused physical activity that has been shown to have many benefits related to physical, mental and cognitive health. Therapeutic Yoga is characterized as applying yoga postures and practice to health requirements and includes instruction in yogic practices and teachings to prevent, decrease or alleviate structural, physiological, emotional and spiritual pain, suffering or limitations (Woodyard, 2011).

Through personalized Yoga poses and programmes, which involve various vestibular (movement/balance), proprioception (movement and resistance) and tactile (deep pressure and touch) activities, individuals can obtain the sensory input they need to help them become focused and coordinated during the day (“Sensory Integration Education,” 2019). These techniques, tasks, and postures (mostly when performed continuously) can improve children’s abilities to relax when they find themselves in a stressful situation (“Yoga and SPD,” 2013). Yoga therapy adopts a multifaceted approach to reduce psychological distress to bring balance and harmony to the body, breath and mind through physical postures, breathing practices, chanting, and relaxation techniques, thus enhancing overall wellbeing. Existing studies have shown that Yoga has developed SPD symptoms by improving sensory processing, motor skills, balance and coordination, cognition, imitation, and communication skills (Kankan Gulati, Praerna Hemant Bhargav, Abraham, & Hemant Bhargav, 2020).

More than 200 children, ages 5 to 10, practiced Yoga, meditation and sensory procedures to assist them control stress, ease test anxiety and focus on schoolwork (Centre for Children’s Therapy, 2019). With personalized yoga activities involving various vestibular, proprioceptive, and tactile activities, children with SPD can experience the sensory input they need to function throughout the day (Hamilton, 2020). The brain works collectively with information from proprioception and vestibular activities to identify the body’s position and acceleration. Yoga is a great way to strengthen these senses as the mind and body work together to complete the poses (“Sensory Yoga Proprioception Vestibular,” 2021). Poses such as a downward dog, airplane, tree pose and planking are simple yoga movements for kids as they receive proprioception input from the pressures on their arms and input to the vestibular system by having their head inverted (“Sensory Yoga Proprioception Vestibular,” 2021). Yoga provides these children with relief – a way for them to take control, take ownership of their feelings and develop their ability to cope without assistance. Teaching these children

yoga breathing techniques allows them to learn to relax and calm themselves. Poses such as a child's pose will enable them to feel the stillness and calm of their bodies ("Yoga and SPD" 2013).

For children with SPD, Yoga can increase body awareness and muscle tone. It can develop balance, joint coordination, motor-planning, and both fine and gross motor skills ("Yoga and SPD," 2013). All of the poses that provoke play are present and remain important for growth, flexibility, and learning. One of the other critical components of a yoga practice is meditation and mindfulness. The significant aspect of mindfulness is the ability to concentrate on this moment—the "here and now" (Eckerd, 2019). Many Yoga and occupational therapists use meditation and breathing techniques to help autistic or SPD individuals calm and regulate themselves. Self-calming techniques are instrumental in easing stress – and research shows that these techniques also are an efficient modality for SPD treatment (Centre for Children's Therapy, 2019).

Meet Cindy

Chan Myae Khin (Cindy)

Graphic Designer

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Cindy (She/her) is a Toronto-based graphic designer. She is originally from Myanmar, also known as Burma. She is currently an OCADU Masters of Inclusive Design student and was a first-class graduate from Manchester Metropolitan University. Her work examines the intersection where design meets inclusion, practicality but is also aesthetically pleasing.

Cindy often uses type and images to express the things she *feels* but cannot explain. Her designs display elegance yet remain harmonious to anything and anyone. For more of her work, please visit [here](#).



PROBLEM SPACE AND CONSIDERATIONS

Chan Myae Khin

Problem Space

Before we go further into the problem space, I would like to add a disclaimer. Designing spaces/kits around the needs of individuals with SPD can be challenging as it is a complex disorder with eight senses; the needs will vary significantly from person to person. This proposed research aims to improve the two senses: proprioception and vestibular sensory issues, by implementing sensory yoga as part of their daily routine. This research will be focusing on these two senses as they are the least researched of the senses.

Lack of research and promotion of Sensory Yoga for children with SPD

Research on the influence of Yoga for people with special needs and relevant to SPD difficulties exist. However, more research is needed, and SPD being the main focus of the study. Existing research focuses on the effect of yoga therapy on the symptoms of a sensory processing disorder in autistic individuals with SPD. Various yoga studies have shown promising improvement in autism spectrum disorder symptoms through improved sensory processing, overall motor skills, balance and coordination, cognition, imitation skills, and ability to communicate in relationships (Kankan Gulati, Praerna Hemant Bhargav, Abraham, & Hemant Bhargav, 2020). However, many existing research types about these aids are directed at parents or yoga instructors with hardly any SPD awareness. Little research has been conducted to create a sensory play kit that promotes sensory Yoga and accommodates SPD issues that encourage children with SPD to participate in fitness routines while having fun.

There is a gap in designing a sensory yoga kit that enables sensory Yoga as part of SPD therapy for children with SPD. Further research directed by children with SPD for SPD children accommodates Yoga as a therapeutic tool, which is a fun and enjoyable experience while beneficial to them is needed.

Codesign and Prototype Plan

For my co-design sessions, I will be working closely with the leading participants, the hypersensitive children with SPD, ages 5-8 in elementary school attending elementary school. It is quite common for children with SPD not to be diagnosed until they are well into elementary school. I will also be working with the secondary participants and key stakeholders, parents/caretakers and occupational therapists. It is crucial to focus on these occupational therapists to see if the yoga play kit could also be transferrable to the OT setting so that professionals can use it as part of their occupational therapy for SPD children. Due to the SPD's sensitive

nature and lack of experience working with children with SPD, occupational therapists are considered part of the participants. These participants will be involved in iterative co-design activities to address user needs better and be carried out separately in smaller working groups.

With the insights of the co-design session, a prototype will be developed. There will be two prototype iterations, and both times will be tested with children. In this way of including the users in the iterative process at every step, the research end goal to design a sensory yoga play kit designed for hypersensitive SPD children approved and tested by hypersensitive SPD children will be achievable.

FEEDBACK FORM



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SENSORY YOGA APP

Chan Myae Khin

About the prototype

This mobile app prototype is created to assist and use the sensory yoga play kit for children with SPD and their parents/caretakers. Once you scan the QR code from the play kit, it will take you to the prototype app directly, where you can download and install it onto your preferred electronic device. This prototype is designed to provide the structure needed to make sensory yoga effective while creating a calming, enjoyable experience for children with SPD. The child can select personalized yoga activities appropriate for their sensory needs. The parents/caretakers can adjust each activity's length and customize the yoga activity options available to the children.

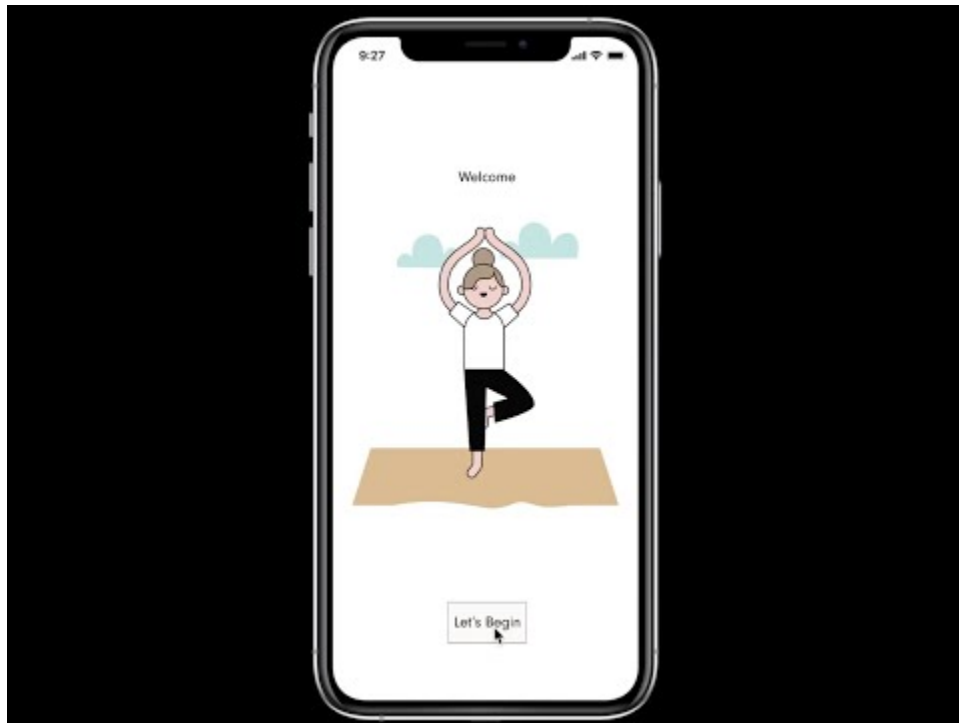
Since the sensory play kit is the primary physical item, I wanted to create a connecting app that supports hypersensitive children with SPD age 5-8 and their parents/caretakers. With children addicted to technology at a young age, I believe it is fitting to create an app that is sensory-friendly and easy to follow yoga activities that will keep hypersensitive children calm and provide them with relief. These yoga activities could provide a way for them to take control. The prototype has a minimalist interface. The muted colour palette provides calmness, and less text creates a more relaxed atmosphere, just like a yoga studio would. The instructions are straightforward, leading them to take ownership of their feelings and their ability to cope without assistance. Furthermore, teaching these children yoga breathing techniques allows them to learn to relax and calm themselves.

There are no sensory-friendly yoga apps at this moment. There aren't many yoga apps available in the app store, but the existing ones are not sensory-friendly. This app is mainly for hypersensitive children with SPD, and I wanted the targeted children would be excited to explore, use, understand themselves better, and benefit them.

How does it work?

After downloading the app using the QR code from the play kit, the child will be able to customize themselves, choose how they feel and start following the yoga tutorials with breaks in between so that the activities won't overwhelm them—a new activity changes with a tap on the screen. There is a progress bar that would work as a timer for how long each activity is. However, at this moment, I am trying to figure out how to function that, but the work in progress prototype showcases how the progress bar would move in action in the final version.

Please check out the video below showcasing my prototype –



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<https://ecampusontario.pressbooks.pub/incd2021/?p=1996>

Thank you

Thank you for exploring my exhibit. If you would like to share your feedback, please take a moment to complete the form below. Your participation is completely voluntary! Please note that your responses will help me to understand the effectiveness of my virtual exhibit and will not be used for any other purposes.



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WE USED TO BE SMARTER: AN EMPATHIC EXHIBITION ABOUT ASIAN ESL INTERNATIONAL STUDENTS' CROSS-CULTURAL LEARNING ADJUSTMENT CHALLENGES | SIHENG WANG

Watch this video to get some awkward feelings!



A video element has been excluded from this version of the text. You can watch it online here:

<https://ecampusontario.pressbooks.pub/incd2021/?p=252>

Overview

For years, Asian **ESL** International students taking college or higher-level courses in developed English-speaking countries is a global trend. According to Open doors 2020, most international students in the US were from Asian countries such as China, India, and South Korea. Similar figures were reported in other western countries. Those students are taking a course in an environment quite different from their mother cultural context, which is defined as cross-cultural learning in this exhibit.

Studying outside one's home country can be really exciting while having many adjustment challenges at the same time. So a lot of international students, like me, are thrilled and struggling. Language barriers, learning styles, cultural differences, financial issues, discrimination, physical and mental health problems are common challenges in cross-cultural study life. Even more serious, international students were even reported to commit suicide every year because of the stress and anxiety caused by those challenges.

To help **ESL** Asian international students have better cross-cultural learning experiences, my research focuses on identifying their typical difficulties and provide some solution proposals through literature review and a co-design section. I have found that studies on international students started about a century ago and

several themes were mentioned many times: English proficiency, the instructor's role, instructors and students' perceptions, the instructor's support, peer support, mental health, and faculty support. This exhibit could not cover all the themes so far because my research is still ongoing. However, I have applied diverse empathic approaches to represent some of these themes to give visitors a general experience of encountering **ESL** Asian international students' challenges.

Overall, this exhibit is like an empathy phase introducing **ESL** Asian international students' adaptation obstacles to visitors. A subsequent step would be creating a guideline brochure for both instructors and students. The guideline would be based on my further study and experiments. You are more than welcome to leave your valuable comments here through any way we provide that you feel comfortable with: the jam board, my personal email, or the collective comment area.

About Siheng Wang



I am a graphic design lecturer at Guizhou University of Engineering Science in China. I got my first master's degree in Graphic Design at the University of New South Wales in Australia in 2011, and now I am doing my second master's program (Inclusive Design) at OCADU.

My MRP is about international students' overseas study life because I think working on something that helps the people around me and myself at the same time is meaningful, and being part of this vulnerable group gives me the advantage to go deep with this topic.

I am interested in minority groups' design elements. During my teaching job in Guizhou (near the Miao and Yi nationality villages), I grasped the chance to explore the traditional minority design. I believe that those elements have the potential artistic , aesthetic , and commercial values for the contemporary design industry.

I like scuba diving and martial arts. Please feel free to contact me through email for the exhibit relevant or irrelevant discussion.

Contact: 83881789@qq.com

LANGUAGE BARRIER

Siheng Wang

Language Barrier 1: They Do Not Understand Me!

Try going through this slide page by page ' the more faces you watch, the more anxiety you get since all the faces are delivering the same message: they do not understand you. You may also start to focus on the typical frowns. After that, you will see some smiling faces, but you can also recognize the “do not understand” message behind the smiles. Please be patient and watch all the way to the end for the complete experience.



An interactive H5P element has been excluded from this version of the text. You can view it online here:

<https://ecampusontario.pressbooks.pub/incd2021/?p=790#h5p-16>

Language Barrier 2: We Used to be Faster!

This is an empathic image I created to describe the burden that the language barrier is bringing to **ESL** Asian international students.



"We used to have swift minds, but we became thinking slow, writing slow, and reacting slow when we stepped into an unfamiliar linguistic environment. Language barriers are heavy burdens. We perform like that we are intellectually impaired."

The text on the image: "We used to have swift minds, but we became thinking slow, writing slow, and reacting slow when we stepped into an unfamiliar linguistic environment. Language barriers are heavy burdens. We perform like that we are intellectually impaired."



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CULTURAL DIFFERENCE AND THE INSTITUTION SUPPORT

Siheng Wang

Cultural Difference: When Shall I Talk In Class?

The teacher-centered style is typical in East Asian countries where students barely question the knowledge which the teachers deliver (Dong et al., 2008).

In Korean universities, students who recalled the exact knowledge taught in the classroom got high marks (H. J. Lee et al., 2017). In the US, classroom activities lack Asian international students' participation because they used silence to show respect to the instructors (Ing & Victorino, 2016; Kim, 2008). They concentrated on listening to lecturers to compensate for the shortage of expression (Kim, 2008).

In a teacher-centered class, the instructor gives lectures, tells students when and what to do, and assigns students to answer questions. Therefore, some **ESL** Asian international students, like me, don't know how to talk in western-styled classes, where students even talk more than the teacher. This video shows the struggling experience of trying to participate in an online class.



A video element has been excluded from this version of the text. You can watch it online here:

<https://ecampusontario.pressbooks.pub/incd2021/?p=841>

Let Me Give You a Hand: The Institution Support

Tip: You may want to take a look at the image I shared on the previous page to help you understand this one.

Many universities and colleges offer extra workshops to help new students adjust to their studies. These courses include writing, presentation, time management, etc., and they are usually free! These supports may seem reasonable or even as spectacular as the image below! Still, the truth is, there are very few **ESL** Asian international students participating in these workshops because they are already overwhelmed by their major courses and assignments. These assistant courses provide a beautiful, supportive hand, but they may also create another obstacle or burden for **ESL** Asian international students.



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MY NEXT STEP AND YOUR TURN TO SHARE

Siheng Wang

My Next Step: The Guideline

I will create a guideline for both instructors and students based on my further research and experiments. The guideline book would be a printed brochure or a digital interactive book, or maybe both. Here is a simple example of the digital version.



An interactive H5P element has been excluded from this version of the text. You can view it online here:

<https://ecampusontario.pressbooks.pub/incd2021/?p=1801#h5p-32>

Seen Enough? It is Your Turn to Share Your Thoughts in Any Way You Prefer!

Feel free to sketch, type, or paste anything that just has entered your mind by using the Jamboard link below. Sharing is caring!

<https://jamboard.google.com/d/1SLSxF08GEPMuCiRizJxzIuT-TRdsfVmzKzGkrIIKYA/edit?usp=sharing>

Disclaimer

Thank you for exploring my exhibit. If you would like to share your feedback, please use the Jamboard link above. Your participation is completely voluntary! Please note that your responses will help me to understand the effectiveness of my virtual exhibit and will not be used for any other purposes.



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ONLINE GROUP THERAPY FOR CHINESE TEENAGERS MENTAL HEALTHCARE | JIANQI YIN



A video element has been excluded from this version of the text. You can watch it online here:

<https://ecampusontario.pressbooks.pub/incd2021/?p=268>

Foreword:

Hi everyone, welcome to my exhibition, You may find it easy in these years, the rate of people with depression is getting higher(Chang & Kim Koh, 2012), and even there is someone around us who suffer from depression, but we cannot find a suitable way to give him or her a hand when we really want to comfort them. This situation makes patients and their family and friends helpless. Especially in the most of Asian countries, it is not difficult to hear about patients do not willing to openly talk about their illness and refuse to accept professional treatments (Shafi et al, 2014). This project pay attention to the Chinese teenagers' mental healthcare, and trying to combine the group therapy method with online App to give these teenagers a platform to release their mental stress.

Why should we pay attention to the impact of depression mood?



A YouTube element has been excluded from this version of the text. You can view it online here:

<https://ecampusontario.pressbooks.pub/incd2021/?p=268>

Video: LIVING WITH DEPRESSION | Kat Napiorkowska

The video made by Kat Napiorkowska shows daily symptoms of the people with depression, watching the video may help us to better understand their feelings and emotions. As we can see from the video, The people with depression feels headache, longly. They always wearing a social musk because they have to, and they feel ashamed of what they have done. These symptoms cost their energy more and more but they have no idea how to get rid of these bad situations.

This research hopes to find a way to build up a warm space for depression group to output their negative emotions without any misgiving, and providing a chance for them to rebuild their social circle by online platform.

Introduction:

The research direction of my Major Research Project (MRP) is online group therapy for Chinese teenagers mental healthcare. This project mainly focuses on two aspects: Group therapy is the first aspect, according to the research material shows that those people who have recovered from depression are valuable for people who are suffering from depression, their words are more persuasive for patients, and they can get close to patients easier (Rottenberg, 2011). Therefore, developing group therapy in the form of fraternity is the main point of this project, but the form of fraternity is not popular in China, so the development of this project is a good chance to make up the corner of this vacancy.



Group Therapy

Group therapy and relevant support groups have been set up in Britain, which provides social support for patients with depression and drug withdrawal.

Studies have shown that peers' companions can reduce depression rates more than routine nursing alone. Compared with frequent nursing, peer support has achieved fantastic success in reducing depression because the support or suggestion of those who have experienced depression has unique credibility for a person who is currently suffering from depression.

(Scoping review.)

In addition, the influences of cultures cannot be ignored, depression is stigmatized in some Asian countries because in the culture of these countries, depression represents cowardly (Shafi et al, 2014). And a big part of Chinese teenagers lack the cultivate of emotional expression due to the cultural background, they are not good at releasing their mental pressure face to face. Reckon for this aspect, I am trying to use the method of an online platform to give these teenagers a hand to open their hearts online and find their sense of belonging.



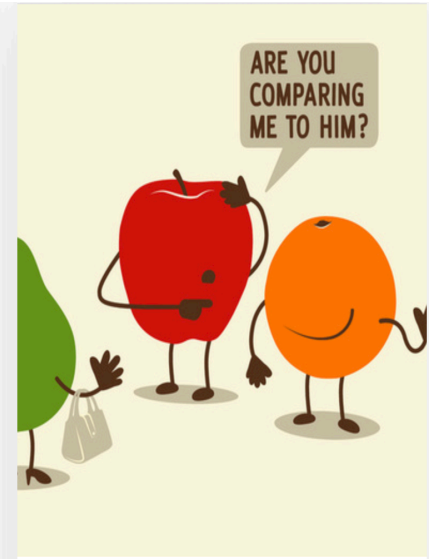
Culture Influence

Asian groups are more likely to suffer from mental illness due to economic and social pressure.



Education System

during the period of applying for university, many Chinese teenagers face more mental stress than they can handle.



Meaningless Comparison

"assigning their value in comparison to an exemplar that does not really exist" is also one of the causes of mental health problems among Chinese teenagers.

(Background research)

Furthermore, considering the different development levels of regions, we can transmit more advanced treatment methods quickly and accurately from developed regions to developing regions through an online platform to make sure patients can get the newest information in time no matter where they are.

[Design background](#)

[Main interfaces & functions](#)

[Reference](#)

Meet Jianqi Yin:

Jianqi Yin

Inclusive Designer/Illustrator
Toronto, Ontario
She/Her
3189261@ocadu.ca

Jianqi Yin (she/her) is a Chinese designer. Currently in her second year of the Inclusive Design (M.Des) at OCAD University. She focuses on discovering the potential problems around her, and combines the solution of practical problems with the form of artistic expression.

She is currently exploring the impact of the group therapy on mental healthcare, especially focuses on Chinese teenagers' depression treatment, and trying to exhibit this topic in the form of online fraternity.



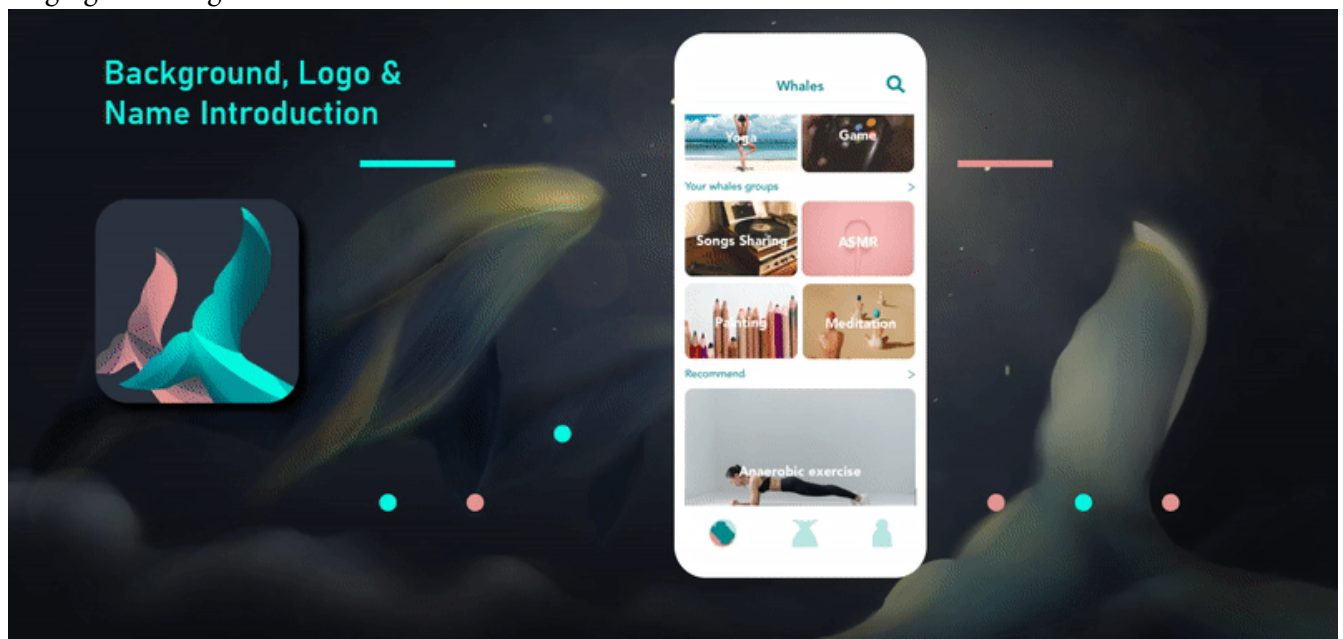
DESIGN BACKGROUND & FLOW CHART

Jianqi Yin

Design background:

The following prototype of this App is a concept of a possible design solution for my MRP, which is not a real exist App. These prototypes shows some of my phased work up to now.

I named this App as Whales. The reason why I chose whales as design inspiration is that whales are social animals in the ocean, They can usually give a hand to their companions when they ask for help, furthermore, they are empathic animals and can be influenced by the emotions of other peers. That's really inspired me because Chinese teenagers need the same kind of group to help each other. so I named the App according to this idea. The Logo of this App is composed of two whales 'tails in blue and light red. The first means is that users can find like-minded partners in the App, the second means is that users could find their inner sense of belonging and recognize their inner self.



The interface style & main function: The App interfaces are relatively simple and the overall style is flat. The main functions are divided into three points:

- Users can enter a “whales” group, such like game group and meditation group and so on. Each group

will have a manager and users can communicate with each other in these groups.

- Users can follow the people they are interested in on the main page, and they can also publish contents.
- Users can enter some training on their personal page, such as sleeping aid concert hall, expert consultation, graffiti room, etc

Flow chart:

The following flow chart shows the specific use process of the App at each step.



(The flow chart of this APP)

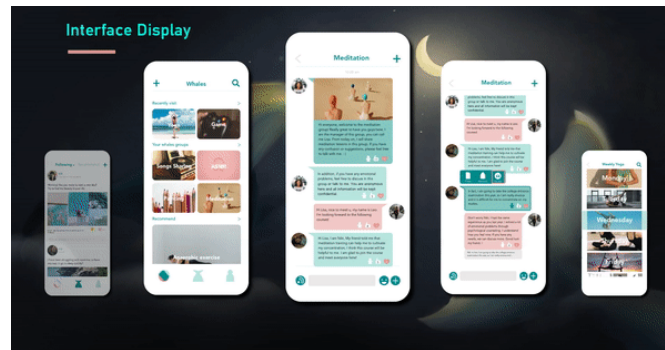
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[Main interfaces & functions](#)

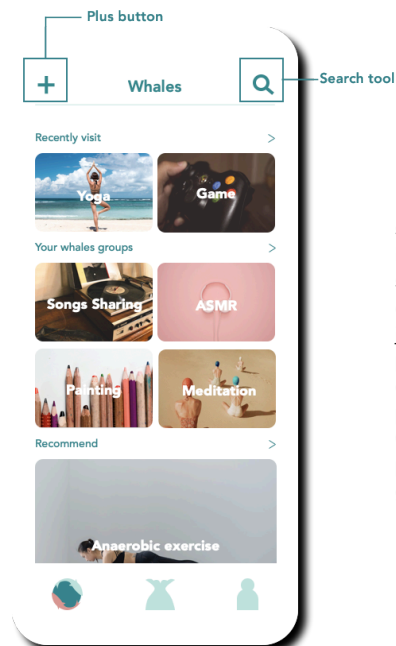
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MAIN INTERFACES & FUNCTIONS

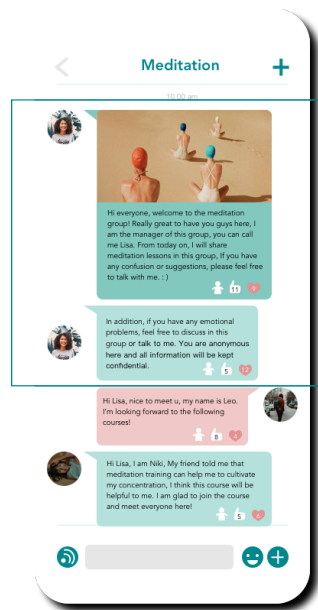
Jianqi Yin



Explanation for functions of main pages:

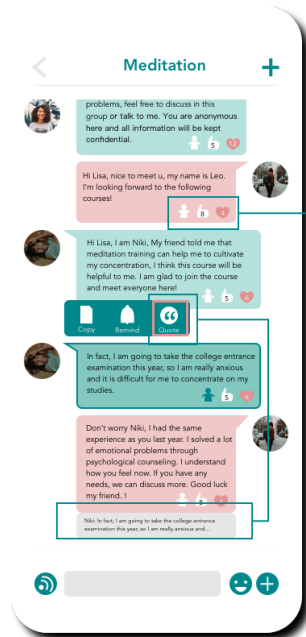


In the page of "whales," You can select the group you are interested in to join or use the search tool in the upper right to choose the group you want to join. Of course, if you have some professional skills, you can simply create your own group by the plus button on the upper left. Once has been approved by the platform, all users could join your group.



Group manager

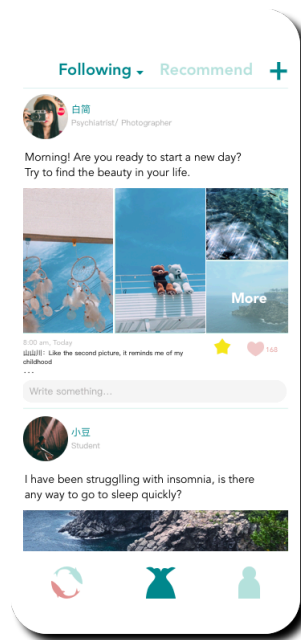
After entering the group, the group manager will introduce him or herself and tell everyone what the central content of the group is, what activities will be involved in, and what kind of help the members of the group have doubts or difficulties, they can @ the manager in the group or send a private message to the manager.



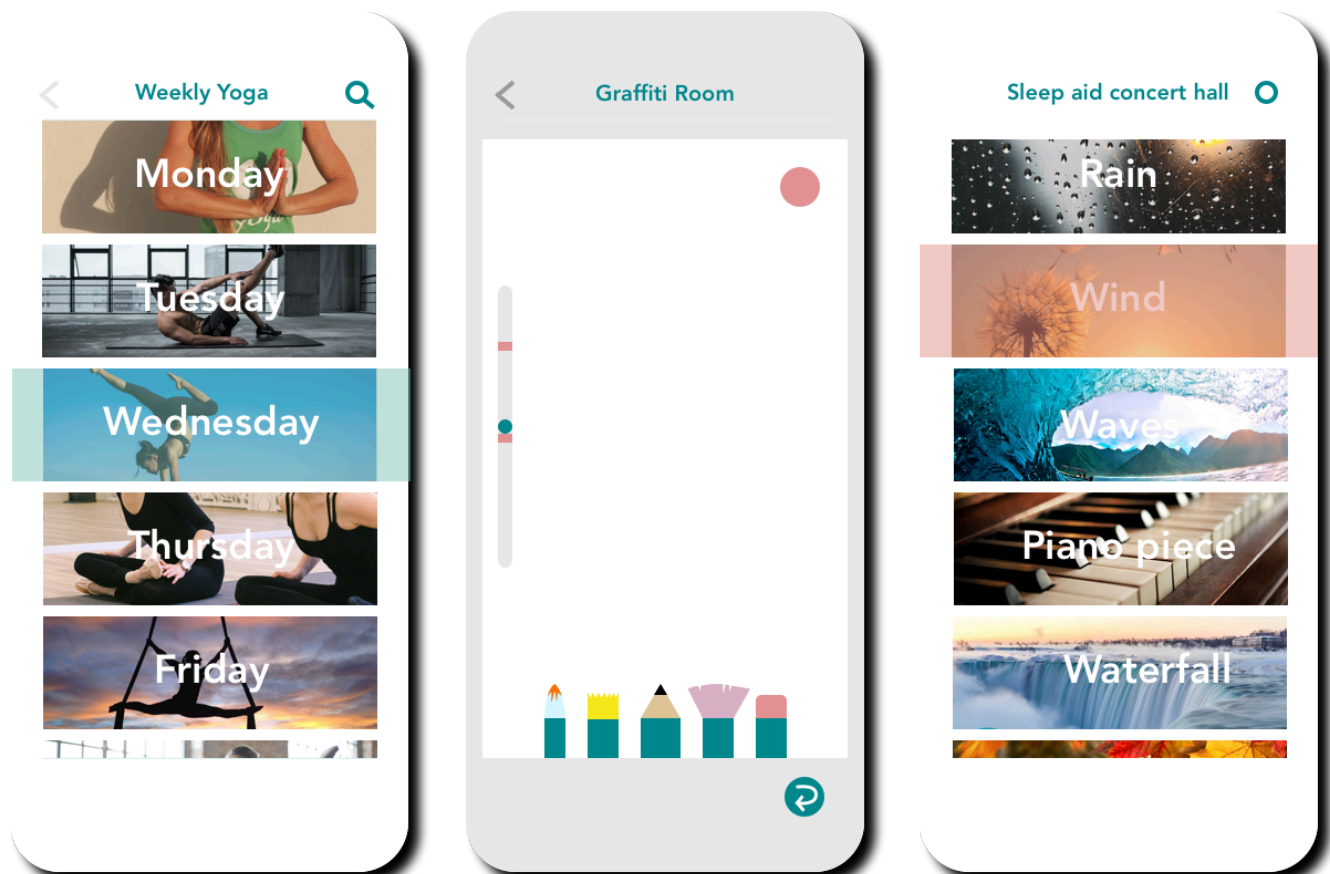
"hug," "like," and "heart" button

In the group chat, when you receive other people's messages, you can see the "hug," "like," and "heart" buttons in the bottom right corner of each other's messages. When others are sharing their emotional difficulties, you can click on the "hug" button in their messages to give comfort to them.

At the same time, if you want to answer other people's questions directly, you can press and hold other people's message to quote his or her contents to reply to the message accurately, so that the chat content in the group will not become chaotic, and the people who seeking help can get an accurate response in time.

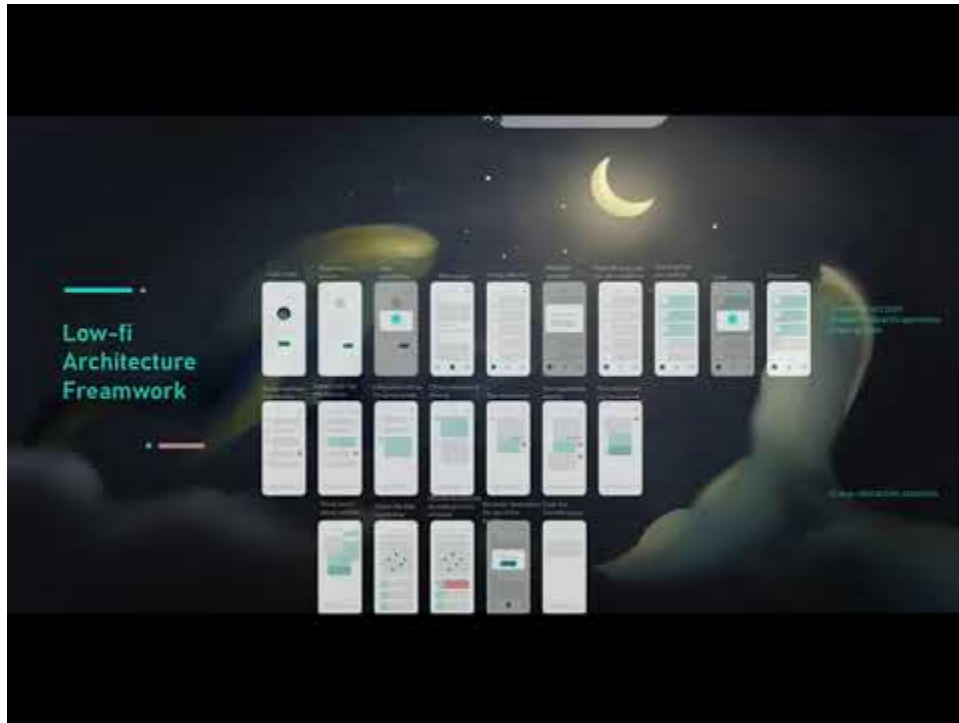


In the main interface, you can post your own content to record your feelings, and you can choose whether the content is public or private. At the same time, you can follow with other users according to your own needs and interests. For example, if you are suffering from insomnia, you can search and follow some experts, and check their daily posts to try to improve your symptoms.



There will also be some mini-program on the personal page of this App, such as weekly yoga, graffiti room, sleep aid concert hall, etc. When users feel annoyed or bored, they can enter the personal page and do some training to relieve their emotional stress.

Summary video:



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Thank you

Thank you for exploring my exhibit. If you would like to share your feedback, please take a moment to complete the form below. Your participation is completely voluntary! Please note that your responses will help me to understand the effectiveness of my virtual exhibit and will not be used for any other purposes.



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ACCESSIBLE COSMETIC PACKAGING FOR VISUALLY IMPAIRED AND BLIND CONSUMERS | SHIVANI

Welcome

Hello and thank you for joining me in my virtual exhibit on accessible cosmetic packaging for visually impaired (VI) and blind consumers.

The goal of this exhibit is to offer paths for visitors to get a knowledge of accessible and inclusive cosmetic package design, as well as to overcome the stigmatized concept of VI and blind user's cosmetics use. It aims to change people's perspectives and inspire them to be inclusive.

Introduction



A YouTube element has been excluded from this version of the text. You can view it online here:
<https://ecampusontario.pressbooks.pub/incd2021/?p=463>

The World Health Organization reports, as of 2020, about 2.2 billion people live with some level of vision impairment, 36 million of whom are diagnosed as blind or visually impaired. As of 2018, 33 million Americans (or about 13% of all adult Americans) reported they either “have trouble” seeing, even when wearing glasses or contact lenses, or that they are blind or unable to see at all (NHIS, 2018). Still, only a handful of beauty brands have invested in products and packaging that are designed specifically for the VI (Sicardi, 2019). The total disposable income (post-tax) for working-age individuals with disabilities is nearly \$500 billion. The total discretionary income is \$200 billion (Yin et al., 2018). These figures are indicative of the large potential clientele base of people want to buy personal care or beauty products but are unable to do it in the best way due to inaccessible products and method of purchasing the same. Cosmetics have historically played a role in “women’s consumer culture (as) a means of self-reinvention and transformation and allowed women to articulate different aspects of the self.” (Jacson, L. 2019). However, there is not much reporting on cosmetics for disabled individuals, and much less on VI and blind individuals. This could be due to the specific challenges each disability group has and each individual’s unique experience with cosmetics.

The universal presence of braille in packaging is beneficial for the visually impaired. Blind persons would

have a difficult time analyzing what is around them if there were no braille labels on products, especially when shopping in supermarkets. They not only have trouble navigating the store, but they also have trouble identifying things/products (Yuan et al, 2019). The issue does not go away once you leave the store. VI or Blind consumers who have bought products that are similar in shape, size, or other characteristics, might continue to have trouble at home distinguishing them or even remembering what products were bought (“The Canadian Federation of the Blind”, n.d). VI/Blind consumers have the additional tasks of labeling their products after purchase to know what and where they were placed (Yuan et al, 2019). Incorporating braille on packaging can make their task of differentiating easier without any hassle and will enhance their shopping experience (Chadwick, 2010).

However, the use of braille on the packaging is not impactful as believed. According to Statistics Canada, approximately 3% of Canadians above the age of 15 years old are visually impaired (Statistics Canada, 2016) and not even 10% of them can read braille (Mulholland, 2010). About 0.3% of Canada’s VI population can actually read braille. This is a relatively small amount of people who would benefit from the use of braille in packaging.

Meet Shivani



Shivani Gulati
Inclusive Industrial Designer

Bombay, India

She/Her

shivani.gulati@student.ocadu.ca

Shivani Gulati (she/her) is an Industrial Designer from Mumbai, India. She is currently studying in her second year of the Masters in Inclusive Design program at OCAD University, where she is concentrating her efforts on providing consumers with inclusive product experiences.

Shivani became interested in inclusive design while studying Industrial Design at the MIT-Institute of Design in Pune, India. Her experience in cosmetic packaging, interior decor lighting, and product design has led her to expand her abilities to include accessible and inclusive design in her current work.

Next up: Problem Space and Considerations >

PROBLEM SPACE AND CONSIDERATIONS

Shivani Gulati

Problem Space

Difficulty differentiating products and colours

For the VI and blind consumer, carrying out a beauty or skincare regimen is not as straightforward as it is for sighted individuals, not only because self-appearance is subjective and requires some degree of personal judgment, but also because facial makeup is heavily reliant upon colours. A blind consumer stated, “I listen to a lot of other makeup artists videos to understand the colour of each new cosmetic I buy and then braille label them at home, it’s a time-consuming process, but it allows me to understand colours and imagine the appearance” (Darling, n.d.).

Another blind consumer stated, “I tend to buy products which are not identical to each other at all with their shape for my ease of use while at home, but this makes me miss out a lot of products from the market, it’s a headache to identify similar packaging” (Personal communication, 2020). It is assumed that a VI or blind person would be able to locate objects at home following personalized home environment principles. However, failure of object detection to locate and identify products at home has been reported. Therefore, having tactile cues within labels, use of scent can help consumers with a better experience (Pradhan & Daniels, 2021)

Dependence on sighted people to cross-check appearance

Blind individuals have been found to play a great deal of attention to their appearance because they know people around them can see them. Yet an obvious and major problem for completely blind users is that there is no way for them to check or confirm their appearance on their own; hence “blind people rely on sighted or partially sighted people to act as their mirrors. And what’s more, sighted people are not exactly ‘reliable’ mirrors” (Peters, M., et. 2017). Reducing the reliance of blind and VI consumers on sighted people, friends and family will help them to achieve a more independent life.

Codesign and Prototyping

I plan to undertake longitudinal co-design sessions with VI/Blind consumers as part of my research. Its objective is to attain information from their previous packaging experiences and allow them to contribute ideas for the best packaging solution for them. I will create prototypes based on the participant’s description of

their ideal package. These prototypes will be put to the test with participants. After getting feedback on the prototype, I will revise the design to meet the needs of the users and repeat the prototyping and assessment process until participants desired design is reached. I intend to use this strategy to make the process more inclusive by listening to the needs of the users at each step and iterating the design until the problem is solved.

Multi-sensory Packaging Quiz

This small quiz will assist visitors in recognizing how combining multi-sensory experiences with packaging can assist VI and blind people in effortlessly differentiating products and improving their experience.



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<https://ecampusontario.pressbooks.pub/incd2021/?p=465#h5p-23>

Thank you

I hope you enjoyed looking through the research findings and thought about how essential it is to have accessible cosmetic packaging. If you would like to share your feedback, please take a moment to complete the form below. Your participation is completely voluntary! Please note that your responses will help me to understand the effectiveness of my virtual exhibit and will not be used for any other purposes. Thank you for reading!



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ESSENTIALLY VERSATILE BOTTLE DISPENSER | SHARON SEQUEIRA



Sharon Sequeira

User Experience Researcher

Toronto, Ontario

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Sharon is a seasoned user experience researcher where she thrives in discovering how to improve online services that impact all Canadians in the digital sphere.

In her free time, Sharon is an avid adventure traveller, having been to all seven continents by herself.

Sharon is also a certified Aromatherapist, receiving honours from the Canadian Federation of Aromatherapists.

She has a small company called Aromà Marché, where she loves making custom skin and hair care products to spark delight among her clients.

Sharon has combined her expertise in research and her passion for aromatherapy to focus on making an everyday body care package usable by the elderly. This stems from her own Mother having undergone back to back surgeries due to carpal tunnel and arthritis. She is keen to ensure dignity and independence are afforded to everyone without having limitations of a package design that inadvertently excludes the senior demographic.

OVERLOOKED DEMOGRAPHIC

Sharon Sequeira

An Overlooked demographic:

Primarily, as a user experience researcher, I was amazed by how few bath and body care products were actually usable by the elderly, especially those who have limited strength in their hands. As one ages, stiffness in joints, arthritis and weakness are common physical ailments. Secondly, as a certified aromatherapist who makes body and hair care products, I delved into how I can incorporate inclusive practices to better build my product containers from a usability perspective. However, this time, with a laser focus on the senior demographic of society.

Globally Speaking – Senior Buying Power:

The **60+** age group is the fastest-growing consumer demographic worldwide, according to the United Nations. And yet the issues that make seniors' daily lives harder or easier — such as product packaging — are not frequently taken into account. Why is that? The numbers below are reminder enough that product packaging needs to be designed and built better so as to not exclude a demographic that we will see ourselves in, sooner or later.

Globally, the **65+** age group population will hit 1 billion by 2030 and 1.6 billion by 2050. (Forbes, 2018).

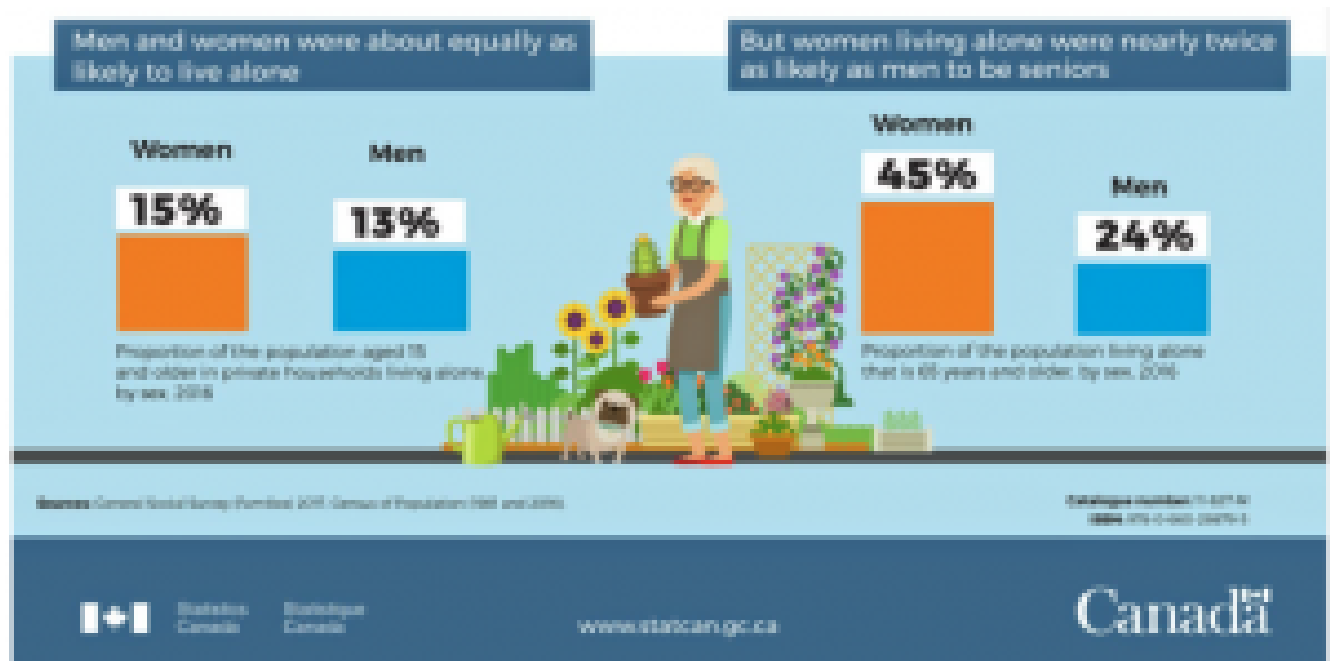
Those who are **60+** will make up more than 20% of the global population by 2050. (Forbes, 2018).

The European Commission reports that consumer spending among seniors aged **60+** rose 50% faster than people under 30.

Bank of America Merrill Lynch estimates that the global spending power will grow to **\$15 trillion** by 2020. (Forbes, 2018)

In Canada:

According to Stats Canada, as of July 1, 2020, there were **6.8 million** seniors aged 65 and older. Roughly accounting for 18.0% of the population. Note, as the image shows below, women living alone were nearly double than that of men living alone. (Stats Can)



Statistics Canada's most recent demographic projections show that seniors could account for over one-fifth of the population by 2025 and could reach one-quarter by 2059. (StatsCan, 2019).

HIRING A PRODUCT

Sharon Sequeira



A YouTube element has been excluded from this version of the text. You can view it online here:
<https://ecampusontario.pressbooks.pub/incd2021/?p=1320>

In this video, we're about to watch, I had decided to go out and buy a few shampoo bottles with different dispensing tops. My Mom, who had two back to back carpal tunnel surgeries, is testing out the tops.

Imagine you're about to take a shower an almost mundane task. Unless you have limited strength and can't actually access the contents of the product.

Now imagine you dread this activity because you can't open your favorite shampoo bottle.

How do you feel? Helpless? Frustrated? How would you adjust your routine because you live alone and don't have assistance?

This exercise was done to showcase that packaging needs to be accessible.

Thanks Mom.

[Hiring a Product](#) Copyright © 2021 by Sharon Sequeira. All Rights Reserved.

HOLISTIC VISION

Sharon Sequeira

What am I hoping to co-design?

Easy-to-open and safe packaging to access shampoo/bath care products. It may be one of the most significant challenges to tackle when it comes to body care, however, ***evolution over revolution!***

What am I hiring the bottle to do?

Aside being a means to offer a cleaning medium – the container is assigned to afford dignity to the elderly as they go about their showering routine, by making the **product dispensing component** easy to use.

Dignity and independence can not be lost because of overlooked ageist designs!

Features to consider in the iterative design process:

- Silicone band in middle for easy grip in a wet environment
- Rubber base allows no slip
- Suction cup to attach the bottle to the shower wall, especially if limited space in shower/bathroom.
- Simple flip cover and squeeze gently to dispense the contents.*
- Opaque bottle to keep track of contents making it refillable with one's favourite brand or buying in bulk to limit waste.
- Ideal for other liquids such as lotions, liquid soap, shampoo, conditioner and shower gel
- Create an aesthetically pleasing design to spark delight!



First prototype (non co-design)

Next Iterations:

- *Offer a wider pump option instead of nozzle
- Bottle needs to be lightweight, portable and secure for travel

- Ensure material used can afford all contents to be pumped/squeezed (leave no product behind!)

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YOUR FEEDBACK WILL STRENGTHEN MY ONGOING EFFORTS.

Sharon Sequeira

I appreciate you kindly taking the time to explore my exhibit! I sincerely welcome any open and honest feedback, because your response will help me understand the effectiveness of this exhibit, as well as to help me improve on my designs.

Please take a moment to complete the form below. Your participation is completely voluntary and your comments will not be used for any other purposes except to help me gain insights toward the future of designing for the elderly.



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[Your feedback will strengthen my ongoing efforts.](#) Copyright © 2021 by Sharon Sequeira. All Rights Reserved.

DESIGNING A THEORETICAL GUIDELINE FOR E-COMMERCE BRANDS TO MAKE ONLINE SHOPPING EXPERIENCE ACCESSIBLE TO BLIND USERS | NUZHAT SAMREEN



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<https://ecampusontario.pressbooks.pub/incd2021/?p=1780>

Overview

The Coronavirus (COVID-19) pandemic has caused mostly all businesses to move online because of reduced in-person shopping experiences. And despite most brands having the best social media and branding strategies, they fail to make their platform accessible to everyone. Online shopping has become vastly popular and is easily accessible to people all over the world. Considering the accessibility criteria many brands are yet to incorporate it into their online interfaces. Designing attractive web layouts that are usable but cannot be used by everyone is something that most brands have been following. Most visually impaired Internet users rely on assistive technologies like screen readers or screen magnifiers to render sites perceivable and operable (Herndon, 2019) Despite the existence of having an accessibility guideline for more than a decade, disabled users are still finding problems using websites because of the way the content is put out (Information Architecture). The knowledge we as designers have regarding visually impaired users' problems while surfing the internet is quite low. This research aims to list out minor and major problems that print-disabled users (blind, partially sighted) are encountering on the web.

Simple interface solutions can easily improve the users' experience on the web, although for a more impactful improvement, a combination of user experience and design solutions might be the answer.

Meet Nuzhat

Nuzhat Samreen
User Interface/Graphic Designer
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Nuzhat Samreen (she/her) is from Kolkata, India. She is a User Interface and Graphic Designer, and also a human-loving introvert. Currently in her second year of the Inclusive Design (M.Des) program at OCAD University. Her design research focuses on combining design thinking, user research, and experience strategy, all with a relentless focus on the user.



[Problem Statement and Considerations>](#)

[Accessibility and Online Shopping>](#)

PROBLEM STATEMENT

Nuzhat Samreen

There are many types of low vision (also known as “partially sighted”): poor acuity (a vision that is not sharp), tunnel vision (seeing only the middle of the visual field), central field loss (seeing only the edges of the visual field), and clouded vision. Individuals with low vision may encounter multiple barriers on the web, for example, web pages that are difficult to navigate and web pages that have poor use of colour contrast, and usage of incorrect font size that makes it difficult to read. Amongst a few of these things, arranging content in a way that it is easy for users using assistive technology to comprehend the information presented, is one of the most important components of web accessibility. There is a need to design solutions that properly address the problems blind users have and create a better experience on the web. This could be done through understanding the problems that are distinct to blind users regarding the information architecture of the shopping websites they access. Then, design solutions can be proposed that properly address these problems and improve users’ experience. However, to be able to suggest design solutions to the key problems blind users encounter on the web, a thorough understanding of how specific design solutions can benefit blind users’ experience on the web is required.

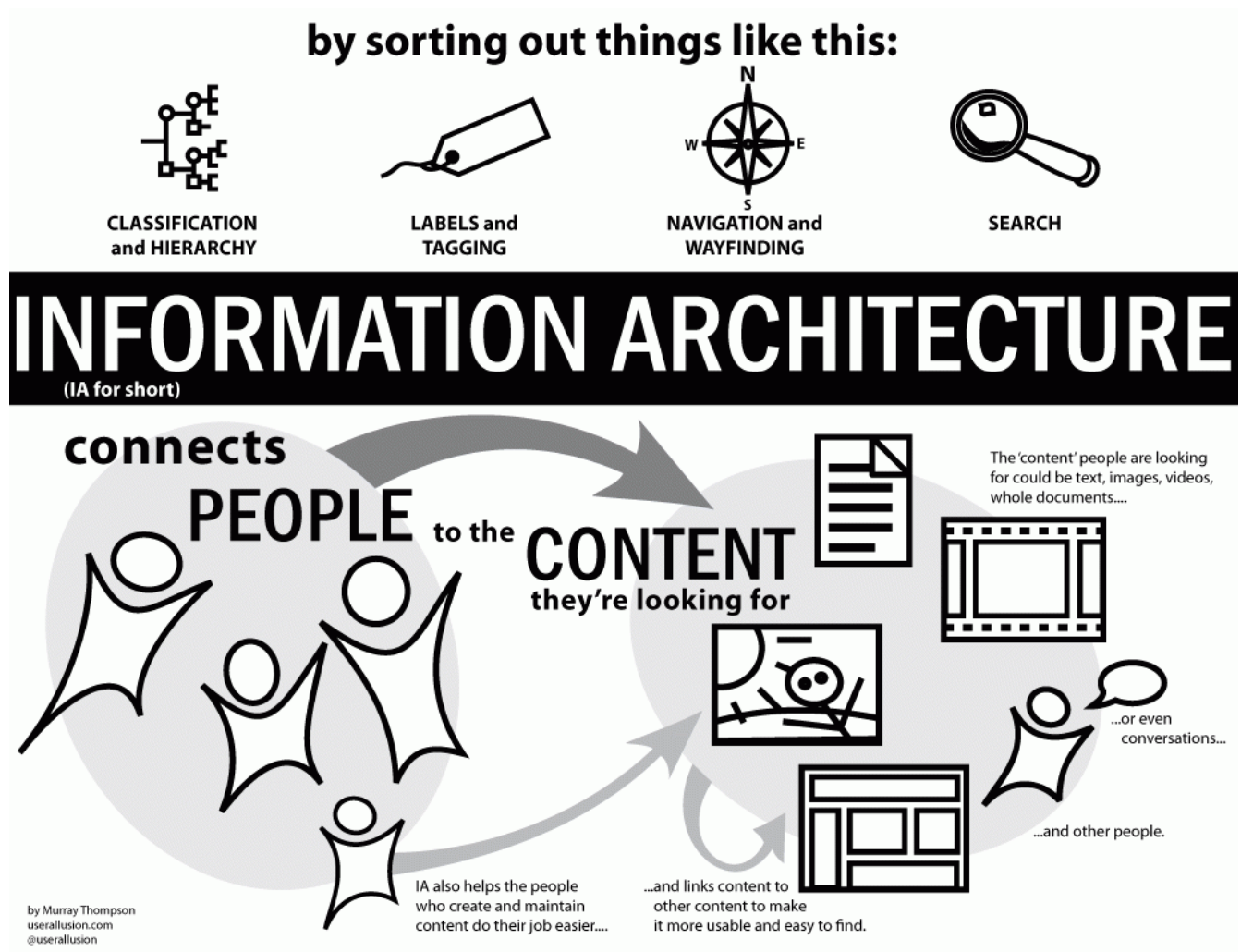


Image by Murray Thompson, userallusion.com

There is a lack of empirical evidence in the existing accessibility web guidelines regarding specifications for information architecture. How content is arranged in an interface matters greatly. It is easier for sighted users to figure out the incorrect positioning of a CTA(Call-to-action) button compared to a visually impaired user. When using a screen reader, the information that is read out loud depends on how the content is displayed horizontally, and any mistake caused in placing the content can cause major confusion for the user who is trying to access the website. For example, a brand selling facial serums might add their 'add to cart' button at the end of the page instead of the beginning, which would result in the user getting confused with all the other information in between.



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[Overview>](#)

[Accessibility and Online Shopping>](#)

ACCESSIBILITY AND ONLINE SHOPPING

Nuzhat Samreen

With the emergence of the current digital era, we are all subjected to a degree of new challenges when trying to navigate websites. Screen readers existed even back in 1989 with the launch of the first web browser. Some of the web accessibility highlights during this time frame included the creation of the first accessibility guidelines in 1995, the same year Amazon was launched.

The pandemic has created more non-accessible online stores, as retail businesses hurried to add online sales capability, throwing up hastily-created websites that are hard to navigate even when fully able.

We're talking about issues like:

- Failing to support screen readers that blind users need to navigate online;
- Not making a site keyboard navigable for users who can't point and click on a mouse
- Confusing layouts that leave users with cognitive decline bewildered and lost;
- Hard-to-read displays with low contrast ratios, poor color choices, tiny text, etc. that make it difficult for users with low vision or weak eyes to read instructions, descriptions, guidance in form fields, and more;
- Presenting vital information such as price and product description in an image without descriptive alt tags, so screen readers can't pick it up;
- Using flashing gifs and animations that can trigger dangerous seizures in users with photosensitive epilepsy;
- Hiding crucial details about delivery and returns in fine print that is almost impossible to find on the site, and/or in jargon that is unclear to many visitors.



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<https://ecampusontario.pressbooks.pub/incd2021/?p=1833>

How can E-commerce site owners respond to this?

Some of these are easy to solve without any special training or tools, like choosing large fonts and high-contrast ratios, drawing an intuitive layout, and rewriting sales descriptions in easy-to-understand language. But others require specialist input, such as the inclusion of ARIA features for screen readers and support for full keyboard navigation capabilities. Even seemingly simple steps, like adding a descriptive alt tag to each image, can be overwhelming if you sell thousands of products, each containing multiple images. This is where my research proposal can come in handy. By designing a guide for User Interface designers where all the accessibility features would be listed out. This would make it easier for designers to incorporate them while designing e-commerce websites. The WCAG guidelines available on the web are useful for developers, but this guide would help designers educate themselves about the accessibility criteria and help them in incorporating these into their initial designs so that developers would not have to go through the entire webpage, again and again, to check for accessibility issues.

Committing to inclusive design not only makes a retailer's website accessible to customers with disabilities but also creates a shopping environment that is easier for all customers to use.

How much do you know about Web Accessibility?



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<https://ecampusontario.pressbooks.pub/incd2021/?p=1833#h5p-40>

[Overview>](#)

[Problem Statement and Considerations>](#)

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WOOD – CREATING BETTER SPACES

The element of wood has vibrant and has 'emerging' energy. Animals and humans alike use wood as shelter. It grows out of the natural environment and into a living being's context, where it gets its vitality. An inclusive space should be designed with nature in mind and meet the user's needs. In the following section, you'll see students working to make physical and virtual worlds more welcoming.



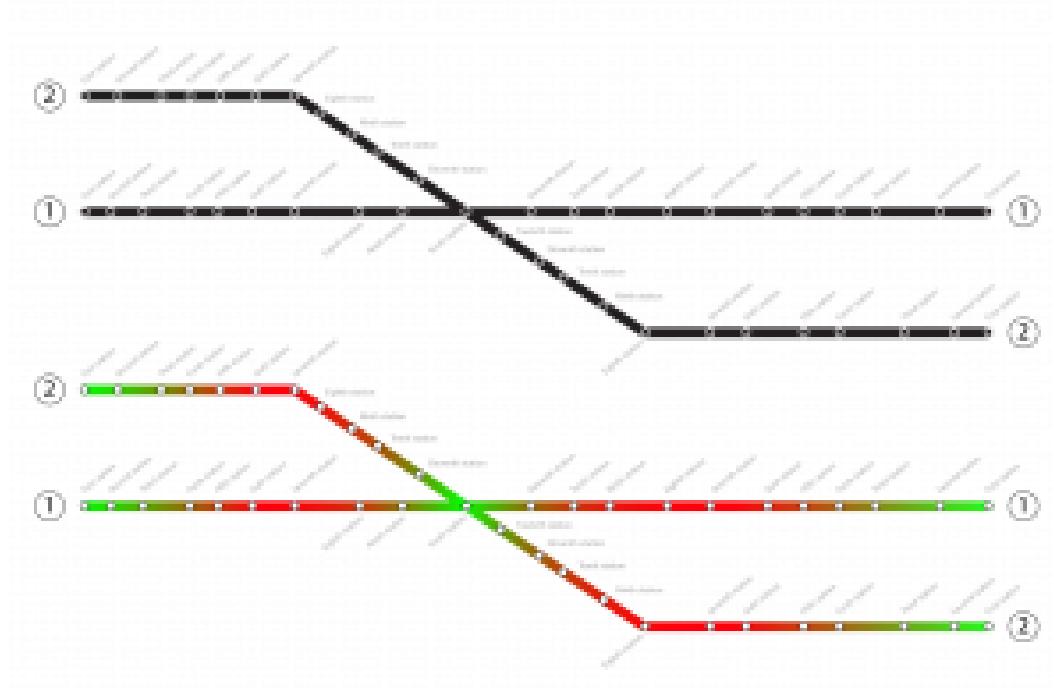
Wood

EXPLORING THE EXCLUSIONARY ASPECTS OF THE COMMUTE BEHAVIOR OF SUBWAY RIDERS | MORTEZA FARHOUDI



Imagine yourself being a citizen of a large city, relying on public transport for commuting between home and workplace. If your home/workplace is located anywhere other than the proximity of the first few stations of a line—or to some extent, intersection of two lines—the chances are rare that you can have a seat during your ridership (i.e., because usually there are more people than there are space and seats, and the seats are already occupied by those who have taken the train in its first stations). The following schematic subway map—with two intersecting lines—represents this phenomenon. The green-red color-coded version of the map shows

that those who take the train in the green areas tend to have the privilege of seating and occupying the most desired spaces.

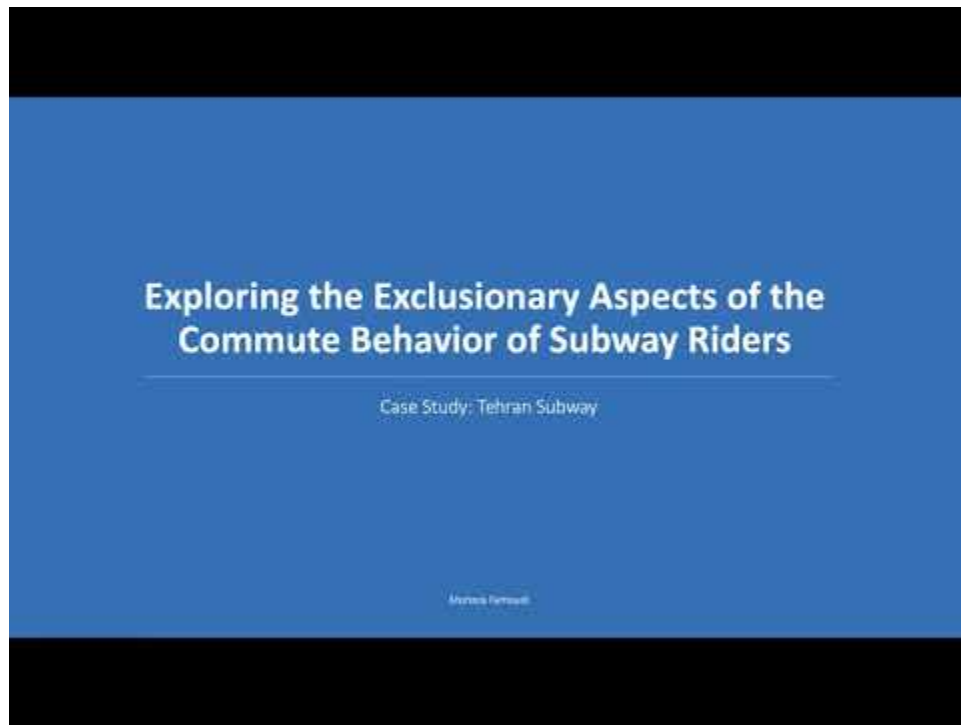


An imaginary subway map (researcher)

This issue shows that from an inclusivity perspective, the interior space of subway cars is unintentionally exclusionary towards a considerable number of commuters. And this is just the beginning of a chain of issues that affect the quality of commuters' life. Such—apparently inconsequential—issues could be among the reasons that make commuting a stressful experience (Bhat & Sardesai, 2006; Tse et al., 2006). And as shown by Wener et al. (2005), this stress can spill over into commuters' work and home life, affecting the overall quality of their life (Costal et al., 1988).

Commuting experience, as a *transitory stage* in commuters' daily life, has been of peripheral concern for mobility scholars. The aim of my MRP is to explore the possibilities for making commuting experience by public transit less stressful, particularly by making it more equitable.

Following video is a short introduction to my MRP; introducing the problem, outlining the objectives and the expected outcomes:



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<https://ecampusontario.pressbooks.pub/incd2021/?p=256>

THOUGHT EXERCISE

Before moving forward with a thought exercise, I should provide the definition for the term “citizenship behavior”. Citizenship behavior refers to actions and behaviors that are not required by citizens, but practicing them could lead to better functioning of society¹.



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If you are interested in what I—as a citizen—have been doing in a similar situation, click on the tab below to read about my experience:



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Thought Exercise by OCAD U 2022 Inclusive Design (MDes) cohort is licensed under a [Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License](https://creativecommons.org/licenses/by-nc-nd/4.0/), except where otherwise noted.

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1. This definition is based on the definition of “organizational citizenship behavior” by Organ et al. (2006), that is “the actions and behaviors that are not required by workers. They are not critical to the job, but benefit the team and encourage even greater organizational functioning and efficiency.”

FEEDBACK



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About me

Morteza Farhoudi (he/him) is a Behavioral Designer based in Tehran, Iran. He has studied Industrial Design in Iran University of Science and Technology. Morteza is interested in investigating the mediating role of artifacts (products, services, environment, policies) in our everyday life, by asking how they can help us act in favor of society? Currently, he is a second year student of the Inclusive Design (M.Des) program at OCAD University.

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INCLUSIVE PUBLIC PARKS FOR CROSS-CULTURAL COMMUNITY PARTICIPATION | JAPJOT SINGH

Foreword

Hello everyone, welcome to my exhibit on creating **Inclusive Public Parks (IPP)** for cross-cultural community participation. This exhibit is meant for every individual who uses or wishes to use public green spaces and wants to understand how incorporating various cultures in the design process is crucial for developing such urban green spaces.

Parks are the places which can be used as a bridge between different communities if they respond to the needs of visitors from diverse cultural groups and be designed and managed with people from different social and cultural backgrounds, as well as different user groups in mind. To address this issue of such disconnect between people and public spaces, a people-centered approach has to be used to plan, design, and manage public parks. **Placemaking** capitalizes on a local community's assets, inspiration, and potential, with the intention of creating parks that promote people's health, happiness, and well-being (What Is Placemaking?, 2007).

Introduction



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<https://ecampusontario.pressbooks.pub/incd2021/?p=405>

As urban populations rise and density increases, access to quality green spaces (and the mental and physical benefits that accompany them) will continue to diminish for marginalized communities, further widening the disparities in access to parks and public spaces and the accompanying public health implications (Past, Present, Future: Who Gets to Write Urbanism's next Chapter?, 2020). Identifying the needs of the current and predicted future communities is considered practical and proactive for planners to achieve Inclusive Public Parks. Also, community engagement in the planning and design of green spaces is an important step in understanding these needs as engagement not only encourages community ownership of the open space but may also maximize its use.

In racially, ethnically, and socioeconomically diverse neighborhoods the importance of integrating community voices into park planning needs to be highlighted. Urban parks and green spaces provide various physical, social, environmental, and health benefits improving the quality of life in the urban environment, so it is crucial that urban parks respond to the needs of visitors from diverse cultural groups.

Inclusive parks should foster racial equity and social diversity among its users as it is essential towards utilizing

the power of parks to its utmost potential. Various researches have considered racial/ethnic variation in park use, but these studies do not consider whether people across race/ethnicity are interacting in parks. In a research by Lee and Scott, a local community member detailed that many local African Americans had no interest in visiting the Cedar Hill State Park as the park did not do anything to encourage their use of the space and that it was mainly visited by White individuals and was viewed by community members as a **“White space”** (Lee and Scott, 2016, p. 432). In such spaces, the presence of people of color can be perceived as out of the ordinary, dangerous, or criminal (Public Space, Park Space, and Racialized Space, 2020). Instead of avoiding this friction, creative strategies can be used as parks could act as a bridge between communities to understand each other and strengthen relationships.

Parks and green spaces offer urban residents vital resources and services, hence the participation of park users is necessary in order to utilize the park to its utmost potential. Different communities need to be incorporated in the planning process because local residents are familiar with their locality, cultural values, and knowledge which professional planners may lack (Huang, 2010, p. 555). The communities around the park must act in a partnership with the local authorities responsible for park planning and management to create a collaborative atmosphere where needs of the whole community can be incorporated in the design process excluding no one because if parks are ever going to serve local residents to the best of their ability, policies and plans regarding parks should be made in response to the voices of those residents (Smiley et al., 2016, p. 2).

Next: Making Multicultural Parks ⇒

Meet Japjot Singh

Japjot Singh

Inclusive Spatial Designer

Toronto, Ontario

He/Him

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Japjot Singh (he/him) is an India-born interior designer. Currently in his second year of the Inclusive Design (M.Des) at OCAD University, he is exploring the untapped potential of public spaces to activate them and enhance their inclusivity.

Japjot has acquired his Bachelors degree in Interior Design from G.D Goenka University, Gurgaon, India in collaboration with Politecnico di Milano, Italy. His experience in designing utility based residential and commercial spaces has lead him to take a leap towards improving the condition of our public spaces as they are in a dire need of a overhaul in terms of how they are designed and managed by the higher authorities.



MAKING MULTICULTURAL PARKS

Japjot Singh

Overview

To create **Multicultural inclusive parks**, members of the community will need to be part of the planning and design of public parks. Martin and Boaz (2000) defines a spectrum of activities ranging from communication through consultation to co-production – the latter referring to the active and direct involvement of individuals or communities in policy debates, strategy formulation, and the design and delivery of local services. From the viewpoint of this present study, the concept of public participation through various participatory activities represents community involvement towards the higher end of this spectrum. The chosen methodology for this research is that of grounded theory (Glaser & Strauss, 1967, pp. 1–3). **Grounded theory** is an inductive method of generating new theory through the simultaneous collection, coding and analysis of data. The outcome of the research will be to form a **design toolkit** to inform others on the methods to make their park more inclusive.

To interact with the given image below, drag the slider (the red line with two arrows in the middle) left or right to see a standard park space on the left and the co-designed park on the right. Clicking the arrow button in the top right corner of the image will make them full screen so you can see them in a larger format. This image highlights the importance of including various communities and user groups during the design process.



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<https://ecampusontario.pressbooks.pub/incd2021/?p=449#h5p-6>

Conceptualize & Prototype

During this phase the researcher would engage the participants in generating and sharing a broad range of ideas

the form below. Your participation is completely voluntary! Please note that your responses will help me to understand the effectiveness of my virtual exhibit and will not be used for any other purposes.



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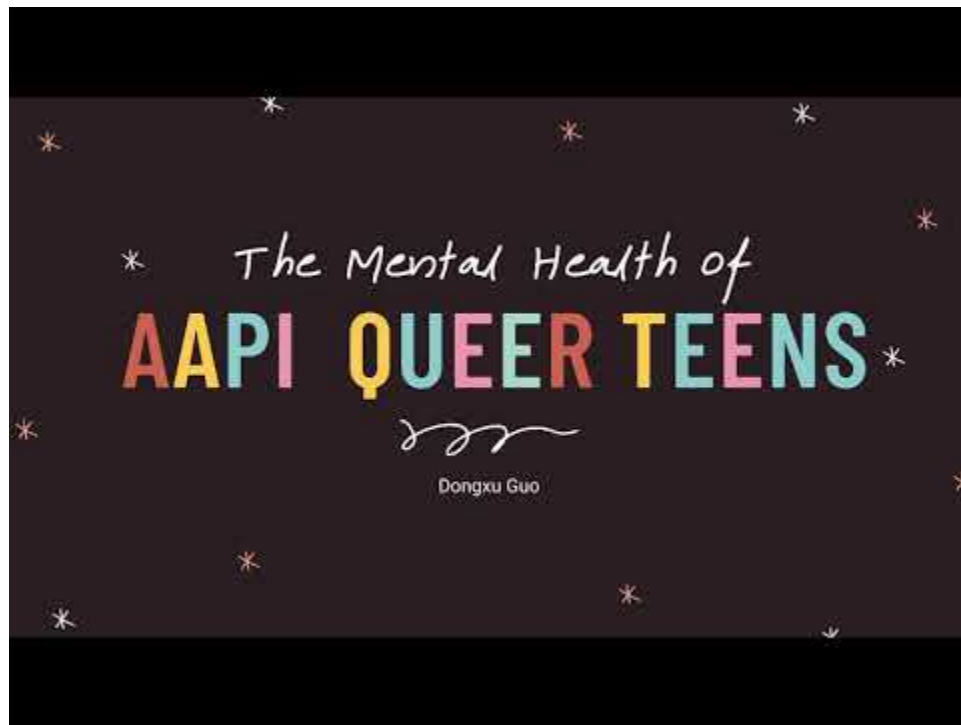
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MENTAL HEALTH OF AAPI YOUTH IN THE LGBTQ+ COMMUNITY | DONGXU GUO



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<https://ecampusontario.pressbooks.pub/incd2021/?p=1392>

Background:

In many East Asian cultures, being queer is still frowned upon by most of society. Many LGBT AAPI youths in North America experience unique challenges from being part of multiple minority groups. The traditional Asian cultural values are often at odds with positive and healthy expressions of LGBT identities. Therefore, they struggle with their sexualities, identities and mental health because of the pressures from their families.

[Research](#)

[Insight, Goal and Future Plans](#)

[References](#)



Dongxu Guo (Victor)

Inclusive Visual and UX/UI Designer

Toronto, Ontario

He/Him, she/her, they/them

Dongxu Guo is a Chinese-born designer. Currently, in his second year of the Inclusive Design (M.Des) at OCAD University, you can contact them at victor.guo@student.ocadu.ca.

RESEARCH

Dongxu Guo

Research

Being queer and Asian is a unique experience in North America. Especially for teenagers that are first and second-generation immigrants. The media and majority of the population in north America overlook the intersection of the two minority groups and the struggles of AAPI queer people navigating their queerness and cultural identity at the same time. AAPI queer youth often experience being unaccepted by both minority groups. This challenge is a direct result of homophobia, transphobia in the AAPI community and racism in the queer community. The lack of belonging can lead to mental health issues for these teens and young adults.

In many AAPI households, being queer countries, being queer is still frowned upon. Many LGBTQ+ teens struggle with their sexualities, identities and mental health because of the pressures from their families, peers and mentors. A 2019 study by the HRC Foundation in partnership with the University of Connecticut “found that Asian American and Pacific Islander LGBTQ youth are at a heightened risk for discrimination at home and in school” (Truong, 2019). The study also analyzed the responses of around 1,200 young people from the United States. It shows “that only 19 percent of Asian American and Pacific Islander LGBTQ youth said they could ‘definitely’ be themselves at home, while only 29 percent said they could ‘definitely’ be themselves at school” (Truong, 2019). For many LGBTQ Asian Americans coming out to parents can be particularly difficult. And this struggle can manifest into depression and other mental health-related problems.

On top of the familial struggles for AAPI queer individuals, they also have to face racial bias and stereotypes within the queer community. Most queer spaces favour whiteness. In a Glaad article author Andre Menchavez demonstrates their unique experience, “I have been alienated from the queer community because of my Asian identity. These experiences of alienation taught me that the colour of my skin made me undesirable. ‘No fats, no femmes, no Asians’ is a phrase in the queer community I am too familiar with. Similarly, I faced the complexity of both fetishization and isolation while dating as an Asian queer person ” (Menchavez, 2019). Their experience is not uncommon within the queer community. Research by [ES magazine](#) reveals that out of 850 participants, 80% of black men, 79% of Asian men and 75% of south Asian men have encountered some forms of racism in the LGBTQ+ scene (Jones, 2016).

Besides being ostracized by both the AAPI and LGBTQ+ communities, most of the AAPI queer people don’t often seek help for mental health issues. This is the result of mental illness being stigmatized in Asian culture. According to a report by the Western Journal of Medicine, many east Asian cultures are highly influenced by Confucian which “discourage open displays of emotions in order to maintain social and familial harmony or to avoid exposure of personal weakness”(Kramer, Kwong, Lee., & Chung, 2002). This belief

creates fear and shame around mental health for the AAPI community. Therefore, it prevents people from the community to openly discuss their past trauma and seek help from mental health professionals.

INSIGHTS, GOAL AND FUTURE PLANS

Dongxu Guo

Insights:

- **Many first and second-generation Asian youths in North America, already feel alienated from their “Asianess”.**
- **The culture and family pressure will cause queer teens to experience mental distress that might lead to depression, anxiety, substance abused issues and etc.**
- **The racial stereotype that exists in the queer community will alienate these teens even more.**

Goal and Big Idea:

Creating a Multi-media Online Space to make AAPI queer youths feel welcome and loved, and providing resources to help them with their mental health.

Future Plans:

- Connecting with local (the greater Toronto area) LGBTQ+ organizations.
- Hosting a co-design session with the target audience (AAPI LGBTQ+ teens). The session will determine how the project will take place in the following aspect: the platform that would be most appropriate for the project, the type of assistant the target audience needs the most and the online environment the target audience wishes to create.
- Designing the technical aspects of the platform (User flow, wireframe, branding, identity and etc.)
- User testing.



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WATER – SHIFTING PRACTICES

Water has ‘reflective’ energy. It acts as a mirror for us to be introspective. It is also transparent—when we are able to see through the distractions, our core needs become crystal clear to us. In inclusive design there is a need to constantly be self-reflective. In the following section, you’ll see students who are working to shift practices and change guidelines within an industry.



Water

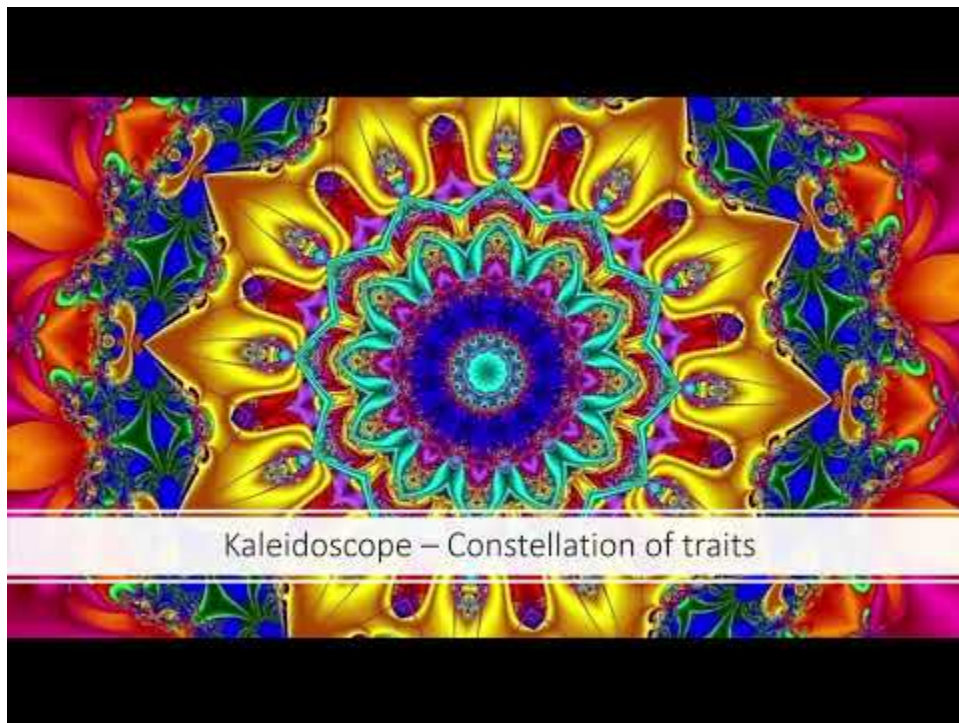
'YOU DON'T LOOK AUTISTIC': SUPPORTING AUTISTIC WOMEN'S SUCCESSFUL TRANSITION TO POSTSECONDARY EDUCATION | SANDRA LAW

Introduction

My project will develop a toolkit that can be used by educators to support autistic women transitioning to postsecondary education. Women often do not receive an autism diagnosis until they reach their mid-thirties, forties or even fifties which means that they do not receive the educational, vocational and other supports provided to people who do receive an early diagnosis (e.g., in childhood). This delay is caused by parental and even professional misconceptions about kinds of behaviors that are typically autistic, which are generally only typical of males who have the condition, not of all autistic people. Autistic women are known for masking their autistic behaviors so that they can more easily 'pass' as neurotypical. However, the effort they make to 'fit in' can take a heavy toll on their mental well-being.

These masking behaviors have consequences for women, such as, increased frequency of melt downs and shut downs once the women or girls arrive home after a work or school day. A combination of masking and the likelihood of a later diagnosis can lead to the development of comorbidities like anxiety and depression, conditions that can complicate women's successful transition to postsecondary education. It may also mean they will need a greater range of supports to persist and succeed in postsecondary education.

This exhibit will provide you, the visitor, with an opportunity to explore the experience of autistic women by viewing and listening to selected online content that has been created by autistic women from all over the globe. You will also have an opportunity to participate in a meme creation exercise that will allow you to explore your own challenges transitioning to postsecondary education (e.g. greater independence and responsibility) and compare them to the challenges faced by autistic women as recounted in memes, blog and Twitter posts, podcasts, and online videos.



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<https://ecampusontario.pressbooks.pub/incd2021/?p=1014>

Meet Sandra

Sandra Law

Learning Designer, Researcher, Writer

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Sandra is a Learning Designer who currently works at an online university in western Canada. She has a background in the sciences, social sciences and education. Her interest in web accessibility began in 2003 when she was working as a technical writer and pursuing a Master of Education degree in Educational Technology from the University of Alberta. In her capacity as Learning Designer she has worked on several courses and projects advocating for greater accessibility of online instructional content, such as, developing online math content in MathML.

She also chaired the eCampus Alberta Universal Design for Learning (UDL) subcommittee which created a series of modules for postsecondary educators on how to incorporate UDL in their practice. She completed a PhD in Educational Technology from the University of Calgary in 2011 with a focus on educational game-based learning. Her decision to enroll in the Master of Inclusive Design program at OCAD University was motivated by a desire to meet like-minded individuals and to explore the role that inclusive design can play in improving the participation rates of individuals with disabilities in postsecondary education.

Next: Issues being explored in this project

ISSUES BEING EXPLORED IN THIS PROJECT

Questions and Gaps

Sandra Law

Problem Statement

Autistic women often receive delayed diagnoses and limited educational and vocational supports and as a result may develop comorbidities, such as anxiety, depression, eating disorders and even suicidal ideation. This means they may face even greater challenges than males with an autism diagnosis (whose traits and behaviours are seen as typical of autistic people) when they transition to postsecondary education, which places much onus on the individual to be effective self-advocates. Participation in postsecondary education leads to improved life outcomes for individuals with disabilities and given current low participation rates of autistic people in postsecondary it is important to find ways to increase their persistence and completion rates when they do enroll in programs (Hart, Grigal, & Weir, 2010; Hendrickson, VanderBusard, Rodgers, & Scheidecker, 2013).

Research Questions

How can educators and student services staff (e.g. those working in accessibility services units) best support autistic women as they transition to the postsecondary education from work, home, or secondary school?

Does this group of individuals need access to unique services and resources (i.e., distinct from those offered to other disabled individuals, specifically those referred to as neurodiverse, and distinct from males) in order to persist in postsecondary education and to successfully compete the programs in which they are enrolled?

[Next: Firsthand accounts of autistic women's experiences](#)



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FIRSTHAND ACCOUNTS OF AUTISTIC WOMEN'S EXPERIENCES

Listening to Autistic Women's Voices

Sandra Law

Videos

Getting a Diagnosis

The children (e.g. girls) that present in a more anxious quiet kind of passive way are not getting the support they should be getting because they are not disrupting the school day. ... That can lead to self-harm and depression and further anxiety so they should absolutely be getting that support and it should absolutely be as much of a priority as it is for the disruptive child.

Purple Ella (Jan 18, 2018)

... if you're a girl with Asperger's, things get even more tricky because all the diagnostic tools that professionals use were designed to spot Asperger's in boys. Now this gender bias leaves thousands of Asperger girls undiagnosed, unsupported, sometimes even after they've taken the test. My younger brother was diagnosed as being on the spectrum when he was three and a half. His autism was obvious or stereotypical. He was late to talk, he bounced and flapped his hands, and he wouldn't make eye contact. ... within two months, he was diagnosed, and the proper supports were put in place to help him.

*Fast forward eight years and he is doing just great. And then, there was me. I didn't bounce. I didn't flap. I was a shy but diligent student. I got good grades and I didn't cause trouble. But what I did do was hide under the table and cover my ears at lunchtime because the noise of my chatting peers was too much for me to cope with. I was quiet, I let others make up the rules of the games we played, and I shared my sparkly pens when no one else would. **And it took 14 years for anyone to notice that I was struggling, desperately.** ... by the time Asperger girls reach adolescence they are mentally exhausted and emotionally wrecked. ... every conversation becomes like a math problem.*

[Niamh McCann Ted Talk \(Oct 2018\)](#)

Dangers of Masking

Masking hides our true self. It hides our unique voice, and it replaces it with a more socially acceptable version of ourselves. Masking is exhausting, I am masking now, and I am masking all of the time when I am with people.

I can't switch it off... People are unaware they are teaching their children to mask, and they are unaware of how much damage it causes to our sense of identity. I learnt to mask my autism and my true self because I was taught to by my parents, and my teachers and my friends. ... As I grew up into my teens, my early 20s, my autism fought back. It was tired of hiding and it was tired of being masked, so it showed itself in the only way it could. I developed an eating disorder, I began to self-harm and I tried to end my life repeatedly. ... the misdiagnoses piled up because my doctors had no idea I was autistic because I had learnt to mask it so brilliantly. I was given psychiatric drugs that did not work, counseling and therapy that did not work. I was even given electric-shock therapy, which did not work.

[Carrie Beckwith-Fellows \(Jul 6, 2017\)](#)

Experiences in Postsecondary Education

University Orientations Customized for Autistic Students



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<https://ecampusontario.pressbooks.pub/incd2021/?p=1025>

Navigating Expectations of Women's Behavior in Postsecondary Education

While navigating the educational system I face considerable pressure to mask or camouflage my autistic traits even at university. I must also contend with societal expectations of women to be seen as competent we are always expected to be seen as calm, emotionally stable and put together all the time. Ultimately this can be harmful because I am forced to mask my autistic traits in order to just be seen as competent and even just to be taken seriously ... the anxiety from this constant masking just exacerbates all the stress brought on by sensory input and these social interactions.

[UC Davis MIND Institute \(Aug 11, 2020\) – Life on the Spectrum: Women Sharing their Unique Experiences](#)

Group Work

I hate it so much, because you get thrown in deep end with random people you don't know, general feeling of anxiety.

... letting someone else run it ... was my coping strategy ... quite happy to stick to the shadows and do the work ... looking back I should have tried to talk a bit more and do the work

[University of Leicester](#)

First Job as Graduate

First full time job ... tasks were easy ... but the environment was impossible. Two weeks in I was completely drained of energy. Hopeless, confused, I thought the best part of my life was over. ... I was coming home every single day and melting down or shutting down. I wondered if I had anxiety or depression. I had suicide check-ins with myself every few days. Every time I would say, no I don't want to die, but I can't figure out how to live. I was masking all the time.

[UC Davis MIND Institute \(Aug 11, 2020\) – Life on the Spectrum: Women Sharing their Unique Experiences](#)

Podcasts

Perceptions of Women of Color with Autism

So I'm not recognizing the differences in hierarchy and how they want to be acknowledged because I acknowledge everyone the same. And as a black female, a black person rather, it's like you get looked at a little differently because of, you know, if I did something and I can't I'm making this generalization but I think if we did the same thing in a different way just because I'm black it's going to be taken differently. ... So it's more like I ignoring you, I'm being mean. I'm being disrespectful. ... So you don't have that same privilege to be disabled or to have

no understanding of what someone means. You're just being hard-headed or you're you're acting ignorant. So it's, that's the difficulty, you're not afforded the same problems as someone whose not black, you has the same issue.

[Catina Burkett Interview on *Spectrumly Speaking* \(Nov 2020\)](#)

Tweets

Today is a big step in my journey growing up autistic. I HAVE A DEGREE!! From the girl in year 9 struggling in mainstream school to being able to say this feels incredible. Anyone out there doubting themselves, believe! You are so capable when the environment & support is right pic.twitter.com/a7hMmEUN5T

— An Autistic Student Nurse (STN) (@AutisticSTNurse) [July 16, 2021](#)

Autistic adult & PhD candidate Eloise Stark shares with writer Brendan McDonald the intense toll masking took on her, and the relief she felt in learning she is autistic.

Cn- ableism, discussion of a very traumatic event, talk of suicidal thoughts <https://t.co/F8H7h2AseD>

— Autistic Women & Nonbinary Network (AWN) (@awnnetwork_) [July 5, 2021](#)

[Next: What the literature says](#)



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WHAT THE LITERATURE SAYS

Literature Review

Sandra Law

Identifying Gaps in the Literature

The areas of focus for this literature review will be 1) underdiagnosis of autistic women 2) the experience of autistic students transitioning to postsecondary education 3) the kinds of supports provided to autistic students, specifically 4) autistic student perceptions of supports and accommodations that are provided to them 5) faculty perceptions of students with disabilities

Underdiagnosis of Autistic Women

Women with autism often receive their diagnoses much later in life than their male counterparts. Some women are diagnosed at the same time as their children, others struggle through life receiving a number of misdiagnoses until finally receiving a correct diagnosis of autism (Beckwith-Fellows, 2017; CBC, 2018). Women who have autism may excel at the primary and secondary school levels but decide to forgo pursuing postsecondary education because of their own low levels of confidence in their abilities (Kim, 2015; Stark, 2019). Women's skill at masking their symptoms, essentially hiding their struggles from peers, friends, teachers, parents and professionals (McCann, 2017) may be one reason for their later diagnoses. Receiving a diagnosis later in life means that women lose out on a number of supports that are provided to individuals with an autism diagnosis prior to the age of 18 (Lehnhardt et al., 2016; Milner et al., 2019; Stark, 2019). Anderson, Carter, & Stephenson (2018) argue that the needs of women in postsecondary education may be greater than those of men. In addition, their needs may not be well-understood and are generally not being met, given the limited amount of research on sex-based differences in autism.

Experiences of Autistic Students in Postsecondary Education

More and more autistic students are pursuing postsecondary education (Widman & Lopez-Reyna, 2020; Gurbuz et al., 2019). The number of autistic postsecondary students is likely underestimated as many of these students fail to register with disability services (Ames et al., 2016; Cai & Richdale, 2016). Even autistic

students who are well-prepared academically may struggle to succeed in postsecondary education (Baldwin et al., Ma et al, 2016). Despite the increased participation of autistic students in postsecondary education there is a shortage of programs that specifically address their needs (Chown and Beavan, 2012). A common theme amongst autistic student accounts of their postsecondary experience is that they feel isolated and lonely and encounter barriers communicating with other students (Ariel & Naseef, 2006; Francis, Duke, Fujita, & Sutton, 2019). This contributes to lower program completion rates for autistic individuals (Adreon & Derocher, 2007; Gotham et al., 2015).

Supports Provided to Autistic Postsecondary Students

There is a lack of clarity about the specific needs of autistic students in postsecondary education. Students who received some preparation (e.g., through postsecondary programs) in transitioning to postsecondary education likely have improved outcomes (i.e., increased program completion rates) (Greenberg, 2020). One of the difficulties inherent in providing supports to autistic postsecondary students is that they are a heterogeneous group. As one autism researcher has put it ‘if you have met one person with autism, you have met one person with autism’. Most of the accommodations provided to autistic students (e.g., separate testing space) were developed to serve the needs of other types of disabled students (Anderson, Stephenson, Carter, & Carllno, 2019). It has been suggested that most of the supports offered to autistic students are a poor match to their actual needs given that they are focused on academic supports when the needs of autistic people may be in non-academic areas (Gelbar et al., 2015). Even when postsecondary institutions do offer specialized supports to autistic students, students may not take advantage of them for a variety of reasons, such as,

- not being aware that supports exist,
- inability to understand that they need help, and
- stress response that impairs ability to request support.

(Elias & White, 2018; Gaffney, 2020; Knott & Taylor, 2014)

Autistic Students Perceptions of Supports and Accommodations

A multi-year, single institution study conducted by Accardo et al. (2019) on student satisfaction with accommodations and supports provided by a university indicated that students felt misunderstood by university faculty/staff, which in and of itself, was a barrier. Students also identified accommodations that they felt would have helped them succeed, such as: quiet locations for exams, a notetaker for lectures, extended time for assessments, academic coaching, housing accommodations, tutoring, and counseling (Accardo et al., 2019).

Faculty Perceptions of Students with Disabilities

Different educators have different degrees of willingness to support accommodation requests (Easterbrook et al., 2015). They may also have different levels of awareness of the range of disabilities their students may have and understanding of their legal responsibilities towards students (Muller, 2006). Faculty members are more likely to support students with disabilities when they have been given some training about the general needs of students with disabilities (Austin & Pena, 2017). It may be that faculty and staff are simply unaware of autistic students in their courses, as many of these students choose not to disclose their status (Kelly & Joseph, 2012). Although there are pedagogical strategies that have proven to be effective with autistic students there is little evidence that they are known or used by faculty members (Austin & Pena, 2017).

[Next: What I plan on doing](#)



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WHAT I PLAN ON DOING

Proposed Research

Sandra Law

A mixed methods approach will be used in this project. The first stage will be an environmental scan of selected Canadian postsecondary institution's websites' disability or accessibility services websites to determine whether they offer services specifically targeted to individuals with autism. This scan has already begun. The second phase will consist of semi-structured interviews will be used with professional groups (e.g., faculty, instructors, and student services personnel) and caregivers. The researcher may also record her own reflections on past and present experiences in the postsecondary learning environment given her own diagnosis of autism. Based on themes that emerge during the interviews a series of co-design sessions will be undertaken with autistic individuals who are planning to start postsecondary education, those who are middle of their programs of study, those on the verge of completing their programs of study and those who have dropped out of postsecondary education. Based on the findings of these sessions a prototype of a toolkit for educators and student services personnel on supporting students with autism will be developed.

[Next: What informed my thinking](#)



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WHAT INFORMED MY THINKING

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Sandra Law

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- [Next: Create your own meme about your postsecondary challenges](#)**



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CREATING YOUR OWN MEME ABOUT YOUR POSTSECONDARY CHALLENGES

Create a Meme

Sandra Law

Please select the URL for the Padlet space to post memes about your own challenges in postsecondary education. I am interested in your experiences whether you are autistic or not. If you feel comfortable sharing that information please do so in your message/meme.

[Padlet URL](https://padlet.com/sandralaw/hf5h8p53nr3hxbk)

<https://padlet.com/sandralaw/hf5h8p53nr3hxbk>

[Next: Your feedback](#)



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YOUR FEEDBACK

Evaluation form

Sandra Law

Please provide your feedback on my exhibit by completing this short survey.



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ACCESSIBLE WEB DESIGN FOR THE SELF-TAUGHT CONTENT CREATOR | CHLOE TYPERT-MORRISON

Foreword

Hello and welcome to my exhibit on accessible web design for the self-taught content creator. Before we continue through this project journey, I would like to note that this exhibit has been written in **plain language** wherever possible and all industry-specific terminologies will have a glossary definition when clicked. This exhibit is meant for everyone, regardless of web accessibility knowledge.

This exhibit uses the social model to frame disability. The International Association of Accessibility Professionals (2020) explains that the social model sees disability as “a socially created problem” (p. 7) where disability is not a trait of individuals but something society creates through inaccessible designs. This model removes the **onus** of finding accessible workarounds from the people who are experiencing the created disability and places it onto the person who is creating the product, experience or environment (p. 7). By helping the people who are creating web content make their work accessible, the onus can be placed on them to ensure that their websites are accessible to everyone.

Introduction



A YouTube element has been excluded from this version of the text. You can view it online here:
<https://ecampusontario.pressbooks.pub/incd2021/?p=89>

Video Transcript

Hello, my name is Chloe Typert-Morrison. For the past year, I have been focused on the question of how to bring Web Content Accessibility Guidelines to the general public. Though these guidelines are becoming more well-known, they are still generally developed for and promoted to web designers, developers and accessibility tool creators. Now that anyone with an internet connection can create web content, it is prudent that we shift our focus to ensure that these creators understand the purpose of accessibility guidelines and how to apply them to their own content.

In my exhibit, I explore the potential ways that the WCAG can be broken down and reformatted for the everyday person. I have also designed one of the possible products that may come from my MRP where I will be co-designing with self-taught web content creators to help them integrate accessibility practices into their content creation process. This exhibit displays a redesigned Squarespace interface that integrates checking for accessibility compliance into each design aspect. The redesign also includes explanations for each one of these

elements to help the person working with it understand what they need to do to make something accessible and why it is important. This tool kit is something that could be promoted to existing content management systems to help them blend accessible design practices into the websites created using their platforms.

I hope this exhibition may help you think about how accessible the content you create is and, possibly, learn a few things too. Thank you for watching and I hope that you enjoy our exhibition.

Explore the Project

[Read the Outline of the Problem ›](#)

[Explore the Redesigned Interface ›](#)

[Browse the References for this Exhibit ›](#)

[Read All Glossary Definitions from this Exhibit ›](#)

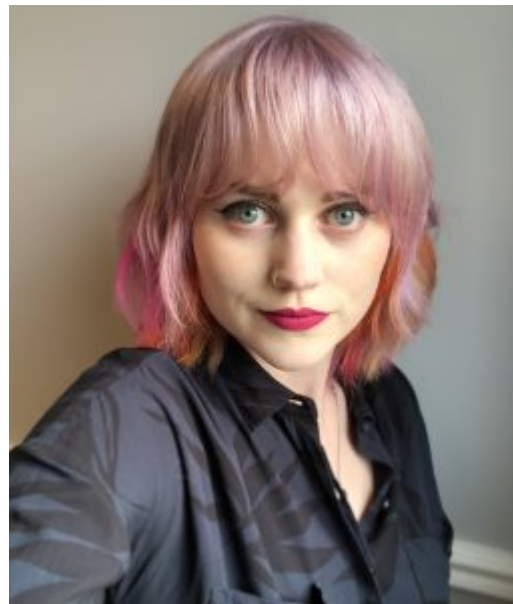
About Chloe

Chloe Typert-Morrison
Inclusive Experience Designer
Toronto, Ontario
She/Her

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Chloe has always been passionate about helping others and using design as a way to help increase awareness of the choices around us. She focuses her efforts on bringing accessible design practices to the general public, advocating for eco-friendly and healthy lifestyles, developing resources to assist LGBTQ+ youth, and promoting local artists and small businesses.

Chloe first developed her interest in accessible web practices while studying for her Honours Bachelor of Design Degree from the York University and Sheridan College Program in Design. She continues to develop these skills while working as the lead UX designer at Black Cat Advertising and to fuel her passion for working with small businesses and start-ups, she has



also established her own company, Launch Twenty Two, with services geared to help entrepreneurs, artists, small businesses find their identity and voice in web, social media and print.

OUTLINING THE PROBLEM

Chloe Typert-Morrison

As of the year 2020, over 1 billion websites have been created using **Content Management System (CMS)** platforms (Schäferhoff, 2020), which is over half of all active websites (Radoslav, 2020). However, even though **Web Content Accessibility Guidelines** have been around since the end of the 20th century (Hoffmann, 2019), 2018 statistics showed that less than 10% of websites meet **accessibility standards** (Christopherson, 2018). I have been working with the hypothesis that this is partly because accessibility guidelines are written as a technical standard for web developers, industry-trained web content creators, and **accessibility evaluation tool** developers (W3C, 2005) but this group of people only make up a small portion of web content creators.

For the time being, CMS platforms do not teach people how to create accessible content and do not ensure websites are compliant (Steenhout, 2017). Websites like **WordPress** are working toward ensuring that all of the new official WordPress **templates** meet WCAG 2.0 AA standards. However, even though these new templates are accessible, once a person begins to edit and add in their own content, there is no guarantee the final product will be accessible (Johnson, 2020). The **accessibility features** are also focused on using industry-specific terminology and may be inaccessible to non-industry creators (2020).

A popular alternative to creating accessible web content is **accessibility overlay tools**. However, these tools can only check for and alter certain kinds of web content, are not able to work with certain programming languages or embedded content, and simply provide a quick-fix solution (Bryne-Haber, 2020). These products do not address the main problem: people are continuing to build inaccessible websites even with accessibility standards in place. This exhibit aims to spotlight one of many possible solutions to this problem by demonstrating how accessibility guidelines and compliance scanning can be integrated into existing CMS platforms in a way that is easy to understand while ensuring that the guidelines are met.

On the [Redesigned Interface](#) page, you will find several interactive images that reimagine the **Squarespace** web content editing interface with integrated accessible design options throughout the content design process. Though this is merely a sample of some of the different aspects that could be updated, it shows that with some slight modifications, the accessibility of the end websites will have an immediate improvement. Please use the link below or the navigation menu to explore the interface and find out more about the redesign.

[Explore the Redesigned Interface }](#)

[Browse the References for this Exhibit }](#)

[Read All Glossary Definitions from this Exhibit }](#)

THE REDESIGNED INTERFACE

Chloe Typert-Morrison

Overview

These redesigned interface screens aim to add accessible design integrations into Squarespace's content management platform.

Squarespace is a website builder that allows anyone, regardless of their skill sets, to create a website. However, as someone who has used Squarespace on multiple occasions and has tested both their older and more recently updated interfaces, I have noticed that they are severely lacking in accessible design options.

For this exhibit, I identified three areas that could be easily remediated using better descriptive language, pre-existing accessibility checking tools, and prompts to help inform the person using it about accessibility guidelines. I have also developed a new section of the interface for accessibility scanning that would run before a person is able to publish their website.

These tools are designed to be easy to use and integrate seamlessly into the website design process. The designs in this exhibit may be specific to Squarespace, but the concept behind them could be applied to any CMS platform.

How to Use

To interact with the following interfaces, drag the slider (the blue line with two arrows in the middle) left or right to see the current interface on the left and the redesigned interface on the right. Clicking the arrow button in the top right corner of each image will make them fullscreen so you can see them in a larger format.

Redesigned Colour Theme Interface

The Squarespace colour theme editor allows the content creator to create custom themes based on background colour and text colour ranging from light to dark options. If you pull the slider to the left, you will see that the redesigned interface allows the creator to develop palettes based on text colour and background colour with a **colour contrast** checker that checks for WCAG 2.1 AA compliance. This will ensure there is enough contrast between the text and the background for a better reading experience. An alert will appear if one of the themes does not have a strong enough contrast that explains what contrast ratio is required to save. The save button will be inactive until all themes meet the minimum contrast ratio.



An interactive H5P element has been excluded from this version of the text. You can view it online here:

<https://ecampusontario.pressbooks.pub/incd2021/?p=213#h5p-3>

Redesigned Image Upload Interface

Squarespace currently has no section in the image editor called **alt text**. The field is labelled as file name, has no description, and the example is just a file name with .jpg at the end which is confusing and misleading. In my redesign, people now have a well-defined area to add alt text with a description, clear example, and the ability to learn more about alt text when clicking the ? icon. If an image does not contribute essential information for this page, it can now be labelled as decorative and a screen reader will be able to skip past it. The interface ensures that all uploaded images are accessible by showing an error message if the person tries to save their changes without using one of the fields.



An interactive H5P element has been excluded from this version of the text. You can view it online here:

<https://ecampusontario.pressbooks.pub/incd2021/?p=213#h5p-5>

Redesigned Colour Palette Interface

The current Squarespace colour palette shows the three main colours used in the themes. There is not much else displayed on this page and does not have a lot of use outside of that one function. The redesigned colour palette interface now has a new section that shows how this palette may look for people with varying types or degrees of colour blindness. This area will also alert a person if colours are too similar in each one of the areas and will mark which ones cannot be next to one another.



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<https://ecampusontario.pressbooks.pub/incd2021/?p=213#h5p-2>

New Accessibility Compliance Scanner Interface

The new accessibility compliance scanner interface would be able to be accessed at any point during the build process and is recommended to be used periodically instead of just at the end. When a person is ready to **publish** their website, they will now be automatically taken to this screen.

The publish button will be locked until a scan has been run. After the scan is complete, any errors found will be listed in the left sidebar with descriptions of each issue. The errors that appear will automatically be highlighted on the right side when selected from the list and an explanation appears for how to resolve the issue using easy-to-follow language. There will also be a link in the description to take the person to the design interface required to make the correction. Once the scan detects no errors, the person may publish their website.

How to Use

To use the interactive image. Click on the purple i icons to open a description box. If you would like to preview the image in a larger format, click the icon with the arrows in the top right corner.



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<https://ecampusontario.pressbooks.pub/incd2021/?p=213#h5p-4>

Thank You

I hope you enjoyed exploring the redesigned interfaces and have possibly reflected on how accessible your own web content is. If you have a moment, please fill out the feedback form below. Your participation is completely

voluntary! Please note that your responses will help me to understand the effectiveness of my virtual exhibit and will not be used for any other purposes. Thank you for reading!



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Chloe Typert-Morrison

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GLOSSARY

Chloe Typert-Morrison

Accessibility Evaluation Tools

Software or online services that help you determine if web content meets accessibility guidelines.

Accessibility Features

Elements integrated with the content management system interface to assist in developing accessible content. For example, a section to add alternative text for images.

Accessibility Overlay Tools

An interface that is displayed on a website that claims to be able to alter the website content to be more accessible based on a person's selections. For example, the interface can alter the website to have larger text if someone is having a hard time reading the default size.

Accessibility Standards

In this context, to meet accessibility standards a website must pass all of the requirements outlined in the 2.0 AA Web Content Accessibility Guidelines.

Alternative (Alt) Text

Alternative Text is a short sentence used to describe an image that can be read by a screen reader or is displayed when the image can not be shown.

Colour Contrast

The luminance contrast between the lightest and darkest colour is measured in a ratio. The higher the ratio, the easier the text will be to read.

Content Management System (CMS)

Software developed to help manage the development and management of digital content. Often used to build websites, especially if someone does not have web design or development skills.

Onus

A duty or responsibility.

Plain Language

The goal of plain language is to be easy to read, understand, and use. It avoids complicated language, euphemisms, and jargon.

Publish

The term for making a website visible to everyone instead of hidden as a draft during the development stage.

Squarespace

A popular content management system platform. Known for having a simple interface and well-designed templates.

Templates

A base website with placeholder content and design styles that a person can use instead of starting a website from scratch.

Web Content Accessibility Guidelines (WCAG)

Internationally recognized standards for what web content needs to be made accessible with specifications on how to do so. There are several iterations and levels of these guidelines but the most commonly used one is currently 2.0 AA.

WordPress

The most popular website building platform worldwide with a market share of 40% of all websites.

EQUITABLE ACCESS TO PUBLIC INFORMATION AND THE ROLE OF THE GRAPHIC DESIGNER | CHRISTINE WOOLLEY

Welcome

Hello and thank you for joining me in my virtual exhibit on equitable access to public information and the role of the graphic designer.

The aim of this exhibit is to introduce pathways for visitors to gain an understanding of accessible and inclusive design, within the context of graphic design, and to shift mindsets and motivations towards inclusion. I am also looking to create opportunities for research connections. If you would like to connect and discuss my research further, please connect with me at christine.woolley@student.ocadu.ca.



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<https://ecampusontario.pressbooks.pub/incd2021/?p=137>

Introduction to my research

Problem space

As the world becomes increasingly digital, almost all communication materials end up on the web. It is vitally important for graphic designers, who often work with print media, to be knowledgeable in applying steps to make their materials accessible and inclusive online.

On June 17, 2021, the B.C. legislature passed the Accessible British Columbia Act into law. The new act will remove barriers and create accessibility standards throughout the province (Government of British Columbia, 2021). As part of the act, graphic designers will be required to ensure their materials are accessible, but there may be limited capacity within the design community in B.C. to meet these new requirements. Studies have shown a lack of consideration has been given to visual accessibility in print-based graphic design (Cornish et al., 2015), and many designers don't have the knowledge or experience to implement accessibility into their design solutions (Forlizzi & Lebbon, 2002; Lee et al., 2020; Zitkus et al., 2013).

Purpose of the research and potential significance

This research will seek to investigate the ability of the graphic design community in B.C. to successfully meet the requirements of the Accessible British Columbia Act and to co-create a framework and set of recommendations on how government can support the graphic design industry during this transition. This will be an initial step in preparing the graphic design industry in B.C. to meet the new requirements and to begin to think beyond accessibility legislation compliance.

If we can build awareness, ability, capacity, and motivation among graphic designers, designers will be more likely to develop materials with accessibility in mind, ultimately increasing inclusive and equitable access to public information.

Benefits of the research and ethical considerations

This research is intended to lead to greater awareness on the importance of creating visually accessible public documents (both in print and online), to create greater cohesion between graphic designer, content creator and individuals who rely on accessible delivery, to increase equitable access to public information, and to create a knowledge base of best practice for visual accessibility based on user needs.

The ethical considerations of not preparing the graphic design industry in considering accessibility are simple; if graphic designers don't consider accessibility in their designs, they create barriers and exclude people from accessing and using the information (Owen, 2016). Graphic designers need to be knowledgeable in building accessibility into their designs to ensure the content is accessible to individuals with disabilities and anyone who relies on accessible delivery of information.

Meet Christine

Christine Woolley

Art director and graphic designer

[**christine.woolley@student.ocadu.ca**](mailto:christine.woolley@student.ocadu.ca)

Christine Woolley (she/her) is a Vancouver-based art director and graphic designer. She studied design at Emily Carr University and is currently completing a Master of Inclusive Design at OCAD University. Before returning to academia, Christine worked as art director for a strategic communications firm specializing in comprehensive public consultation and engagement programs. Her work has included brand identities, environmental design, signage systems, publication design, interactive graphics, and websites, with many of her projects ranging across media.



She is a multi-faceted designer whose work encompasses strategy, design and technology. She is a Certified Graphic Designer (CGDTM) and Executive Board Member, PR Chair for the Society of Graphic Designers of Canada, BC Chapter. She has led and mentored design teams and continues to mentor young designers.

[**An introduction to accessible graphic design >**](#)

INTRODUCTION TO GRAPHIC DESIGN AND ACCESSIBLE DESIGN

Christine Woolley

Graphic design conveys critical information in visual form, but is this exclusionary in nature?

From graphic health warnings and pill packaging to informational campaigns and hospital signage, graphic design allows for the creation of public-facing visuals that educate, persuade, prevent and safeguard (Schrauwen et al., 2017). As shown in the image below, graphic designers can make life-saving information accessible to all. In this example, the World Health Organization used a series of stamps to promote the anti-smoking message.



Source:
[wired.co.uk/article/stamps-design-london-exhibition-crisis](https://www.wired.co.uk/article/stamps-design-london-exhibition-crisis)

At the onset of the global Coronavirus pandemic, the United Nations issued its first-ever [open brief to creatives around the world](#) to help develop materials that would create awareness and understanding to stop the spread of the virus (Roberts, 2020). This is another example of how graphic design plays a vital role in

providing critical information to a wide range of individuals, in different visual languages and cultural contexts.

Graphic designers are in a position to create effective design solutions that provide people with the opportunity to access and use information (Buller & Spevack, 2019). But for communications materials to be effective, they must be both visually clear and accessible to the user so they can access, understand, and use the information (Cornish, Goodman-Deane, Ruggeri, et al., 2015).

Graphic design theory has long considered how users are accessing and viewing information. Principles of visual hierarchy allow designers to organize and prioritize content in a way that is easy for people to process information. Establishing a visual flow is achieved through basic design principles such as contrast, spacing, typography and position. The posters shown below emphasize how visual hierarchy can lead the viewer's eye to information in order of importance.



Embracing colour with Eddie Opara. Source: [creativecommons.adobe.com](https://creativecommons.org/licenses/by/4.0/)

However, there are additional considerations that need to be included in the design process when creating materials that will be published online. This is to ensure assistive technology, such as screen readers, can access the content in a logical and understandable way. Accessible design principles include adding alt text to images, checking colour contrast ratio, correctly structured headings, ensuring all content is tagged, and including multiple modes of delivery.

Owen (2016) defines accessibility design as “a mindset that needs to be in place from the very start of any project”. Designers who do not consider accessibility end up creating materials that exclude people, (Owen, 2016, para. 3). When designers consider accessibility in their work, the result is a better experience for all (Buller & Spevack, 2019).

Studies have shown a lack of consideration has been given to visual accessibility in print-based graphic

design (Cornish et al., 2015), and many designers don't have the knowledge or experience to implement accessibility into their design solutions (Forlizzi & Lebbon, 2002; Lee et al., 2020; Zitkus et al., 2013).

[Why has a lack of consideration been given to visual accessibility in print-based graphic design? >](#)



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ACCESSIBILITY GUIDELINES

Christine Woolley

Industry standards, codes, and guidelines

Accessibility guidance for graphic designers is available in the form of industry standards, codes, and guidelines, such as the Society of Graphic Designers of Canada and the Association of Registered Graphic Designers (2019) *GDC Code of Ethics*, the International Council of Design (2020) *Professional Code of Conduct for Designers* and the American Institute of Graphic Arts “AIGA, the professional association for design” (1994) *AIGA Standards of Professional Practice*. The accordion below provides an overview of these industry Codes and indicates where the responsibility of ensuring accessibility in design is placed.



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<https://ecampusontario.pressbooks.pub/incd2021/?p=774#h5p-15>

Furthermore, the Association of Registered Graphic Designers (2019) [*AccessAbility, A Practical Handbook on Accessible Graphic Design*](#) was developed to support graphic designers with planning graphic design projects to ensure they are as accessible as possible for the intended audience, and to fill a gap in design education and knowledge.

Source: rgd.ca



Professional design organizations are clearly placing the responsibility on the designer to ensure that graphic materials are accessible, but they are also acknowledging there is a need for tools, standards, and training to ensure designers have the skills and understanding required to consider accessibility in their projects (Association of Registered Graphic Designers, 2019).

If accessible design tools, standards, and guidelines exist but graphic designers aren't considering accessibility in their designs, the design industry needs to investigate and understand the reason for this mismatch. Additionally, if graphic designers aren't aware of design organizations, they won't necessarily be able to find this information, and if they aren't aware of accessibility or inclusive design as concepts, they won't necessarily know to look for this information.

How can we create greater awareness of accessible design? >



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THE IMPORTANCE OF ACCESS AND ACCESSIBILITY LEGISLATION

Christine Woolley

Understanding the importance of access

The United Nations Educational, Scientific and Culture Organization (UNESCO) identifies the universal right to information as essential for the well-being of individuals (United Nations Educational, Scientific, and Cultural Organization, 2015). The right to information is an important element of the fundamental right to freedom of expression. Article 19 of the Universal Declaration of Human Rights (1948) states that the fundamental right to freedom of expression includes the freedom “to seek, receive and impart information and ideas through any media and regardless of frontiers”.

Ensuring that graphic materials are accessible upholds the right to information. This allows for equitable access to information and affords people with disabilities equal opportunities to easily access and use information (Buller & Spevack, 2019).

Accessibility legislation is fundamental to bringing about a culture shift towards inclusion

Federal accessibility legislation exists in the form of the *Accessible Canada Act* (2019), Canada’s first national accessibility law. The Act aims to achieve a barrier-free Canada by 2040 by identifying, addressing, and preventing barriers. Barriers are defined as anything that “hinders the full and equal participation in society of persons with an impairment, including a physical, mental, intellectual, cognitive, learning, communication or sensory impairment or a functional limitation” (Accessible Canada Act, SC 2019. C. 10., 2019).

Relevance of my research within the B.C. context

On June 17, 2021, the B.C. legislature passed the Accessible British Columbia Act into law. The new act will remove barriers and create accessibility standards throughout the province (Legislative Assembly of British Columbia, 2021). Today, almost 25 percent of British Columbians over the age of 15 identify as having some form of disability. The number of people with disabilities, as well as the severity of their disabilities, are likely to increase as the population ages. Additionally, B.C. is the most ethnically diverse province in Canada. Almost 30 percent of British Columbians immigrated to B.C. from another country; approximately 25

percent of the population identify as a visible minority; and another six percent of the population identify as Indigenous (Government of British Columbia, 2019).

Learn more about the [Accessible British Columbia Act](#).

[Test your accessible design knowledge! >](#)



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TEST YOUR KNOWLEDGE!

Christine Woolley

To truly understand the considerations that go into accessible graphic design, it's useful to think about how you access and interact with graphic design materials.

The following questions are designed to get you thinking about accessibility considerations, to reflect on any barriers you may face in accessing information, and to consider the needs of individuals with disabilities who rely on accessible delivery and access to information.

Colour contrast



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<https://ecampusontario.pressbooks.pub/incd2021/?p=1235#h5p-27>

Image source: Aritzia

The colour contrast in this image does not pass **Web Content Accessibility Guidelines**. WCAG 2.0 level AA requires a contrast ratio of at least 4.5:1 for normal text and 3:1 for large text. WCAG 2.1 requires a contrast ratio of at least 3:1 for graphics and user interface components. WCAG Level AAA requires a contrast ratio of at least 7:1 for normal text and 4.5:1 for large text.

Learn more about [colour contrast](#) and try it out for yourself.

Communicating through colour



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<https://ecampusontario.pressbooks.pub/incd2021/?p=1235#h5p-35>

Image source: Wallpaper* City Guide

Colour should be used to highlight or complement what is already visible. Relying on colour alone to communicate information can cause barriers for people with various types of colour vision impairment, including people with colour blindness.

We need to consider what maps, and other forms of graphical information, look like to all users. The image slider below shows what the above map would look like for people with different types of colour blindness, including protanopia and achromatopsia.



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<https://ecampusontario.pressbooks.pub/incd2021/?p=1235#h5p-29>

Image source: Adapted from Wallpaper* City Guide

[Feedback >](#)



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FEEDBACK

Christine Woolley

Thank you for exploring my exhibit. If you would like to share your feedback, please take a moment to complete the form below. Your participation is completely voluntary. Please note that your responses will help me to understand the effectiveness of my virtual exhibit and will not be used for any other purposes.



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References >



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PET ADOPTION & PET OWNERSHIP BARRIERS FOR SENIOR WOMEN LIVING ALONE | LYNN ALKHOURI

Meet Lynn

Lynn Alkhouri

Designer & Illustrator

Beirut, Lebanon / Paris, France

She/Her

lynn.alkhouri@student.ocadu.ca



Lynn Alkhouri is a Syrian designer, illustrator, and animal rescuer based in Beirut, Lebanon and soon to be in Paris, France. Enrolled in the Inclusive Design graduate program at OCAD University, she intends to create more inclusive digital experiences and shift her career towards a human centric path.

Lynn has worked in graphic design, web/app design, and illustration. In 2019, she took on a new solo venture by opening up [Beirut Cat Cafe](#), the first pet cafe in Lebanon, where people can drink coffee while surrounded by rescue cats. She currently devotes her time to specializing in Inclusive Design, while teaching digital illustration through her [YouTube channel](#).

“As someone who’s worked extensively with rescue animals, this project is very close to my heart. I constantly find that my true passion resides wherever I can work on helping people and animals simultaneously.”

Welcome!

Hello there, and welcome to my exhibit. Below is a video briefly describing my topic, why I've chosen to conduct research in this area, and what I plan to do in the future:



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<https://ecampusontario.pressbooks.pub/incd2021/?p=567>

Introduction

Problem Space

Companion animals can enrich people's lives in various ways. Numerous research studies have proven that pets have the ability to improve a person's emotional wellbeing, physical health, and social lifestyle as well as reduce feelings of isolation and loneliness (K. A. Anderson et al., 2015). Among the constantly rising number of people living with companion animals, older adults (75 years and older) often tend to form deep connections with their pets and perceive them as irreplaceable family members (Miltiades & Shearer, 2011). As pet owners grow older, their companion animals can become noticeably more crucial to their wellbeing, however, pet-care

obstacles might begin to appear, and separation can have horrible consequences on both ends (Enders-Slegers & Hediger 2019).

Why Older Women Living Alone?

During the past 20 years, more and more older women are reported to be living alone due to many reasons (Eshbaugh, 2008). Women often outlive their male partners, and numerous studies showcase women having longer lifespans than men. On the other hand, today's society is slowly shifting towards independent living, in addition to divorce and celibacy becoming more socially acceptable (Eshbaugh, 2008). The goal of my research is to identify, and co-design solutions for, pet ownership and pet adoption barriers affecting older women living alone in private homes or in residential care facilities.

In on research study, when elderly women participants were surveyed on the advantages of cat ownership, it was mostly affirmed that their companions provided affection, company, happiness, and a sense of security (P. A. Mahalski, 1988). On the other hand, certain disadvantages were pinpointed when non-pet owners were asked to elaborate on their choice not to have a pet cat. The pensioners' answers included worrying about dying and leaving the cat behind, the added expense for low income participants, and worrying about the cat dying or getting displaced, among other reasons. What the surveyed women described as *disadvantages*, can more accurately be called *barriers*, and those barriers could be addressed with an inclusive mindset.

So Now What?

Growing older does not mean that one has to give up certain joys in life. Considering the numerous benefits pet ownership can offer to senior communities, human-animal relationships should be accessible to people of all ages. It is unjust that a person may have to give up their pet, or refrain from pet ownership completely, due to old age. With that being said, my study goals can be simplified into two categories:

1. Encouraging Adoption

To encourage older women interested in pet adoption, and offer them meaningful information on the subject catered specifically to their needs. It is important for older women to be well-informed before making a decision, and successful human-pet pairing is possible regardless of the adopter's age.

2. Maintaining Pet Ownership

To help senior women who are already pet owners, to maintain their relationship with their pets by finding solutions for pet-care assistance and pet emergency planning.

Research Questions

1. Are there pet ownership and pet adoption barriers faced specifically by older women (i.e., 75 years

and older) living alone? If yes, what are they and how might we approach them from an inclusive mindset?

2. Are available pet-care assistance resources doing enough for the elderly women? How can we improve on their effort and raise more awareness about their services?
3. Considering that the benefits of pet ownership outweigh the disadvantages, how might we create accessible, informative, affordable, and equitable adoption processes that encourage older women's interest to welcome new pets into their homes?
4. What are the guidelines to designing an effective and affordable pet-care plan that will put older women's minds at peace in the event of their necessary absence from home (i.e., events such as urgent hospitalization or passing away)?
5. What are the guidelines that ensure a pet-friendly home environment for elderly women and reduce the risks of physical injury due to pet-care tasks?

[Next up: Explore the problem space through personal stories >](#)

THE PROBLEM SPACE | REAL LIFE STORIES

Lynn Alkhouri

How Would The Barriers Manifest in Real Life?

Persona Stories

The following scenarios are completely fictional, but nevertheless taken from real-life experiences reported in [academic literature](#) over the decades. I've created the stories below to showcase the number of issues older women may face with pet adoption and pet ownership. Below each scenario are suggestions of how each problem could have been avoided or solved.



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<https://ecampusontario.pressbooks.pub/incd2021/?p=573#h5p-18>



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<https://ecampusontario.pressbooks.pub/incd2021/?p=573#h5p-19>

What About You?

Have you, or someone you know, faced issues similar to Lily and Amanda's stories? Below, you have the opportunity to share with me any kind of problem you think may be related to my topic. I'd also highly appreciate your feedback on this exhibit!

Your participation is completely voluntary! Please note that your responses will help me to understand the effectiveness of my virtual exhibit and will not be used for any other purposes.



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[Next up: Available Pet-Care Assistance Resources >](#)

AVAILABLE PET-CARE ASSISTANCE RESOURCES

Lynn Alkhouri

Available Pet-Care Resources in Canada

Click on each title to visit the website



[The Farley Foundation](#)

The Farley Foundation helps low-income pet owners in Ontario by subsidizing the cost of non-elective veterinary care for their sick or injured pets. You can visit their website to check if you are eligible for receiving assistance.



[Pet Insurance](#)

With help from the Ontario Veterinary Medical Association, you can plan for unexpected pet illnesses or accidents. Half of all pets will have a major illness in their lifetime, and veterinarians can now offer advanced treatments to help your pet recover from illness or injury. But treatment can be costly, and veterinary bills can add up to several thousand dollars or more. Pet insurance can help protect you from unexpected costs while providing the best veterinary care for your pet.



[Coping with Loss of a Pet](#)

The Canadian Animal Health Institute (CAHI) offers tips on how to cope with the loss of a pet. Anyone who considers a pet a beloved friend, companion, or family member knows the intense pain that accompanies the loss of that friend. In this link you'll find some tips on coping with that grief, and with the difficult decisions one faces upon the loss of a pet. CAHI's website also offers other services like pet health tips and preventative animal care.



[Spay and Neuter](#)

As a pet owner, it is your responsibility to protect your pet from unwanted litters. The City of Greater Sudbury offers programs to help reduce unwanted litters and stray animals. The program offers reduced rates for spaying/neutering domestic cats, and can help with catching and spaying feral cats as well.



[Toronto Animal Services](#)

Funded by Scheinberg Relief Fund and donations from Toronto residents, Toronto Animal Services is providing assistance to pet owners who are affected by the COVID-19 pandemic. Assistance will be provided with the purchase of pet food and supplies, such as cat litter and pee pads.



[SPCA Mobile Animal Wellness Services](#)

Funded by Scheinberg Relief Fund and donations from Toronto residents, Toronto Animal Services is providing assistance to pet owners who are affected by the COVID-19 pandemic. Assistance will be provided with the purchase of pet food and supplies, such as cat litter and pee pads.



[East Village Animal Hospital](#)

East Village Animal Hospital offers veterinary services to low-income individuals and families, and those on social assistance.

[Available Pet-Care Assistance Resources](#) Copyright © 2021 by Lynn Alkhouri. All Rights Reserved.

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GUIDE TO DESIGNING INCLUSIVE USER INTERFACES FOR PEOPLE WITH VISUAL IMPAIRMENTS | MONIKA TAK

Welcome

Hello everyone! My name is Monika Tak and welcome to my page in the virtual exhibit on guidelines to designing inclusive and accessible interfaces for people with visual impairments.

Intro

A few years back, there were an estimated 253 million people with visual impairments worldwide. They did not see the world as the rest of us. They also can't do things like the rest of us. Also, in today's world, almost every person irrespective of their abilities owns a smartphone. But how do people with visual impairments use their "touchscreen" phones?

Research around this topic says that these people are more receptive to tactile feedback.

The main aim of use of this guide is to make designers understand the importance of inclusivity while designing or developing any interface. This guide will act as a resource to help interface developers design interfaces that are inclusive of all their users.

Inclusivity in Interfaces

Interfaces appear different to everyone. They appear even more different to people with visual impairments like low vision, colourblindness etc. How they perceive interfaces says a lot about its friendliness. We navigate through them easily, but a lot of people who are differently-abled struggle to do it which in turn causes mental stress. One of the main cognitive distortions of human nature is drawing conclusions about a diverse world by relying on personal experience. Current social network systems cannot address the challenges of an inclusive society. It is important to follow an exploratory design approach. The focus should be on different views among users, designers and developers, generating different perspectives and diversity in thinking. Usability and accessibility should always be considered while designing a product or service.



Figure 1: Visually impaired woman using a touchscreen interface.

Overview

Here's an overview of my research study.



A video element has been excluded from this version of the text. You can watch it online here:

<https://ecampusontario.pressbooks.pub/incd2021/?p=671>

Video transcript

Hello everyone, welcome to my page on the exhibit! The title of my research is “Guide to designing inclusive user interfaces for people with visual impairments”

The big idea is to make interfaces more accessible and inclusive of visually impaired individuals. Almost

every person around the world owns a smartphone today which needs to be inclusive of all its users, including those who are differently-abled.

My target audience for this study is visually impaired individuals between the ages of 18 to 35 since they are affected more by the use of these devices. And a smartphone is something that almost everyone uses.

But people with disabilities might not be able to use it in the exact same way as others.

So, we as designers need to be more empathetic while designing interfaces so that it benefits the population at large.

So while conducting research for this topic, I observed that visually impaired individuals are great at tactile reception and that could be a good starting point for this study.

I also understood that inclusivity often focuses on optimisation for accessibility without compromising the experience of users.

Although there are some notable differences between mobile devices and desktops include the lack of tactile feedback, ubiquity, limited screen size, small virtual keys, and high demand for visual attention. These differences have caused unprecedented challenges to users.

I plan to use the Design Thinking Methodology to conduct this research. It helps in finding solutions that actually work.

Basically, It is an iterative process that involves 5 steps: Empathize – Define – Ideate – Prototype – Test

“Design for All” is the main objective behind choosing this topic. While working on a product that will be accessible to all, it is important to incorporate the feedback received after each step. No user should feel excluded while using any product or service.

Thank you for watching. Hope you enjoy the rest of the exhibit!

QUESTIONS TO ASK

Monika Tak

Some questions need to be asked to make interfaces accessible for the users. Empathy plays an important role while designing any product or service. So the designer needs to step into the user's shoes and ask some questions.

1. What obstacles do people with visual impairments face while interacting with web or mobile interfaces?
2. What kind of features in an interface will make it "accessible to all"?
3. How will the life of visually impaired users change after interacting with "accessible" interfaces?
4. Is tactile response the only way to engage visually impaired people while using interfaces?
5. Would "context awareness" help in designing inclusive interfaces?
6. Which response engagement technology (tactile, visual, speech) would most effectively make the interface accessible to all?

BIOGRAPHY & REFERENCES

Monika Tak

Meet Monika

Monika Tak

User Experience Designer

monika.tak@student.ocadu.ca

Monika is an Inclusive Design graduate student at OCAD U with some experience working as a UX designer. Her research study mainly focuses on accessibility in user interfaces for people with visual impairments. She completed her bachelor's degree with a major in Graphic Design from Central India School of Fine Arts and then went on to work as a designer for the next 3 years.

It was while working that she realized there are a number of problems faced by people with visual impairments which need some solution. People with colourblindness and low vision find it difficult to interact with everyday interfaces. After starting the course at OCAD, that became the topic of her research study. The "Guide to designing Inclusive User Interfaces" will surely help designers in coming up with more accessible and inclusive interfaces.



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ARTTEXT: IMAGE DESCRIPTION FOR VISUAL MEDIA IN K-12 ARTS-BASED LEARNING | ADAM WILTON

Welcome to my exhibit on authoring image descriptions for visually impaired students in art-focused education. My broader research interest is in digital accessibility for these learners in kindergarten to grade twelve (K-12). Specifically, I am interested in effective strategies and approaches to accessibility education for classroom teachers. As designers and facilitators of learning experiences, classroom teachers play a critical role in ensuring that digitally accessible learning materials are provided to students from the outset.



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<https://ecampusontario.pressbooks.pub/incd2021/?p=975>

Starting Points

At the core of this exhibit are two fundamental beliefs. First, disability is not a state or trait that is inherent to the learner. Instead, the experience of disability is shaped by the goodness of fit between the learner's unique access requirements and how responsive the classroom environment is to these requirements. For example, a digital file given to students as a worksheet that provides no alternative means for a blind student to access visual media creates a mismatch between that student and the learning experience.

Second, ensuring meaningful access to digital learning materials is a shared responsibility of the members of the educational team (e.g., teachers, educational assistants, administrators). The responsibility to make sure that blind and low vision students have access to digital format learning materials rests with this team and not exclusively with blind and low vision students themselves and/or specialist staff (e.g., teachers of visually impaired students). In a classroom guided by **Universal Design for Learning** (UDL) principles, accessibility starts at the point of content creation or collection before it is shared with students.

Meet Adam

Adam Wilton

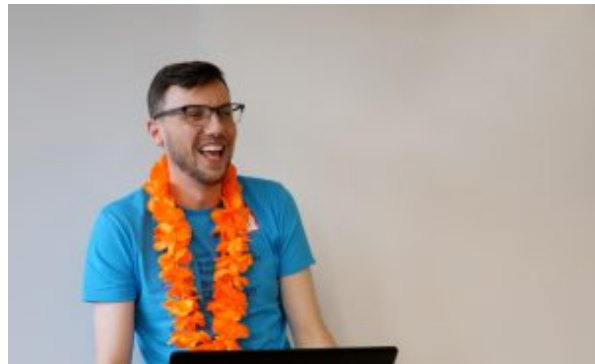
Educator and Administrator

adam.wilton@student.ocadu.ca

Adam Wilton (he/him) has been privileged to learn and grow with visually impaired students as an educator and administrator for the last 15 years. After several years as a teacher of visually impaired students (TVI) and Certified Orientation and Mobility

Specialist (COMS), Adam began his current role as the manager of a provincial outreach program serving blind and low vision students and their educational teams in British Columbia. A significant part of this role involves coordinating the timely access to alternate format versions of learning materials in both digital and in hard copy (e.g., braille, enlarged print) for students.

An interest in digital accessibility and inclusion brought Adam to the Master of Design in Inclusive Design program, where he is currently a student. Prior to this graduate work at OCAD University, Adam completed an MA in Child Study and Education from the University of Toronto and a PhD in Special Education from the University of British Columbia. In addition to work in



applied settings, he is also a sessional instructor at the University of British Columbia, training and mentoring new TVIs from across Canada.

Next: Getting Started with Guidelines for Writing Effective Image Descriptions

IMAGE DESCRIPTION IN DIGITAL LEARNING MATERIALS

Adam Wilton

Educators create and collect digital learning content across a range of curricular areas, some of which, like Arts Education, may emphasize social and cultural interpretation as much as objective understanding. In British Columbia, the **K-12** Curriculum emphasizes that students should “describe and respond to works of art,” including the visual arts, as early as Grade Two and continuing through to Grade Twelve (BC Ministry of Education, 2016). Therefore, K-12 educators will need to author image descriptions that accounts for the interpretation and understanding of visual art in digital learning content, or collect and share learning materials that contain these descriptions.

The sections that follow examine common image description guidelines and how these may need to be re-interpreted in the context of visual media in art-based learning materials

Subjectivity in Image Description

In short: All image description is subjective. Strict objectivity in describing visual art for blind and low vision students may disadvantage students in terms of equity and engagement in the learning experience.

Most guidelines for effective image description highlight the importance of objectivity – the description should be confined to the content and function of the visual media (WebAIM, 2021). However, objectivity reflects a certain set of values and may reinforce existing power structures (Coklyat & Finnegan, 2020). This concept is firmly rooted in Western **positivism** and limits social and cultural contextualization (Roberts, 2005). In fact, the practice of description must rely, to some extent, on a subjective determination of what information is important enough to convey, the words used to represent that information, and how much information is necessary (Kleege, 2018).

Media Type in Image Description

In short: Consider the importance of the medium of the image in the description.

Another common guideline for effective image description is to avoid unnecessary information by identifying the type of object being described. This helps to keep image descriptions short and efficient while

also informative. For example, guidelines suggest that beginning an image description with “An image of...” is unnecessary since the user would already be aware that they were interacting with an image.

However, when describing works of art, the object type and its medium (e.g., photograph, painting, sculpture) may be essential to the student’s understanding and interpretation of the piece (Lewis, 2019). For example, distinguishing between a photograph of an apple and an oil painting of an apple will be important, depending on context and the purpose of the learning content.

Centring Student Perspectives

In short: Gather feedback from students on the image descriptions they encounter in their learning materials.

The quality of an image description is ultimately determined by how effectively it communicates meaningful information to the user, in this case the student. Consulting with students on their preferences related to arts-based image description will help educators to write more effective image descriptions and be better able to evaluate descriptions in learning content. Further, educators can clarify the use and volume of descriptive language in their image descriptions based on students’ feedback.

Authorship is important. Be transparent with students about who authored the image descriptions if this information is available. Image descriptions are often unattributed and assumed to be indisputable fact(s) (Kleege, 2018). Knowing the source of the description gives students the information to reflect critically on the content of the description.

[Next: A Worked Example of These Guidelines In Action](#)

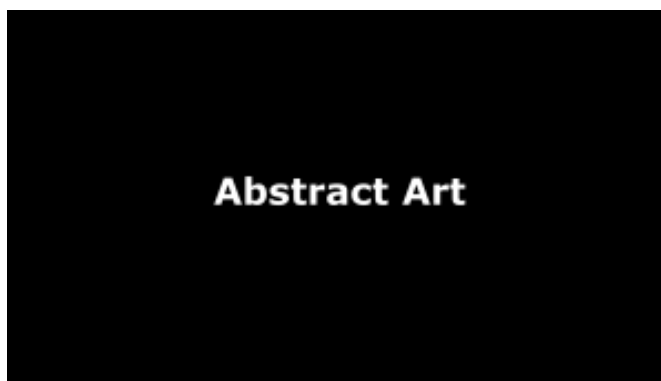
A WORKED EXAMPLE

Adam Wilton

Let's now look at some examples of image descriptions that a blind or low vision student may encounter in digital learning content. Each iteration provides an example of the type of image description that a blind or low vision student may encounter. As you move through each description, attempt to imagine the image that is described – it is a digital abstract art piece by artist Linnaea Mallette.

Description as a Basic Indicator

Depending on the context and purpose of an image, the description may only provide a basic indicator of the visual content. If the surrounding text that refers to the image has detailed information on the content of the image, it would be likely be unnecessary to repeat that information in an image description (WebAIM, 2021). However, many learning materials will not be authored with the access requirements of blind and low vision learners in mind and may not consider the requirements of students using **access technology**. For this reason, the appropriateness of basic indicator descriptions such as the one below should be critically considered before they are added to the learning material, especially in arts-focused content where there is emphasis on a piece of visual art.



Description as an Objective Report

Depending again on the context and purpose of the image, the description may contain an objective reporting of the visual features of the image. This next description is more than a basic indicator – it provides an overview report of the elements in the art piece. As mentioned on the previous page, there is still an element of

subjectivity, as a series of decisions were required to arrive at what was described, the words used to describe, and how much detail was provided about the art piece.

**Abstract art with shapes of
with various colours on a
black and white background**

Description as Interpretation

Some images, particularly those in arts-based contexts, may require some degree of interpretation of the content of the piece. For example, the description below interprets what some shapes in the art piece represent (i.e., flowers) and makes distinctions between elements in the foreground and background to provide a more textured description. However, note that the description stops short of defining how the art piece should make the student feel or react.

**Digital abstract art featuring
colourful and wavy cut-out
shapes that includes a large
flower shape at the centre. A
black background with a grid
of white stripes is visible in
the background.**

Visual Media

As promised, here is the art piece that is described in the previous sections, with varying degrees of effectiveness. Note the colours and shapes in the image – did the series of descriptions give you an accurate sense of the actual image?



Image Source: PublicDomainPhotos

Next: Now it's Your Turn to Author an Image Description!

YOUR TURN!

Adam Wilton

After reviewing the series of image description iterations on the previous page, how would you interpret the visual features of the abstract art piece below to provide a rich, meaningful description of the content?



Source: [Wikimedia Commons](#)

Throughout this exhibit, context has been emphasized as an critical factor in determining the role that the image description will play in the student's engagement with the learning content. For example, note the textbox below, meant to simulate the textual context of the same abstract piece as if it appeared in a textbook.

As you author another description for this image, be sure to note any changes to your interpretive decision-making compared with the one you followed for the de-contextualized image above. Are these descriptions different? If yes, what accounts for these differences?

Featured Work of Bernd Luz



This piece of abstract art, painted with acrylics on canvas, features vibrant yet isolated orange and bronze brushstrokes on a backdrop made up of sea of subtle blue and white brushstrokes.

Thank you for your participation in this exhibit on image description practices in **K-12** arts-focused learning materials. For more information, please see the References section at the end of this exhibit.

Next: Your Feedback, Please!

YOUR VALUED FEEDBACK

Adam Wilton

Dear visitor,

Thank you for exploring my exhibit. This type of guidance for digital accessibility is what I hope to produce, in partnership with blind and low vision students, for classroom teachers as my Major Research Project. Your feedback is incredibly valuable in terms of shaping my next steps.

If you would like to share your feedback, please take a moment to complete the form below. Your participation is completely voluntary! Please note that your responses will help me to understand the effectiveness of my virtual exhibit and will not be used for any other purposes.

With gratitude,

Adam



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[Next: References Page](#)

REFERENCES

Adam Wilton

In any learning material, displaying an image is an intentional act. An adequate image description gives the user an opportunity to understand why the image was worth including in the content. Listed below are the resources and articles that are referenced in the exhibit.

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FIRE – EDUCATING OTHERS

The element of fire has ‘outwards’ energy, meaning that its affect reaches outside of itself. Fire lights up hope and sparks dialogue to create an inclusive future. In the following section, you’ll see students who are working to educate others through spreading awareness, advocating, and sharing lived experience.



Fire

MOTIVATIONS IN STEM ENROLMENTS OF THE VISUALLY IMPAIRED WITH INTEREST IN ASTRONOMY | LUKE PEREIRA



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<https://ecampusontario.pressbooks.pub/incd2021/?p=107#h5p-14>

EXHIBIT - AUDITE

Luke Pereira

Exhibit – AUDITE

[Audite = latin for “listen”]

Welcome to my Exhibit. I have great admiration and respect for those educators in the disability field. For over 20 years, my love for astronomy and science has led me to intertwining my recent courses in education technology with inclusive design, my two master’s programs. In my current work in academia, I am hoping to bring some tangible change in **STEM** enrolments for visually impaired kids, with my focus being in the field of astronomy. In my research proposal, I looked at the idea of activation/motivation/intervention that would elicit change perceptions for visually impaired kids who might or might not have had interest in STEM, especially in astronomy. I have developed a prototype concept which I envisioned as project AstroVision – Toolkit for the blind – to help with my research in addition to other factors, and hope to assist and foster growth for these visually impaired kids into space science and more!



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<https://ecampusontario.pressbooks.pub/incd2021/?p=159>

THE BIG IDEA



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<https://ecampusontario.pressbooks.pub/incd2021/?p=159>

Why do kids get interested in science? to be a doctor, astronomer or even mathematician perhaps! There are

lots of opportunities and visuals all around to spur interest. All it takes is motivation and a push. Now, what about visually blind kids? what motivation and push would they afford to have the same opportunity as their peers?

Let's follow this path and see where this leads us.

Problem 1

Lack of mentors for blind students

Lack of internship opportunities

Lack of opportunities for visually impaired to get into sciences in schools and post-secondary (Bell & Silverman, 2018)

Problem 2

Attitudinal barriers by educators

Creates a perceived barrier for space science opportunities for the blind, deterring careers in sciences (Prema & Dhand, 2019).

Problem 3

Lack of enforced disability legislation

Educators find challenges in developing techniques for teaching blind students with current methodology and practices (Miyauchi, 2020).

These are just some of the many barriers that definitely prevent visually impaired kids from being better informed of their chances of success in STEM sciences.

But is it fixable? Before we tackle education reform in post-secondary for all disability groups STEM and question low enrolments, we have to listen and understand to the deeper intrinsic and extrinsic factors of the visually impaired in their personal barriers and lack of opportunities early on.

THE VISION

Purpose

The research will look at providing physical 3d objects and materials for visually impaired students to elicit emotion, interest, in sciences focusing mostly in astronomy. While similar tools do exist for the sighted in STEM toys, we are looking to inspire, educate and generate discourse and interest by packaging an experience of space to the blind of all ages allowing them to see the benefit of science careers and resolve in action.

Identifying outcomes

The research outcomes hope to identify motivations/enablers through interventions that activate a change in perception for visually impaired kids interest in STEM sciences and in our focus, astronomy. By looking at different internal and external responses when engaging in our tools, or in mentoring, or a combination of both, we hope to come to an understanding on what additional motivation would allow a change in perception for these kids to enrol into STEM.

Listening to Universe

Since listening skills will be a major source of information for a student who is blind or visually impaired, it is important to develop good listening skills when the child is young. It is also important to continue to build on those skills as the student progresses through grade school (Willings, n.d.).

Technically, we cannot see the night sky beyond the brightness of the stars. However, radio waves and infrared can allow us not only to see, but listen and that is what enables the field of STEM of to allow students to use all their senses. However, I am not saying to close your eyes and solve physics or math, but just being aware that technology and smart ideas can allow different forms of learning.

Lets try! Close your eyes and listen to the pitches of highs and lows when a musical scan of the galaxy spectrum is done. Pay attention to location of where the sound is coming from. (please note your headphones are working fine)



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<https://ecampusontario.pressbooks.pub/incd2021/?p=159>

Astrum. (2020, November 9). *A New Way To Experience Space* [Video]. YouTube. <https://www.youtube.com/watch?v=Fl5YDriOkmw> used under [CC BY](#) / Spliced 48s from original

What about Data Graphs!

The **SAS** Graphics Accelerator transforms graphs and charts into sound, enabling students and adults with visual impairments and blindness to quickly glean information from charts and graphs.

The Y value represent the pitch. The lower values sound deep while higher sounds high.

The X axis are mapped to your left and right speakers as you move across the bottom of the axis.

Listen below! (please turn your headphones down as it may get loud)



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<https://ecampusontario.pressbooks.pub/incd2021/?p=159>

SAS Software. (2017, March 17). *SAS Graphics Accelerator: Audio Mappings for Sonification* [Video]. YouTube. <https://www.youtube.com/watch?v=JKXXTsogFqg> used under [CC BY](#) / Spliced 23s from original

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LISTEN CLOSELY

Luke Pereira

With the absence of sight, there still remains a vision



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<https://ecampusontario.pressbooks.pub/incd2021/?p=161#h5p-22>

Video: How a blind astronomer found a way to hear the stars | Wanda Diaz Merced

Wanda Diaz Merced studies the light emitted by gamma-ray bursts, the most energetic events in the universe. When she lost her sight and was left without a way to do her science, she had a revelatory insight: the light curves she could no longer see could be translated into sound. Through sonification, she regained mastery over her work, and now she's advocating for a more inclusive scientific community. "Science is for everyone," she says. "It has to be available to everyone, because we are all natural explorers."

The research hopes to listen to visually impaired kids themselves by providing them with tools already developed by great organizations like NASA and freely made 3d renderings for the public to DIY. We live in a time where inspiring and providing physical objects in a physical space to groups that need, than virtual, might actually have more long term positive effects to kids.



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<https://ecampusontario.pressbooks.pub/incd2021/?p=161#h5p-12>

Image 1: Touching the stars: improving NASA 3D printed data sets with blind and visually impaired audiences

Image 2: NASA's Solar System Exploration Research Virtual Institute worked with students, colleagues, NASA, the National Federation of the Blind (NFB), teachers and parents to make earth and space science accessible for all.

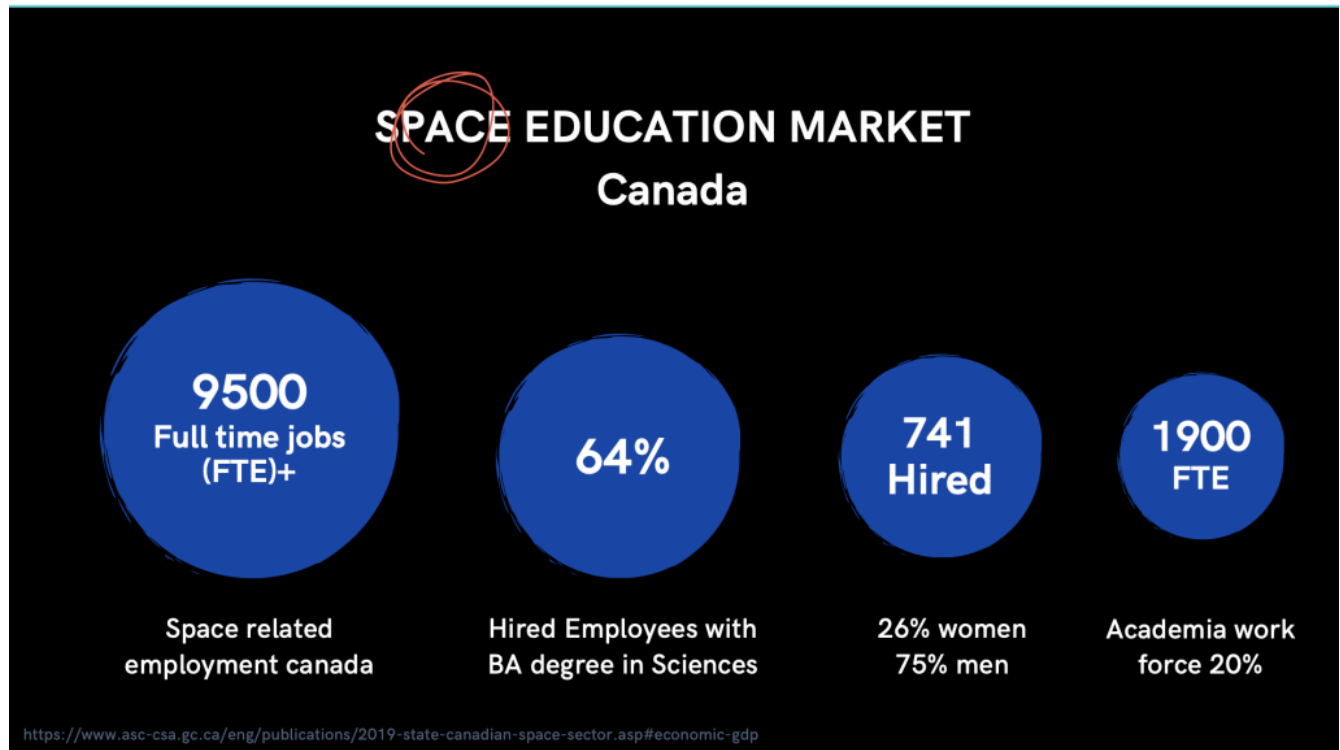
Image 3: Prototype toolkit created for the research project in which the above objects will be shipped to kids.

Image 4: Touching the stars: improving NASA 3D printed data sets with blind and visually impaired audiences, Source:

<https://www.youtube.com/watch?v=fc9Fifyv8OY&t=21s>

Image 5/6: 3d models downloaded from <https://nasa3d.arc.nasa.gov/models> and created to virtual models for printing using online modelling tool like sketchfab. See models here <https://skfb.ly/ooVJS> and <https://skfb.ly/oppOQ>

To be competitive in the marketplace when it comes to STEM, means opening all doors, not only to the gender differences in space related jobs, but all disabilities as a whole, which seem to be non-existent in the current space education market.



Space Education Market chart created by Luke Pereira <https://www.asc-csa.gc.ca/eng/publications/2019-state-canadian-space-sector.asp#economic-gdp>

Thank you for exploring this exhibit and I hope in sharing this vision, will inspire you and spark that fire within for inclusive STEM learning for visually impaired kids everywhere.

Please click **NEXT** at the bottom of this page.

BIOGRAPHY - LUKE PEREIRA

Luke Pereira



Luke Pereira

Toronto, ON

Education technologist and web designer

He/Him

luke.pereira@student.ocadu.ca

Luke is heading into his second year of the inclusive design program. His research interest includes a blend of education technology and design. Working full time at the University of Toronto, his focus is on staff and adult training and development. He will completing his Master's in Educational technology alongside the Inclusive design program by next spring. His research ideas are from his experience with student diversity on campus, their exhibitions, projects and many ideas showcased through the years on career pathways and wellness.

He takes that inspiration and looks to bring in more diversity

into education when it comes to various disability groups. Hence, his MRP focus is on the theme of educating others or lighting a flame to start real movement into the disability space while educating others on how to activate and foster interest in astronomy for the visually impaired and eventually STEM programs as a whole.

With prior interest in astronomy and sciences and after all the schooling is done, Luke will focus on musical orchestral compositions which is next on the list perhaps merging music with education and design in some form. Luke has been composing for the last 10 years on the side, however not at a level of professionalism as his peers.

REFERENCES - AUDITE

Luke Pereira

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MAPPING BRAIN INJURY | JOSEPHINE GUAN

Welcome to *Mapping Brain Injury*. My research focuses on co-creating meaning and purpose with brain injury survivors using arts-based methods like drawing and writing. In this exhibit you'll get a look into my current process and my research plan, which is all inspired by my personal experience and artistic practice.



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Meet Josephine

Josephine Yu Jia Guan

Toronto, Ontario

She/Her

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Josephine is a Chinese-Canadian artist that has worked as an illustrator, graphic designer, and arts instructor. Now, she's focusing on arts-based research in the Inclusive Design program.

Throughout all of her work, she's most interested in facilitating conversations and using multiple ways of communicating. You can see her [past work on her website here.](#)



THE MAP

Josephine Guan

Overview

Mind mapping is a way to branch out several thoughts that relate to a theme. It helps me to see everything at once and make connections with things that are seemingly unrelated.

Since I'm still in the process of finalizing my research proposal and chatting with potential partner organizations, I haven't had a chance to share my work publicly. I'd like to give you a glimpse of what I've been thinking, reading, and making throughout my journey of **research-creation**.



A mind map can start to look like neurons in the brain!

[Click here to visit the Map](#)

You will be taken to an external site.

Guided Tour

If you prefer a guided tour, watch the video I've recorded below!

Video coming soon.

RESEARCH PLAN

Josephine Guan

I want to probe deeper into the **emotional and social side of healing from an acquired brain injury**. I plan to do this through arts-based methods with my participants who are currently processing a diagnosis.

It's not about garnering sympathy, but making space for people who are figuring out their path to talk about what they might need from others.

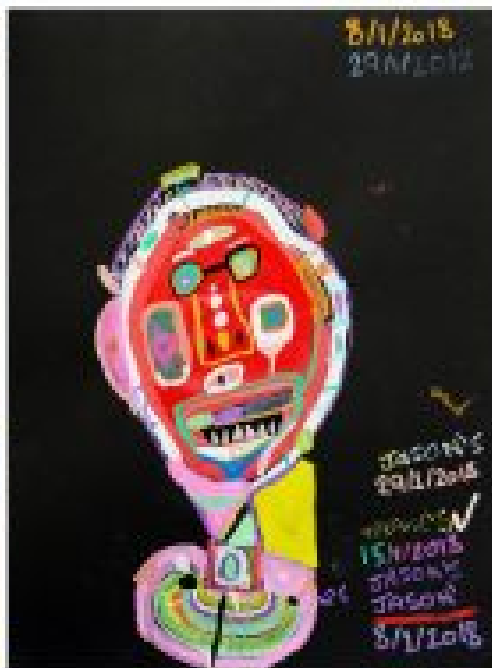


Photo of Jason Ferry, a member at Headway East UK's brain injury art program. On the right is his work titled 'Affirmations'

Arts-based methods

Arts-based methods (or arts-based research) is any kind of research that uses creativity such as drawing, photography, theatre, songwriting, poetry, as a way to collect data or to share results from a study.

Typically in healthcare, **quantitative research methods** are used. However those methods wouldn't be suitable for the research questions that I want to explore.

My Methodology



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PROVIDING ACCESS TO INTERACTIONAL CONVERSATION IN AAC SYSTEMS FOR DYSARTHRIC SPEAKERS | NNEKA NNAGBO

Welcome

Hi everyone! My name is Nneka Nnagbo, and welcome to my exhibit on providing access to interactional conversation in augmentative and alternative communication (AAC) devices for individuals who have dysarthria.

This exhibit aims to educate visitors on the topics of providing access to interactional forms of conversation in AAC devices for dysarthric speakers. Through interactive activities and discussions, this exhibit expands concepts of traditional conversation with AAC devices, prompting visitors to reflect on the modes through which we participate in conversation and how the various communication tools and resources we use impact the nature and structure of our conversations.



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<https://ecampusontario.pressbooks.pub/incd2021/?p=471>

Meet Nneka

Nneka Nnagbo

User Experience Designer

nneka.nnagbo@student.ocadu.ca

Nneka Nnagbo (she/her) is a Nigerian Canadian designer and writer based in Ottawa, Ontario. Her focus lies in the decolonization of design and helping to ensure that the next generation of emerging technology has diverse storytellers at the forefront, crafting solutions and experiences that are equitable, inspiring, and inclusive.

Nneka's research aims to support the conversational goals and social inclusion of individuals who are speech-impaired, by providing equitable access to various forms of social interaction through assistive communication technologies, such as augmentative and alternative communication (AAC) devices.

Nneka is currently a graduate student in the Masters of Inclusive Design program at OCAD University. She holds a BScSci degree in Political Science and Public Administration from the University of Ottawa and a Public Relations diploma from Algonquin College.



Explore the Exhibit

[Overview of the Problem Space](#)

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OVERVIEW OF THE PROBLEM SPACE

Nneka Nnagbo

Introduction

Conversation is the most important and recurrent social activity of human beings. It has been described as cultural building blocks and the primary means by which we learn and share our culture. One's ability to converse effectively, especially within social contexts, greatly impacts their quality of life, interpersonal relationships, and participation in society.

Dysarthria is the most common acquired motor speech disorder affecting speech production. Individuals who have dysarthria experience conversational barriers due to the full or partial loss of their speech. Dysarthric speakers often rely on communication aids and embodied modes of communication—collectively referred to as Augmentative and Alternative Communication (**AAC**)—to either augment or replace their speech.

Interpersonal interaction is difficult for dysarthric speakers who use AAC devices

There are two main forms of conversation: **transactional conversation** and **interactional conversation** (Brown & Yule 1983; Waller 2019). In addition to very low rates of communication when using these devices, AAC traditionally has focused on providing access to transactional conversation, such as expressing concrete needs and wants, and transferring information (e.g., messages) (Hawley et al. 2005). Conversely, interactional forms of conversation, which focus on the establishment and maintenance of social relationships, are not well-supported in AAC systems. From a social inclusion perspective, interactional forms of conversation, such as telling stories, jokes, and sharing personal experiences, are important to forming interpersonal relationships.

Previous conversation models have been used to inform the design of AAC devices for the purpose of improving conversations for users. However, the one-model-fits-all approach for modelling pragmatic features of conversation to improve conversational interaction in AAC devices, is ineffective for supporting interactional conversation for individuals who have dysarthria.

What my research is trying to do

The goal of research is to co-create a model of dysarthric conversation in order to enable AAC systems to

support interactional forms of conversation that enhance interpersonal interactions for individuals who have dysarthria.

The objectives of my research are threefold: (1) to co-design a model of dysarthric conversation; (2) to integrate the model into an AAC system to address specific interactional conversation barriers faced by individuals who have dysarthria; and (3) test that model-enabled AAC system provides access to better interactional conversation.

How my research will benefit others

An empirically-based model of dysarthric conversation will help ensure that AAC devices are designed using accurate models that are reflective of the lived, conversational experiences of people who have dysarthria. Such a model also has important implications for AAC research, clinical assessment and intervention, and technology design as it could help people in the AAC field to envision and analyze the process that an AAC system must go through as dysarthric conversation unfolds.

Ultimately, providing access to interactional conversation within AAC devices would help alleviate the interpersonal problems that emerge for dysarthric speakers as they can better engage in interactional forms of conversation like telling stories, jokes, and sharing personal experiences with conversational partners. This in turn will help them maintain social relationships, enable them to more fully participate in society, and, by extension, enhance their quality of life.

Explore the Exhibit

[Applying the Model](#)

APPLYING THE MODEL

Nneka Nnagbo

How might the model contribute to the design of AAC devices?

Modelling dysarthric conversation can help support AAC devices' in providing access to interactional forms of conversation during in-person, situational conversations. Such a model gives the AAC system a structure that guides it in terms of how to handle interactional forms of conversation for dysarthric speakers. In addition, this helps the system “know where it is in a conversation, how the various stages of a conversation fit together, and the sequence of events that are likely to occur during a conversation,” as well as the type of output items (e.g., digitized or synthetic speech) that will be needed in the upcoming stage of the conversation, so that it can prepare to offer these to the user for selection and use (Arnott & Alm 2013). The AAC system needs this in order to be able to optimize the selections and predictions that it makes as it tries to present its user with appropriate things to say as their next contribution to the conversation (Arnott & Alm 2013).

Once the model of dysarthric conversation is applied to the AAC system, it could be used to address specific interactional conversational barriers that dysarthric speakers face while using AAC devices in conversation, such as telling stories, jokes, and sharing personal experiences about where they are from and their hobbies, for instance. In addition, the model will help me, the researcher, understand how dysarthric speakers converse during in-person, situational conversation (e.g., what are the feelings, thoughts, and emotions they are trying to convey to their conversational partners? What are the types of interactional forms of conversations they participate in? What are the AAC tools/resources needed for better interactional conversation?

The idea

This idea is inspired by primitive and ancient tools of human communication; from cave paintings, the oldest methods of communicating, to rock carvings (petroglyphs), which consisted of drawn pictures using different signs and symbols to deliver messages and convey stories. The ancient Egyptians were amongst the first people to use symbols as a form of written communication through their revolutionary design of hieroglyphics, which later developed into the alphabet system that we know today, as well as papyrus, the precursor to modern paper and the earliest paper-like material known to humans. Our modern writing system is fairly recent in comparison to these earlier communication tools/methods from which it evolved. It's weird to think of the system of writing as a technology because it's been a part of our societies for so long, but it's been important in

shaping human history. I would argue that the practice of writing on paper was inspired by ancient Egyptian designs and technologies. Particularly, the technological tools of hieroglyphics, papyrus, and the reed pen, together, were the original systems of ‘writing on paper.’

There are many benefits of writing. Writing helps us think through things. It helps us process and get things out of our heads. In addition, there is something about writing with a good pen that feels very natural and fluid; it is enjoyable for its own sake, much like a good conversation. **Handwriting could be a viable entry point to providing access to better interactional conversation in AAC devices for individuals who have dysarthria.** The integration of handwriting into AAC systems, based on a dysarthric model of conversation, makes way for an additional, more expressive and personalized, mode of communication through AAC devices. People who have acquired dysarthria could make use of these handwriting capabilities in AAC systems during interactional conversations to have more meaningful interactions. This also creates an opportunity to enable them to make and preserve their own symbols and fonts (i.e., pictorial properties of a symbol) out of their handwriting.

This potential avenue of exploration also deemphasizes the use of natural speech during conversation as it presents alternative “design frames on communication that serve a wider range of functions beyond speech generation” (Ibrahim 2020). In addition, it disrupts the view that communication is necessarily organized around talk (i.e., verbal communication) (Ibrahim 2020).

The idea in conversation

Frame of mind

The following scenario showcases the idea (low fidelity prototype) in use. In this scenario, you will assume the role of a conversational partner to an individual who has acquired dysarthria and uses the prototype to engage you in an interactional conversation—telling a personal story. Transcripts and image descriptions are available directly after the interactive modules below.

Scenario

You’re having a conversation with a young woman named Chika who acquired dysarthria last year as a result of a brain stem injury which put her in a coma for a short time. Since her injury, Chika prefers to use writing as her primary form of communication as it’s always been much easier than trying to speak. You ask Chika where she is from.

Listen to Chika's story

Using her speech-generating AAC device, Chika constructs a message by typing the story of where she is from. Her AAC device then reads out her story in the form of synthetic speech.



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<https://ecampusontario.pressbooks.pub/incd2021/?p=521>

Transcript

My name is Chika; it is a Nigerian name which means 'God is greater' in Igbo. I am from Nigeria, the Anambra State, located in the southeastern region of the country. I was born in the capital city of Awka.

Read Chika's story

Using her handwriting AAC device, Chika writes out the story of where she is from.

To interact with the various features of the prototype, click on the interactive prototype (image) below. Click on the green **i** (info) icons to open a description box about a specific feature.



An interactive H5P element has been excluded from this version of the text. You can view it online here:

<https://ecampusontario.pressbooks.pub/incd2021/?p=521#h5p-25>

Image description

My name is Chika; it is a Nigerian name which means 'God is greater' in Igbo. I am from Nigeria, the Anambra State, located in the southeastern region of the country. I was born in the capital city of Awka.

Thank you

Thank you for exploring my exhibit. If you would like to share your feedback, please take a moment to complete the form below and reflect on the interactive scenarios from above. Feel free to include any final thoughts, questions, and/or learning outcomes in the form. Your participation is completely voluntary! Please note that your responses will help me to understand the effectiveness of my virtual exhibit and will not be used for any other purposes.

If you would like to discuss my research or themes from my exhibit further, please connect with me at nneka.nnagbo@student.ocadu.ca.



An interactive or media element has been excluded from this version of the text. You can view it online here: <https://ecampusontario.pressbooks.pub/incd2021/?p=521>

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GENDER GAP IN SOCIAL ENTREPRENEURSHIP AND CHALLENGES FOR WOMEN INNOVATORS IN TORONTO'S STARTUP ECOSYSTEM | LESLIE ESPINOSA

Welcome

Hello! Thank you for joining me in my virtual exhibit on the Gender Gap in Social Entrepreneurship and the Challenges for Women Innovators in Toronto's Startup Ecosystem.

This exhibit aims to create awareness about the importance of inclusive leadership and human skills for women entrepreneurs to improve their businesses. Together, we are going to explore the problem space and key definitions. I'm also curious to know what human skills you consider important and value in a leader.

At the end, you will be able to download a resource guide with external links to explore them at your own pace. If you would like to connect and discuss my research, please reach out to leslie.espinosa@student.ocadu.ca.



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<https://ecampusontario.pressbooks.pub/incd2021/?p=2190>

Meet Leslie

Leslie Espinosa

BA. International Businesses and Administration

Toronto, Ontario

She/Her

leslie.espinosa@student.ocadu.ca

Leslie is Peruvian born and raised, and a graduate student in the Masters of Inclusive Design program at OCAD University. She holds a Bachelor in International Businesses and Administration, with experience in supply chain and international trade.

Since she moved to Toronto, she became interested in Design for Equity as a way to address exclusion and inequities that exist today with different communities, especially BIPOC women and LGBTQ+. Her research aims to put people and racial/ethnic equity first, and build upon available resources within organizations to create change.

She also co-founded a sustainable fashion startup in Peru that empowered local artisans to produce high quality handmade knitwear pieces with organic fibers.



Explore the Exhibit

[Overview of the Problem Space](#)

[Human Skills and Inclusive Leadership](#)

OVERVIEW OF THE PROBLEM SPACE

Introduction

My Major Research Proposal focuses on the Gender Gap in social entrepreneurship and the challenges for women innovators in Toronto's startup ecosystem.

The majority of studies around this topic only consider males and females. My approach is to explore the gender disparities in the entrepreneurial ecosystem and its intersectionality with the LGBTQ+ and BIPOC communities.

I plan to include entrepreneurs who self-identify as women, immigrants and newcomers, and business owners of small and medium enterprises (SMEs) and self-employed women.

Problem Background

Entrepreneurship is considered as the pursuit of freedom and independence, a manner of disrupting the status quo and as a way to change position in the social order (Rindova, Barry, and Ketchen 2009, 6-9).

Entrepreneurial activities are perceived as masculine occupations. The male entrepreneurial model has been universalized through decades. Some women who wish to become entrepreneurs are required to act under a neutral set of values and attitudes, while men are required to comply with the 'entrepreneurial' masculinity standards (Bruni et al., 2004).

Studies show that media representation often reinforces these stereotypes and excludes women, BIPOC communities and gender diversity (WEKH 2020,p.8). Evidence suggests most women do not identify with the term entrepreneurs, because they aspire to be changemakers.

Entrepreneurship in Canada

Canadian population has positive attitudes toward entrepreneurship as a career (GEM Report 2019/2020, p.55):

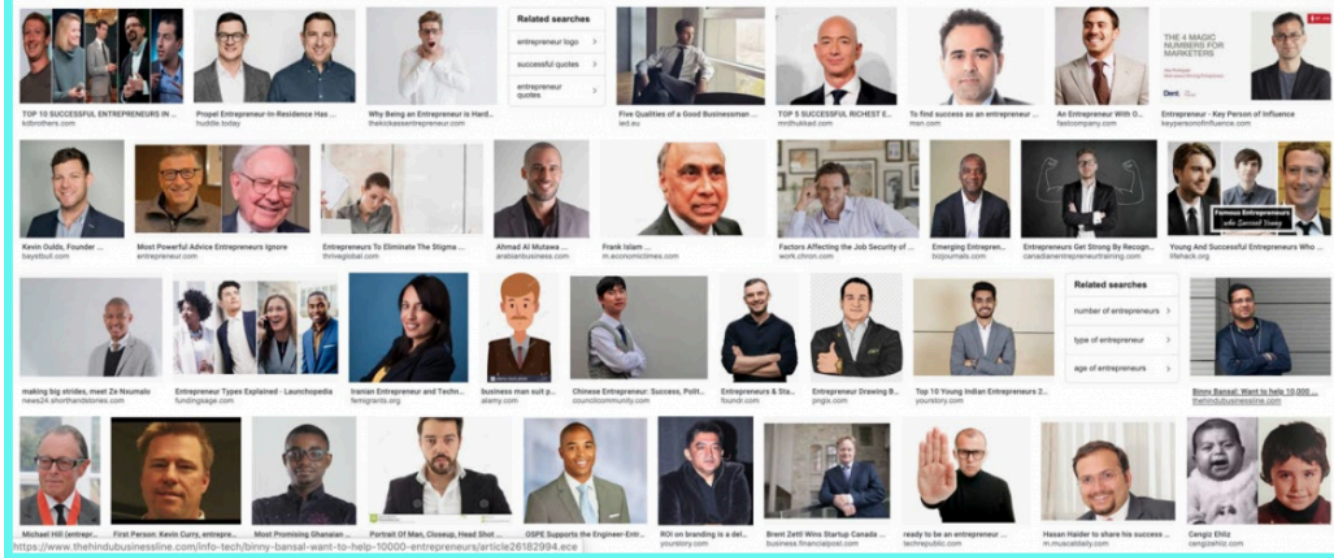
- 69% of Canadian adults view entrepreneurship as a good career choice.
- 80% of Canadian adults (80%) believe that successful entrepreneurs enjoy high status in Canada.
- 76% Canadian adults believe that entrepreneurial success attracts a high level of media attention in Canada.

Canadian entrepreneurs were ranked 6th in motivation to ‘make a difference in the world’ in the GEM (Global Entrepreneurship Monitor) Report 2019/2020, 2 of 3 Canadian entrepreneurs are motivated to build purpose-driven businesses. Canada is perceived as a leading country for mission-driven and social entrepreneurship (GEM Report 2019/2020, p.3)

Challenges

1. Cultural stereotypes and absence of role models.
2. There is a scale-up problem in the entrepreneurial ecosystem in Canada. Women are currently under-represented in training and mentoring programs across Canada due to gender barriers.
3. Women have limitations when trying to access funding and banking products. The gap is wider for women starting new businesses. This situation not only has a negative impact on business performance but also on a country level development (Unnikrishnan & Blair, 2019)
4. Women starting and sustaining new businesses face challenges while trying to access financial, human, and social capital. Human capital refers to the skills, business knowledge, and experience an entrepreneur needs. Social capital refers accessing to networks that provide information and resources, and formal and informal mentor relationships. There is evidence that social capital can enable female entrepreneurs to increase their aspirations, envision long-term plans, and set more ambitious growth targets for their businesses (Chastain et al., 2021).
5. Immigrant women entrepreneurs face additional barriers: local knowledge, language, discrimination, lack of mentors and networks (WEKH, 2020).

“Think Entrepreneur. Think Male.”



Source: The State of Women's Entrepreneurship in Canada 2020, WEKH

Research Outcome

I'm interested in co-creating a toolkit with entrepreneurs who self-identify as women to help them become the change makers and inclusive leaders they aspire to be.

Explore the Exhibit

Human Skills and Inclusive Leadership

HUMAN SKILLS AND INCLUSIVE LEADERSHIP

As mentioned before, most women do not identify with the term entrepreneurs, they aspire to be **changemakers**.

Who is a Changemaker?

A Changemaker is someone who is taking creative action to solve a social problem. This person is able to inspire others, able to adapt to the changes and become the change they want to see happen. Changemakers are inquisitive, open-minded and resourceful. These set of skills are essential to excel as a leader and entrepreneur. It is important to focus on soft skills/human skills training and development as much as you do on traditional hard skills.

Human Skills

Often called soft skills or interpersonal skills. The term soft skills was created by the U.S. Army in 1960's. It was used to refer to the skills that do not require the use of machinery. The military included many important activities within this category, the social skills necessary to lead groups, motivate soldiers, and win wars were encompassed by skills they had not yet catalogued or fully studied (Wikipedia, 2021).

Why Human Skills matter?

Human skills are classified as a combination of personality traits, behaviors, and social attitudes that allow people to communicate effectively, collaborate, and manage conflict. Problem solving, delegating, motivating, and team building are all much easier if you have good skills. Knowing how to get along with people – and displaying a positive attitude are crucial for success. It also helps during the hiring process.

Developing human skills is a learning curve as it cannot be learned from books and blackboards. They come from continual reflection and a personal wish to improve ourselves.

Types of Soft Skills

Here is a list of what it is considered essential traits:

- Communication: Social skills, Storytelling,
- Critical thinking
- Leadership
- Positive Attitude
- Teamwork
- Work ethic
-
- Problem-solving
- Time management
-
-
- Decision-making
- Organizational
- Stress management
- Adaptability
- Conflict management
-
- Creativity
- Resourcefulness
- Persuasion
- Openness to criticism

Inclusive Leadership

Inclusive leadership is emerging as a unique and critical capability helping organizations adapt to diverse customers, markets, ideas and talent. Inclusion is not only a nice to have, it enhances performance.

Inclusive leaders share this signature traits, based on a research conducted by HBR (Harvard Business Review) in 2019:

1. **Visible commitment:** They articulate authentic commitment to diversity, challenge the status quo, hold others accountable, and make diversity and inclusion a personal priority.
2. **Humility:** They are modest about capabilities, admit mistakes, and create the space for others to contribute.
3. **Awareness of bias:** They show awareness of personal blind spots, as well as flaws in the system, and work hard to ensure a meritocracy.
4. **Empathy and perspective taking:** understanding others deeply and leaving them feeling heard
5. **Curiosity about others:** They demonstrate an open mindset and deep curiosity about others, listen

without judgment, and seek with empathy to understand those around them.

6. **Cultural intelligence:** They are attentive to others' cultures and adapt as required.
7. **Effective collaboration:** They empower others, pay attention to diversity of thinking and psychological safety, and focus on team cohesion.

Interactive Activity

Now it's time to get those juices flowing.

I'm curious to know your thoughts on soft skills and inclusive leadership. Here is a brief questionnaire where you can share your experience.



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<https://ecampusontario.pressbooks.pub/incd2021/?p=2268#h5p-43>

Thank you

Thank you for exploring my exhibit. If you would like to connect and discuss my research further, please connect with me at leslie.espinosa@student.ocadu.ca

ACTIVITY

<https://jamboard.google.com/d/1G2uPBa74Zys55rWCuwOcvtdJSuR8F1ThWHeQNaW4P-o/edit?usp=sharing>

<https://jamboard.google.com/d/1G2uPBa74Zys55rWCuwOcvtdJSuR8F1ThWHeQNaW4P-o/edit?usp=sharing>

<https://jamboard.google.com/d/1G2uPBa74Zys55rWCuwOcvtdJSuR8F1ThWHeQNaW4P-o/edit?usp=sharing>

Thank you for exploring my exhibit.

[Feedback >](#)

REFERENCES

A MULTI-SENSORY DESIGN OF PERCEIVING ARTWORKS THROUGH THE SENSE OF TASTE | MINGYAN WEI

Welcome

Welcome to the exhibit of my major research project. My topic focuses on the multi-sensory design of using the sense of taste to interpret the traditional Chinese ink paintings. And I would like to name the exhibit “A Bite of Museum” to make it exhibit “palatable” and offer a different perceptual method for museumgoers to understand and access Chinese art and culture.



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<https://ecampusontario.pressbooks.pub/incd2021/?p=420>

About me

Mingyan Wei | Media professional

Mingyan.wei@student.ocadu.ca

Toronto, Ontario

Mingyan graduated from the University of Sydney with a major in Media Practice and has ten years of working

experience in the media field based in Beijing, China. Throughout her career, she has been learning to look at things from different perspectives. And now, she is interested in observing things around her through the lens of inclusive thinking.

Mingyan's passion for art and design brought her to this program. She is currently working on a multi-sensory design project of interpreting artworks with the sense of taste to increase the equitable access of museums as well as bridge the cultural barriers.



Research Background

As one of the five human senses, gustation's ability to perform a pedagogical role to inspire critical thinking has prompted curators to introduce food to museums and explore multi-sensory approaches for quite a long time. And there have been some valuable attempts and successful practices of incorporating food as a perceptual way to enrich the experience of museums around the world. The following five areas summarize some current practices of taste and food in some museums.



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<https://ecampusontario.pressbooks.pub/incd2021/?p=420#h5p-24>

While plenty of encouraging progress has been made to the practice of multi-sensory transformation approaches based on food and the sense of taste, due to the numerous art forms and cultural diversity, the great potential of gustation in the realm of cognition still remains to be tapped.

This research will work on figuring out the answer to the question "How can gustation enhance the understanding and perception of traditional Chinese ink paintings through multi-sensory design?" specifically, the sub-questions are:

1. How can gustatory experiences enhance audience interpretations of certain artworks and bridge cultural barriers?
2. How can integrating food into exhibition design enhance interactions between audiences and artworks?
3. To what extent can affordances of visual perception be translated into gustatory perception?
4. How can research findings be translated so that stakeholders (museums, art galleries) can develop

feasible audience interactions with artworks enhanced by gustatory experiences?

[Thoughts on Prototyping](#)

[References and Feedback](#)

THOUGHTS ON PROTOTYPING

Mingyan Wei

Discover the hidden gastronomy

An ink painting will be used as an example to show how to let the audience find the hidden gustatory signs in the painting through interaction. The work depicts bamboo and chrysanthemum, which are members of the “Four Gentlemen” in Chinese culture (the other two are plum and orchids). As symbols of nobility and beauty, these plants often appear in Chinese literature and artistic works, as well as the history of Chinese food culture development.

Click the hotspot for more information



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<https://ecampusontario.pressbooks.pub/incd2021/?p=433#h5p-34>

Co-design and Prototype

I plan to undertake co-design sessions with someone interested in Chinese culture and food, try to figure out to what extent can affordances of visual perception be translated into gustatory perception.

An anticipated prototype will be to connect the tableware and the digital painting through a conductive device. The prototype will be enabled visitors to activate the corresponding animations in the image while eating the food, thereby interacting with the artwork while activating the sense of taste.

There will also be a menu for visitors to take away, which contains an introduction about the artwork,

related food cultures, as well as some recipes for the possible ingredients in the paintings for visitors to cook the artwork in the future.



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[Overview](#)

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REFERENCES AND FEEDBACK



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Thanks for your attention and I hope you could enjoy this exhibit!



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[Overview](#)

[Thoughts on Prototyping](#)

EARTH – AFFECTING SYSTEMIC CHANGE

Earth's energy is 'stable'. Designs that stem from earth represent ideas with a solid base. Work in inclusive design may need to be sustained over a longer time period in order to make sure everyone's voices are considered and things are processed thoughtfully. In the following section, you'll see students who are working to affect systemic change by developing frameworks for organizations.



Earth

GUARDRAILS FOR DISABLED FUTURES AS A FRAMEWORK IN THE PUBLIC SERVICE | JULIANNA ROWSELL

Accessible and Inclusive practices in all aspects of life improve outcomes for people

We cannot “deliver” on equity as institutions, structurally or otherwise without the various actors, people, policies, processes, tools and technology working in tandem to achieve connectorship through acceptance, welcome, belonging and action. This is where the exploration of agency, autonomy, and the flourishing of individuals intersect with our need to grow and scale quickly. The dichotomy between “move fast and break things” and “fix root causes” within organizational design has a significant impact on the identity, context and future in which individuals with disabilities find themselves. Community-led co-design will enable partnership, and offer an opportunity for reflection on the components of a framework that includes diverse populations within the institutional structures that make up the public service by framing needs of people within the public service with meeting the needs of the public.

One of the keys aspects of this is addressing ableism and its impact on people and their futures. This might be in our day to day life, our interactions and engagements. It might be about the ways in which we work, the organizations we work for and the expectations of people in the workplace. It is present whether we commute to the office or work from home. It impacts how, where and when we socialize. In this times of uncertainty and crisis we have found ourselves in during the last year it’s become more overt.



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<https://ecampusontario.pressbooks.pub/incd2021/?p=666>

Meet Julianna Rowsell

Julianna Rowsell
Inclusive Designer + Accessibility Advocate
She/Her/Elle or They/Them
Systems thinker
Newfoundlander
Non status Mi'kmaq
#AS #Anemia #ADHD
Julianna.rowsell@student.ocadu.ca

The faces of my invisible disability and struggle with chronic illness



I am Julianna Rowsell, a Senior Inclusive Designer and Accessibility Advisor with Shared Services Canada. I've worked in accessibility within the public service for more than a decade. I self identify as a person with a disability including ADHD, an autoimmune disorder called Ankylosing spondylitis (AS) as well as anemia. I was diagnosed with scoliosis at the age of 15, and AS in my second year of university. I also identify by the pronouns she/her or they/them. I am both a settler and a person of indigenous background who has lost their culture and connection to the land by way of structural and institutional decisions that impacted my family before confederation of the province of Newfoundland and Labrador in 1949. I recognize that I am white passing and receive the privilege that is afforded to me because of my appearance. I am at a similar intersection with my disability as it is mostly invisible and often part of the pretext of erasure because it is not "tangible" or "concrete" to the society in which I live.

I am the older sibling to a long time CPP disability recipient who was born with a chromosomal difference that is medically referred to as Turner syndrome. I am the stepdaughter of a man who experienced a life altering injury at work in his late thirties. He was a logger and a carpenter, but could no longer work in that field after losing three of his fingers in an accident. I am the granddaughter of a woman who struggled with dementia and I acted as her part-time caregiver in my teenage years before cancer took her. I am also the daughter of a bipolar schizophrenic man in his 60's who experiences homelessness and chronic under-housing in Toronto. I have been exposed to and lived through disability for all of my life and it's influenced my career decisions, the detours in my route through life and my uncanny passion to spark intentional inclusion of disability communities. For us to be seen as individuals in need of equitable and just

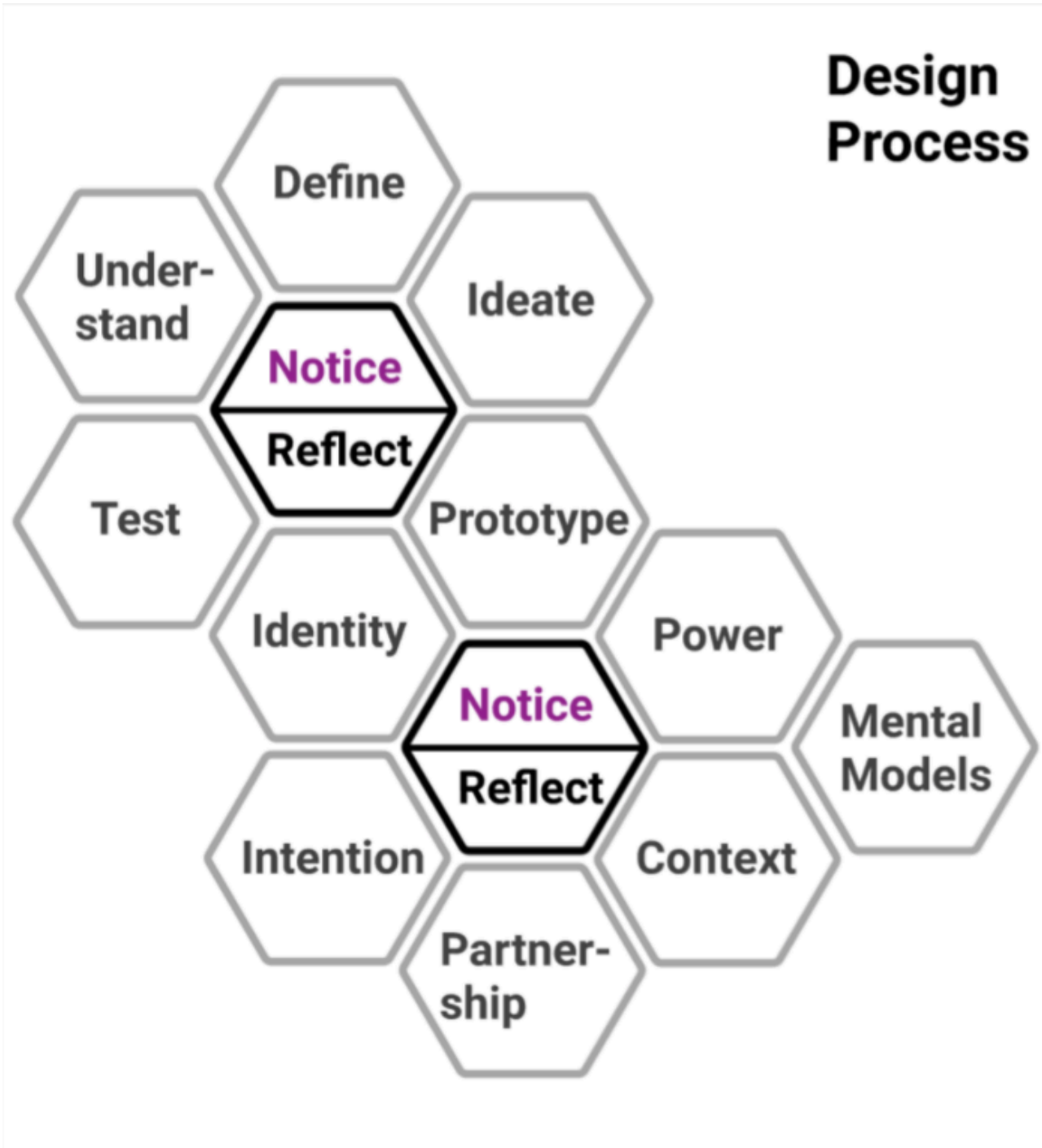
tools and opportunities at work and in life. We have valuable contributions and innovations to reshape the discourse and journey in our societies to become enablers both environmentally and culturally.

I aim to share stories to help empower others to co-create more equitable and inclusive futures. I am a passionate advocate for inclusive design and delivery of services through socially responsible policy. I am a maker and translator of things to help enable a society where everyone can thrive. I help to create simple, easy to use accessible and inclusive services for people in Canada by partnering with other government departments. I am currently entering the research phase of a Master of Design in Inclusive Design program at OCAD.

NOTICE, PAUSE AND REFLECT: BUILD REFLEXES, QUESTION EXCLUSION AND BE INTENTIONAL

Julianna Rowsell

Noticing, pausing and reflecting within your design process, and your product teams processes, you can use it in a lot of places, but it's really about building reflexes, questioning exclusion and being intentional about inclusion. And what does that mean in terms of the design and delivery of products and services.



Adapted from the Stanford School of Design – K12 Lab Liberatory Design, Equity Centred Design Process

So, why would you do this?

This is a guide to help you bake accessibility and inclusive design into your processes, your methods, your ways of working. One of the first reasons would be it's an exercise in the mind, and helps create new mental models and allows teams to have deeper conversations within the team about the work that's happening, or

has happened and it lowers the learning curve for new team members, it creates more awareness to the product decisions, and reduces tension between agility and inclusion within the product development. There's a higher level of trust and confidence within the team because there's more openness and transparency and better understanding of the decisions being made, where they come from, and what we're prioritizing and valuing it also creates a more inclusive and resilient product because it reduces accessibility related technical debt and barriers to access through connections, methods and processes with people and outcomes.

A curious mindset can help us explore who we might be excluding

Here are some questions that might help you explore as a team, gain more insight into how your product works, and build awareness of how a more inclusive mindset can help us leverage better outcomes for people.

Why?

Why did we make these changes? Where did the need for the change come from?

What?

What are we going to do to re-validate our changes?

Who?

Whose needs are now met that were not met before? Why?

How?

How can we measure who is being excluded from this change? How can we intentionally include them?

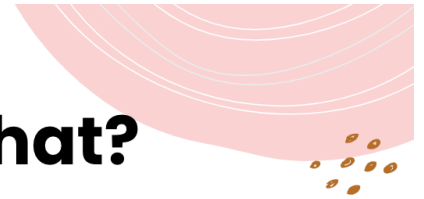


Why?

Where did the need
for the changes
come from?

What?

Are we going to
re-validate our
changes?



Who?

Whose needs are
now met that were
not met before?

How?

Can we measure **who** is
being excluded from
this **change**? How can
we **include** them?



Key questions you can ask to help a team pause, notice and reflect on their design decisions, development implementations and user outcomes.

What is a champion?

Well, in reality, anyone can champion anyone can support the efforts around accessibility and inclusive design and you can start right down at you don't really have awareness, develop some awareness, to have a working level capability to you're a practitioner in the area to an expert, and anywhere along that cycle adds value, and it's someone who practices Inclusion Accessibility and equity related efforts and their work and challenges or defends ways of working mindsets or processes and they effort to improve more inclusive outcomes. They promote these efforts within their teams within their communities within the work that they do themselves.

Who is a champion?

It's anyone who's trying to help, to question the work done, challenge things in reviews, recommend or ask about testing done and proposed review on how to meet user needs. It's not about being an expert, it's about forging new reflexes as a team and being the first one to try how it might go, and then innovate, and learn more and as you learn more and you're trying to find a picture.

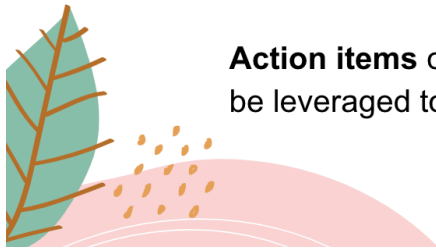
Continuously learning, iterating and ideating

Not every approach will work in the same way in the same team or same hope or same dynamic. And so we kind of are continuously learning the same way we look at things like continuous improvement or continuous development. The goal is to go through the questions taking time to pause and reflect honestly on the changes, needs and impacts on outcomes, what considerations went to the actions tasks or ways of working.



Goals

Go through the questions, pause and reflect honestly on the changes, needs and impacts on outcomes. What considerations went into the actions, tasks, and ways of working?



Action items or team follow up can be **added in the last slide** and be leveraged to inform team backlog.



Teams love goals. In this case the goal with to go through the questions above, pause and reflect honestly as a team on the changes, needs and impacts on outcomes. What considerations went into the actions, tasks and ways of working? Develop action items or team follow-up mechanisms that can be added to backlogs and sprint work flows.

Because when you look at this from a systems thinking perspective, or even a service design perspective. When connects with what, why, who and how. Do we have those map insights so that we have decision logs can see why we've made a new decision, or if there was nuances in the decision making process. And do we know new things now that we didn't then, and how do we then apply that across our products. And so you can connect this to values like putting people at the heart of your service or delivering a measurable outcome and taking care of each other. So when you treat resilience and wellness as an organizational responsibility, not just a character trait, you're able to create more space for people to feel like they belong take risks, learn from mistakes and to speak openly, and we can prioritize support accountability and growth together.

When we're looking at those deliverables, delivering measurable outcomes, and we're working to achieve the greatest impacts of the greatest people in the greatest need. That means focusing on measuring how we can help people and to create lasting change in the government or the public service, or in industry. It's not just a project milestone, it's about measuring exclusion. And when we put people at the heart of our services we're

building inclusively, with diversity and accessibility into everything we do, and it's from the start, it can't be an afterthought in this situation. And in reality, it shouldn't be.



When connects to what, why, who and how

Did we do **similar work** already ? If so,
can we consider the **context**?

When connects to what, why, who and how. Did we already do similar work? If so, can we consider the context?
Do we know something differently now that's led to a new more informed decision?

Do participatory design, connect with people with disabilities

You have to work hand in hand with the people who use and operate services, which means talking to people with disabilities, it means talking to people who are culturally diverse, who are racially diverse who come from a variety of different backgrounds and skill levels, and who have different experiences, and you can leverage that to work with them to create products and services with people, instead of just for them. And so now that you've done this exercise as a team, what do you do next, well the follow up, what decisions were made when the team was impacted by the changes in the discussion.

- What conversation might need to happen next, and then your action items?
- What are the next steps as a team, or as an individual contributor, do we have things to add to the backlog, and are we committed to doing this again?
- Are we willing to iterate on the process, and kind of put ourselves in a place of maybe leaning into discomfort to ask these questions to kind of go against the grain a little bit?
- When you're in a demo or review period actually taking the time to notice to pause and have reflection, and then we can take that into our own self reflection as well. We are all learning, it's about practicing and repeating.

You've done the exercise as a team, now what?

Follow-up

- What **decisions** have been made?
- **Who** on the team is **impacted** by the changes?
- What **conversations** need to happen **next**?

Action items

- What are our **next steps** as a team and as individual contributors?
- Do we have things to **add** to the **backlog**?
- Are we **committed** to **doing** this again?



You've done the exercise, now what? Well consider what your follow-up items are and the create the action items that stem from the conversation and exploration.

This is a **guide**, you can iterate on it to meet your team's needs, try it out your next demo review or hold space to follow up during the next retro. There's this really great quote from Richard Buchan about no one experiences the whole system people experience their own pathway through it. And this is where we have a great opportunity to leverage diversity to leverage our own mental toolboxes and our capacities to learn and change.

What you can do is to choose to be a catalyst champion this work in your role in your community, in your product work, and what you're doing, and we can move the needle on accessibility and inclusive design.



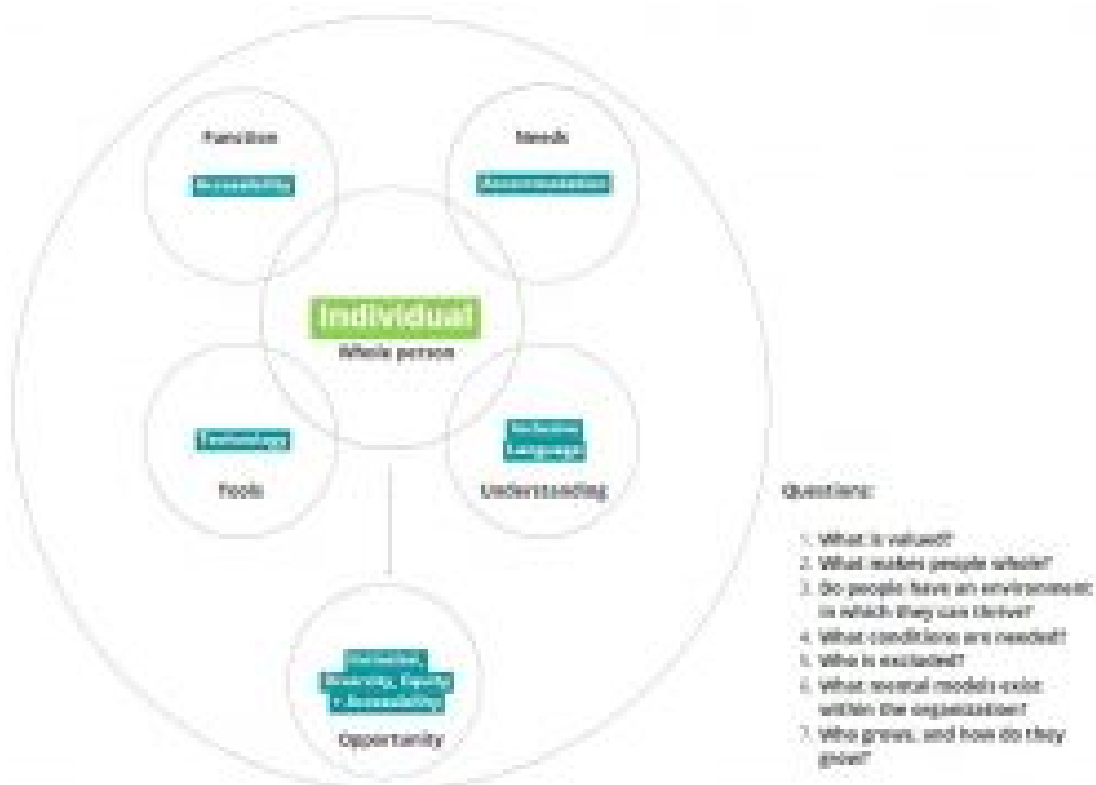
Notice, pause and reflect: build reflexes, question exclusion and be intentional by Julianna Rowsell is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/), except where otherwise noted.

INTENTIONAL INCLUSION THROUGH ENVIRONMENT AND CULTURE BRIDGES

Julianna Rowsell

Accessibility and Inclusive Design are at the intersection of disability, inclusion and equity of service design and delivery within the public service.

Intentional Inclusion through environment and cultural bridges



- Exercise the mind and help to create new mental models
- Map where your team has been, where is now and where it is going

- Deeper conversations within the team about the work
- Lowers the learning curve for team members
- Creates more awareness to product decisions
- Reduces tension between agile and inclusion
- Higher level of trust and confidence within the team
- Creates a more inclusive and resilient product
- Reduces accessibility related technical debt and barriers to access
- Connects methods, processes and people to outcomes



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REFLECTIONS ON ABLEISM AND PROMPTS TO HELP YOU NOTICE EXCLUSION

Julianna Rowsell

We aim to break the cycle of exclusion with intentional inclusion.

Here are a few core ways to help to achieve this:

- Get comfortable with not knowing everything
- Identify pain points and how we might address them in our workflows or ways of working
- Reduce the problem space by focusing and activating goals forward

We have as many opportunities as we will allow ourselves to get better at being intentional about accessibility and inclusivity. We do not have to do it all today, or tomorrow and we can make mistakes and fail. Its what we do afterwards that is critical to culture change and outcomes.

Mindsets

Mindsets are a way to understand people's attitudes, behaviours and motivations based on different variables. Mindsets change depending on the context.

Embrace curious mindset

Approach the unknown with curiosity rather than fear. The wildest Q can create the biggest opportunities. Embrace the phrase: "What if?"

Consider multiple perspectives

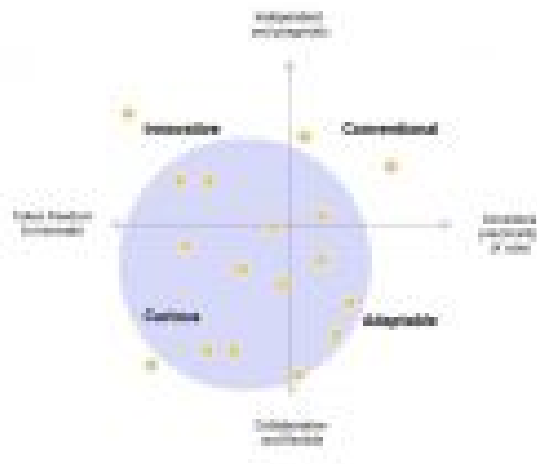
Consider people, teams, co-workers, stakeholders and the people who use our services. Inclusive Design demands that we use the diversity to challenge what is possible. Shift perspectives.

Prompt and experiment

The road to success and change is paved with small experiments. Recognize that struggle and embrace ambiguity.

Empathy maps to mindsets

Applying an inclusive lens



Fairness & Inclusion

Treat people equitably.

- Have you treated people unfairly based on something they cannot change?
- How does ableism perpetuate bias or stigma?

Agency & Autonomy

Support and respect self-determination.

- What decisions have you made that divert power in a relationship?
- Do you value people's time and energy?
- Can people participate or engage in the ways that they need to?

Openness & Transparency

Encourage openness and reflection.

- What do you need to know to understand how decisions are being made?
- How might you provide open channels of communication?
- When do you share information with people?

Respect & Dignity

Create interactions and expectations that are honest and consider human needs.

- Is your relationship with the person open, honest and transparent?
- How might you have reacted differently with other people?
- Do you value the persons time and energy?

Accountability & Governance

Take responsibility for how action and inaction effects human experiences and the implications that our decisions have on others.

- Are you willing to take ownership of your decisions?
- Do you see beyond the immediate repercussions when dealing with people?
- Are you willing to try to undo harm from your actions?

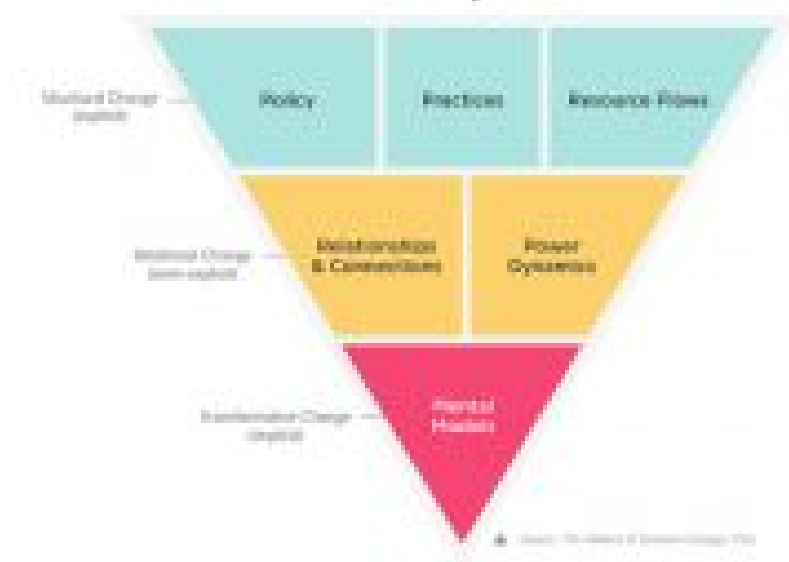
Growth

We can all learn and become better versions of ourselves.

- How are you encouraging questioning and unlearning?
- How are you encouraging self reflection?
- What things give you pause when you see overt and covert ableism in practice?

Removing or changing systems that uphold oppression

Six Conditions That Hold Systemic Problems in Place



Aim to ask yourself and those around you powerful questions.

Provoke thinking

What's important about that for you?

Shift perspective

How might this look from our user's perspective?

Check assumptions

What assumptions are we making?

Challenge beliefs

How else could this situation be interpreted?

Identify and share back

Noticing and reflecting through the process allows designers to redesign themselves to be more equity-centered. Practicing self-awareness of one's own identity, values, emotions, biases, assumptions and situatedness.

We are able to make more authentic connections between who we are and who they're designing with. We can co-create and co-construct a new paradigm of design, one that is diverse, inclusive and equitable. Hold space for community to reflect, express and process thoughts and emotions. Balance quick action with thoughtful reflection.

Feedback

Thank you for exploring my exhibit. If you would like to share your feedback, please take a moment to complete the form below. Your participation is completely voluntary! Please note that your responses will help me to understand the effectiveness of my virtual exhibit and will not be used for any other purposes.

[Disabled Futures and Ableism](#) (*short google form*)



Reflections on ableism and prompts to help you notice exclusion by Julianna Rowsell is licensed under a [Creative Commons Attribution 4.0 International License](#), except where otherwise noted.

GLOSSARY - DISABLED FUTURES

Julianna Rowsell

Glossary

Ableism

A belief system that sees persons with disabilities as being less worthy of respect and consideration, less able to contribute and participate, or of less inherent value than others. Ableism may be conscious or unconscious, and may be embedded in institutions, systems or the broader culture of a society. It can limit the opportunities of persons with disabilities and reduce their inclusion in the life of their communities.

Micro-aggression

A statement, action, or incident regarded as an instance of indirect, subtle, or unintentional discrimination or bias against members of a structurally marginalized group

Diversity

A term used to encompass the acceptance and respect of various dimensions including race, gender, sexual orientation, ethnicity, socio-economic status, religious beliefs, age, physical abilities, political beliefs, or other ideologies.

Equity

A condition or state of fair, inclusive, and respectful treatment of all people. Equity does not mean treating people the same without regard for individual differences.

Inclusion

The extent to which diverse members of a group (society/organization) feel valued and respected.

Accessibility

Accessibility means that people can do what they need to do in a similar amount of time and effort as someone that does not have a disability. It means that people are empowered, can be independent, and will not be frustrated by something that is poorly designed or implemented.

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CREATING EQUITABLE WORKPLACES



A video element has been excluded from this version of the text. You can watch it online here:

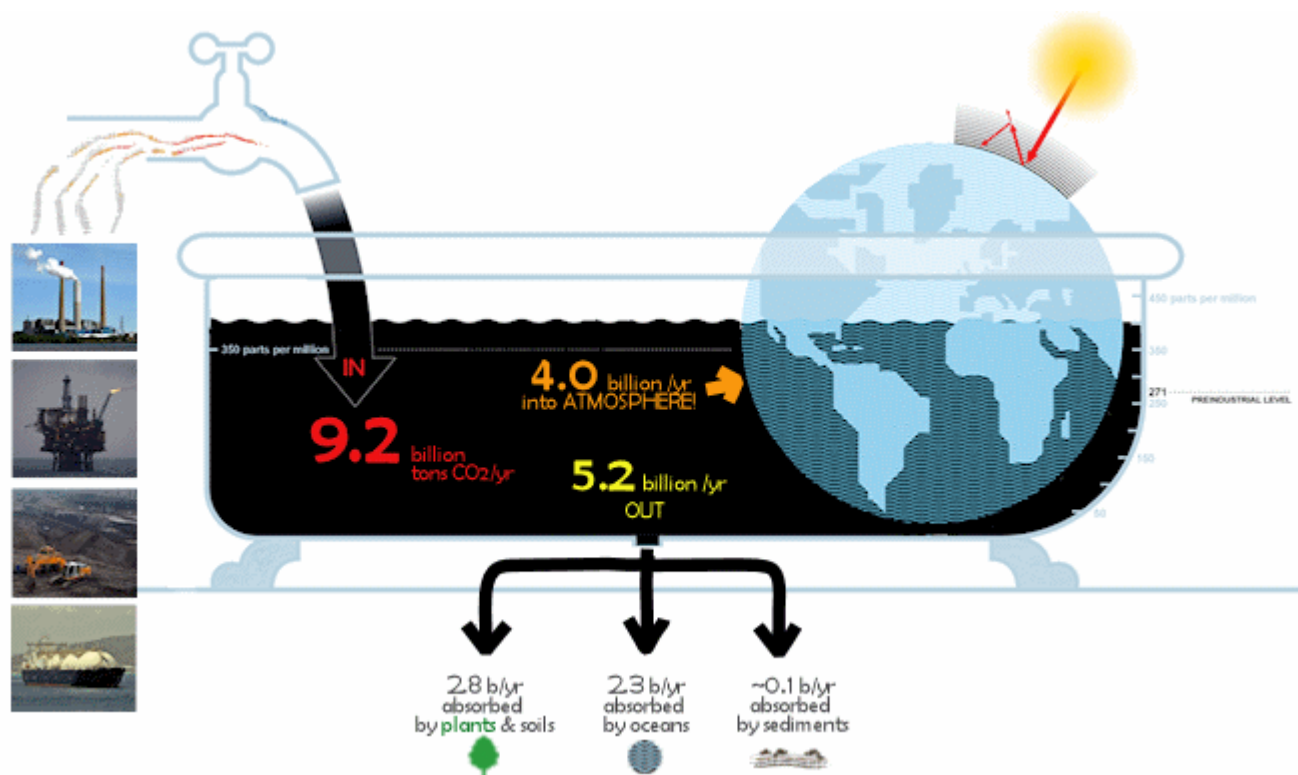
<https://ecampusontario.pressbooks.pub/incd2021/?p=1462>

Background

Water has an often understated power. We know that it sustains us, grows our crops, carries our goods, and tempers our climate. It is also one of the most destructive forces the world has ever known, capable of crashing over or eroding away anything in its path.

It is easy to see water only for its effects on the thing we're paying attention to: say, whether the rain will ruin our weekend plans. But we can only understand water's impact on us by approaching it systematically, in all its forms.

It is no accident that water is the most-used metaphor in systems theory. The bathtub model, in which we measure not just how much water there is in the tub, but how different inputs and outputs affect the volume, helps us to determine how to avoid the tub running dry—or overflowing. For example, this graphic depicts the climate crisis, showing that our inputs are pushing us to an overflow, that being the brink of disaster.



Systems theory is also a useful frame for diversity, equity and inclusion. If we think of what it means for a workplace to truly value, accommodate and reward everyone equitably, it's easy to focus on one kind of input or output: number of employees by gender, race or ability, or productivity levels. But flows are uneven, and the causes can be hard to measure. What we need in order to get a clearer picture of the equity in a system is, essentially, to ask the water how it's flowing.

Introduction

How do we measure an equitable workplace? Since the advent of the first-wave “diversity” and second-wave “diversity and inclusion” frames for integrating the workforce, many policymakers, academics and executives have proposed ways forward, but few with measurable success.

Experiments in workplace diversity have frequently devolved into stereotypes of marginalized identities, attempts to force-fit marginalized people into the structures already created by identities in power, or abstracted into sociometrics in an attempt to avoid actual discussions of exclusion and oppression woven into the model of work. And yet, research shows that organizations that *do* express principles of inclusion and equity in the workplace *are* more effective, and more profitable.

What if we're measuring the wrong thing? Instead of basing the success of an organization on its work rate and productivity level, and therefore the return on investment of diversity and inclusion work, what if we took an empirical approach focused on the approaches of those successful organizations, and saw what happened when some popular approaches were applied in a controlled environment?

The Experiment

For the purposes of this project, I intend to work with a product team at a large software company. The experiment has two phases:

1. In collaboration with my advisors, I will consult experts in diversity, equity and inclusion roles at similar organizations, ask them about the methodologies I have uncovered, and their experiences with the efficacy of each.
2. Based on this work, I will construct a working plan for implementing this in a team of approximately 100 employees, representing common roles and levels in software development. I will embed myself with the team, leading a workshop on the changes to be undertaken in the team over a three-month period. I will conduct entry and exit interviews, as well as a program of journaling with employees who have opted in. Employees will be asked to provide weekly feedback on their experiences.

Based on this data, I will report on employee perspectives on their own shared control of the overall project. On issues where they or people who share identities with are concerned, were those issues prioritized and addressed? Did people from throughout the organization have chances to advocate for change at all levels, not just in the product being developed but also the system that builds it? And how did these techniques affect the product, and the working relationships of the team?

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About Matt May

Matt May is Adobe’s head of inclusive design. His work includes integrating more equitable design practices across every aspect of the Adobe user experience, training and mentoring the Adobe Design team, and advocating principles of accessibility and inclusive design to the public at large. He lives in Seattle.

Matt began his work in accessibility as a developer at an online grocery site, HomeGrocer.com, in 1998. In 2002, he became a Web Accessibility Specialist at the World Wide Web Consortium (W3C/WAI), and in 2005, he co-founded Blue Flavor, a respected design consultancy.

Along with co-author Wendy Chisholm, Matt wrote *Universal Design for Web Applications* (O’Reilly, 2008), which is used in university curricula worldwide. His public speaking engagements have included the United Nations (WIPO/ITU), the International World Wide Web Conference, SXSW Interactive, the CSUN Assistive Technology Conference, A11y Summit, OzEWAI, O’Reilly OSCON, the UIE Web Apps Summit, Web Design World, Ignite Seattle, and Adobe MAX.

GLOSSARY

access technology

Software and technological devices that promote access across a range of user profiles. "Access technology" includes specialized software and devices once referred to as "assistive technology" as well as solutions for universal access available to all users.

accessibility evaluation tool

Software or online services that help you determine if web content meets accessibility guidelines.

accessibility features

Elements integrated with the content management system interface to assist in developing accessible content. For example, a section to add alternative text for images.

accessibility overlay tools

An interface that is displayed on a website that claims to be able to alter the website content to be more accessible based on a person's selections. For example, the interface can alter the website to have larger text if someone is having a hard time reading the default size.

accessibility standards

In this context, to meet accessibility standards a website must pass all of the requirements outlined in the 2.0 AA Web Content Accessibility Guidelines.

alt text

Alternative Text is a short sentence used to describe an image that can be read by a screen reader or is displayed when the image can not be shown.

augmentative and alternative communication (AAC)

AAC describes the communication strategies and techniques used to supplement (augment) or replace (provide an alternative to) the usual methods of speech and/or writing for individuals who have

(impairments in speech-language production) wherein they have little or no functional speech due to a physical and/or intellectual disability.

AAC falls under the broader umbrella of assistive technology, or the use of any equipment, tool, or strategy to improve functional daily living in individuals with disabilities or limitations.

Augmentative and Alternative Communication (or AAC)

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AAC falls under the broader umbrella of assistive technology, or the use of any equipment, tool, or strategy to improve functional daily living in individuals with disabilities or limitations.

citizenship behavior

Behaviors that are not required by citizens, but could lead to better functioning of society.

colour contrast

The luminance contrast between the lightest and darkest colour is measured in a ratio. The higher the ratio, the easier the text will be to read.

Content Management System (CMS)

Software developed to help manage the development and management of digital content. Often used to build websites, especially if someone does not have web design or development skills.

ESL

English as a second language

handwriting-enabled AAC device

will add later

K-12

K-12 refers to the primary and secondary education systems represented by grade levels starting in kindergarten and concluding in grade 12, or twelfth grade.

onus

A duty or responsibility.

plain language

The goal of plain language is to be easy to read, understand, and use. It avoids complicated language, euphemisms, and jargon.

positivism

Positive knowledge is based on natural phenomena and their properties and relations that can be verified by empirical sciences

publish

The term for making a website visible to everyone instead of hidden as a draft during the development stage.

quantitative research methods

Methods that focus on gathering numerical or statistical data through surveys, questionnaires, or polls.

research-creation

An approach to research that involves creative and academic research activities.

SAS

Statistical Analysis System (SAS) is an integrated system of software products provided by SAS Institute Inc., which enables programmers to perform: Information retrieval and data management. Statistical analysis, econometrics and data mining. Business planning, forecasting, and decision support.

Squarespace

A popular content management system platform. Known for having a simple interface and well-designed templates.

STEM

STEM is an acronym for the fields of science, technology, engineering and math.

templates

A base website with placeholder content and design styles that a person can use instead of starting a website from scratch.

Universal Design for Learning

A framework to optimize teaching and learning for all students based on scientific insights into how humans learn. Multiple means of engagement, representation, and action and expression are provided in classroom programs to maximize meaningful engagement and learning.

Web Content Accessibility Guidelines

Internationally recognized standards for what web content needs to be made accessible with specifications on how to do so. There are several iterations and levels of these guidelines but the most commonly used one is currently 2.0 AA.

WordPress

The most popular website building platform worldwide with a market share of 40% of all websites.

OVERALL EXHIBITION FEEDBACK

Thank you for exploring our exhibit. If you would like to share your feedback, please take a moment to complete the form below. Your participation is completely voluntary! Please note that your responses will help us to understand the effectiveness of our virtual exhibit and will not be used for any other purposes.



An interactive or media element has been excluded from this version of the text. You can view it online here: <https://ecampusontario.pressbooks.pub/incd2021/?p=2068>