Creating an Inclusive Learning Environment for Post Secondary Design Education

Synergized design learning in a co designed space
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Vanessa Vilic Evangelista (v.ve)
Abstract

Successful studios combine stimulation, inspiration, and promote the learner to discover self-direction. In addition to the appearance of the space, amenities and appropriate technology are vital for students to experience design challenges and opportunities as they would in a design office. The physical requirements, spatial layout and flexibility are necessary to sustain the learning and teaching methods of collaboration and brainstorming between students and facilitators (OMP/P Architects, VS furniture & Bruce Mau Design, 2010). A well designed studio space enhances the learner’s educational experience. This research will support how learning environments specific to studio experiences impact student and engagement thus influencing their success and lifelong learning. In addition, this research provides the fundamental needs of what lifelong learners require in their studio spaces.

Methodological triangulation substantiated the evidence for Participatory Action Research which was conducted in three Parts: Survey, Charrettes, and a Creative Workshop. Students and faculty were asked to co-create a solution with the researcher / author. This MRP is a collection of their ideations, solutions and needs. Together this established the knowledge to empower and emancipate multiple voices to validate a vision of change, direction, the variety of expertise, experiences, perceptions, ideas and allowed diverse groups to create synergy, and understand different ideas and contributes to the space between.

The conclusions discuss and show how a learning environment becomes flexible and adaptable but it also shows how it can focus on the individual.

Keywords: design education, spaces, technology, learning environments, change in student, change in teacher. Generations of learners, future learning, variety. Inclusive, studio learning, design studio, space between, collaboration, engagement, synergy, co design, design thinking.
Acknowledgement

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what an amazing team, across all five design clusters. Industrial Design Design, Sign & Graphics a lady; my designer ‘vintage walk’ ladies, pm and st and the to the incredible interior design team (kg, ef, re, np, zm). Special thanks: Zabia Mian for all your monthly inspiration cards to get me through the process. Emilio Firmani for all your support with Revit and technical abilities and helping me create the workshop drawings and bringing the co design to life in 3d. You have been an amazing friend and supporter of this journey thank you for your friendship and sharing our small box. Kelly Gluck not sure where to begin, thank you for your friendship, support, dedication, inspiration and editing skills; if it wasn’t for you I probably wouldn’t even be learning again. Thank you for being an inspiration, a mentor, a friend and investing so much time in me going back to school.

I couldn’t have done this with you. I am forever thankful, friend. To my OCAD University Support, a special thank you to my Principal Advisor Julia Treviranus for your inspiration to me and will always be. To my family, with you this journey wouldn’t even be worth it. Thank you to my husband, Tony Evangelista and Tony Evangelista for all your support with the boy and cooking in the inclusive world. To Sambhavi Chandrashekar, your advice, expertise and guidance has been amazing. My success would not be possible without you. Thank you to Vera Roberts and Cheryl Giraudy for challenging my learning and imparting your knowledge, insight and support with Revit and technical abilities and helping me create the workshop drawings and bringing the co design to life in 3d. You have been an amazing friend and supporter of this journey thank you for your friendship and sharing our small box. Kelly Gluck not sure where to begin, thank you for your friendship, support, dedication, inspiration and editing skills; if it wasn’t for you I probably wouldn’t even be learning again. Thank you for being an inspiration, a mentor, a friend and investing so much time in me going back to school.

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Dedication

To :

my parents: mum and dad.
You are simply the best.
Thank you for supporting all my adventures and being part of my success always.

my wonderful, patient husband paul “honey”
and our amazing boyz - xavier “xk” and zander “ze”

You are all my blessings, without you none of this would be possible or worth it. You give me the energy to succeed.

And to my dziadzia eddy,
you are missed but I know always with me, especially through this process.
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INTRODUCTION
This document presents the final compilation of the rationale, research framework, design challenge, methodology, analysis and synthesis for the Major Research Project (MRP) one component award of Master of Inclusive Design.

The researcher / author will address the importance of understanding and working with the end user reflecting Human Centered Design. In the design proposal; Creating an Inclusive Learning Environent for Post Secondary Design Education. The research findings will support innovative design approaches, best practices, techniques and implementation techniques to provide a framework for an adaptable flexible and engaging studio space for the evolving student. Research tools and investigations utilized in previous undergraduate studies as well as this graduate work will also be integrated to defend an argument that existing design studio environments antiquated by new technologies, modern teaching methods and multiple learning styles. In addition, an evolving, lifelong learning student demographics challenge previously accepted traditions dating back to Beaux Arts (Gluck, 2005). Finally, this MRP will celebrate diverse student and faculty ideations and proposed solutions for the future studio environments. These designs will be compiled and compared with empirical research resulting in one proposed solution with two variations for further critique and analysis, as part one of the design spiral. This design will represent a co designed, synergized methodology to creating solutions.

Figure 2: right Diagram to represent the project

Alternative Text: Black background Yellow circle with title of project: creating an inclusive learning environment in post secondary design education, A synergized design: A new kind of space. Offset from the circle are the 3 larger circles each connecting to a horizontal line each representing one of the 3 dimensions of inclusive design. Dimension 1: Recognize diversity and uniqueness, Dimension 2: Inclusive process and tools, Dimension 3: Broader beneficial impact. From left to right there are six smaller circles in light gray, charcoal and white (have a bubble look) each present the components of the project: People / User, Participatory Action Research (par), Co design, Diversity, Human Centered Design, Creative process, Engagement, Generations and Synergy.
Chapter 1
Synergized design learning in a co designed space

1.1 Background Design Context

Through design, remarkable environments facilitate meaningful life experiences and enrich well-being. How designers create stimulating environments which impact individuals in this way provides an intriguing discussion. A scan of literary research identified a recurring theme that development of physical learning environments may be lapse due to an increased reliance on online modalities and technology. However, for reasons such as the importance of instant and iterative feedback, one area that continues to warrant a physical place is the design studio. A studio; a constructed learning environment which traditionally facilitates a creative process, supporting individual needs while enabling expression that nurtures active learning. Literature indicates that there have been changes both in learners and in educators, as the newest generation of learners commence post secondary. Will this current studio support, engage and make the new generation of student successful? (Teknion, 2014). In the Teknion seminar ‘Chalkboard to Whiteboard’ (2014), facilitators premised that post secondary institutions must validate their relevance due to competition for students, excellent faculty, funding and importance in a society where massive technological changes have revolutionized the way people learn, work and live. This is a huge challenge for leadership at all levels in Higher Education. The seminar raised relevant questions surrounding technology and change. Citing that never before have massive changes in communication and technology affected so many so fast. We must question whether Post Secondary institutions can keep up with the multiples of new technologies students will bring into the classroom. The concept of how we have been designing offices over the past ten years with a flexible and adaptable approach to support technology may be the solution rather than trying to design for the future (Teknion, 2014).

As a result of this significant seminar, the inspirational framework which thus underpins this Major Research Paper is: The connection between an environment, and it’s users it’s technology and changes in education.

Figure 3: Above A series of Icons representing the project.

Figure 4: Right Conceptual Framework Poster

Human–computer interaction (HCI) researches the design and use of computer technology, focusing particularly on the interfaces between people (users) and computers. Researchers in the field of HCI both observe the ways in which humans interact with computers and design technologies that let humans interact with computers in novel ways. (Wikipedia)
1.2 Objective

1.2.1 Research Focus (and Questions)

A series of questions and during the Research Ethics Board (REB) process provide a path of investigation:

1. How will the physical space of a design studio support individual needs and enable meaningful expression that nurtures active learning for all generations? (plus will remain relevant for the next decade)

2. How can the users be involved to create the evolving studio?

3. How do educational environments adapt to the changing student, the digital student, the online student?

4. What will a future design studio / learning environment look like?

1.3 Design Challenge: Human Centered Design

Human Centered Design also referred to as User Centered Design User centered Design is defined by Wikipedia as the practice in design where the user comes first in the design process. UCD is a framework of processes (not restricted to interfaces or technologies) in which the needs, wants, and limitations of end users of a product, service or process are given extensive attention at each stage of the design process (Wikipedia). Relatedly the design challenge considered in this paper (studio) explores and examines existing design facilities and involves participants in a critique of their existing learning / teaching spaces. As well as considering a new approach.

From both my own learning and teaching experiences, I understand how an environment can impact both the activity whether intentional or by frustration and then resignation. For example it is a challenge to create a learner centered activity in a space that was designed to be teacher centered, something most post secondary facilities built in the last century or even last three decades commonly do. As result, physical constraints force an instruction to be static, disconnected and often limiting.

“People ignore design that ignores people.”

- Frank Chimero, Designer and Illustrator
Commonly in a scenario where there is minimal funding and is publicly fund-ed, the process of who is involved is limited. Typically institutions as enclosed compartments a standard ratio to house 30–60 learners in a teacher centered environment. Adjacent is figure 3 a typical wing in a post secondary institution. Most disappointing is the absence of space for flexibility, and adaptability. Now consider the outcome when such an institution makes a change and a certain area, which may have been designed to house math learners originally, has now become a design curricula area. Desks are changed to drafting tables and pin up space is allowed on the wall and voila, we have a design studio. It is unfortunately, a real estate driven decision which does occur and many layers of the design process are forgotten; in particu-lar, users needs. One such design facility was recently renovated and there was minimal user involvement in designing for the needs of the space. The design faculty and students who would have been excellent resources of new ideas, expertise, and knowledge were not asked to be involved with this new facility. Senior management, stakeholders and other design par-ties moved forward with a design without the early and meaningful input of the participants who actually utilize the space. This type of design ap-proach happens in many post-secondary institutions, due to many factors. Often there are budgets, time lines, corporate standards that take priority, and the time to connect users of the space is not afforded. The idea of engaging the users through participatory action needs to be embedded into the timeline in various ways; it must be viewed as essential not optional.

“How do we get the users involved to create their enriching, flexible learning environment?”

- researcher, designer, author,
Stimulated by the pivotal Teknion seminar and personal experiences, I wondered; what if there was an opportunity for both the evolving student and responsive facilitator to be part of the design. What might they create? I brought this idea forward to my administration and they were happy and eager to support this research and requested that I revaluate the design of Humber College’s ITAL studio spaces, strategically identifying unique solutions to potentially label us an innovative design centre for all users. The idea has evolved into exploring a future studio / classroom. Design students and faculty would be invited to participate in the design process through various activities and methodologies.

1.4 Methodology Overview

The epistemological framework of this research includes the triangulation of empirical against case studies of significance along with analyzed findings of Participatory Action Research to engage faculty and students.

1.4.1 Inclusive Design Participatory Action Research “PAR” Focus

Participatory Action Research (PAR) is a fundamental approach to collect knowledge and identify direction for the design proposed solution(s) (Baldwin, 2012). Baldwin discusses Participatory Action Research as a supportive collaborative tool in engaging participants to solve problems and provide new directions. In this study, participants have three opportunities to be engaged:

- **Part A**, a survey to review their existing environments and ideas around an inclusive design classroom.
- **Part B**, charrette
- **Part C**, a workshop both to engage them in co-design to capture their design preferences and ideations to improve the environment.

![Research Framework Triangulation](image)

**Inclusive Research Recipe – Triangulation to substantiate the evidence for design**

- **Literature Review**: Players (users) student + facilitator + environments + technology + co-design
- **Case Studies**: Humber vs Precedent
- **Participatory Action Research**: 3 Parts: **Survey**, **Charrette**, **Creative Workshop Area**
Synergized design learning in a co-designed space
2.1

PEOPLE: USERS
2.1.1 Stakeholders: Learners and Facilitators

Empirically, significant research exists and was examined with regards to generational differences and how people work together in a contemporary workplace. (Workplace One. 2011). However, little has been published specifically addressing how learners can be productive in educational environments. What has been addressed is how the roles of teacher and student and how they have changed (Teknion, 2014). See figure 5 below for an overview comparison of then and now, how facilitators and teaching was approached then and how it has changed today. The relationship between professor or facilitator and students is evolving. The classroom must adapt or become irrelevant to the learning process (Teknion, 2014).

Cited in their seminar materials, Teknion quoted Mark Prensky, from Digital Natives, Digital Immigrants: “Our students have changed radically. Today’s students are no longer the people our educational system was designed to teach” (Teknion, p.14, 2014).

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Profiles of the changing student and the next generation of learners.

My niece is sixteen with connection to the World Wide Web, her history assignment on Roman Architecture goes beyond the textbook. It provides not only with still photographs, but virtual tours through Google Earth and has Skype capabilities demonstrating an archeologist working on a site.

My four and half year old son can use an I Pad better than his grandparents. He has learned to use this electronic device faster than learning how to ride a bike or tie his shoes. Above he is shown in the photo with a digital camera, he enjoys taking photos and instantly seeing the results.

2.1.2 Generations

Figure 8: I Pad and young children

Alternative Text: a four and half year old and a 5 month old, intrigued with the I Pad. The three images show them engaging with the device.

Above two young boys, four and half the other 10 months old together are intrigued with the I Pad.

Both are the next generation, referred to as generation z (born 1995 – 2009ish) while generation c occurs after 2009, currently referred to as digital natives, intuitive (user friendly) tech-savvy, flexible, multi-tasking individuals (Pickett, n.d). Are post secondary institutions ready for this generation? If learning is indeed life long, what when all generations enter the same learning environment, how can the environment adapt to everyone’s needs?

A brief overview of generations and the demographics of those who chose to answer this question participated in the survey;

- Born 1925 -1945 (Silent Generation / Traditional) – 0%
- Born 1946 -1964 (Baby Boom Generation) – 10%
- Born 1965 – 1981 (Generation X) - 20%
- Born 1982 – 1989 (Generation Y, Millennial) – 13%
- Born 1995 – 2009ish (Generation Z) – 56%
- Born after 2009 (Generation C after 2009) - 0%  (Pickett, n.d)

In her book, Generations Working Together, Berstein (2006) explores the dimensions of generations and how each group approaches communication, work style, family, authority and technology. Millennial personalities are described as having the ability to multi-task, have short attention spans and feel valued and wanted. Millennials have a sense of entitlement. Research indicates that overbearing parents have created a generation with an attitude of “you’re ok, I am perfect” (Howe & Strauss, 2000, p.5). There are known as “helicopter parents”. Their high expectations and personal safety have been made paramount in the home, therefore these issues must be enhanced in the schools and in the workplace for millennials in order to make them feel comfortable (Bernstein, 2006). Such intense characteristics and needs affect the studio environment; the learners are changing, thus the studio and its supporting design centre must also respond to the new generation.
For Generation "Y" the preferred method of communication is technology (Bernstein, 2006). They can text message quicker than they can write; technology is their life. The freedom of the World Wide Web is their library and their connection to their friends. All environments to support millennials should incorporate; visual stimulation, technology, teamwork support, and contemporary graphics (Bernstein, 2006). A key component of the studio is to support generation "Y" with the use of technology, computers and outlets to connect laptops. Ironically despite their communication preference 0% of the generation "Y" users surveyed that they would still prefer a virtual online classroom rather than a studio environment to learn in. Actually 100% of generation "z" also surveyed that they prefer a physical classroom, only 1% of the surveyors would take a percentage of classes online.

Furthermore, to create interest and capture the learner’s attention, it is essential that the environment appear entertaining and inviting, which can be addressed with the use of graphics and colour and accommodations for their devices.

Considering these needs, the notion of the changing student proposes additional questions:

• Are the professors moving away from a teacher centered lecturing approach?
• Are they as resourceful and reachable as the students are? How do the current facilities adapt to engage and inspire?
• How does a post secondary institution adapt to student's technological choices?

“The physical requirements, spatial layout and flexibility must be addressed to sustain the learning and teaching methods of collaboration and brainstorming between students and facilitators. A well designed studio space enhances the learner’s educational experience.” – (OMP/P Architects, VS furniture & Bruce Mau Design, 2010). Findings indicate students want to more involved with their learning experience and would like to engage, collaborate and continue to learn beyond the studio (McMahon & Kiernan, 2011). Physical environments need to adapt to student-centered learning (Nair, 2014).
2.1.2.1 Connection to Millennials
Inspirational Precedent Case Study Creative Space
3XN’s design for Ørestad College

In Copenhagen, the firm 3XN created a very different learning environment. Stated in by Trung Le: “The prototypical factory model with its self-contained classrooms is replaced by an environment that features a diversity of spaces that flow into one another. The design promotes reflective, collaborative learning that mimics the way teenagers think, learn and socialize” (LE, T. 2010, 08.24).


Figure 9: Options for collaboration, users’s choice where to work - social nodes

Figure 10: Large Atrium with social stair, connects to wellness and keeping active

Figure 11: Circular stair case

Figure 12: Options for collaboration, bean bag room, “Chill space”
2.1.3 Learning Styles

Learners construct knowledge differently, each having a preferred approach (Cranton, 2000). Kolb explores the different approaches to learning styles and in his research he identifies four different learning styles that are defined as:

1. **Convergers** are the active, conceptual experimenters.
2. **Assimilators** favor the concept approach to things but also learn through observation.
3. **Accommodators** prefer experience, validation and experimentation.
4. **Divergers** work best in the tangible experience and through reflection of observation in stages.

These learning styles can be related to both the design student and the design instructor. The majority of learners need to understand and see how the theory is put into practice (OMP/P Architects, VS furniture & Bruce Mau Design, 2010). Ankeron & Pable (2008) support Kolb’s “converging” student description of students who focus on active experimentation. This study identified 13% of design students participating defined themselves as converging learners based on this description. These learners have abilities to solve problems based on real life examples thus instructors are required to source concrete examples as a reference.

In contrast, “assimilating” (Kolb, p.37) learners observe, then reflect. Only 18% of the learners in the study defined themselves in this way. These learners are abstract thinkers and prefer a conceptual approach. Instructors should condense lectures and readings on logical and concise reading materials for these students (Ankeron & Pable, 2008). “Accommodators” (Kolb, p.37), which represent 39% of learners in this study indicated they prefer hands on experience, validation and experimentation. These students prefer experimental learning or hands-on activities. Studio spaces where the theory can be tested and placed into practical applications are ideal for these learners, in which the physical classroom is essential (OMP/P Architects, VS furniture & Bruce Mau Design, 2010).

“Divergers” (Kolb, p.37) which represent 30% of learners in the study require concrete experience which allows them to gather information. For example, group work, and mind mapping could be used to document process. In an inclusive setting educators should be develop lessons which incorporate various delivery methods and activities to appeal to all types of learners. Essentially at one point in every class, each learner is learning in their prime method through varied delivery and application opportunities.

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**Figure 13: Users “survey” responses (question 8) What type of learner do you think you are? Definitions provided by Cranton, 2000, p.39. Please select the one that MOST suits your learning style.**

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Alternative Text: A bar graph representing each learner in percentages. In light grey, Convergers are the active, conceptual experimenters. (13%) mid grey, Assimilators favor the concept approach to things but also learn through observation. (18%). In dark grey, Accommodators prefer experience, validation and experimentation. (39%), in yellow, Divergers work best in the tangible experience and through reflection of observation in stages (30%).
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Synergized design learning in a co-designed space

TECHNOLOGY

2.2
New technologies, personal devices, tablets, interactive programs are a growing phenomenon that is affecting daily. The life and routine need for WiFi capabilities is becoming the norm (Thompson, 2014). Learning technologies (Almos, 2014) are defined as any tool that supports learning including but not limited to computers (desktops, laptops, and tablets), interactive whiteboards, smart screens, and smart phones. The change in technology and devices is rapid and what will come next is unforeseen. Keeping up to date with emerging technological trends seems impossible as a new product launches the current model already seems out of date.

Technology should be transparent, fluid in the system (not separated) from the function”.

- researcher, designer, author, student

Figure 14: Digital collaborative connection team setting

Alternative Text: A private collaborative space with a large screen for digital capabilities and connections

Thompson discusses a case study in his article 4 keys to Designing the Classroom of the Future (2014). One school made a sizeable investment about 10 years ago on interactive boards, now they seem like a chalk on a blackboard with the launch of personal devices, tablets and the provide a new direction of what interactive can become in the classroom. Technology companies such as Smart Glass, Blue Scape seen below in figures 15, 16, 17, Vidyo products and software provide limitless opportunities for connection, interaction, visual interactive capabilities.

Figures 15, 16, 17: Technology Blue Scape in action “a visual collaborative workspace”

Alternative Text: Photos show how the visual collaborative workspace works. People can swipe their personal devices on to large screen. Facilitator can pinch each item and enlarge. Final image show that you can write on the screen as well.
Given these implications, how do designers of furniture, products, and space keep current or ideally ahead of emerging technology? In visiting multiple showrooms such as Haworth, Herman Miller and Teknion, who specifically deal with corporate and learning environments they all, state the same protocol; not to keep up with it, an essential difference, we design our products to adapt and work with all technology (Haworth, Herman Miller and Teknion, 2016). Thompson’s article (2014) support this concept when designing spaces. Klein, a design consultant approaches design with flexibility for learning spaces, regardless of future technology. The key is having open access; lots power receptacles, USB port WIFI outlets and many opportunities to charge the devices (Thompson, 2014). In contrast, Almos (2013) brings forward an important argument about technology and creating a modern learning environment; that technology is only creating an illusion of modernity and little has changed in teaching approaches and delivery. As an example she illustrates how pointless it is for class to be conduct with a teacher centered approach, regardless of whether the walls were invisible (Almos, 2014). The learning technology is meaningless when it is limited and students are being controlled when and how they can use it (Almos, 2014). Relatedly, the challenge is to examine and explore how technology works and how people want to use (UCD) it in a space, specifically how to do students do their best learning, what do they want in their studio? Technology is changing rapidly, spaces need to support the change and connectivity needs to be embedded into all activities (such as printing) and access campus wide. Digital interactive screens need to be installed in studios, and post secondary environments need to address change and adaptability. Learners who participated in this study want to digital galleries showcasing various student work. However, the consensus indicated that spaces shouldn’t be designed around technology instead they should be designed with function as the major goal and technology should adapt to the space. Technology should be transparent, fluid in the system (not separated) from the function.

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In the context of design education, a design studio can be described as a constructed learning environment with the intention of providing a strategy for the creative process. As Bakarman, (2001) described, “The design studio is a melting pot for different skills and knowledge, that have been accumulated and acquired during the school’s years, are integrated and interrelated.” (p.1) Most commonly, the design studio is positioned as a connection between theory and practice, supplemented by courses such as technical knowledge and practical skills. Factors such as gender, age, technology, and on-line learning are impacting the changing classroom. These diverse implications play a fundamental role in creating an environment to share ideas, strengths and overcome obstacles. This study will provide evidence that design students do not desire a virtual classroom but instead require a well-designed physical studio to support their creative learning. However, the users do want this environment to be flexible and also provide the connectivity to collaborate with peers online. Literary research indicated a successful studio requires a combination of elements that integrate all learning styles, motivates and allows for self-directed exploration, practical skills development and active learning. Creating a supportive environment which simulates industry practice is also essential for all students (Bakarman, 2001). The environment needs to be a safe atmosphere for learners and educators but a well-designed physical studio space provides the learner with a positive educational experience (Bakarman, 2001). In a current article by Bolkan (2014), he discusses that classrooms can be designed to improve student experience, by engagement. His research is substantiated by research undertaken by Steelcase, a furniture company who specializes in educational learning environments that recently completed a study understand how an environment can add to student engagement. Bolkan (2014) outlines some of the survey findings which are aligned to those of Steelcase:

- Making their classroom more flexible improved their motivation to attend class.
- Classroom activities are more engaging in a flexible classroom;
- Supporting student engagement within the classroom will reflect in higher grades
- When measured student engagement levels were higher in the flexible classrooms than in the traditional classroom with rows and columns of desks (Bolkan, 2014, p1)

The concept of engagement in combination of a physical learning space / studio becomes a new level of focus. A Steelcase researcher, stated; this is a critical factor because engagement begins with attention, the environment influences thinking (Steelcase, 2015). Therefore what are the components of a studio/classroom can influence the users interest / engagement?

“The concept of engagement in combination of a physical learning space / studio becomes a new level of focus” – researcher, designer, author, student
2.3.1 Attributes of a Studio Space

Defining a studio with specific attributes is a great starting point to define what the users need in their space. According to Nasar, Preiser and Fisher (2007) who have conducted many surveys and the results from the anonymous survey conducted for this report (2016). The sample represented in the 2016 survey which reflects Part A of the research activities for this paper was comprised of Design Educators (10% of the surveyors), 82% of the student surveyors and 8% identified themselves as both educator and student. The author’s study (2016) reiterated that successful physical studio space must consist of the following attributes;

1. “Natural light” was a motivating influence, 17% of the survey respondents indicate there needs to be an access to natural light improvement in their current space (2016).
2. “Collaboration space to interact” with fellow learners, 45% respondents indicate their current facilities were fair to meet this need. (2016)
3. “Quality of resources for students to have access to”, 36% indicate their current environment to be weak, 31% indicate their facilities are fair. (2016)
4. “Personalization within the studio in order to claim ownership of their space”, a need that necessary which no facility currently offers. 70% of respondents rate their facility as weak in this domain. A homeroom is what students need.
5. “Flexibility within the space with mobile furniture and laptops”, 40% of the survey respondents indicate their current space as “Fair” and 15% indicate it’s very weak.
6. “Connection to technology”, 35% of the respondents rate their facilities as good, where as 49% indicate there needs to be an improvement and rate with “fair” or “weak”
7. “Deep surface”, respondents indicate 52% deep surface options are “weak or fair”.
8. “Pin up space”, respondents indicate this is missing link, 67% indicate more inspirational space required with “weak or fair” responses.
9. “Production area, messy zone”, 57% of respondents rate their current facilities as weak or fair.
10. “Storage space”, 21% of respondents rate their current storage space as weak.
2.3.1.1
Inspirational Precedent Case Studies linking to Attributes of a Studio Space

Figure 25: Attribute #1 “Natural Light”, Attribute #2 “Collaboration space to interact”

Figure 26: Attribute #2 “Collaboration space to interact”, Attribute #5 “Quality of resources for students to have access to”
(Photos by Author)

Figure 27: Attribute #2 “Collaboration space to interact”, Attribute #7 Pin Up Space
(Photos by Author)

Figure 28: Attribute #4 “Personalization within studio”, Attribute #8 Pin Up Space
(Photos by Humber College ITAL Industrial designers and faculty. Copenhagen Trip 2014)

Figure 29: Attribute #4 “Personalization within studio”, Attribute #8 Pin Up Space
(Photos by Humber College ITAL Industrial designers and faculty. Copenhagen Trip 2014)

Figure 30: Attribute #3 “Quality of resources”
(Photos by Humber College ITAL Industrial designers and faculty. Copenhagen Trip 2014)
Historically, educational settings have consisted of teacher controlled environments for many years (Ankerson & Pable, 2008). The typical physical setting of a classroom in aging buildings (20 years or more) most often consists of tables or desks situated in rows facing the whiteboard or blackboard and the static position of the teacher. Many post-secondary institutions, have recently proposed an expanded curriculum that includes many areas of design. For example programs include graphic design, interior design, visual communications, interior decorating, design foundation, fashion design, and industrial design. In most cases, as with other Part A participants from various design institutions such as Algonquin College, Sheridan College, Ryerson University, OCAD University and Humber College ITAL older buildings are being retrofitted and expanded to support the design education where it previously had not existed. There are two major issues which dramatically impact the success of these renovations; the architecture of the base building and funding. The structure of the base building limits the extent of the change and in turn, the spatial quality. As clearly stated in book The Third Teacher by OMP/P Architects, VS furniture & Bruce Mau Design “Form follows function, it seems obvious but is often forgotten. The notion of teaching and learning should shape the building, not vice versa.” (2010, p. 79). All the case studies conducted for this study identified that funding determines and often limits what can be addressed in each existing environment, creating a “made do” scenario for teachers and learners. One approach to help this issue is to focus on the learners. The prime objective of the studio should support all diversities, all learners, and their needs.

Studio space must also be able to be simply and quickly reconfigured to suit desirability of users and engage all learning activities and various delivery methods (OMP/P Architects, VS furniture & Bruce Mau Design, 2010). Flexibility is another key component for generations “Y” and “X” and table clusters for group work play a vital role in collaboration. This needs to be addressed in studio design and retrofit as the majority of the students applying to post-secondary schools and those currently enrolled in design programs are categorized in these generations. The atmosphere of a well-functioning design studio provides collaboration, encourages research, synthesis and communication. “Studio classes engage learners in many skills and knowledge in many areas. Studio procedures and environments are closely linked to the needs of learners.” (Ankerson & Pable, 2008, p. 142). To advance traditional ideas of a studio experience, educators have been exploring new strategies to creatively teach these learners often in an effort to overcome design limitations. Traditional classroom environments do not support the teaching and learning of a creative profession. The activities often change during an allotted time including formal lecture, group discussion, tutorials, and critiques. An inclusive studio needs to have the adaptability and flexibility to change to every student’s needs. A studio environment is quite different than a classroom setting as the following section will explain.

As clearly stated in book The Third Teacher by OMP/P Architects, VS furniture & Bruce Mau Design “Form follows function, it seems obvious but is often forgotten. The notion of teaching and learning should shape the building, not vice versa.” (2010, p. 79).
2.3.2 Studio Verses Traditional Classroom

The studio configuration and layout is a significant component to support the needs of all learners. The strategy of small discussion groups encourages more students to participate. Students who may be reluctant to speak out in a large group, often feel more comfortable sharing ideas in a smaller setting (Cranton, 2000). In addition, smaller group settings enhance and create equality amongst the learners. Equality is essential in a self-directed inclusive learning environment, especially when focusing on the characteristics of an adult learner. In her 2005 research on interior design education, Gluck described Knowle’s theory of Andragogy; “Adults are themselves the richest resources for one another, hence the greater emphasis on such techniques as group discussions, simulation exercises etc.” (2005, p.34). Studio environments need to both encourage and respond to andragogical approach (p.34).

2.3.3 Historical Precedence on a Studio

The Bauhaus, a German art and design school active from 1919 to 1933 played a significant role in design studios in the 20th century. As Wick (2000) explains Bauhaus took the andragogy to the next level. Students took responsibility for the path of their own learning through reflective practice supported by dialogue between instructor and student. In addition to comparisons of current studio strategies to Bauhaus philosophies, Gluck (2005) referenced Kearesley who described the instructor taking the role of ‘facilitator’ in a self-directed learning environment. The Bauhaus studio experience was based on a facilitator as mentor and student as apprentice. Guerin and Thompson’s research Interior Design Education in the 21st Century: An Educational Transformation (2004), referred to the study completed by Ernest Boyer and Lee Mitgang (1996) on the field of architecture and education. Boyer and Mitgang concluded that the studio environment is ‘a climate for learning’ (1996, p.1) for both instructors and students to collaborate on a common goal in an ‘open, communicative, celebrative and caring environment’ (Guerin & Thompson, 2004, p.5). Team based learning, activities between learners and workshops, involving faculty and students were essential to the success of the Bauhaus. (Gluck, 2005). Many design schools remain guided by curriculum and methodology from the Bauhaus.

A traditional post-secondary learning space is often an auditorium or lecture theatre with fixed seating in very close proximity arranged in a semi-circle. Both of these physical arrangements diminish the success of active learning (Siberman, 1996) and only marginally support Kolb’s learning styles. The rooms must be transformed to stimulate creativity and active learning, thus inherently supporting the learning objectives of a design studio. “Studios are the forum of creative exploration, interaction, and assimilation.” (Salama, 1995, p.1). The physical environment must enhance this forum through organization, furnishings, fixtures and equipment. When the existing furniture is not a permanent fixture such as that of the auditorium, several adjustments can be made to the layout to support learning. For example a U-shape of tables and chairs encourages large group discussion. Clusters or team style groupings encourage group interaction and if the room size permits, a combination of both arrangements provides multiple platforms (Siberman, 1996). A large central gathering zone will bring learners together to observe demonstrations and examples of materials or outcomes. Demonstration is an excellent method to enhance self-directed learning (Lee & Caffarella 1994 &OMP/P Architects, VS furniture & Bruce Mau Design, 2010). Alternatively, there might be instances where two or three different demonstrations occur simultaneously at various areas of the room or at different times. Demonstration is a strategy which fosters practical skills and allows students to be active in their learning (Cantor 2001). As illustrated above, flexibility is essential when various strategies demand tables to be arranged to support smaller or larger groups which encourage discussion. Also the scale of the learning environment and setting should ensure the learners feel comfortable (Filling-Cornick, 1997). When a permanent layout is not feasible as described, easy reconfiguration by users is essential.
2.3.4 Design Studio Connection to Industry; Building on Diversities

Numerous authors confirm the most important component to design education is the studio experience. In the Journal of Interior Design, a focus report in the teaching of design, Barnes (1993) stated, “design education is not a linear process, but experimental in nature.” (p.35). Design expresses unique, individual approaches to solve a problem, however when a social environment is created, brainstorming manifests and several solutions to the problem arise. In her 2005 study of three design schools Gluck cited Malecha as a link to industry practices, essential to studio experience success. This is still needed in most instances. Malecha (2002) affirms in his book “Reconfiguration in the study and practice of Design and Architecture, a transformation in education is required to make the link to the practice” (p.22). Malecha (2002) compared the organization of the traditional design office versus the new design office.

The traditional approach was very “linear and disconnected” (Malecha, 2002,p.23). The new office approach was defined as “continually reconfiguring and connecting” with all members of the team, including the client (Malecha, 2002). The change of the organizational approach was based on the “mixing of talents, abilities and experience” (Malecha, 2002) to create a collaborative diverse team.

In the learning environment to create team building charrette or competition, where students from all years can make up a team to develop a solution, the diversity and mixing of talents and skills levels would mimic the office approach. Based on the descriptions and references provided above, it is clear that a traditional classroom or lecture theatre is not equivalent to a design studio which facilities group work or creativity.

In the North American market, design firms provide collaboration zones, resource areas and opportunities of personalization, storage and inspiration space (Gluck, 2005). Introducing more authentic practices in the design studio emphasizes how the professional culture operates (Salama, 1995). To properly prepare students for the industry, the studio experience should mirror the experiences and opportunities as they would in a design office (Gluck, 2005). A research and resource section within a studio or situated adjacent to it is essential for design programs and one which the learners have some ownership of is ideal (Gluck 2005). It is essential that design students be highly stimulated to determine their professional goals (Barnes, 1993). Self-directed learners need to be given the opportunities to feel motivated and to feel as though they are involved in the planning of their learning (Cranton, 2000). Direct-directed learners need to be given the opportunities to feel motivated and to feel as though they are involved in the planning of their learning (Cranton, 2000). Moustakas (as cited in Salama, 1995, p.7) defines creativity as: “To be creative means to experience life in one’s own way, to perceive from one’s own person, to draw upon one’s own resources.” A bulletin board space, or “pin up” as referred to in the profession, must be provided as a place for visible drawings, photos, new terms, current events to inspire the mind. Inspirational images and new terms provide learners with a visual context and activate multiple intelligences (Naumes & Naumes, 1999).
2.3.5 Inspirational Precedent Case Study Creative Space

Connection to Industry: BBC North / ID:SR.

Figure 31: Options for collaboration, user’s choice where to work - pods

Figure 32: Options for collaboration, user’s choice inspirational space

Figure 33: Inspirational space, cafe an additional informal area to collaborate

Figure 34: Inspirational space, bright colourful space, options to collaborate

Figure 35: Inspirational space, bright colourful space, options to collaborate

Figure 36: Options for collaboration, user’s choice where to work - acoustical pods

The approach for the office design was an excellent example of how Human Centered Design and PAR. The architects and the employees of BBC worked together in a very “energized programme of user engagement” (ArchDaily, 2011). “Over a period of seven months the process included interviews, feedback sessions and people profiling in addition to building workshops, show and tell and look and feel sessions” (ArchDaily, 2011).
2.3.6 Real Life Case Study

A common theme emerged from the analysis of authors suggesting that open, informal gathering zones should be incorporated throughout any learning facility or office environment to stimulate collaboration. Various locations in addition to the classroom or studio such as outdoor space, learning commons, corridors (known now as the spaces in-between) should be designed to share knowledge, skill and expertise.

These areas would be defined spatially, be multi-use and flexible, thus meaning to be simply and quickly reconfigured to adapt functionally. Studios are designed for work in teams. Education should not be restricted to four walls of classroom (Teknion, 2014). Learning environments need to transform to a space that enhances, contributes and supports all learners. It is noteworthy here to mention space that was previously considered circulation in now essential to be a successful learning environment. Thus the reference to spaces in between, where learners have their opportunity to forge their own personal space.

"Education should not be restricted to four walls of classroom" (Teknion, 2014).
3 DESIGN

Synergized design learning in a co designed space
According to Oxford dictionary this is how design is defined:

**NOUN**
- a plan or drawing produced to show the look and function or workings of a building, garment, or other object before it is built or made:
  - “he has just unveiled his design for the new museum”
- synonyms: plan • blueprint • drawing • sketch • outline • map • plot

**VERB**
- decide upon the look and functioning of (a building, garment, or other object), typically by making a detailed drawing of it:
  - “a number of architectural students were designing a factory”
- synonyms: plan • outline • map out • draft • draw • invent • originate • (Oxford dictionary, 2016)

As part of this study several design approaches will be implemented. As explanation for this design section, a series of art ideations compiled for course INDC 6007; Inclusive Art, Design and Communication will be included as visuals to support the design approaches. Figures 31 to 37.

### 3.1 Inclusive Design Principles

At the Inclusive Design Research Centre (IDRC) OCAD University define, inclusive design as “considering the full range of human diversity of with respect to ability, language, culture, gender, age and other forms of human difference” (IDRC, 2016).

Further they cite three dimensions:
1. Recognize diversity and uniqueness
2. Inclusive Process and tools
3. Broader beneficial impact

(Oxford dictionary, 2016).
3.1.1 Dimension 1: “Recognize diversity and uniqueness” (IDRC, 2016)

Inclusive design designs for the individual, rather than the average (Treviranus, 2016). The idea of the diversity is that we recognize individual needs and strengths. Creating solutions should not be segregated solutions nor to part of mass solutions standards or typical (Treviranus, 2016). Everyone is unique and design solutions should be flexible to adapt to that uniqueness.

As explained by Garcia-Diaz as a review on Scott E. Page’s Book: Complexity and Diversity, specific to Chapter 8: Emphasizes the role of diversity on the performance of complex systems, creates synergies and the construction of collective knowledge. “Individually we are all creative with our variation and across different types, new ideas are generated. Collectively we have new direction for this challenge.” (Garcia-Diaz, Jasss review, 2011, http://jasss.soc.surrey.ac.uk/14/2/reviews/5.html)

This initial photographs and collage was created in 2014, however inspired by the visual precedence of a quilt, v.ve edited and modified the collage for a unique installation.
3.1.2 Dimension 2: “Inclusive process and tools” (IDRC, 2016)

Including diverse perspectives in the process of design allows for innovation (Treviranus, 2016). Diversity creates creativity, diverse people come together to build on the strengths as individuals but grow unique solutions and perspectives in decision making as a group (Treviranus, 2016). Diverse design teams need to include edge case participants or as ‘extreme users’ defined by Rich Donovan, (IDRC, 2016). As the designs need to be as accessible and usable by all. The process of linking everyone is a vital component in creating a viable solution for everyone to use. This is a synergized a solution.

Figure 42: Diversity Creates Balance Process: Final installation and explanation adjacent page

Figure 43: Diversity Creates Balance: Art installation, Meme, 2015

Size: 24” x 60” suspended

Description: In the effecting cultural change course, our team further explored diversity to create a meme. The process began with each of us individually brainstorming the inspiration of diversity and what the exact message we wanted to create. We all individually drafted and brainstormed and each created unique posters around the idea of Diversity is…

It then evolved to Diversity is Equality.

Finally after a class discussion on Balance, the meme of Diversity Heals Balance was born. The team then explored the idea inspired by the team member Yu Lin (Zen Master) to create a Live installation, one people could interact with.

Then, the thought was to create an interactive, OOC was installation. We proto-
typed the idea around an active balance board on a website, where the team diversity can see icons available along the side of shared people to select their diversity and add to the balance board.

The idea is regardless of how many icons make the board the board will never tip and all add to the balance.

Challenge: Standard Inclusive diversity ICONS and creating an interactive WEB-SITE. This was surprising as we didn’t know how to use the web tools to create the game. However it’s still an idea we would like to explore.

In the mean time, we wanted to demonstrate this concept to our class mates, inspired by lego… the idea evolved.

We then placed a 6 board installation in the lobby of IDRC. We started off with 18 diversities from our cohort. We then tried to spread the meme. It was an excellent way to engage the individuals who visited the IDRC. As people interacted with the installation, we were able to keep the process of the final piece evolved from unique individual ideas but together created an original syn-

ergistic installation.

Artist, and Designer: Dr. Dennis Lagman, Songfeng Koni Xie, Rushmita Alam, Vanessa Vilic Evangelista, Yu Lin

Course: Effecting Cultural Change, Spring 2015

Educational Advisor: Jutta Treviranus
3.1.3 Dimension 3: “Broader beneficial impact” (IDRC, 2016)

The third dimension is the impact of design and the effects and benefits of it has on additional users not just the intended participants; it has broader impact, similar to the “curb cut effect” (Treviranus, 2016). The curb cut was intended for people in wheelchairs and scooters to safely transition from road to side walk; however, everyone with wheels benefits; baby strollers, bikes, roller blades, and walkers. Inclusive design has a positive impact when integrated in the process, (Treviranus, 2016).

Figure 44: Layers of Diversity; synergized when Linked series of photos: Final installation and explanation adjacent page

Figure 45: Layers of Diversity; synergized when Linked.
Cardboard, wood, acrylic, wire, August 2015 | Size: 8”x8”x37”

Description | Building on the concepts from installation no. 06 - inspired by the Di verse city of Toronto; by its communities, people, building, traffic, chaos + lights…
The shapes are simple rectangles, which were inspired by the architecture of all the different buildings in the city. Each shape, although similar at first glance, is actually unique by shapes, type of pattern (openings), texture, and or colour. Each piece is connected to the next + are all linked with the same center point. This emphasizes the synergy of the installation, each piece unique, different from the other but together the impact of the art is more powerful.

The perception is that a mobile is constantly moving and or changing. Every time one views a mobile, the appearance can be different as can the reflection of the shapes in the surrounding environment. The lighting changes depending on the time of day and patterns as the natural light moves around the installation. If viewers were to close their eyes and view the mobile, the feeling of different colours and patterns could affect their senses. These ideas duplicate the notion of a changing city; constantly moving + changing.

Due to the material choices for the installation + the use of a laser cutter, the scent of the installation was of fresh cut wood. (not intended but a nice scent) However the smell of the acrylic; was not as popular. (similar to scents in the city, I suppose)

** It was the intent that metal was to be included in the installation, this material would have added to providing sound to the installation as it moved; almost like a wind chime. However in this installation metal pieces were added to the bottom of the pieces, to create sound with the installation.

Experience if this installation, be part of the art. If the piece was installed in an area where viewers can add their unique piece the installation; it could emulate the diversity + inclusivity of the growing city. A series of layered, linked installations can be created.

It would be fantastic if each Inclusive design cohort created one of these to hang in OCAD U. The inclusive design program each year could create a permanent, yet growing installation.

Artist + Designer (s) | Vanessa Vilo Evangelista
Course | Inclusive Art, Design + Communication, August - Summer 2015
Educational Advisor | Geoffrey Shea
3.2 Co Design

To design is not a new idea, it is just often overlooked. “The concept of co-design is directly related to co-creation. By co-design we refer to collective creativity as it is applied across the whole span of a design process” (Sanders, Simmons (2009, p.1). The idea of exploring how to involve learners was supported by co-design methodology. It is therefore an important part of this study and design proposal.

Empirical and primary tool findings indicated students want to be involved with their learning experience and would like to engage, collaborate and continue to learn beyond the studio (McMahon & Kiernan, 2011). For example, a design need in the subject facility focuses on the need to redesign from teacher centric to student centric. Process models such as Design thinking, Active Learning, Co design, participatory action, integrative thinking and Human Centered design add to the engaging methodologies of this study. Specifically Co-creation / Participatory Design are evolving methodologies in the design process (Tacchi & Watkins, 2007). Both are connected to Human Centered design; both start with the people you are designing for and ends with solutions that were designed to meet their specific requirements (IDEO, 2016).

The results of human centered design or the integration of engaging methodologies is inspiring for everyone (Meisterheim, Cretney & Cretney, 2011) because everyone is committed to ideas, and ultimately a change. This inclusive strategy is therefore ideal offering learners the opportunity to take ownership of their environment. A co-design, PAR approach supports empowering and emancipating multiple voices to validate a vision of change and direction (Baldwin, 2012). There was one approach to gather quantitative data through survey but through PAR a collection of collaborative, multi-faceted strategy in order to understand the “space in-between” (Corbin & Buckle, 2009). Examining the space in between is critical reduce dichotomies; and fundamentally enrich our understanding of diversity and inclusive design.

In summary, connecting learners through PAR methodologies is an essential component to inclusively engage with the key players who use the environment; human centered design requires participatory research practices (Sanders & Stappers, 2014). This is a co design.
3.2.1 Synergy

Synergy defined by Wikipedia is the creation of a whole that is greater than the simple sum of its parts (Wikipedia), working together to create a greater good. Treviranus stated; “We need to prize and learn to orchestrate and create synergy out of our differences” (2016).

The resulting literature review identified that users want to be involved with expressing, creating and be part of their learning practices (Sanders & Stappers, 2014). Therefore, the next step is to engage the users in a participating exercise in design thinking along with a co-design exploration to examine their needs and differences. The research activity hopes to engage a diverse sample of learners from Humber College ITAL representing varying generations in a charrettes and a workshop on redesigning their design space and be part of a synergized solution.

Figure 38 which demonstrates the framework and concepts derived from the literature review analysis in order to move forward with programming, ideation, creation and co-design. Co Design will be approached by charrettes and design workshops to generate ideas how to implement outcomes of analysis. The process if evolving, it will continue, with evaluation, reflection and more creation.

3.3 Design Approach Summary

The design approach to user-centered, inviting diverse inputs from the design community in general, with a substantial component of participatory research approach through involvement of the design community of Humber College ITAL in a discussion about their studio spaces. The collection of perspectives will be synergy at its best; to create an inclusive design learning environment.

A major goal of co-design is celebrated in the approach to the participatory activities. Participants in the workshop could derive satisfaction from having contributed to potential change at their current facility. Both learners and facilitators should derive satisfaction from having contributed envisioning a future design classroom resulting in long-term social benefits which are related to productivity, successful outcomes and both personal and professional growth.
4 RESEARCH METHODOLOGY
Chapter 4

Synergized design learning in a co-designed space

This epistemological approach to the research will be an analysis comparing findings from faculty and students input literature and precedent case studies of successful design facilities, offices and studios. To ensure inclusive research, participatory action research will be a fundamental component in identification of the user’s needs and these findings will support how learning environments specific to studio experiences impact student engagement thus influencing their success. Supporting student success is integral to the mandate of post-secondary institutions. As technology continues to make significant changes in how work is accomplished and learning materials are accessed we need to reconsider how well our physical environments meet the changing needs to support students. In order to substantiate evidence in an inclusive manner, the collection of this data will use a variety of inclusive research methods to analyze and address existing obstacles in the current environment.

Figure 50: left. Poster for workshop Recruitment

Alternative Text:

Silhouettes of learners with conversation blank bubbles sitting in a studio. Title: Wish list: Story board, thoughts of a user.

Questions on poster: Do you have WISHES that you like to explore in order to CHANGE the FUTURE design learning environment? Would you be interested in being involved in a design workshop. It will be creative (speak your mind, draw your ideas, build your vision and plan the space)
If Interested please contact Vanessa Vilic Evangelista, OCAD University, Master of Inclusive Design Student, vv14ie@student.ocadu.ca by March 8, 2016. When: Tuesday, March 15, 2016 5pm-9pm, Where: Humber North Room: N105. A lite dinner + refreshments will be served.

Figure 51-53: Right. Poster for workshop Recruitment posted in design wing to attract attention of students and facilitors.

4.1 Recruitment of Participants

Participants in the online survey and email charrette were current students, graduates or faculty members from five post-secondary design institutions in Toronto: Humber College ITAL, OCAD University, Algonquin College, Ryerson University and Sheridan College.

The workshop at Humber College had 13 participants. From among those who respond to the poster, efforts were made to select participants to get a good distribution across generations: Adults born 1990 and after (Generation Z), Born 1982 – 1989 (Generation Y, Millennial), Born 1965 – 1981 (Generation X), Born 1946 -1964 (Baby Boom Generation) and Born 1925 -1945 (Silent Generation / Traditional), every generation was presented except the silent generation.

Recruitment for the workshop was completed by promotion at Humber College ITAL as the participants were only from there. The researcher wrote an email to the college administration Refer to Appendix D requesting their assistance in the recruitment and in the conduct of the session. Humber College ITAL administrations sent out poster and workshop invitation and consent letter by email to all faculty, graduates and students. Additional posters were posted in the design wing to attract attention of students and facilitors. Refer to Appendices D through F for details and protocol.
4.2 Research Framework Triangulation

The analysis of findings of this research will involve a comparative triangulation of literature based empirical research comparing findings of case studies along with a Participatory Action Research to engage faculty and students (diagrams below).

4.3 Participatory Action Research: Triangulation, 3 types of Data

As stated earlier, the idea of Participatory Action Research (PAR) is a fundamental approach to establishing the knowledge and direction for this revised solution(s), the proposed re-design of an existing educational studio space (Baldwin, 2012). Baldwin discusses Participatory Action Research as a supportive collaborative tool in engaging participants to solve problems and provide new directions. Participants will have the three opportunities to engage: in part A, a survey to review their existing environments and ideas around an inclusive design classroom. Part B, charrette and Part C, a workshop both to engage them in co-design to capture their design preferences and ideations improve the environment.

There is a danger of exclusion in research based on variables of age, social class, ethnicity, gender, sexual tendency, language and both physical and mental disabilities (Hang, 2009). To avoid this predicament, the recipe of literature case study and participatory action research findings provides the opportunity to engage, stakeholders, users, and the public at various levels of power ability and function (Smith, 2012). Participatory action research with all users must be implemented to ensure a diverse sample therefore all demographics within the design centre must be represented. For example, those with: generational diversities, different learning styles, differing personality types, various cultural and ethnic backgrounds, language barriers and any other relevant needs.

4.3.1 Survey

An online survey was conducted from the time of REB approval till the end of March 2016. (Appendix b) Email charrettes were used to collect additional inputs from the survey respondents who choose to participate. The survey was administered through the Survey Monkey web based tool, where data was stored in an encrypted form. Raw survey data was collected in an Excel file for further processing. The survey was conducted from February 1, 2016 - March 31, 2016.

There were 102 participants in the surveys. Survey’s were originally developed as the part of the process to gather high percentages of statistics to validate the reliability of results (Mae Sincero, n.d). Surveys have their advantages and disadvantages, below is a comparison chart, information paraphrased. This method ensured validity in many areas, it confirmed how majority of the learners critiqued the core attributes of their studio space, informed preferred learning styles, confirmed that their environment plays a vital role in their learning, provided preferences, requests and additional ideas.

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Representation a large population (large samples)</td>
<td>• Inflexible design</td>
</tr>
<tr>
<td>• Low costs</td>
<td>• Not ideal for sensitive topics or controversial issues</td>
</tr>
<tr>
<td>• Convenience</td>
<td>• Questionable Inclusive</td>
</tr>
<tr>
<td>• Good statistical evidence precise results</td>
<td></td>
</tr>
</tbody>
</table>
Chapter 4

Synergized design learning in a co-designed space

Figure 54: Users “survey” responses (question 12)
Rank the following in order of influencing your best learning. 1 - representing the best.
Alternative Text:
Left column of list influences: Environment, facilitator, technology, types of activities, types of lectures, types of assignments, individual based assignments and group work. According to the user responses, the facilitator is MOST influential, followed by the environment and then types of assignments.

Figure 55: Users “survey” responses (question 30)
Student: if you had the choice, would you take all your courses online?
Alternative Text:
The circular bar graph indicates that ninety five percent of learners who responded to this survey indicated no to full time online learning. In-class is preferred, however one percent indicated yes. Therefore the need for an environment is necessary with the option to learn online.

Figure 56: Users “survey” responses (question 31)
Educator: if you had the choice, would you teach all your courses online?
Alternative Text:
The circular bar graph indicates that ninety three percent of educators who responded to this survey indicated no. In-class facilitation is preferred. However one percent indicated yes. Therefore the need for an environment is necessary however learning online must also be incorporated into the solution.

Figure 57: Users “survey” responses - open ended question (question 24)
As a designer what does inclusive mean to you?
Word cloud created by Author on http://www.wordle.net/
Flexible + adaptable design to meet everyone’s functional needs, including everyone in the form + function, designed for all to use: gender, age, medical conditions, mental health, physical abilities. It means the freedom to be able to be you while still succeeding like everyone else. Having a fair shot at all the tools, information, and space to meet our needs. The hierarchy of spaces directly related to positions is removed. That allowing everyone to be on an equal playing field. Even if it is as simple as every office is the same size, inclusive design to me means having all of the tools I need to complete the best work that I can. See above on inclusive definition. Inclusive design to me means a space that caters to as many needs of the users as possible, including everyone and accessibility. It can meet variable needs, such as functional, psychological and environmental needs for all kinds of users. Finding new ways to include more people in the experience of your design. Inclusive design means design that is mindful of differences. To me it means creating spaces that are accessible and appealing to everyone and thinking of unique situations to old problems. It means design includes everyone of all abilities. Designing for the “extreme user. There are no limitations to any users who use or want to use space. Inclusive design is about creating a space that is inviting, friendly, personal, and makes everyone feel welcome. It creates a space that is accessible and appealing to everyone and thinking of unique situations to old problems. Inclusive design means to me is having more than one option available to me to learn and grow as a designer.
All ideas matter, all users matter

Figure 5.8: Users “survey” responses (question 25)
What features would your inclusive design studio have and why?

Online can be isolating at times, I love that my school has a place that I can go and learn and collaborate.

I LEARN BETTER IN PERSON, INTERACTING WITH OTHERS AND DISCUSSING. IT ALSO FOSTERS CONNECTION AND REDUCTION OF FEELINGS OF ISOLATION AND CONFUSION WHICH CAN HAVE A NEGATIVE EFFECT ON THE STUDENTS MENTAL HEALTH AND OVER ALL SUCCESS.

Education is changing rapidly. Look at all of the wonderful online resources like Lynda.com. Kahn Academy, Code School... The classroom needs to adapt as well, it needs to be mobile and flexible and have the ability to transform into a space that can be customized for the unique learning goals of each student.

I think that having less separation and more collaboration between programs in regards to curriculum and spaces could help create a more ongoing learning environment in the future.

NATURAL LIGHT, ERGONOMIC OPTIONS, LECTURE RECORDINGS AND INTERACTIVE TECHNOLOGY, EXCELLENT ACOUSTICS AND TEMPERATURE CONTROL, MORE DURABLE AND FLEXIBLE FURNITURE OPTIONS TO BEST LEARN DEPENDING ON HOW I AM THAT DAY, ETC.

Technology is changing, our studios need to adapt to the change.
4.3.2 Charrette

A charrette is a design problem or scenario completed in a defined (usually short) period of time to extract initial visual thoughts and ideas. charrettes are excellent tools in promoting and enhancing the value of community-based insights. They are both valuable resources to involve multiple participants of backgrounds (Doyle, 2009). Such activities bring together a variety of expertise, experiences, perceptions, ideas, and allow diverse groups to create synergy, and understand different ideas. Smith (2012) substantiates this through her research on design charrettes which identifies the possibility of increased open, inclusive and holistic engagement between all participants.

One example of a suitable charrette for this discussion focuses on the idea of communication and / or collaboration. This would initiate discussion around questions such as: How do you like to communicate? What tools do you use to communicate? In a classroom environment how do you prefer to communicate? The facilitator would encourage activities such as: Draw your ideal classroom environment, in layout and surroundings. Collage all the tools, technology and furniture would you want to include this environment. Add notes.

Another example would be to provide a digital and hardcopy of a photograph(s) or plan of the space in question and asking participants to sketch on top what they might change or what they would add. For participants who prefer digital drawing or who use assisted technology, a format would be implemented to accommodate their preferences. Since this activity could be time consuming for many participants or could potentially exclude many who are not confident in their drawing capabilities, the workshop other forms of engagement was derived another methodology to capture and understand intellectual abilities. Twenty nice designers in represented their generation consisting of a diverse group of faculty and students participated in the charrette. Refer to appendices C and

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**Figure 60: “Charrette” Participants responses - what does Inclusive mean to you?**

Word cloud created by Author on http://www.wordle.net/

Alternative Text: Welcoming social accessible various technologies various types of learning auditory tactile visual adaptive accessible sharing welcoming approachable readily available regardless of diversity nature. It indicates inclusivity, celebrating diversity, welcoming, everyone, everything included + welcome, universal user design. Friendly expressions, everyone to experience, participate, contribute, we are of different colors, different heights, even different values, but we are together peacefully. Coming together, synergy at its best, diversities coming together, welcoming problems of different kinds of inhabitants, collaborating + connecting community, group activity. It’s like chewing gum, everyone can, modular design ever changing. People create + change function, design that includes all participants no matter of the their differences, inclusive encompassing plants, people, experience = functionality, equally, everyone’s needs equally significant. CELEBRATE diversity, no barriers, accessible to all for enjoyment = function, accessible to largest amounts of people, not segregation, unity, fairness.
4.3.2.1 Charrette Ideations PART 1 - by a series of designers

THINK BIG THINK BOLD. THINK OUT OF THE BOX. ALL IDEAS are WELCOME. Add NOTES. BE CREATIVE. You are part of the FUTURE.

2D Thinking

What is DESIGN to you? (diagram, sketch, draw, add a photo of your vision)

What is INCLUSIVE to you? (diagram, sketch, draw, add a photo of your vision)

What is the future of DESIGN EDUCATION to you? (diagram, sketch, draw, add a photo of your vision)

Figure 61: "Charrette" Participants responses by Akansha Osmond

Figure 62: "Charrette" Participants responses by Brittany Fernandez

Figure 63: "Charrette" Participants responses by Clare Formosa

Figure 64: "Charrette" Participants responses by Dana Tapak

Figure 65: "Charrette" Participants responses by Emily Kusec-Ashcroft
4.3.2.1 Charrette Ideations PART 1 - by a series of designers Continued...

THINK BIG THINK BOLD. THINK OUT OF THE BOX. ALL IDEAS are WELCOME. Add NOTES. BE CREATIVE. You are part of the FUTURE.

2D Thinking
What is DESIGN to you? (diagram, sketch, draw, add a photo of your vision)
What is INCLUSIVE to you? (diagram, sketch, draw, add a photo of your vision)
What is the future of DESIGN EDUCATION to you? (diagram, sketch, draw, add a photo of your vision)
4.3.2.1 Charrette Ideations PART 1 - by a series of designers Continued...

THINK BIG THINK BOLD. THINK OUT OF THE BOX. ALL IDEAS are WELCOME. Add NOTES. BE CREATIVE. You are part of the FUTURE.

2D Thinking

What is DESIGN to you? (diagram, sketch, draw, add a photo of your vision)

What is INCLUSIVE to you? (diagram, sketch, draw, add a photo of your vision)
4.3.2.1 Charrette Ideations PART 1 - by a series of designers Continued...

THINK BIG THINK BOLD. THINK OUT OF THE BOX. ALL IDEAS are WELCOME. Add NOTES, Be CREATIVE. You are part of the FUTURE. 2D Thinking

What is DESIGN to you? (diagram, sketch, draw, add a photo of your vision)
What is INCLUSIVE to you? (diagram, sketch, draw, add a photo of your vision)
What is the future of DESIGN EDUCATION to you? (diagram, sketch, draw, add a photo of your vision)
4.3.2.1 Charrette Ideations PART 1 - by a series of designers Continued...

THINK BIG THINK BOLD. THINK OUT OF THE BOX. ALL IDEAS are WELCOME. Add NOTES. BE CREATIVE. You are part of the FUTURE. 2D Thinking

What is DESIGN to you? (diagram, sketch, draw, add a photo of your vision)

What is INCLUSIVE to you? (diagram, sketch, draw, add a photo of your vision)

What is the future of DESIGN EDUCATION to you? (diagram, sketch, draw, add a photo of your vision)
4.3.2.1 Charrette Ideations PART 1 - by a series of designers Continued...

THINK BIG THINK BOLD. THINK OUT OF THE BOX. ALL IDEAS are WELCOME. Add NOTES. BE CREATIVE. You are part of the FUTURE.

2D Thinking. What is DESIGN to you? (diagram, sketch, draw, add a photo of your vision)
What is INCLUSIVE to you? (diagram, sketch, draw, add a photo of your vision)
What is the future of DESIGN EDUCATION to you? (diagram, sketch, draw, add a photo of your vision)
4.3.2.1 Charrette Ideations PART 2 - by a series of designers

3D THINKING - SPATIAL DESIGN

On the next page, there are 4 photos, select 2, 3 or all +

Sketch, draw a VISION of what you want to IMPLEMENT in this current learning studio depicted on the next page (sketch on top of the photo(s) provided.)

How would you change it? What would you implement? Sketch, add notes, be creative. THINK BOLD. THINK BIG.

Figure 91: “Charrette” Participants responses by Akansha Osmond

Figure 92: “Charrette” Participants responses by Akansha Osmond

Figure 93: “Charrette” Participants responses by Emily Kusec-Ashcroft

Figure 94: “Charrette” Participants responses by Emily Kusec-Ashcroft

Figure 95: “Charrette” Participants responses by Jacob Willow
4.3.2.1 Charrette Ideations PART 2 - by a series of designers Continued...

3D THINKING - SPATIAL DESIGN

On the next page, there are 4 photos, select 2, 3 or all +
Sketch, draw a VISION of what you want to IMPLEMENT in this current learning studio depicted on the next page (sketch on top of the photo(s) provided) 
How would you change it? What would you implement? Sketch, add notes, be creative. THINK BOLD, THINK BIG.
4.3.2.1 Charrette Ideations PART 2 - by a series of designers Continued...

3D THINKING - SPATIAL DESIGN

On the next page, there are 4 photos, select 2, 3 or all + Sketch, draw a VISION of what you want to IMPLEMENT in this current learning studio depicted on the next page (sketch on top of the photo(s) provided)

How would you change it? What would you implement? Sketch, add notes, be creative. THINK BOLD. THINK BIG.

Figure 101: "Charrette" Participants responses by Meliza Macapinlac

Figure 102: "Charrette" Participants responses by Marcin Kedzior

Figure 103: "Charrette" Participants responses by Rami Dawood

Figure 104: "Charrette" Participants responses by Kristen Dibattista

Figure 105: "Charrette" Participants responses by Renya Tensuda
4.3.2.1 Charrette Ideations PART 3 - by a series of designers

2D THINKING - PLANNING
Sketch, draw a VISION of what you want to IMPLEMENT in this current learning studio depicted on the next page (sketch on top of the plan provided). How would you change it? What would you implement? Sketch, add notes, be creative. THINK BOLD. THINK BIG. (table + chairs in corner to assist with scale of space)
4.3.2.1 Charrette Ideations PART 3 - by a series of designers Continued...

2D THINKING - PLANNING
Sketch, draw a VISION of what you want to IMPLEMENT in this current learning studio depicted on the next page (sketch on top of the plan provided). How would you change it? What would you implement? Sketch, add notes, be creative. THINK BOLD. THINK BIG. (table + chairs in corner to assist with scale of space)
4.3.2.1 Charrette Ideations PART 3 - by a series of designers Continued...

2D THINKING - PLANNING

Sketch, draw a VISION of what you want to IMPLEMENT in this current learning studio depicted on the next page (sketch on top of the plan provided). How would you change it? What would you implement? Sketch, add notes, be creative. THINK BOLD. THINK BIG. (table + chairs in corner to assist with scale of space)
4.3.2.1 Charrette Ideations PART 3 - by a series of designers Continued...

2D THINKING - PLANNING
Sketch, draw a VISION of what you want to IMPLEMENT in this current learning studio depicted on the next page (sketch on top of the plan provided). How would you change it? What would you implement? Sketch, add notes, be creative. THINK BOLD. THINK BIG. (table + chairs in corner to assist with scale of space)
4.3.2.1 Charrette Ideations PART 3 - by a series of designers Continued...

2D THINKING - PLANNING
Sketch, draw a VISION of what you want to IMPLEMENT in this current learning studio depicted on the next page (sketch on top of the plan provided). How would you change it? What would you implement? Sketch, add notes, be creative.
THINK BOLD, THINK BIG. (table + chairs in corner to assist with scale of space)
4.3.3 Workshop / Focus Group

Linking workshops within the Participatory Action Research (PAR) methodology is a powerful part of the recipe in establishing the knowledge to empower and emancipate multiple voices to validate a vision of change and direction for any solution, specifically this focus in learning environments. Workshops could be part of the recipe which contributes to the space between.

The final ingredient to this PAR recipe was a workshop / Focus group, inspired by Doyle’s (2009) article “Using Focus Groups as a Research Method in Intellectual Disability Research”. Not only do the focus groups benefit the people with the intellectual disability, many people, if not all individuals’ benefit from the process. Regardless how one defines or understands an intellectual disability, a focus group and or workshop brings together a variety of expertise, experiences, perceptions, ideas and allows diverse groups to create synergy, and understand different ideas. Workshops / focus groups could be part of the recipe which contributes to the space between.

Related to design context for MRP, activities would in the form of charrettes to extract knowledge and ideas from the users of the current design facility. Understanding and engaging with diverse expertise, backgrounds, and perceptions allows the group to challenge topics of design and create new stimulating ideas and approaches to problems. Workshop / focus group are a huge part of innovation and new ideas.

There are several activities which have the potential to engage all participants; however, the challenge is to actually engage everyone. Often large participant groups are not successful therefore the strategy will be to break out large groups into smaller focus groups (Radford, 2013).

There are many examples of approaches which contribute to engagement of workshops/ focus groups; this researcher was inspired by the strategies documented by Radford University, who created a Design Methodology Workbook around focus groups (2013) and a very inspirational workshop by Teknion, by Gregg Dekker; Why did George Jetson still commute to work? Workflow MAP, IDEXCanada, provides the following bio of Gregg Dekker along with a description of this specific workshop;

“Is currently a Director of Workplace Strategy at Teknion, and is involved in speaking, consulting and facilitating on innovation, business development, generational differences, and workplace effectiveness. His use of tools and an engaging style make client engagements enjoyable, direct and memorable” (IDEXCanada, 2015).

“The workshop is described as in a future with technology that allows nearly everyone to work from anywhere; do you think people will still travel to offices to work? In this highly interactive facilitated workshop, you will explore and decide for yourself why - or why not - workers will work together in physical offices. You will be able to work anywhere, but you will need to work somewhere. Where should that somewhere be?” (IDEXCanada, 2015).

The researcher utilized the basis of this workplace workshop and created a Workflow MAP related to educational learning environments.
Chapter 4

Synergized design learning in a co-designed space

The workshop consisted of four parts:

1. Brainstorming: Workflow MAP Teknion, Gregg Dekker; (an adaptation to educational spaces) REFLECTION of education space – NOW and FUTURE
2. Priorities and Planning exercise: inclusive wishes. What would YOU need in a design studio environment to meet your needs and preferences?
3. Inclusive concept 2d and 3d ideation. What does inclusive mean to you? What features would your Inclusive design studio have and why?
4. Reflections of the workshop experience

All of these activities were designed to extract information and ideas from the participants regarding their ideas and individual approaches. The workshop was conducted on March 15, 2016 at Humber College with faculty and students invited from the design programs to obtain design ideas for a re-envisioned learning environment. The workshop session was planned to take around 4 hours and key activities were audio recorded with the consent of all participants. Photographs were taken during the workshop with the consent of the participants have been included in the presentation of findings. Appendix F1 and F2 has further breakdown of the outline of the workshop and a copy of the presentation.

The researcher utilized the basis of this workplace workshop and created a Workflow MAP related to educational learning.
WORKSHOP PART 1: WorkflowMAP - (developed by Teknion, Greg Dekker)

- each dot represents half a day of work / learning, everyone received 10 dots for a full work week.
- Participants did the workflowMAP activity once to show how they work / learn today and in their current facilities. Then we completed the activity again as a future learning environment. If they had a choice where would they work. Participants received 10 more dots, this was completed on the trace paper. This activity allowed the students to reflect on how they work / learn and where. Several dots were placed in the HOME option. This launched a great conversation of why students want to work from home. Ultimately, it is because their current environment does support their long work time hours to collaborate with others. Learners want variety; they want an agile learning environment, similar to what the professional world is designing in the workplace. The researcher visited 3 showrooms. Herman Miller, Haworth and Teknion. All these manufacturers are delivering the same message in different ways. New common components of a workplace:
  - LIVING OFFICE.
  - People vs. Tools.
  - agile,
  - various communication,
  - wellness,
  - FLEXIBLE and ADAPTABLE,
  - culture / social
  - more of need for face to face interaction (especially in the future) OPTIONS.
  - USER’s choice.
  - No set desks.
  - Change. Active Ergonomics.
  - people to explore different working configurations.

Learners in educational settings seem to want this here too.

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Figure 132: Photo set up of Part 1 of the workshop "WorkflowMAP Educational Space" Adapted from Teknion, Gregg Dekker’s session.

Figure 133: Photo students engaging in Part 1 of the workshop "WorkflowMAP Educational Space" Adapted from Teknion, Gregg Dekker’s session.

Figure 134: Photo students engaging in Part 1 of the workshop "WorkflowMAP Educational Space" Adapted from Teknion, Gregg Dekker’s session.

Figure 135: Photo students engaging in Part 1 of the workshop "WorkflowMAP Educational Space" Adapted from Teknion, Gregg Dekker’s session.

Figure 136: Photo students engaging in Part 1 of the workshop "WorkflowMAP Educational Space" Adapted from Teknion, Gregg Dekker’s session.

Figure 137: Right Photo students engaging in Part 1 of the workshop placing the dots of HOW and where they currently work.

Figure 138: Photo students engaging in Part 1 of the workshop "WorkflowMAP Educational Space" Adapted from Teknion, Gregg Dekker’s session.

Figure 139: Photo students engaging in Part 1 of the workshop "WorkflowMAP Educational Space" Adapted from Teknion, Gregg Dekker’s session.
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Figure 137: Image of a word cloud summarizing how the participants work / learn NOW in their current facilities.

by: Author created on wordle.net

Figure 138: Image of a word cloud summarizing how the participants WOULD work / learn in a FUTURE in their learning environment.

by: Author created on wordle.net
WORKSHOP PART 2A: Priorities exercise: inclusive wishes

- What functional features would your inclusive design studio have...
In your exclusive DESIGNATED studios, which function items would you prioritize

The following list was established from the user survey requests along with charrette wishes, let’s prioritize them and add more. Participants were given four posted notes to prioritize their wishes.

Let’s assume this is possible: Link Outdoor learning space, Access to resource area, Natural light, Different levels of lighting

FUNCTIONAL PROGRAM in the studio itself

a. Computers zone
b. Workshop – production zone
c. Gallery display
d. Inspiration space Pin up space, tactile, writable surfaces, magnetic surfaces
e. Printing zone, scanner, etc
f. Independent learning zones (desks)
g. Lounge furniture, Sleeping/chill area 24/7 long periods of time to work
h. Collaboration space, team work tables, a variety
i. Storage
j. Remote collaboration (video conference)
k. Mini kitchenette (micro, sink)

Pick your Top 3 selections from the selections above
1. yellow
2. orange
3. pink
4. OTHER not on the list – mini green

Figure 139: Photo of participants engaging in Part 2 of workshop prioritizing the function of their future studio, placing their posted notes on a communal white board.

Figure 140: Photo of enthusiastic participants.

Figure 141: Right: Photo of prioritized posted notes.
WORKSHOP PART 2B: Priorities exercise: inclusive wishes

Planning exercise: inclusive wishes
What would you put where. Participants worked as a team or independently.

Figure 142: Photo of enthusiastic participants collaborating on planning.
Figure 143: Photo of enthusiastic participants working independently.
Figure 144: Photo of work in progress.

Figure 145: Photo of a sketch, ideation by Emma Christensen.
Figure 146: Photo of enthusiastic participants discussing and contemplating decisions.
Figure 147: Additional sketches ideations by Rami Dawood and Emilia Majerus.
WORKSHOP PART 2C: Planning together

Incorporating everyone’s ideas, requests on to one CO designed 2d plan / 3d drawings.
WORKSHOP PART 2C: Planning together

Incorporating everyone’s ideas, requests on to one CO designed plan / drawings.
WORKSHOP PART 3: Collaboration + Flexibility + Adaptability Ideations

1. Quickly DRAW (2d)
2. Quickly MODEL (3d)

The recurring concepts of inclusive design are **Collaboration + Flexibility + Adaptability** how you would express the three words above a abstract or formal Language.
WORKSHOP PART 3: Collaboration + Flexibility + Adaptability Ideations

1. Quickly DRAW (2d)
2. Quickly MODEL (3d)

The recurring concepts of inclusive design are **Collaboration + Flexibility + Adaptability** how you would express the three words above a abstract or formal Language
WORKSHOP PART 4: Reflections of workshop

Random, creative challenges are cool, gets us out of the funk.

It was fun!
Not stressful, just creative.

Hackathon is similar, crazy ideas for short period of time - Charrette.

This is a great process to get us thinking, we should start every project like this.

None of you entered this room which a preconceived notion, it was ego-less process and the results are awesome.

This activities break you out your typical thinking or focus.

Thank you again for the inspiring workshop. It was such a fun and engaging learning experience! Please let me know if you will be conducting any further research that I could be a part of in the future.

Figure 171: Left Photo of final co design workshop session. Design by: Akansha Osmond, Cedar Samaha, Emily Kusec-Ashcroft, Emilia Majerus, Emma Christensen, Susannah Fatou, Renya Tensuda, Kristen DiBartolo, Nicole Castron, Omar Rivera, Rachel Irving-Beer, Ram Dhowod, and Stephanie Trifonowch.

Figure 172: Photo of co designers. Figure 173: Photo of co designers - FUN bunch.

Figure 174: Right Photo of final co design workshop session. Design by: Akansha Osmond, Cedar Samaha, Emily Kusec-Ashcroft, Emilia Majerus, Emma Christensen, Susannah Fatou, Renya Tensuda, Kristen DiBartolo, Nicole Castron, Omar Rivera, Rachel Irving-Beer, Ram Dhowod, and Stephanie Trifonowch.
4.4 Conclusion of Research Instruments

It is not a new idea that design can facilitate remarkable environments supporting life enriching experiences for people. However, the creation of such spaces demands a stimulating participatory methodology of research activities. Inclusive strategies for the data collection and analysis ultimately solve this design problem in a meaningful way. Participatory Action Research (PAR) methodology has three key ingredients to address an inclusive, diverse perspective in gathering the data from the participants of the existing space. In summary surveys, along with reflective exercises, charrettes and workshops/focus groups, create a PAR which identified data for further analysis. The analysis illustrated successful features, challenging obstacles, expertise, experiences, perceptions, potential solutions, and new ideas which allowed diverse groups to create synergy and understand varying perspectives. Survey and Charrettes and workshop = Solution direction.
Synergized design learning in a co-designed space
Making Connections: DESIGNING with PAR Results (evidence based design)

The next part of the inclusive process is to apply the findings of the PAR activities analysis into the design. The challenges or obstacles with such results is that they are NOT part of a standards program, but non typical and not a post secondary approach. Everyone must understand that the idea of inclusion in a learning environment goes beyond making spaces / desks accessible, flexible, adaptable which is the common approach to removing barriers. Instead this is about understanding EACH user and how they want to work in the space. It’s about understanding the norm, but incorporating the difference.

I asked Kelly Gluck to comment on her reflection of what has or has not changed since her study a decade ago: “Publicly funded spaces should be the epitome of best practices, showcasing evidence based design outcomes, longevity and meaningful planning through to fulfillment. A creative response to fiscal breaks down restraints means better use of funding verses limited funding. In my opinion it is easy to hide behind constraints rather than deeply explore opportunities. This new study and co design approach breaks down such barriers and preconceived obstacles.” (Gluck, 2016, Personal Communication)

Figure 178: Left, Group work with Technology

The preliminary design solution presented in this document is a co-design of what the users have requested responding to their needs, challenges and desires for their learning environment. It is a sketch, one variation of the design. The next part of the design process or the design spiral would be revisiting these designs with the co-designers for clarification and affirmation.

Figure 179: Group work with Technology

5.1 Design Direction - Solutions

“Publicly funded spaces should be the epitome of best practices, showcasing evidence based design outcomes, longevity and meaningful planning through to fulfillment. A creative response to fiscal breaks down restraints means better use of funding verses limited funding. In my opinion it is easy to hide behind constraints rather than deeply explore opportunities. This new study and co design approach breaks down such barriers and preconceived obstacles.” (Gluck, 2016, Personal Communication)
This future learning environment design exercise started as a redesign of a three existing individual spaces however the inclusive wishes and user requirements indicated a large application was warranted to be more engaged with their learning / facilitation. If the outcome of the exercise was to be holistically considered for a more significant redesign for long term success.

The design approach is to create a several different types of learning spaces to learn and share knowledge with peers / colleagues.

As a result of dialogue in the focus group, five large homerooms “home base” have been provided with the request of smaller class sizes (15-20max). The homeroom concept would be that students, specific to their program have this space for the duration of their study (yearly, 2 years or all 4 years). Students of each design cluster would have their own maker space and would have the opportunity to design their own space with their needs and preferences.

Two large project rooms on the east side could be lecture rooms, designated project rooms and private or collaborative space.

A meeting room for visitors or can act as an additional project room. Sunken lounges spaces have been included for independent learning, collaborative learning or simply chill space to sleep. (although this particular request with an existing base building, may not be as realistic due to the constraints of existing foundations, but the idea should still be explored)

A variation of independent zones, partner learning, collaborative zones with media options have been positioned which provide opportunities to work together in many cases.

Inspirational zones are embedded throughout the space along with all support areas requested, such as workshop, printing facilities, resource room, kitchen (central). There were a few different wishes, one was a games room, referred to this as de-stress room (for additional inspiration). Inclusive Dimension 1: Inclusive design designs for the individual, rather than the typical (Treviranus, 2016). Although the majority didn’t request this, it is most likely that others would benefit from it if implemented, which links to Inclusive Dimension 3: “Broader beneficial impact” (IDRC, 2016). The impact of design and the effects and benefits of is has an additional users not just the intended participants: it has broader impact, similar to the “curb cut effect” (Treviranus, 2016).

Another wish was a quiet space for spiritual meditation. I also referred to this as inspiration zone, as we are all inspired in different ways. Again this space could also benefit many learners or the designer can create a quiet space with can be adapted or used for as mediation environment. I have taken these unique wishes and compiled them into typical categories to adapt with the system.

Designing with no constraints provides new possibilities and innovations.
5.2 Additional inspirational case studies linking to PAR requests

Figure 182: Space connecting to nature, a variety of lounge seating and digital gallery.
Source: http://blog.lpainc.com/lpa-blog/educational-design-where-we-learn-matters

Figure 183: Space connecting to nature, a variety of work zones
Source: http://blog.lpainc.com/lpa-blog/understanding-stem-education-environments

Figure 184: Spaces connected to other spaces, flexibility
Source: http://media3.architecturemedia.net/site_media/media/cache/53/ff/53ffa2b628ec1ffe7c6089676fead771.jpg

Figure 185: Flexible furniture to be reconfigured.
Source: http://blog.lpainc.com/lpa-blog/understanding-stem-education-environments

Figure 186: Variety of lounge seating and digital wall
Source: http://blog.lpainc.com/lpa-blog/109751/Five-Trends-in-K-12-School-Design-Everyone-Should-Conside...
5.2 Additional inspirational case studies linking to PAR requests

Figure 187: Bar height collaboration zone.

Figure 188: Lounge area for collaboration.

Figure 189: Marshmallow type stools for prompt and easy mobility.
Source: Photo by Susan Young

Figure 190: Flexible pods, working rooms for independent learning, partnership, collaboration, easily reconfigured.
Source: Photo by Neal Hamberg

Figure 191: Flexible pods, working rooms for independent learning, partnership, collaboration, easily reconfigured.
Source: Photo by Neal Hamberg
5.2 Additional inspirational case studies linking to PAR requests

Figure 192: Independent pod or partnership for private work space placed in the “spaces in between” in the corridor.

Figure 193: Sunken zone, multiple uses

Figure 194: A variety of seating options. Cafe like with bench and tables. Natural Light.

Figure 195: Working zones independent learning, other zones to support collaborative learning. Natural Light

Figure 196: Sketch with a space with a variety of surfaces. Standing height, desk height and lounge height. Providing students with choice where they want to work.
Source: http://apps.carleton.edu/reason_package/reason_4.0/www/images/851185.jpg?1335113550
5.3 3d Ideation Sketches

Figure 197: 3d sketch - space connecting to nature, digital active screens, a variety of lounge seating and digital gallery.

Figure 198: Home room, studio concept "maker space" each cohort to design their own, digital screens and storage.

Figure 199: Acoustic pods for independent learning or partnership, inspired from case study BBC North / ID:SR.

Figure 200: Flexible pods, working rooms for independent learning, partnership, collaboration, or an escape pod (with a connection to nature.)

Figure 201: Sketch with a space with a variety of surfaces. Standing height, desk height and lounge height. Providing students with choice where they want to work.
Figure 202: Process work "in progress" - ideations connecting PAR to the solutions
Chapter 5

Synergized design learning in a co designed space

The diagram embedded into this spread shows how PAR activities were integrated into the planning to guide meaningful outcomes.

(Shown as black circles) making the connection of how the user preferences of working in a cafe was approached into the design of the kitchenette and working room booths for informal collab spaces or independent work zones.

(Shown as grey squares) making the connection - Homerooms, a place to call home, to have a sense of personalization and ownership were the wish of the workshop.

(Leaders) make the connection Link to the outdoors, natural light, options to work outside, the illusion of being outside was a wish.

Figure 203: Left, WorkFLOW map from workshop
Figure 204: Top, NODE ICONS, created by Author
Figure 205: Plan Ideation - option A
By: Author inspired by PAR
Spaces in between refers to the other “non-designated areas” where inspiration, such as corridors, routes to get to specific designations should also be designed to share knowledge, skill and expertise.

Figure 206: Plan ideation - option A. Highlighted zones of “spaces in between”

Figure 207: Plan ideation - option A. Highlighted plans indicate the specific nodes of home base, independent, partnership, collaborative, social, support + inspirational (gallery).
The plan follows the same principles but changes the direction of the floor plan to create additional interest. The diagram embedded into this spread shows how PAR activities were integrated into the planning to guide meaningful outcomes.

(Shown as black circles) making the connection of how the user preferences of working in a cafe was approached into the design of the kitchenette and working room booths for informal colab spaces or independent work zones.

(Shown as grey squares) making the connection - Homerooms, a place to call home, to have a sense of personalization and ownership were the wish of the workshop.

(Leaders) make the connection Link to the outdoors, natural light, op-
Spaces in between refers to the other “non designated areas” where inspiration, such as corridors, routes to get to specific designations should also be designed to share knowledge, skill and expertise.

Figure 211: Plan ideation - option B: highlighted zones of “spaces in between”

Figure 212: Plan ideation - option B: highlighted plans indicate the specific nodes of home base, independent, partnership, collaborative, social, support + inspirational (gallery).
Chapter 5

5.4 3d Ideation Sketches in Revit (progress)

Figure 213: Home Base studio for 16 students with a variety of work options.

Figure 214: Home room, studio concept "maker space" each cohort to design their own, but this image show private pod for collaboration or team work with media.

Figure 215: Games room with de-stress options to be re inspired.

Figure 216: Flexible pods, working rooms for independent learning, partnership, collaboration, or an escape pod (with a connection to nature).

Figure 217: A sunken seating for collaboration, chill zone or SLEEP space.
5.5 Marrying one’s passions: a reflection of engaging people in design.

This section has a change of voice and is an informal language to suit a reflection of the project. Overall, I believe this MRP was successful in linking to the three dimensions of Inclusive Design.

1. Recognize diversity and uniqueness (IDRC, 2016)
I did recognize diversities by applying a flexible and adaptable design solution to the project. However, standards - segregated approaches interfere as usual. Synergy was at its best in this PAR approach. The charrette results were amazing and the workshop could not have been better. Amazing, meaning successful, full of energy, creative. The participants of both the charrette and the workshop gave their submissions a great amount of attention and thoughts into their proposals. The designers who participated in the workshop were incredible with their honesty, experience, ideas, and designs. The results, the conversation, and reflection were outstanding.

Thank you again to all the faculty and students who participated in this research, you are part of shaping the FUTURE of design-learning environments. Special thank you to the charrette and workshop participants who spent the time sharing their creative talents: Akansha Osmond, Brittany Fernandez, Cedar Samaha, Clare Formosa, Dana Tapak, Emily Kusec-Ascroft, Emilia Majerus, Emma Christensen, Farnaz Habibi, Hang Truong, Ruxanda Patrasc, Renya Tensuda, Jing Wang, Jingyi “Jinny” Lai, Jacob Willow, Kelly Gluck, Kimberly Czodomolsky, Kristen Dibattista, Leah Watling, Lesley Taylor, Mohafizali Merali, Marcin Kedzior, Meliza Macapinlac, Natascha Del Pero, Nicole Czachor, Omar Rivera, Pablo Lopez Castillo, Pamela Mayhew, Rachel Iving-Beer, Ramiro Dawood, Tsvetelina Rabashki, Stephanie Ttrymovych, Susan Toppling and Zaiba Mian, you are all amazing, thank you for all your support.

2. Inclusive process and tools (IDRC, 2016)
Through my PAR triangulation process I gathered diverse perspectives. I gathered a collection of information from the students and faculty who shared their knowledge, ideas, ideations, designs and user preferences, i.e., needs of what and wants based on their own experiences and goals.

3. Broader beneficial impact (IDRC, 2016)
Finally, I do think that my MRP, my role, my approach, my results can be a platform from beyond this Project. These approaches can be imbedded into all new post secondary projects, learning environments and in workplaces. The application possibilities are endless and provide a template for a longitudinal study if the research focus site decides to revisit their facilities design process.

As I mentioned, I LOVE design, but I love people more! I love to engage people in new and exciting ways. I am very pleased with my results of what I learned through to create synergy and evoke positive emotion and breed creativity in everyone. This study was an excellent example of linking differences to create new ideas and a collaborative change.
5.6 Conclusion: A Contribution to Inclusive design

This document presented the final compilation of the rationale, research framework, design challenge, methodology, analysis, creative ideations and synthesis for the Major Research Project (MRP) one component award of Master of Inclusive Design.

In the design proposal; Creating an Inclusive Learning Environment for Post Secondary Design Education; Synergized design, learning in co designed space; the researcher / author addressed the importance of understanding and working with the end user reflecting Human Centered Design and celebrated the difference and variety of the user’s needs.

The research findings support innovative design approaches, best practices, techniques, understanding user difference, and the idea that one size does not fit all. The study gathered deeper understanding of cognitive teaching strategies today for multi generational learners in order to ensure success in the classroom from every student.

The study gathered learning preferences, new activities, workflow styles and ideas for implementation to provide a framework which, if applied as a template for user engagement, will create an adaptable flexible and engaging studio space for the evolving student. This study aligns with the three dimensions of inclusive design:

- 1. Celebrating diverse student and faculty ideations and unique proposed solutions
- 2. Engaging users through a series of PAR activities, to be part of the process
- Understanding the broader impact of how many learners, can benefit for such a learning environment.

The PAR process celebrated diversities and created a positive creative energy and the users were thrilled to be involved. The study manifested with people and process, which created the merger of people, their ideas with architectural interior environments to create a synergistic inclusive product space.

Treviranus (2016) recently explained of the benefits of creating synergy “out of our differences ... negotiating the fluid merger of diverse strengths, making the whole far greater than the parts” (p.8). The study has been an excellent example of how synergy is crafted.

The PAR process created collaborative evidence which represented a co designed, synergized methodology in creating solutions; a future studio environment.
5.7 Embedding inclusive PAR into a design process

This following information is an attempt to understand where to embed PAR into the design process. This initial checklist links people to the design process, when PAR should be implemented prior to any construction or redesign of a new facility.

1. A year before design development begins, PAR needs to begin. Start with surveys, workshops, to understand how the people work and what their wishes are. Recognize diversity and the different needs, preferences. Connect to high schools for input from students in grade 11 and 12.
2. Bring the users to the potential space, brainstorm ideas with them, “get people excited” continue to recognize diversity.
3. Examine and present new learning trends, change, new ways of thinking and working.
4. Be creative with the inclusive process to engage learners, facilitators, management, stakeholders.
5. Continue to engage learners with how they work, what they want and design ideas. Be part of the process
6. Present design ideas, get feedback.
7. Make connections with PAR, how did PAR inform your design?
8. Once the project goes to tender, construction and procurement
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Future Extensions of the Study

There are many possibilities which arise from this research.

1. Complete full rendering of this co design proposal.
2. How do we embed inclusive process once the project has gone to tender, procurement and or construction?
3. Check a design a checklist for existing facilities of ideas how to create a flexible, adaptable ever changing learning environment.
4. Complete a 1:1 mock up (or several) of specific zones, how easily the space becomes flexibility and adaptable to one’s needs and preferences.
5. To examine and observe people in the space or mock up.
6. Present the design solutions (the co creation developed by author with participant’s direction) to the co designers for additional input and critique.
7. Share this vision with students, stakeholders, and faculty for additional input and critique.
8. Consider longitudinal study if the research focus site decides to revisit their facilities design process which might map the differences pre and post inclusive design process application.

“Creativity happens when things - words, ideas, colours or children’s alphabet blocks - get put together in new ways. It may occur as a flash of insight by an individual over-achiever, but it’s MORE likely to happen when people put their heads together and start bouncing ideas off one another, making NEW connections and breaking open each one’s habitual way of thinking. That is, when people co-create or collaborate.”

(Stated in the book: CO-create by Teknion et all, p. 11.)
Active learning.
Active learning is a process whereby students engage in activities, such as reading, writing, discussion, or problem solving that promote analysis, synthesis, and evaluation of class content. Cooperative learning, problem-based learning, and the use of case methods and simulations are some approaches that promote active learning. This section provides links to bibliographies, research summaries, articles, and other resources about active learning (CLRT, 2015).

Design thinking.
Description reads as: Empathize, Define, Ideate, Prototype and Test | Learn. The methodology commonly referred to as design thinking is a proven and repeatable problem-solving protocol that any business or profession can employ to achieve extraordinary results. (The Fast Company Staff, 2015)

codeign | Participatory Participatory design
(originally co-operative design, now often co-design) is an approach to design attempting to actively involve all stakeholders (e.g. employees, partners, customers, citizens, end users) in the design process to help ensure the result meets their needs and is usable. (Wikipedia, 2015)

Integrative thinking
Description reads as follows: Integrative Thinking as the process of integrating intuition, reason and imagination in a human mind with a view to developing a holistic continuum of strategy, tactics, action, review and evaluation for addressing a problem in any field. (Wikipedia, 2015)

Synergy
is the creation of a whole that is greater than the simple sum of its parts. The term synergy comes from the Attic Greek word synergia / synergas, meaning “working together”. (Wikipedia, 2016)

Human Centered Design
User-centered design (UCD) is a framework of processes (not restricted to interfaces or technologies) in which the needs, wants, and limitations of end users of a product, service or process are given extensive attention at each stage of the design process. (Wikipedia, 2015)

Space between – definition one relates to people
The strengths and challenges of conducting qualitative research from each membership status are examined. Rather than consider this issue from a dichotomous perspective, the authors explore the notion of the space between that allows researchers to occupy the position of both insider and outsider rather than insider or outsider. (https://ejournals.library.ualberta.ca/index.php/IJQM/article/view/291) (Corbin & Buckle, 2009)

Spaces in between relates space
The definition of between is the space between two points in position or time. (http://www.yourdictionary.com/)

Spaces in between
refers to the other “non designated areas” where inspiration, such as corridors, routes to get to specific designations should also be designed to share knowledge, skill and expertise (Author, 2016)

Synergy
is the creation of a whole that is greater than the simple sum of its parts. The term synergy comes from the Attic Greek word synergia / synergas, meaning “working together”. (Wikipedia, 2016)


Other resources

http://designsojourn.com/article/page/3/

https://www.bluescape.com/product/

https://smarttech.com/Solutions/HigherEducationSolutions/Productsforhighereducation/interactivewhiteboardsanddisplays/
SMARTboardsandinteractiveandoverlays

http://www.pentagram.com/#/home

http://apps.carleton.edu/reason_package/reason_4.0/www/images/838185.jpg?1335113550
Appendix A - Survey Participant Recruitment - Email to Colleges

Appendix A. Email to colleges for survey participant recruitment

By Email
To: Design Departments of Humber College, OCAD University, Algonquin College, Academy of Design, Ryerson University and Sheridan College

Dear ... 

I request your help in distributing the undermentioned message to faculty, graduates and students in your design program to help me recruit participants for my research. Please let me know if you have any queries or concerns.

Best regards,

Vanessa Villa Evangelista
Second year student
Master of Design program in Inclusive Design
OCAD University, Toronto, Canada
Phone: 416-995-3933
Email: vvl@easycaststudent.ca

Call for participation in online survey

Creating an Inclusive Learning Environment for Post-Secondary Design Education

I am a Master’s degree student at OCAD University, Toronto, Canada. The focus of my research is creating an inclusive learning environment for post-secondary design education. For this purpose, I am conducting a research study that investigates learning environments with the objective of enhancing engagement and relevance for design students.

I am an adult student or faculty member in design programs. I invite you to read through the details given at the link below to view survey information and consent form. If you consent to taking the survey, you will be prompted to complete the online questionnaire after providing your consent on the online consent form.

If you have any questions or need any clarifications before consenting to participate, please contact me. The survey closes on February 25, 2014.

Vanessa Villa Evangelista
Second year student
Master of Design program in Inclusive Design
OCAD University, Toronto, Canada
Appendix B - Survey Continued

11. What type of learner do you think you are? See below for definitions provided by (Cranton, 2009, p. 39) Please select the one that MOST suits your learning style, (everyone to respond, please).

- **Analytical** - find the logical, analytical, organized approach. 
- **Reflection** - think about the process and seek new applications and methods. 
- **Collaboration** - seek out the group approach to think and learn through discussion. 
- **Experience** - prefer practical, real-world experiences and application.

12. Everyone to respond: Rank the following in order of your influencing your best learning: 1- representing the best; n/a checkbox is not working correctly, please use drop down.

13. What is your favorite type of learning environment? 

14. What design education do you?

15. Indicate one item/feature in your current learning or teaching environment that you find motivating?

16. What would you change in your existing learning environment, in order to be more successful?

17. What do you think is the most successful space in your

18. Institution:

Select all that apply, add additional + rank in order Where 1 is most successful and 9 is least successful. Please use n/a drop down NOT check box.

19. Other A + B from the previous question (19), please specify other. Otherwise enter n/a

20. In general, please rate the following characteristics in your current design teaching/learning environment.

- **Collaborative:**
- **Open Space:**
- **Flexible Schedule:**
- **Technology Choices:**
- **Activities:**
- **Workshop:**
- **Inclusive Teaching:**
- **Time Cycling:**
- **Team Collaboration:**
- **Field A:**
- **Field B:**

21. In general, please rate the following characteristics in your current design teaching/learning centre.

[Image of survey and questions with options for ratings]
Appendix B - Survey Continued

If you wish to participate, please check the box below, provide your contact information, and mail to the address above. Your responses remain confidential.

[ ] I would like to participate.

34. THANK YOU! THANK YOU!

Appendix C - Charrette

Chapter 8

Synergized design learning in a co designed space

Appendix B - Survey Continued

Appendix C - Charrette
Appendix C - Charrette Continued

CHAPTER 8

Synergized design learning in a co designed space

Appendix C - Charrette Continued

**Creating an Inclusive Learning Environment for Pre-Secondary Design Education**

**Charrette**

Thank you for your survey responses and for consenting to participate in the Charrette.

1. **Charrette synopsis**
   - Charrette has explored your insights and ideas shared in previous feedback meetings in order to refine the Space and shape the Pre-Secondary design learning environment.
   - The workshop was designed to encourage participant involvement and discussion for the Pre-Secondary design learning environment.

**Understanding the Goals of the Charrette**

- **What is DESIGN?**
  - (Collaboration, sketch, share, add a photo of your vision)

- **What is DESIGN?**
  - (Collaboration, sketch, share, add a photo of your vision)

- **What is DESIGN?**
  - (Collaboration, sketch, share, add a photo of your vision)

- **What is DESIGN?**
  - (Collaboration, sketch, share, add a photo of your vision)

Appendix C - Charrette Continued

**Synergized design learning in a co designed space**
Appendix D - Email to Humber College for Workshop Recruitment

Appendix D: Email to Humber College for Workshop Participant Recruitment

By Email
To: The Administration, Humber College

Dear...

I request your help in recruiting participants for a design workshop I am organizing in Humber College for my research. Please distribute the attached poster and information to faculty, graduate students and students in the design department.

Please let me know if you have any questions or concerns.

Best regards,

Vanessa Vigo Trongvilita
Second year student
Master of Design program in Industrial Design
OCAD University, Toronto, Canada

Phone: 416-973-5922
Email: vvrHetlo@students.oca.ca

Appendix E - Information and Consent Form for Workshop Session

Appendix E: Information and Consent Form for Workshop Session

Owner: [This line will be inserted before issuing the consent]
Creating an Inclusive Learning Environment for Post Secondary Design Education

Potential student investigator:
Vanessa Vigo Trongvilita
Second year student
Master of Design program in Industrial Design
OCAD University, Toronto, Canada
Phone: 416-973-5922
Email: vvrHetlo@students.oca.ca

Student Information:
- Name:
- Program:
- Year:
- Email:
- Phone:

Inclusion:
- I am interested in participating in this research.
- I am interested in participating in a design workshop to be conducted in March 2023.

Inclusion Consent Agreement:

I give consent to participate in this research.
I authorize the following data to be collected:
- Personal Information: Name, Program, Year, Contact Information
- Inclusion: Yes, No, Prefer not to say

Purpose:
- To explore how design education can be made more inclusive
- To understand how students from diverse backgrounds participate in design education

What is Involved?
- The workshop will be held at OCAD University in the spring of 2023.
- The workshop will include a variety of activities, such as group discussions, surveys, and interviews.
- Participants will be asked to complete a survey and participate in a focus group.

What will happen next?
- The results of the workshop will be presented at a conference or a professional event.
- The data will be analyzed and the findings will be shared with the participants.

Contact Information:
- Name:
- Email:
- Phone:

It is your choice to participate in this study. If you have any questions or concerns about this study, please contact me.

Vanessa Vigo Trongvilita, the student researcher, or my Faculty Supervisor, Prof. Jutta Treviranus, using the contact information provided above.

If you are interested in participating, please complete the consent form provided above.

If you have any questions or concerns about this study, please contact me.

Vanessa Vigo Trongvilita, the student researcher, or my Faculty Supervisor, Prof. Jutta Treviranus, using the contact information provided above.

If you are interested in participating, please complete the consent form provided above.

If you have any questions or concerns about this study, please contact me.

Vanessa Vigo Trongvilita, the student researcher, or my Faculty Supervisor, Prof. Jutta Treviranus, using the contact information provided above.

If you are interested in participating, please complete the consent form provided above.
Appendix E - Information and Consent Workshop Session Continued.

Appendix F - Workshop Session Protocol
Appendix F - Workshop Session Protocol Continued.

Appendix G - Timeline