Creating an Inclusive Learning Environment for Post Secondary Design Education

Co Design

Diversity

3. BROADER BENEFICAL IMPACT

Participatory Action Research (PAR)

Human Centered Design

People

Synergy

PROCESSES AND TOOLS

1 RECOGNIZE DIVERSITY

Generations

2. INCLUSIVE PROCESSES

Engagement

Creative Process

Synergized design **learning** in a **co designed** space

Figure I: Cover icon to represent the project

Icon created by v.ve, 2016 | Inspired by her own Layers of diversity: synergize when linked installtion, 2015
And inspired when a similar form was created to represent flexibility + adapbilty in research workshop by student: Akansha Osmond, 2016, The start of the co design process.

Black background. A 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 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. The rays projected from the center circle are the components of the project: People, Participatory Action Research (par), Co design, Diversity, Human Centered Design, Synergy, Creative process, Engagement, Generations

Creating an **Inclusive** Learning **Environment** for Post Secondary **Design** Education

Synergized design **learning** in a **co designed** space.

Vanessa Vilic Evangelista (v.ve)
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Mentor | Sambhavi Chandrashekar
Edited by (Friend and Mentor) Kelly Gluck

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Author's Declaration

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 is 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.

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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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Figure 1: Cover icon to represent the project

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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 Environment 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

3 dimensions of inclusive design

1. recognize diversity   co design

2. inclusive processes and tools

engagement PAR

Diversities

People / Users

Creating an Inclusive Learning Environment for Post Secondary Design Education

synergy

3. broader beneficial impact

Generations
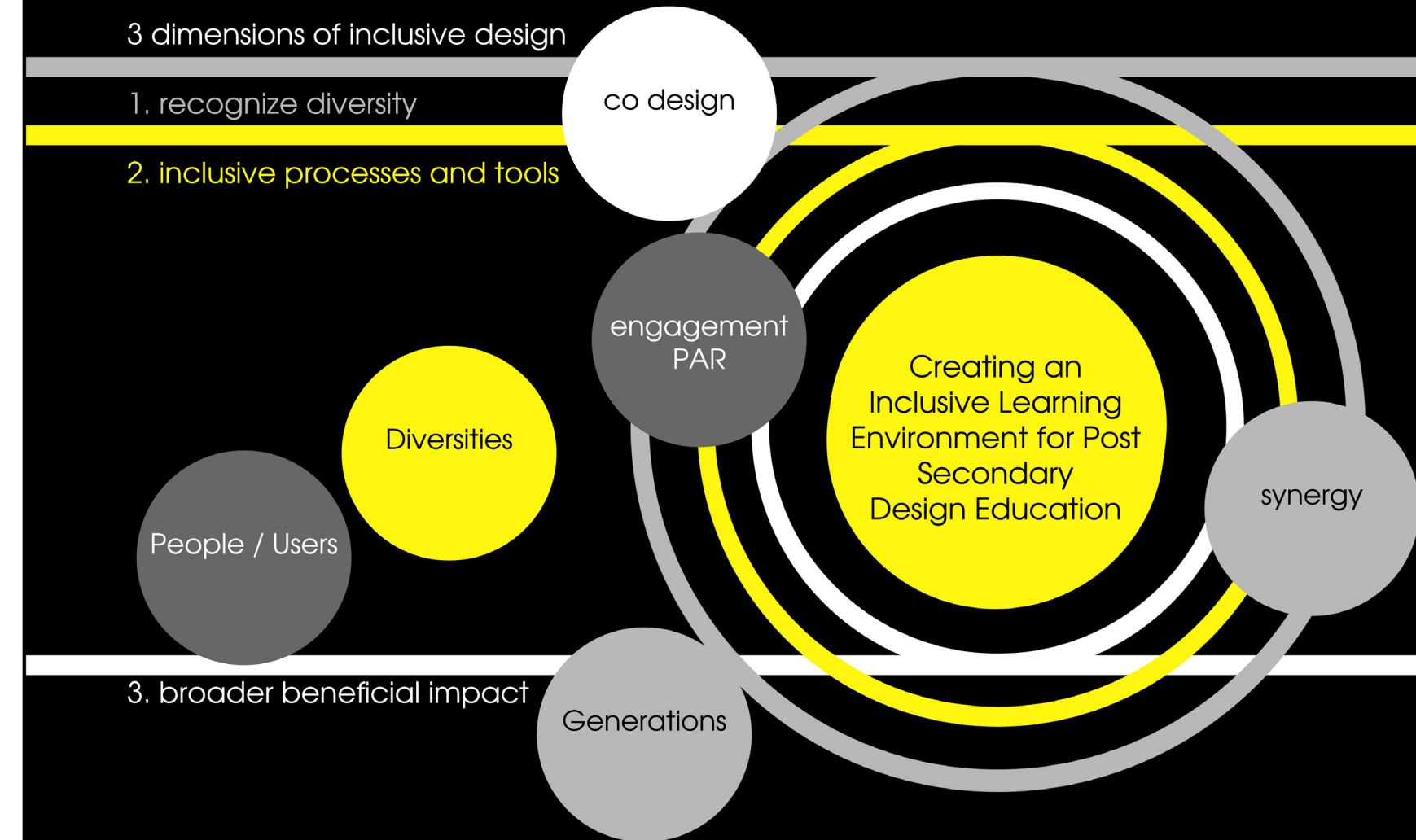
1.1 Background Design Context

Through design, remarkable environments facilitate meaning 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.
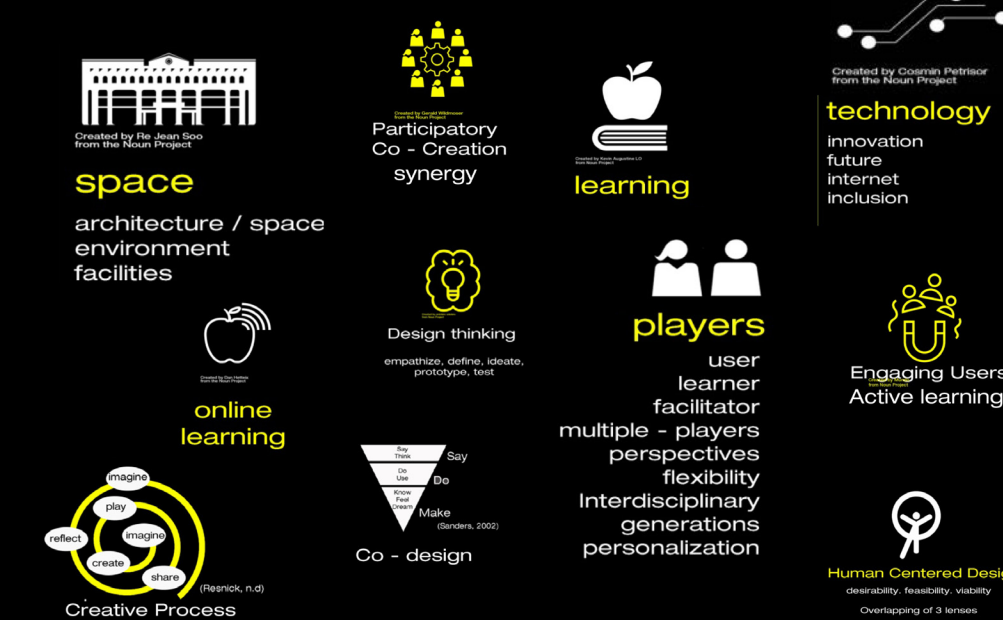
Figure 3: Above A series of Icons representing the project.

Icons developed by various designers on https://thenounproject.com/

Alternative Text: a series of icons representing the project, architecture / space, co design / synergy / participatory, online learning, creative process, design thinking, learning, players / use / learner / perspectives / flexibility, generations, personalization, technology / innovation/ future, engagement and human centered design
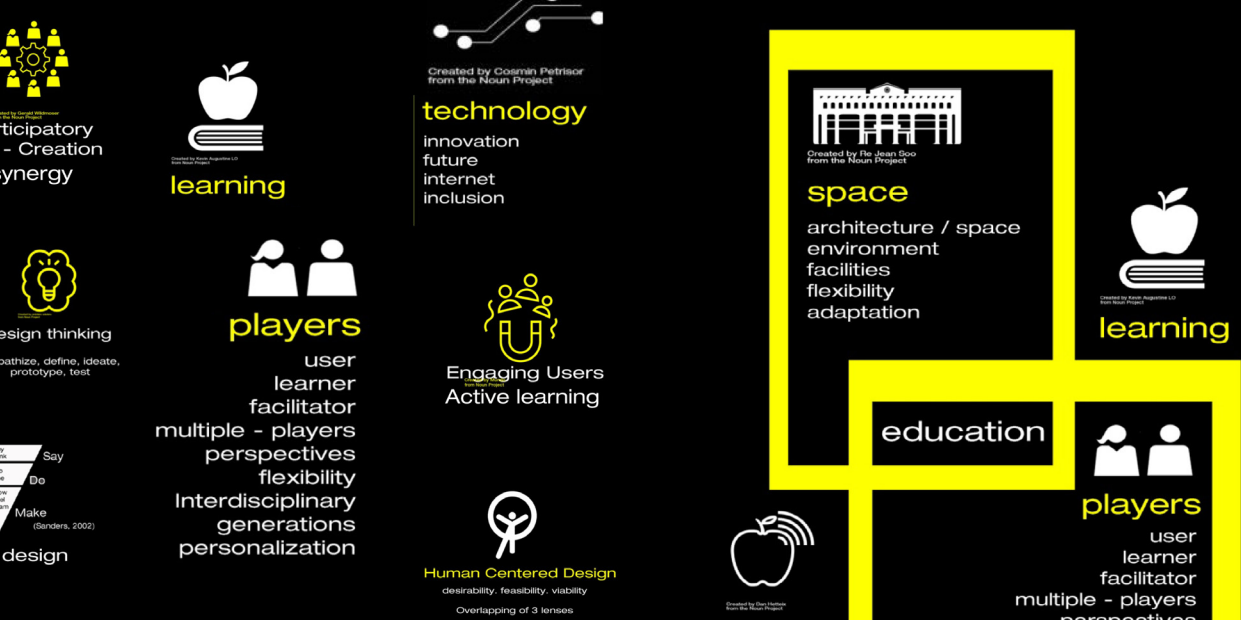
Figure 4:: Right Conceptual Framework Poster

By Author, Icons developed by various designers on https://thenounproject.com/

Alternative Text: A graphic representing 3 frames overlapping which represents the foundational framework of the project. First Frame located at the top represents the space: A school building icon is located here and the following points are listed: architecture / space, environments, facilities, flexibility, adaptation Second Frame located in the centered represents the players: a female + Male silhouette icon has been included here and the following points have been listed: users, learner, facilitator, multiple – players, perspectives, flexibility, interdisciplinary, personalization. Third Frame located at the bottom represents the technology: a circuit board icon has been included and the following points have been listed: innovation, future, internet, inclusion. The overlap between space + players, indicates education, an apple on top of books icon has been used to identify this overlap. A line from education links back to technology and another icon, an apple with wave indicating online education, online learning. The overlap between technology + players, indicates 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)
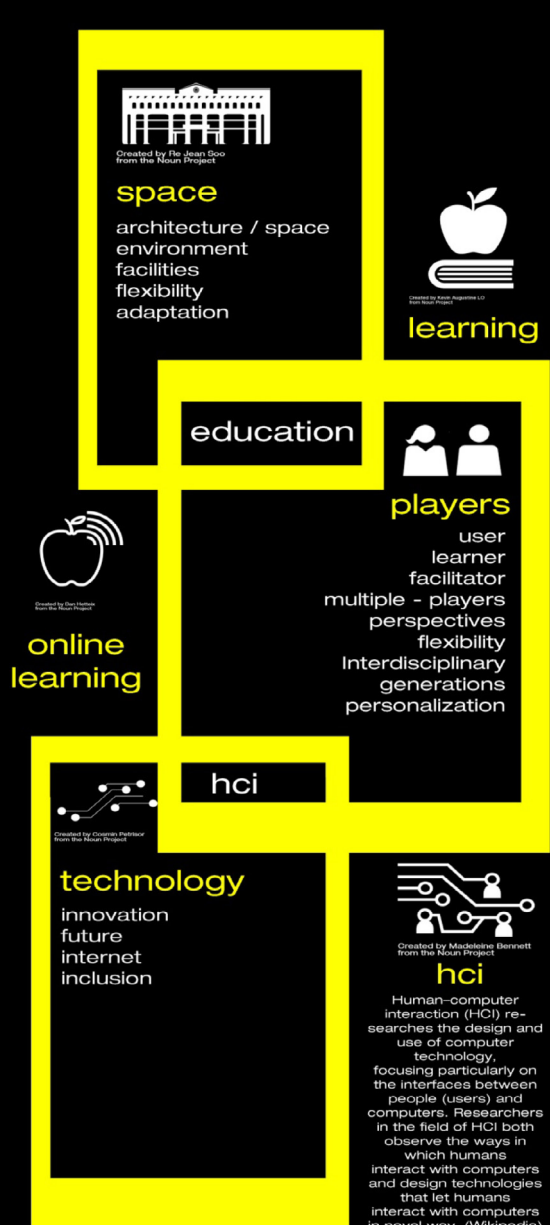
"People ignore design that ignores people."

- Frank Chimero, Designer and Illustrator

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.

Commonly in a scenario where there is minimal funding and is publicly funded, 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 particular, 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 parties moved forward with a design without the early and meaningful input of the participants who actually utilize the space. This type of design approach 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.
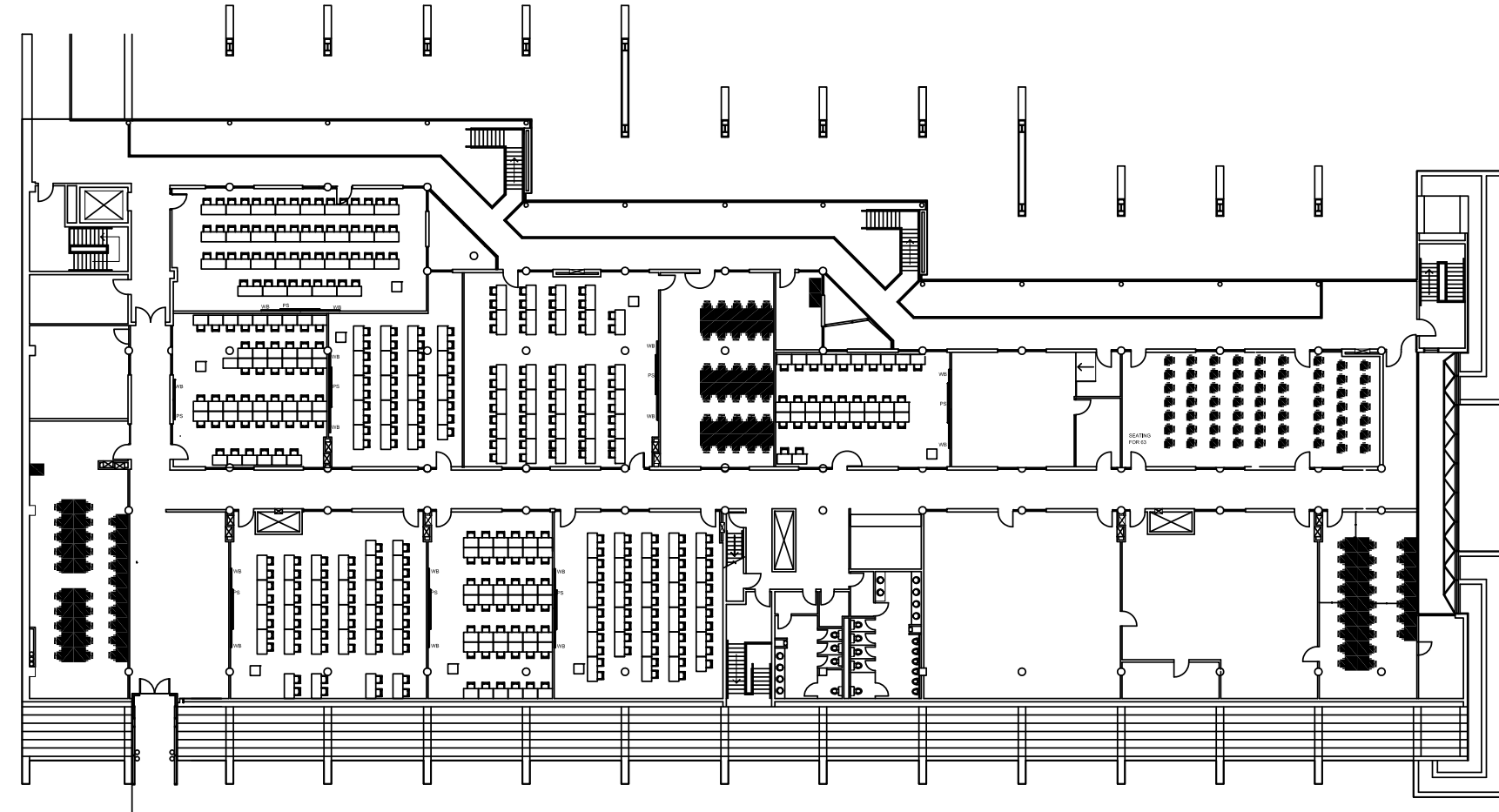
Figure 5: A typical wing in a post secondary institution.
Alternative Text: Most disappointing is the absence of space for flexibility, and adaptability. Now consider the outcome when such an institution makes a change and a certain area, which may have been designed to house math learners originally, has now become a design curricula area.

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 identity 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, charrrette
Part C, a workshop both to engage them in co-design to capture their design preferences and ideations improve the environment.
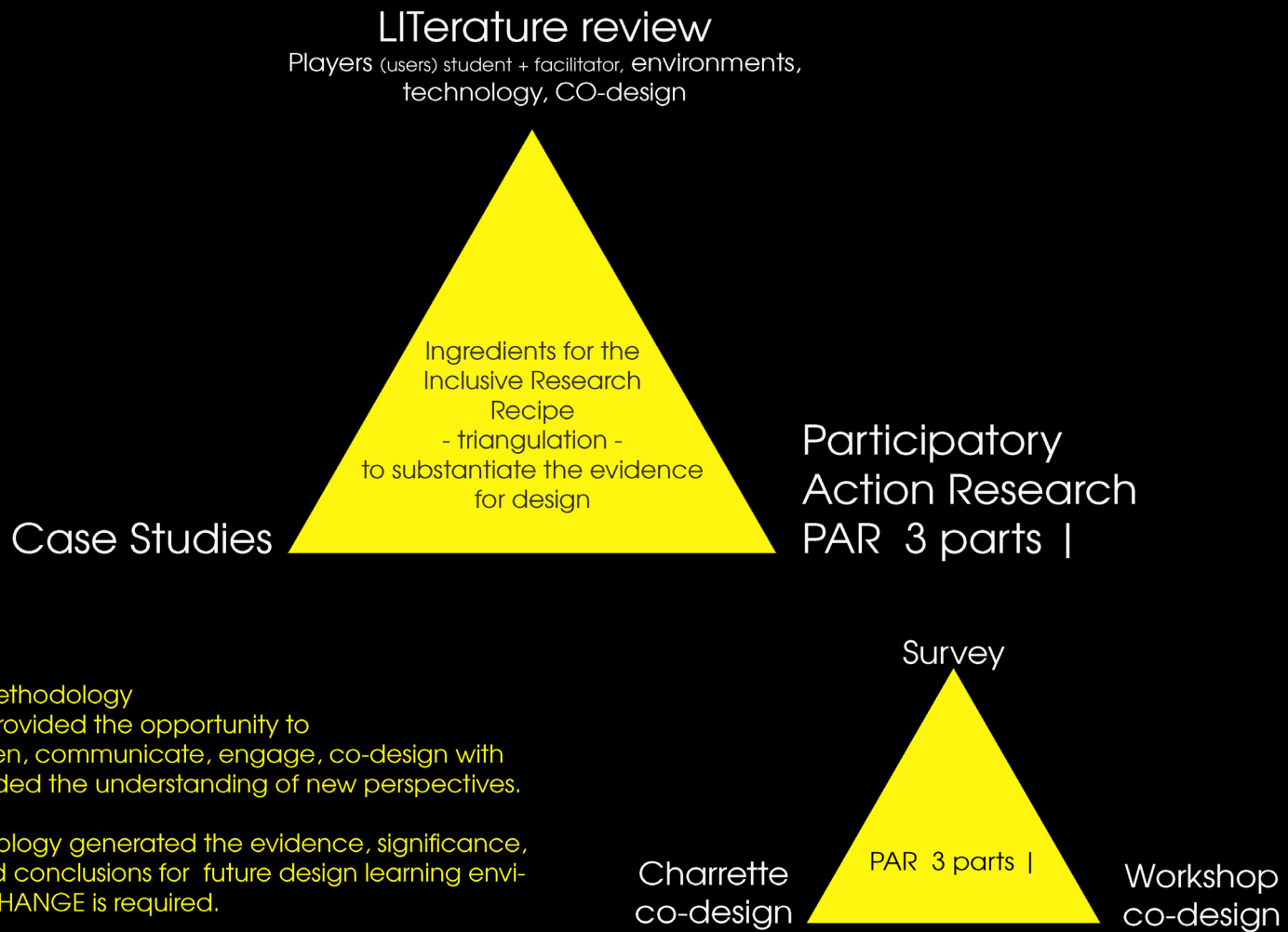
Figure 6: Research Framework Triangulation
Alternative Text : A yellow triangle, in the centre of the triangle is a note: ingredients for the Inclusive Research Recipe– Triangulation to substantiate the evidence for design.
A yellow triangle, in the centre of the triangle is a note: ingredients for the Inclusive Research Recipe– Triangulation to substantiate the evidence for design. At the top of the triangle indicates: Literature Review: Players (users) student, facilitator, environments, technology and co-design. Bottom left of the triangle indicates: Case Studies, existing environments, Humber vrs. Precedent Bottom right of triangle indicates: Participatory Action Research 3 Parts: Survey, Charrettes, Creative Workshop area.

2

CONTEXT

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 class room 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).

"Children must be Taught how to think, not what To think."
 — Margaret Mead (Teknion, 2014)

THEN	NOW
Teacher Focus	Student Focus
Mass Production	Mass Customization
Lecture Based	Project Based
Knowing	Doing
Instruction	Constructivist
Teacher as Sage	Teacher as Guide
Facilitator	Critical
Content Focus	Thinking Focus
Low Tech	Tech Rich
Listening	Communicating
Memorization (Teknion, 2014)	Thinking Creative

Figure 7: Then + Now

Alternative Text: Image on the right: Right side of the black and white image a young boy, approx 3 years of age is holding a camera. A conversation bubble says digital technology is my life, and the other thinking bubble states I love being creative. Image of the left: A comparison of how classrooms have changed:Then: Teacher focus, mass production, lecture based, knowing, Instruction, Teacher as Sage, Facilitator, Content Focus, Low Tech, listening, Memorization. Now: Student Focus, Mass Customization, Project Based, Doing, Constructivist, Teacher as Guide, Critical, Thinking Focus, Tech Rich, Communicating, Thinking Creative.

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 text book. 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.

Figure 8: I PAD and young children

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

2.1.2 Generations

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

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

Source:http://www.fastcodesign.com/1662178/wanna-improve-education-demolish-the-classrooms

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

Source:http://www.fastcodesign.com/1662178/wanna-improve-education-demolish-the-classrooms
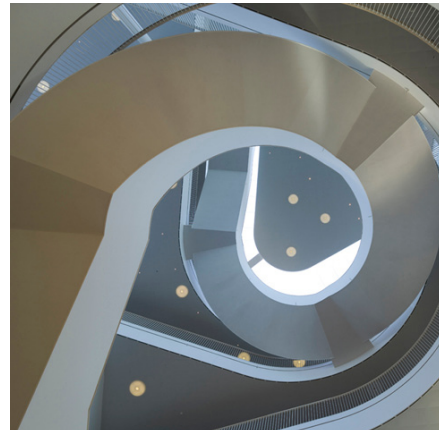
Figure 11: Circular stair case

Source:http://www.fastcodesign.com/1662178/wanna-improve-education-demolish-the-classrooms

Source: http://www.fastcodesign.com/1662178/wanna-improve-education-demolish-the-classrooms

In Copenhagen,he 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 12: Options for collaboration,bean bag room, "Chill space"

Source: Source:http://www.fastcodesign.com/1662178/wanna-improve-education-demolish-the-classrooms

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. (Cranton, 2000, p. 39)

0%   10%   20%   30%   40%   50%   60%   70%   80%   90%   100%

"Convergers" - are the active, conceptual experimenters.

"Assimilators" - favour the concept approach to things but also learn through observation.

"Accommodators" - prefer experience, validation and experimentation.

"Divergers" - work best in the tangible experience and through reflection of observation in stages
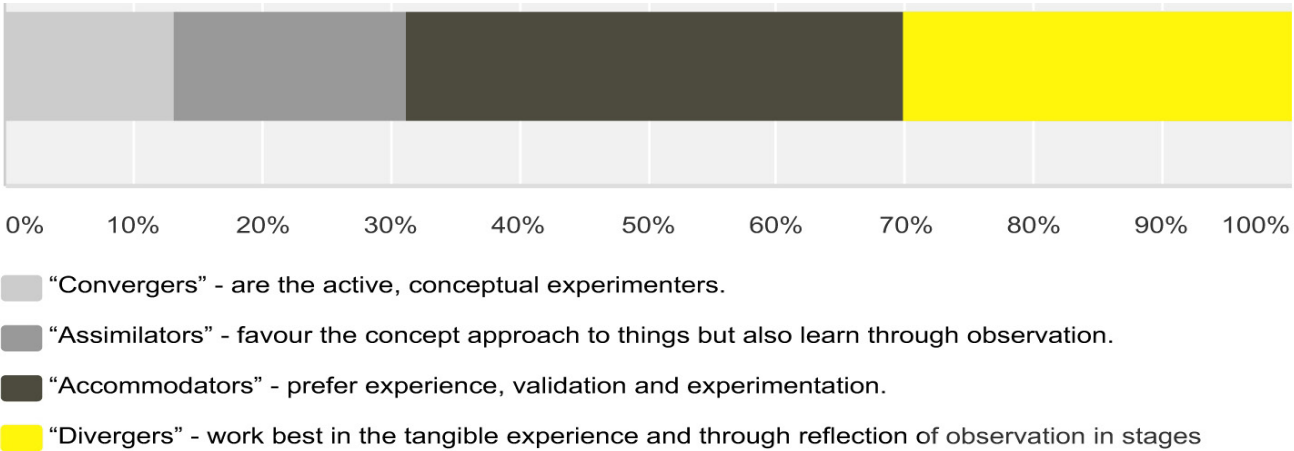
Figure 13: Users "survey" responses (question 8) What type of learner do you think you are? Definitions provided by Cranton, 2000, p.39. Please select the one that MOST suits your learning style.

Alternative Text: a bar graph representing each learner in percentages. in light grey, Convergers are the active, conceptual experimenters. (I13%) 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%)

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). Ankerson & Pable (2008) support Kolb's "converging" student description of students who focus on active experimentation. This study indentified 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% 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 (Ankerson & 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 a 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,

2.2

TECHNOLOGY

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

- researcher, designer, author, student

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.

Figure 14: Digital collaborative connection team setting

Alternative Text: a private collaborative space with a large screen for digital capabilties 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 work space"

Alternative Text: Photos show how the visual collaborative workspace works. People can swipe they personal devices on to large screen. Facilitator can pinch each item and enlarge. Final image show that you can write on the screens as well.

2.2.1

Inspirational Precedent Case Study embedding Digital Technology into the Learning
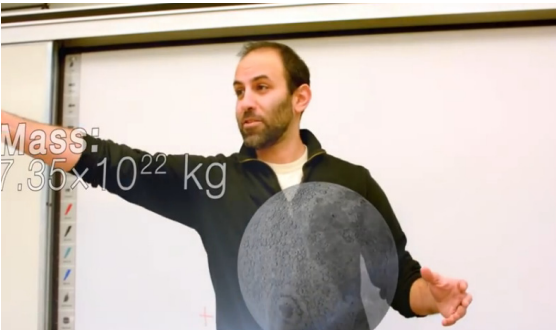
Figure 18: 3d graphic experience for learners and facilitator

Technology in Education: The future https://www.youtube.com/watch?v=uZ73ZsBkcus

Alternative Text: A 3d vitual hologram, connecting to the learners personal devices.

Figure 19: personal device (Phone or Tablet) Connection to desk, connection to facilitator

Technology in Education: The future https://www.youtube.com/watch?v=uZ73ZsBkcus

Alternative Text: Learners with personal devices and their very own 3d digital holograms.
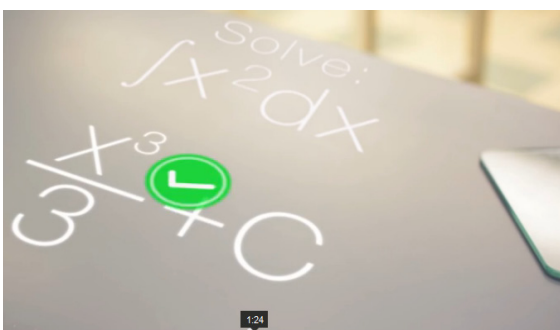
Figure 20: personal device (Phone or Tablet) Connection to desk, connection to facilitator provide instant feedback.

Technology in Education: The future https://www.youtube.com/watch?v=uZ73ZsBkcus

Alternative Text: Learners receive instant digital feedback.

Figure 21: 3d graphic experience for learners and facilitator

(Cuong, 2013) https://www.youtube.com/watch?v=wroLk1ETVeM

Alternative Text: A 3d virtual hologram, connecting to the learners personal devices.

Figure 22: Interactive screens for all learners

(Cuong, 2013) https://www.youtube.com/watch?v=wroLk1ETVeM

Alternative Text: Learners interacting with touch screens.

Figure 23: Digital virtual 1:1 realities

(Cuong, 2013) https://www.youtube.com/watch?v=wroLk1ETVeM

Alternative Text: a digital virtual reality of a park with digital dinosaurs. Learners engage by being immersed in the virtual reality to experience and learn about the topic.

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.

2.3

DESIGN STUDIO

"The concept of engagement in combination of a physical learning space / studio becomes a new level of focus"

- researcher, designer, author, student

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 students 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 row 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?

Figure 24: Left. Users "survey" responses (question 21)
Rate the following characteristics in your current design learning/ teaching environment. Select all that apply, add additional and critique (rate): 1 - awesome (light grey). 2 - good. 3 - fair. 4 - weak. 5 - n/a

Alternative Text: Bar graph to represent user critique. left column of list attributes to critique: Collaborative space, open studio space, natural light, quality of resources, printing resources, production area, messy zones, photography resources, connection to technology, online learning capabilities, personalization with studio, flexibility within the space with mobile furniture and laptops, inspirational space, deep surfaces, outdoor learning spaces, location, staff, curriculum, advertising, storage / lockers. 1 - awesome (light grey). 2 - good (mid grey) 3 - fair (charcoal). 4 - weak (yellow). 5 - n/a (black).

Every attribute has a percentage of weakness, the one item which didn't receive any weak ratings was staff. Weakest attributes quality of resources, photography resources, personalization of space (by far the largest percentage of weak) inspirational space weak and outdoor learning opportunities weak.

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 activates 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 a 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
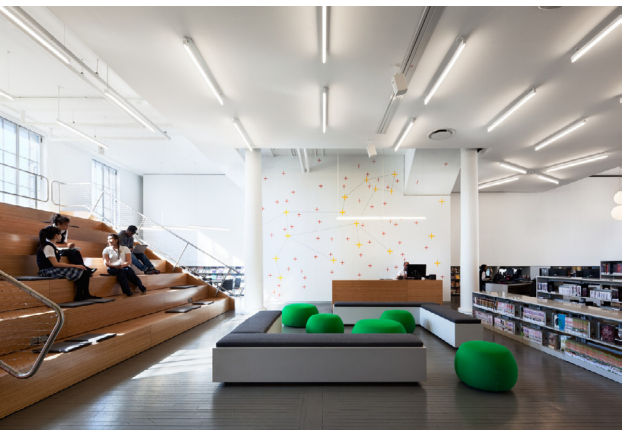
Figure 25: Attribute #1 "Natural Light",
            Attribute #2 "Collaboration space to interact"

Source: (Photo by Michael Moran) http://www.archdaily.
com/233607/hamilton-grange-teen-center-ricelipka-
architects/

Figure 26: Attribute #2 "Collaboration space to interact",
            Attribute #3. "Quality of resources for students to
            have access to"
            Attribute #8 "Pin Up Space"

(Photos by Author)

Figure 27: Attribute #2 "Collabora
            tion space to interact",
            Attribute #6. "Connection
            to technology."

(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 fac-
ulty. Copenhagen trip 2014

Figure 30: Attribute #3 "Quality of resources"

(Photos by Humber College ITAL Industrial
designers and faculty. Copenhagen trip
2014

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).

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.

"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).

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, p34)" Studio environments need to both encourage and respond to and 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 (Silberman, 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 (Silberman, 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 (Pilling-Cormick, 1997). When a permanent layout is not feasible as described, easy reconfiguration by users is essential.

The change of the organizational approach was based on the "mixing of talents, abilities and experience" (Malecha, 2002)

to create a collaborative diverse team.

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). 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 ones' owns person, to draw upon one's own resources." A bulletin board space, or" "pin up" as it is referred to in the profession, must be provided as a place for visual 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).

In the North American market, design firms provide collaboration zones, resource areas and opportunities of personalization, storage and inspiration space (Gluck, 2005).

2.3.5 Inspirational Precedent Case Study Creative Space
Connection to Industry: BBC North / ID:SR.

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).

Figure 31: Options for collaboration, users's choice where to work - pods

Source: (Photos by Will Pryce and Gareth Gardner) http://www.archdaily.com/194671/bbc-north-idsr/

Figure 32: Options for collaboration, users's choice inspirational space

Source: (Photos by Will Pryce and Gareth Gardner) http://www.archdaily.com/194671/bbc-north-idsr/

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

Source: (Photos by Will Pryce and Gareth Gardner) http://www.archdaily.com/194671/bbc-north-idsr/

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

Source: (Photos by Will Pryce and Gareth Gardner) http://www.archdaily.com/194671/bbc-north-idsr/

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

Source: (Photos by Will Pryce and Gareth Gardner) http://www.archdaily.com/194671/bbc-north-idsr/
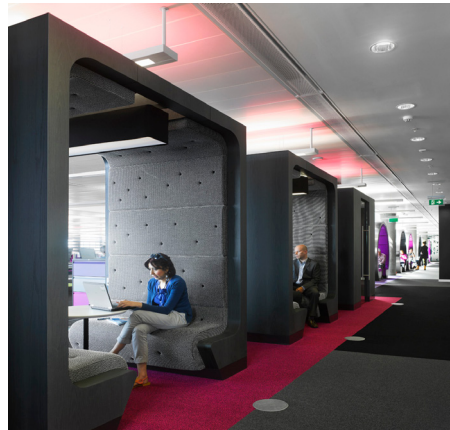
Figure 36: Options for collaboration, users's choice where to work - acoustical pods

Source: (Photos by Will Pryce and Gareth Gardner) http://www.archdaily.com/194671/bbc-north-idsr/

"Education should not be restricted to four walls of classroom"

(Teknion, 2014).

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 e nvironment t o s timulate collaboration. Various locations in addition to the classroom or studio such as outdoor space, leaning 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.

Figure 37: Teknion Showroom - Collaboration Space

(Photos by Author)

Figure 38: Haworth Showroom - Collaboration Space
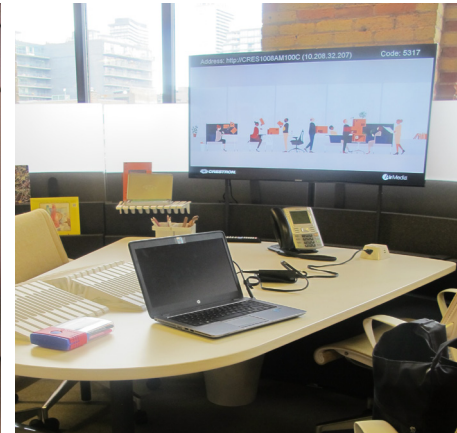
(Photos by Author)

Figure 39: Herman Miller Showroom - Collaborate Space with Technology.

(Photos by author)

3

DESIGN

...purpose, planning, or intention that exists or is thought to exist behind an action, fact, or material object...

(Oxford dictionary, 2016).

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 •

purpose, planning, or intention that exists or is thought to exist behind an action, fact, or material object: "the appearance of design in the universe"
synonyms: intention • aim • purpose • plan • intent • objective

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 complied 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

Figure 40: Inclusive Design Dimensions visual graphic

Source: (Diagram from: IDRC, http://idrc.ocadu.ca/index.php/resources/idrc-online/library-of-papers/443-whatisinclusivedesign

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

Figure 41: Expressing Diversity through art installations, Diverse Designers, Digital media, 2015
Size: 132"x 48"

Description: Inspired by the Delta cohort and all of our differences, unique backgrounds with our designs and approaches, together we inspire, generate new ideas, change and create unique synergies. Individually unique, singly talented, together they have incredible synergy to create inclusive design solutions. They are the Delta cohort 2014.

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.

Ideation | Diverse Designers installed as a full height corridor installation, 2015.

Artist and Designer (s): Vanessa Vilic Evangelista
Photographers: Jeffrey Woodrow and Vanessa Vilic Evangelista
Course: Unlearning and Questioning, Summer 2014
Educational Advisor: Jutta Treviranus

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.

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

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 needs 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 vital component in creating a viable solution for everyone to use. This is a synergized a solution.

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 was the exact message we wanted to create. We all individually sketched 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 treats 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, LIVE web installation. We prototyped the idea around an active balance board on a website, where the all diversities can be icons available along the side of siteand 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, as it's all about the balance.
Challenge: Standard Inclusive diversity ICONS and creating an interactive WEBSITE. Time was against us as we didn't know how to use the web tools to create this 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 or 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 enter the IDRC.
This installation was an excellent demonstration how the process of the final piece evolved from unique individual ideas but together created an original synergistic installation.

Artist and Designer (s): Dennis Lagman, Songfeng Koni Xie, Rushmita Alam, Vanessa Vilic Evangelista, Yu Lin
Course: Effecting Cultural Change, Spring 2015
Educational Advisor: Jutta Treviranus

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

3.1.3 Dimension 3: "Broader beneficial impact" (IDRC, 2016)

The third dimension is the impact of design and the effects and benefits of is 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 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 Diverse 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 installation. The various openings + coloured pieces offer unique reflections and patterns as the natural light moves around the installation. If a viewer were to close their eyes and view the installation, the feeling of various colours + 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 assisted in providing a 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 piece, to create a 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 easily be growing piece of art, similar to Toronto 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 Vilic Evangelista
Course | Inclusive Art, Design + Communication, August - Summer 2015
Educational Advisor | Geoffrey Shea

Figure 46: Inclusive Synergy Co Design Hands Activity + Art installation, 2014 Final installation and explanation adjacent page

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 do involve learners was supported by c-design methodology. It is therefore and 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.

Figure 47: Inclusive Synergy Co Design
Hands Activity + Art installation, 2014

Size: Varies 120"height

Description:
Building on the inspiration of all of our differences, unique backgrounds with our designs + approaches, together we inspire, generate new ideas, change + create unique synergies. In the summer intensive 2014, v.ve created an activity to engage the whole class in an art installation.
Every member of the cohort individually expressed an idea, a physical model using wire + paper to create a unique model. Then the models were linked to create one art installation to represent our individual creativity, self- expression, connection to achieve synergy.
An excellent activity for team building, I have continued to facilitate this activity with all new student cohorts.

Artist + Designer (s): Co design. Cohort Delta 2014, lead facilitator v.ve
Course: Unlearning + Questioning, Summer 2014

Human Centered Design

desirability

feasibility   viability

The solutions that emerge at the end of
Human-Centered Design should hit the overlap of
these three lenses: They need to be
Desirable, Feasible, and Viable. (UBC, 2015)

Integrative thinking

salience	causality	architecture	resolution
see the problem from multiple view-points and take them all into consideration.	realize that casual relationships are more than just one way.	see the big picture while working on individual parts.	search for creative solutions to all aspects of the issue at hand

(van Berkel, 2013)

design thinking

Learn about the audience for whom you are designing

Empathize

Construct a point of view that is based on user needs and insights

Define

Brainstorm and come up with creative solutions

Ideate

Build a representation of one or more of your ideas to show others

Prototype

Return to your original user group and testing your ideas for feedback

Test

(Rayner, 2015)

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.

Right 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

Figure 48: left: Conceptual framework poster completed for course 6006, November 2015
By Author, 2015
Refer to appendix at the end of document for a descriptive summary of these terminologies.

Alternative Text:
First process: Human Centered Design, 3 overlapping components of: desirability, feasibility, viability. The solutions that emerge at the end of the human-centered design should hit the overlap of these three lenses.
Second process: Integrative thinking, 4 bubbles that link to each other are: salience: see the problem from multiple viewpoints and take them all into consideration. Causality: realize that casual relationships are more than just one way. Architecture: see the big picture while working on individual parts. Resolution: search for creative solutions to all aspects of the issue at hand.
Third process: Design Thinking, 5 bubbles that link to each other are: Empathize: Learn about the audience for whom you are designing. Define: Construct a point of view that is based on user needs and insights. Ideate: Brainstorm and come up with creative solutions. Prototype: Build a representation of one or more of your ideas to show others. Test: Return to your original user group and testing your ideas for feedback.

 ideas how to implement outcomes of analysis. The process if evolving, it will continue, with evaluation, reflection and more creation.
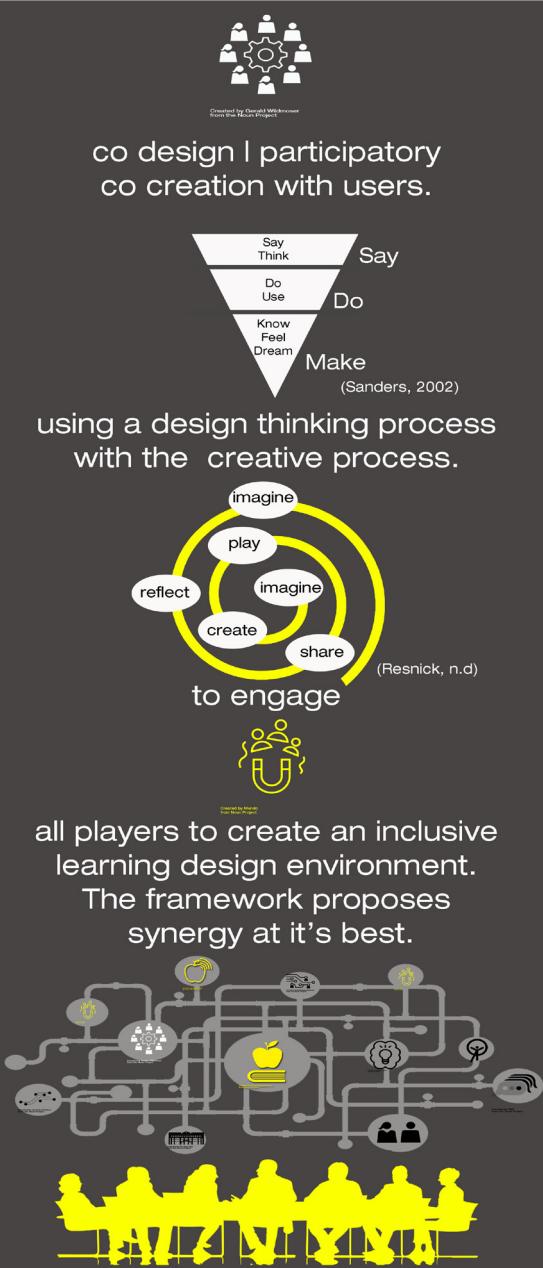
3.3 Design Approach Summary

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.

Figure 49: Right: Conceptual framework poster completed for course 6006, November 2015
By Author, 2015

Alternative Text:
co design | participatory co creation with users. (a graphic is then embedded here an upside down triangle) the following words are placed in the triangle starting the top (the largest end of the triangular is at the top) Say, Think, Do, Use, Know, Feel, Dream, leads to making (sanders, 2002). The statement continues by stating: using a design thinking process with the creative process. (a graphic is embedded here a yellow spiral, in the middle of the spiral, imaginations starts, then as the spiral moves out the following words continue: imagine, create, play, share, reflect, imagine) then continues (Resnick, n.d) The statement continues by stating: to engage a icon is embedded here a magnet and people being attracted to it) All players to create an inclusive learning design environment. The framework proposes synergy at it's best.

co design | participatory
co creation with users.

Say
Think   Say
Do
Use   Do
Know
Feel
Dream   Make
(Sanders, 2002)

using a design thinking process
with the creative process.

imagine
play
reflect   imagine
create
share   (Resnick, n.d)

to engage

all players to create an inclusive
learning design environment.
The framework proposes
synergy at it's best.

RESEARCH METHODOLOGY

4

Wish list: Story board "thoughts of a user"

Do you have WISHES that you would like to explore in order to CHANGE the FUTURE design learning environment?

WOULD you be interested in being involved on 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.

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 a nd 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:
Silouettes of leaners 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 faculty.

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; from 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 gen@ration.

An email was sent to the Design departments of these colleges with a request to circulate a message to their faculty, graduates and students inviting them to participate in the online survey (refer to Appendix A. The link provided by the email more information about the research on the online survey page and captured consent before proceeding to complete the survey. Those who consented to receive the charrette, were sent more information about the charrette and a separate consent form (Refer to Appendix C)

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, charrrette 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.

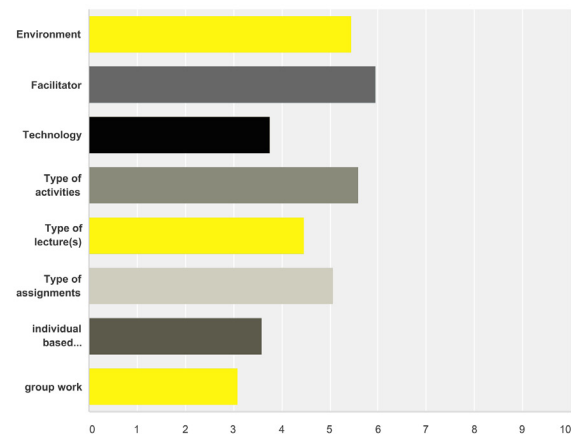| Advantages	Disadvantages
• Representation a large population (large samples)	• Inflexible design,
• Low costs	• Not ideal for sensitive topics or controversial issues
• Convenience	• Questionable Inclusive
• Good statistical evidence precise results	
• Researcher own biases are eliminated	

(Mae Sincero, nd)

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.
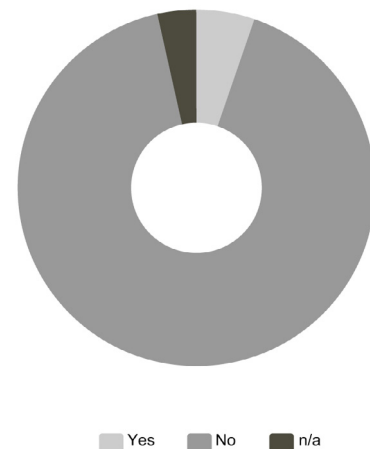
Figure 55: Users "survey" responses (question 30)
Student: if you had the choice, would you take all your courses online?

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. There fore the need for an environment is necessary with the option to learn online.
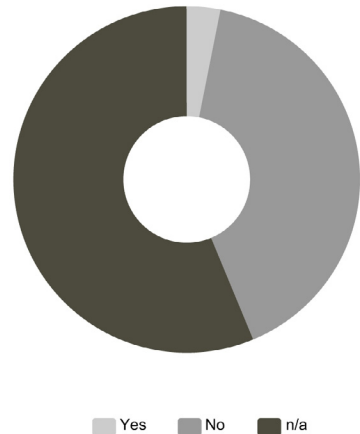
Figure 56: Users "survey" responses (question 31)
Educator: if you had the choice, would you teach all your courses online?

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. There fore the need for an learning environment is necessary however learning online learning must also be incorporated into the solution.

Inspired by the study "What Frustrates Screen Reader Users on the Web: A Study of 100 Blind Users" (Lazar, Allen, Kleinman & Malarkey, 2007), the reflections were based on the evaluation of reflective diaries of users which focused on user frustration and experience with navigating a website. These criteria can be added to the survey questionnaire design to ensure the survey is capturing the analysis and assessment of past and present thoughts and reflections of the users in their current work environment.

For this study, surveys and reflective activity guidelines were sent out electronically through email invitations for convenience and to connect to a large population of past and present students. Ensuring inclusivity with the survey design, the text based electronic format have to complied with multiple criterion including large print, html compliant to adapt to screen readers and translators, and braille. The survey was available for a two month period to afford participants maximum flexibility to ensure and convenience. It is essential to gather statistical data to understand the majority of learners think of their current environment part of the inclusive lens, is to focus on the space in between. Charrettes and workshops support this approach.

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/

Alternative Text: 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 relating to positions is removed, thus allowing everyone to be on an equal playing field. Even if it is as simple as every office is the same size, Inclusive to me means having all of the tools I need to complete the best work that I can, See above on inclusive definition, All ideas matter, all users matter, Inclusive design to me means a spaces 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 designs 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, Includes everyone of all abilities. Designing for the "extreme user, There are no limitations to any users who want to use the space, friendly, inviting, personal, Design that provides the opportunities people to work together and be part of a team, Inclusive design means to me is having more than one option available to me to learn and grow as a designer.

greenery, windows to natural views, painted walls that makes the space welcoming and friendly, a collaboration area + options for semi-privacy independent work stations

CELEBRATING DIVERSITY AND DIFFERENCES THROUGH DESIGNS THAT ACCOMMODATE EVERYONE, AND ALLOWS PEOPLE TO PERSONALIZE AND CUSTOMIZE

NATURAL LIGHT, VARIETY OF AREAS, SET UPS, ACTIVITIES, SEATING, STANDING, WINDOWS, SAMPLES, EXAMPLES SO THAT I CAN FLUIDLY MOVE FROM ONE TYPE OF ACTIVITY TO ANOTHER ENGAGING LEARNERS AND PEERS.

Desks with adjustable heights that are moveable, adjustable lighting, technology to enable remote access, accessible without the use of steps (with accessible, gender-neutral bathrooms accessible, as well),

All ideas matter, all users matter

TECHNOLOGY THAT INCLUDES COMPUTER WORKSTATIONS, COLOUR PRINTERS, POSTER/LARGER FORMAT PRINTERS, SO THAT WORK CAN BE PREPARED AND COMPLETED ON CAMPUS (RATHER THAN OUTSOURCING). LOTS OF WORK SURFACES THAT PROVIDES COLLABORATIVE WORK AND HEADS-DOWN WORK. SOUND CONTROL SO THAT THE STUDIO ISN'T OVERBEARINGLY LOUD.

Figures 58-59: Users "survey" responses (question 25)
What features would your Inclusive design studio have and why?

TECHNOLOGY IS CHANGING, OUR STUDIOS NEED TO ADAPT TO THE CHANGE.

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 inspiring 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.

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

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 easily available regardless of diversity nature is inclusive inclusivity celebrates diversity, welcoming, everyone, everything included + welcome, universal user design, friendly purposeful, 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, relating to dozens of different kinds of inhabitants, collaborating + conjoining 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 plant, people, experience + functionality, equality, 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

Smith (2012) substantiates this through her research on design charrettes which identifies the possibility of increased open, inclusive and holistic engagement between all participants.

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-Ashcrof

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)
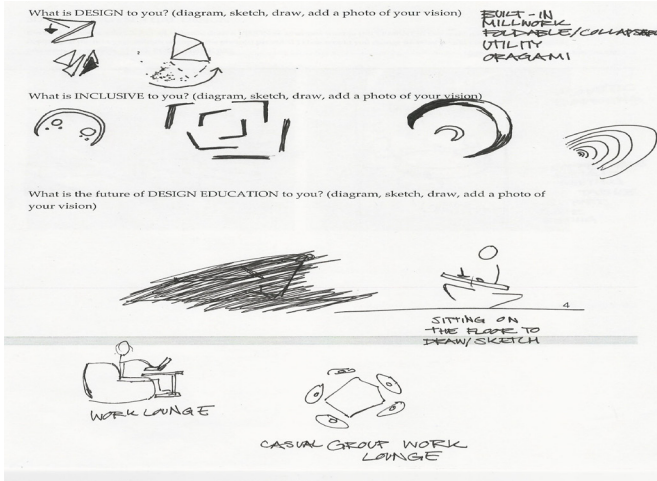

Figure 66: "Charrette" Participants responses
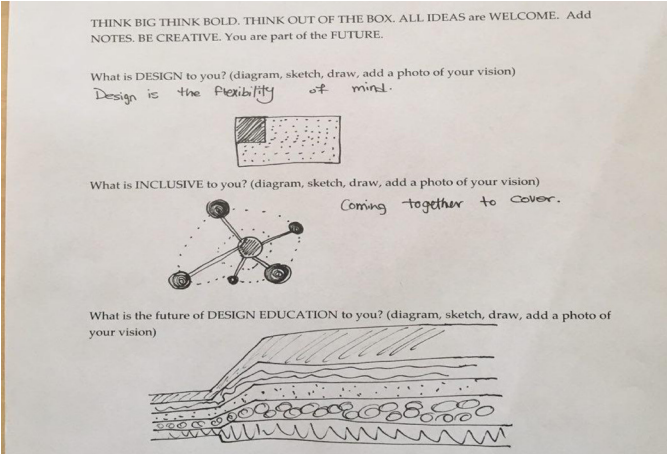
by Emma Christensen

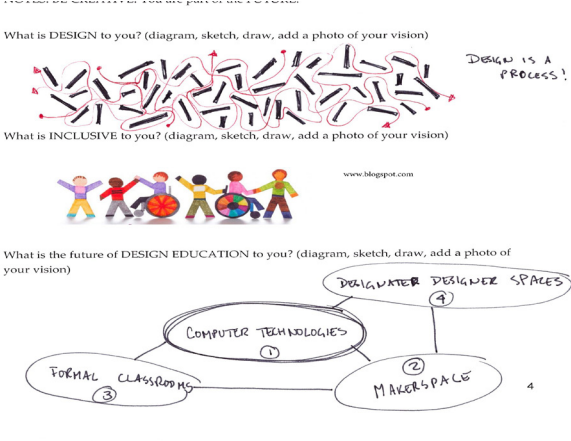Figure 67: "Charrette" Participants responses

by Farnaz Habibi

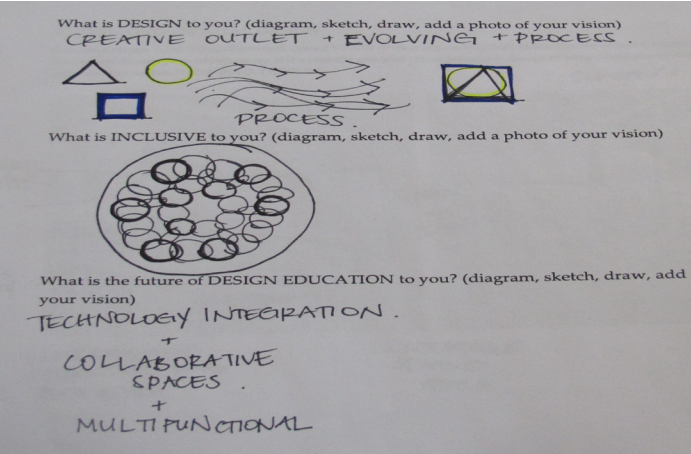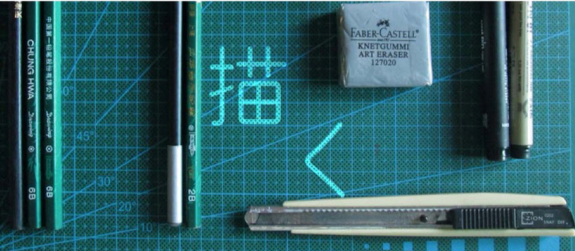Figure 68:   "Charrette" Participants responses

by Hang Truong

Figure 69: "Charrette" Participants responses

by Kristen Dibattista

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

Tools and statistics make art and science together. Not only about expressions, but what it is for. Aesthetic and also functional.

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

We are of different colors, different heights, even different values, but we are together peacefully.

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

The diversity: we try to get closer to each other but we also leave space.

Figure 70: "Charrette" Participants responses

by Jingyi "Fairy" Lai

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)

Figure 71: "Charrette" Participants responses

by Ruxandra Patrasc

Figure 72: "Charrette" Participants responses

by Stephanie Trofymowjch
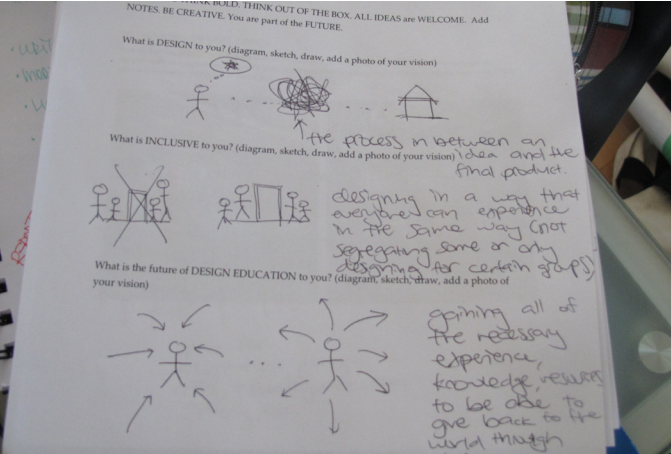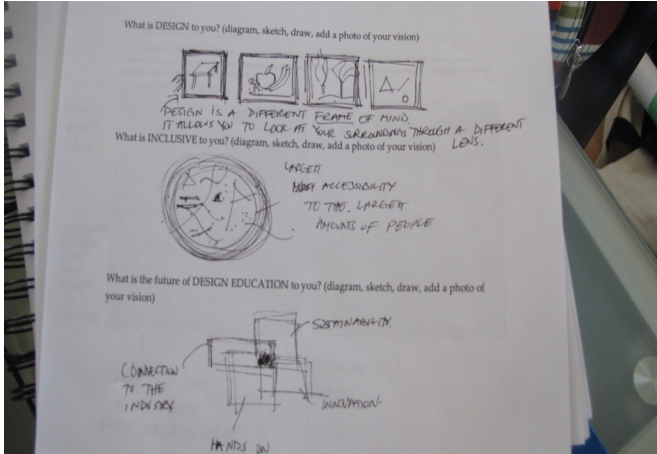
Figure 73: "Charrette" Participants responses
by Jing Wang

Figure 74: "Charrette" Participants responses

by Renya Tensuda

To me, DESIGN: is an artistic and creative approach to problem solving, which requires practical skills.
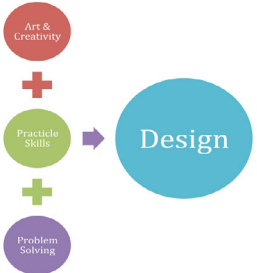
INCLUSIVE can mean a lot of things, but I think what is unique about this word is that it also suggests equality. More like a holistic approach to things where EVERYONE's needs are seen as equally significant. It is opposite to universal design where the main goal is to meet halfway so that the design works for the majority. It is a ONE size fits ONE approach so that every single person has an equal access to the design. In inclusion, DIVERSITY is CELEBRATED rather than DEALT WITH.

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

For me Design Education is about TRANSFORMATION. It ENRICHES students with an unlimited vision and EMPOWERS them to go into the world and be CREATIVE yet MINDFUL.

Image from: https://zonefox.com/wp-content/uploads/2016/02/transformation.jpg

Figure 75: "Charrette" Participants responses

by Jacob Willow

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)

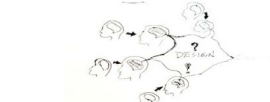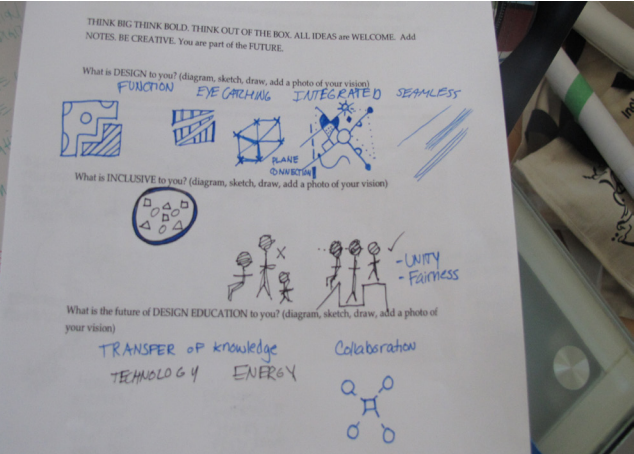What is the future of DESIGN EDUCATION to you? (diagram, sketch, draw, add a photo of your vision)

Figure 76 "Charrette" Participants responses

by Kimberly Czornodolsky

Figure 77: "Charrette" Participants responses

by Leah Watling

Figure 78: "Charrette" Participants responses

by Mohafizali Merali

Figure 79: "Charrette" Participants responses

by Marcin Kedzior

Figure 80: "Charrette" Participants responses

by Kelly Gluck

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)

Figure 81: "Charrette" Participants responses

by Meliza Macapinlac
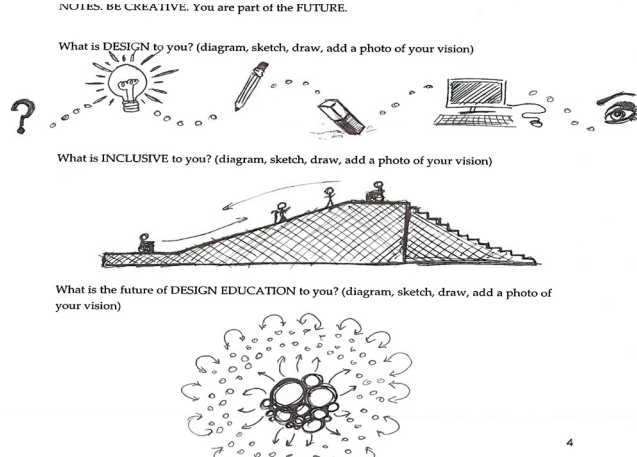
Figure 82: "Charrette" Participants responses

by Rami Dawood
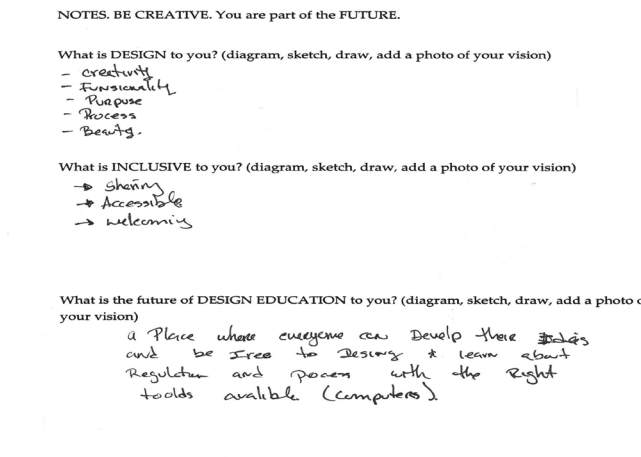
Figure 83: "Charrette" Participants responses

by Natascha Del Prete
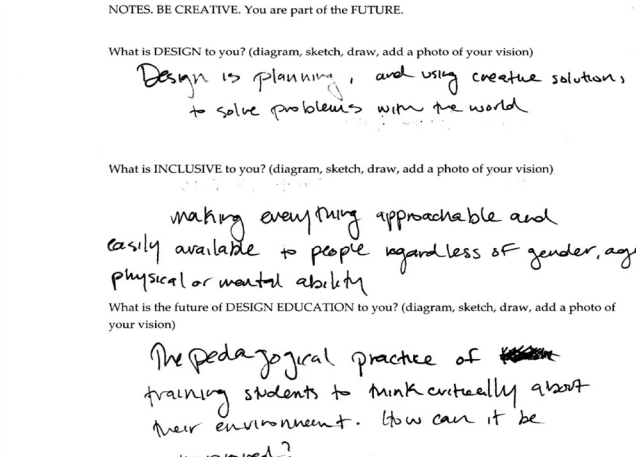
Figure 84: "Charrette" Participants responses

by Rachel Irving-Beer
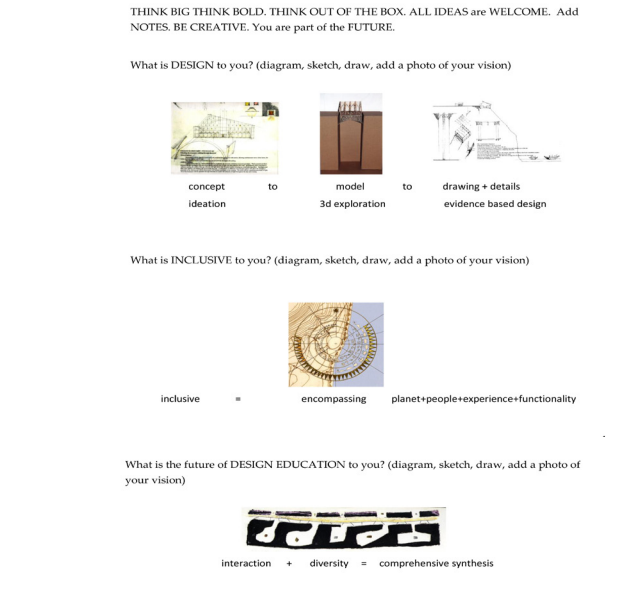
Figure 85: "Charrette" Participants responses

by Lesley Taylor

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)
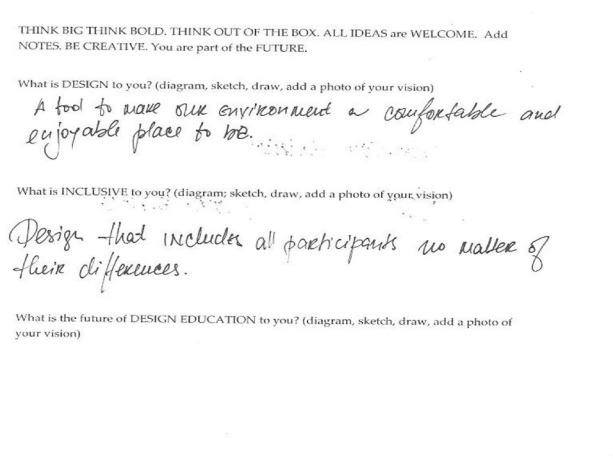
Figure 86: "Charrette" Participants responses

by Tsvetelina Rabashki
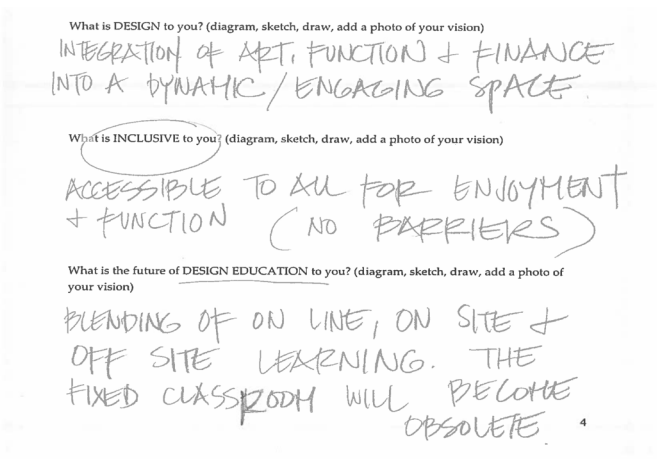
Figure 87: "Charrette" Participants responses

by Zaiba Mian
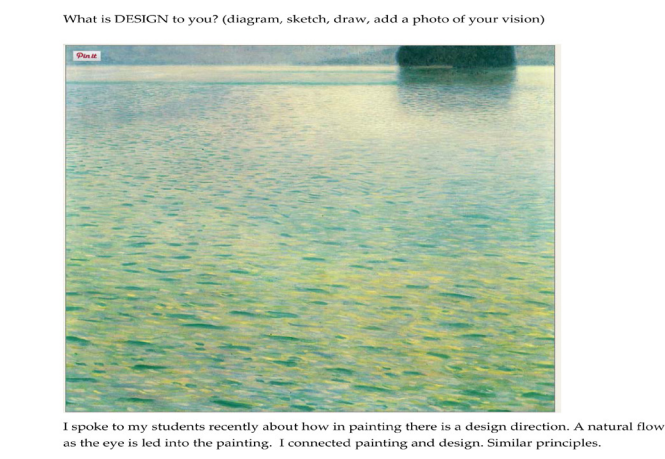
Figure 88: "Charrette" Participants responses

by Pamela Mayhew and Susan Topping
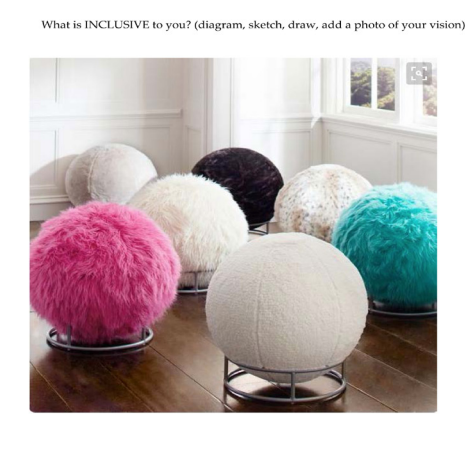
Figure 89: "Charrette" Participants responses

by Pamela Mayhew and Susan Topping

Figure 90: "Charrette" Participants responses

by Pamela Mayhew and Susan Topping

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
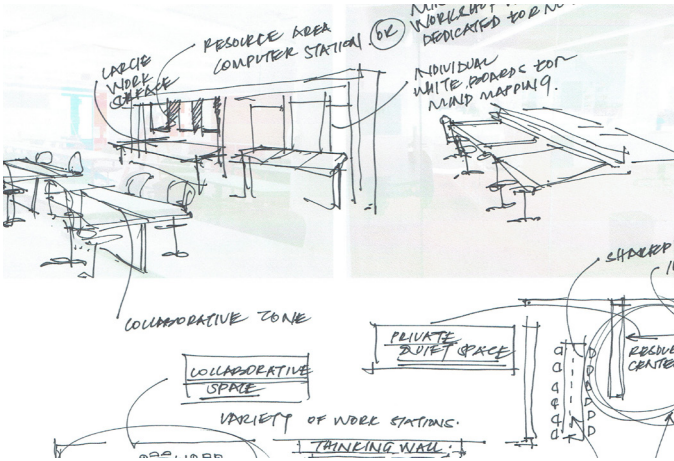
by Akansha Osmond

Figure 92: "Charrette" Participants responses

by Akansha Osmond
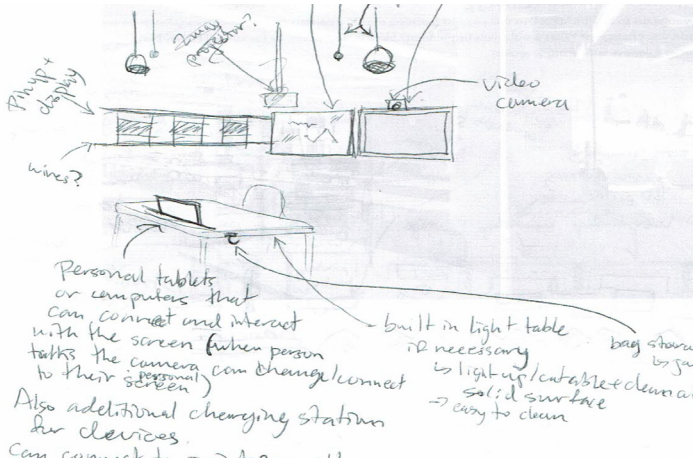
Figure 93: "Charrette"
Participants responses

by Emily Kusec-Ashcroft
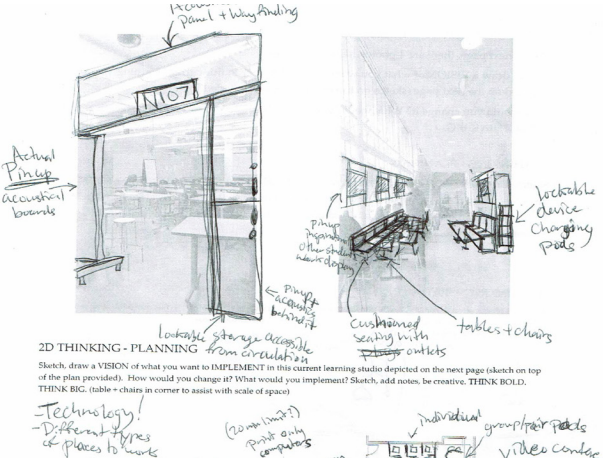
Figure 94: "Charrette" Participants responses

by Emily Kusec-Ashcroft
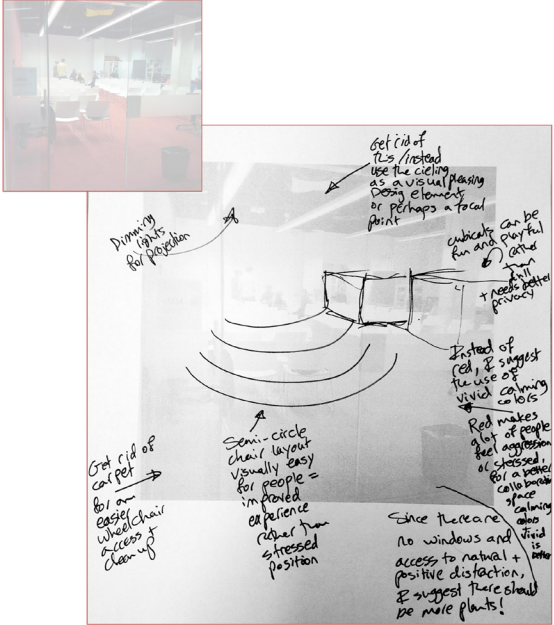
Figure 95: "Charrette" Participants responses

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.

Figure 96 "Charrette" Participants responses

by Clare Formosa

Figure 97: "Charrette" Participants responses

by Mohafizali Merali
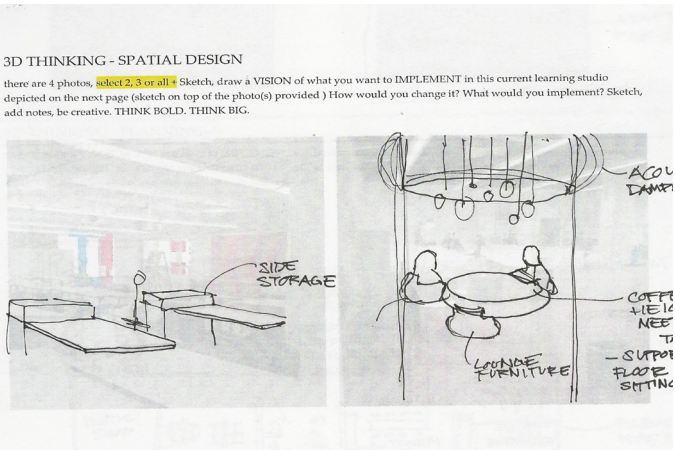
Figure 98: "Charrette" Participants responses

by Emma Christensen
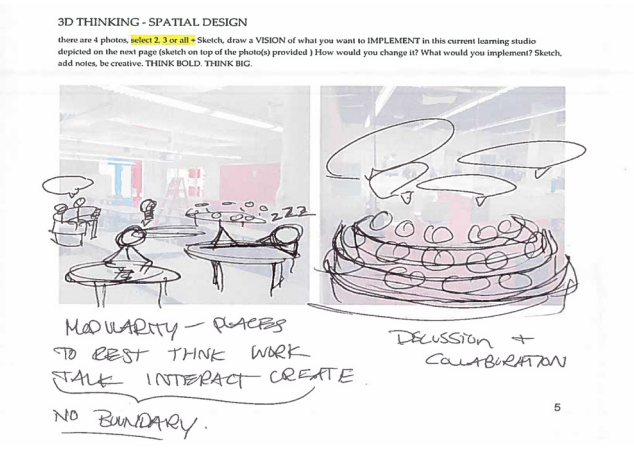
Figure 99: "Charrette" Participants responses

by Kimberly Czornodolsky
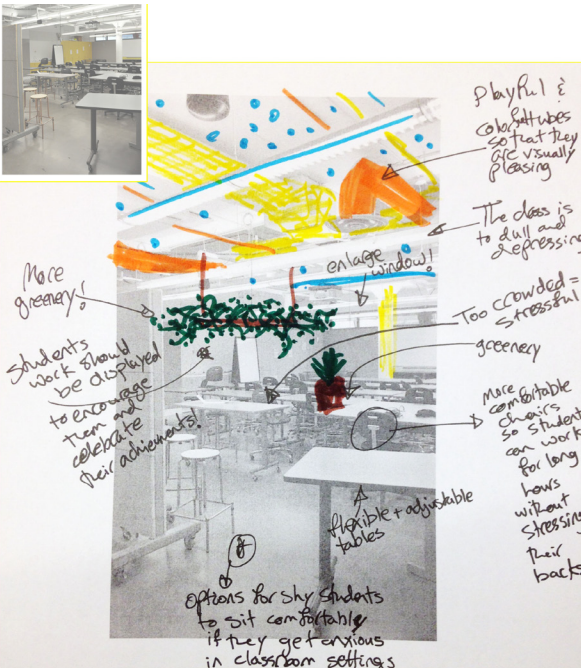
Figure 100: "Charrette" Participants responses

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.
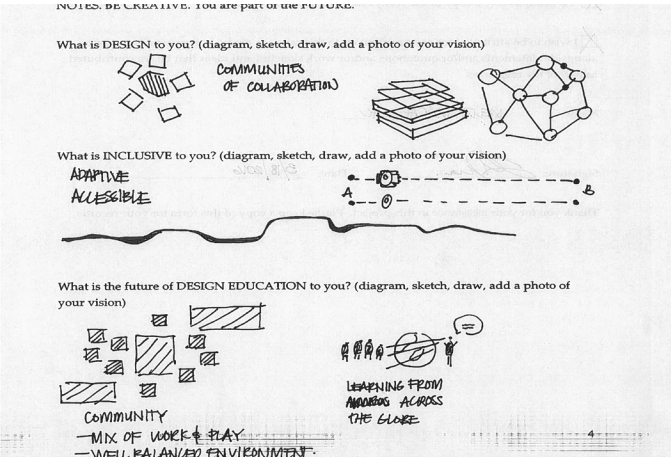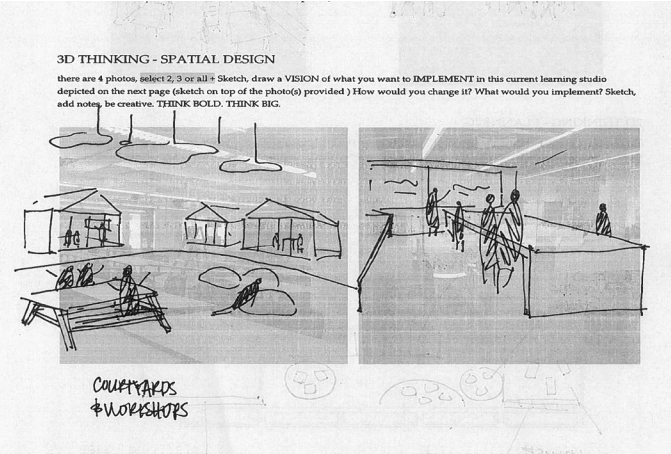

Figure 101: "Charrette" Participants responses

by Meliza Macapinlac
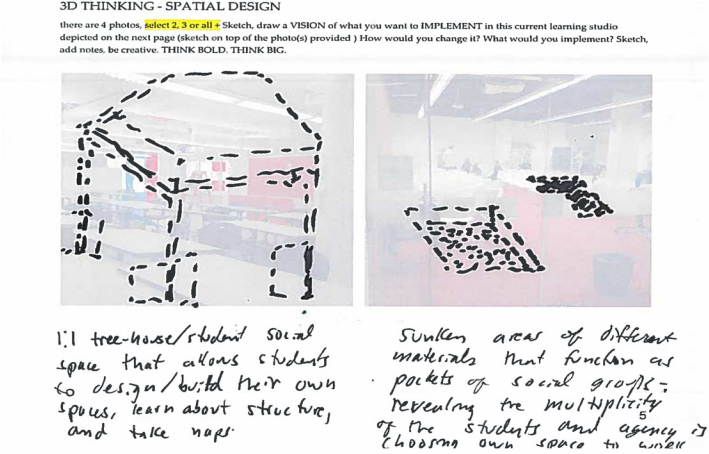
Figure 102: "Charrette" Participants responses

by Marcin Kedzior
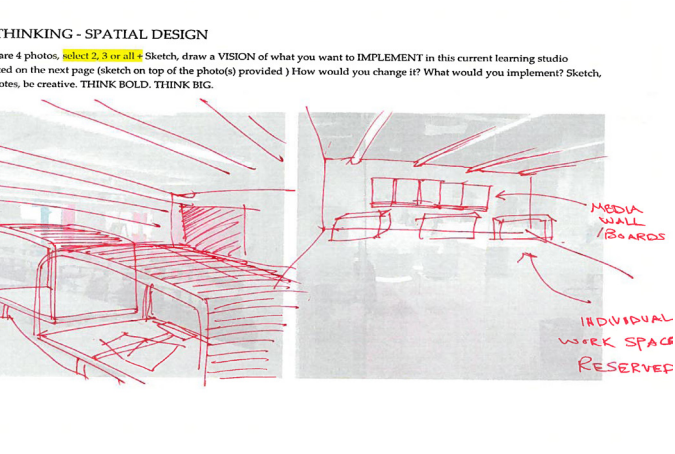
Figure 103: "Charrette"
Participants responses

by Rami Dawood
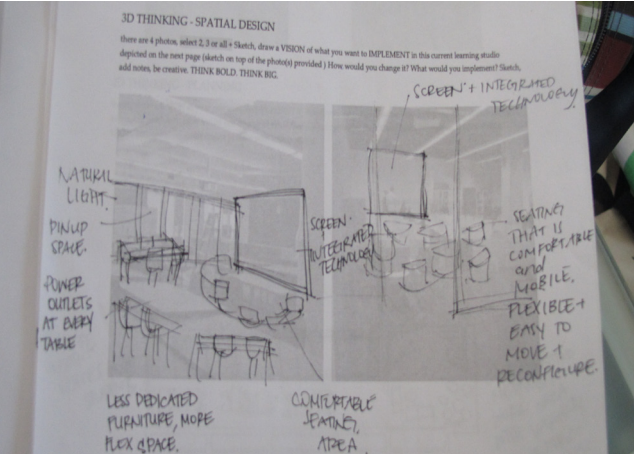
Figure 104: "Charrette" Participants responses

by Kristen Dibattista
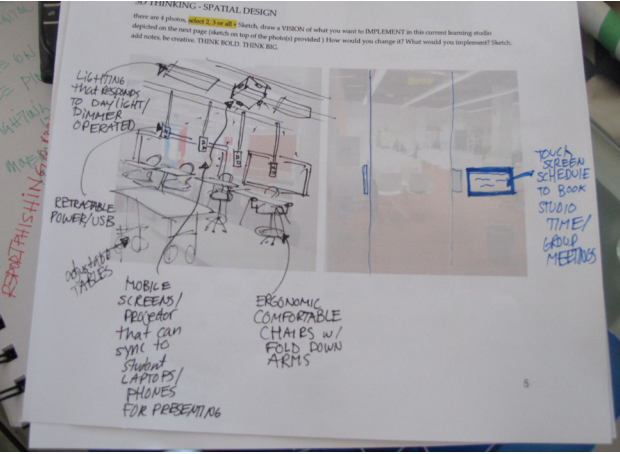
Figure 105: "Charrette" Participants responses
by Renya Tensuda

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)
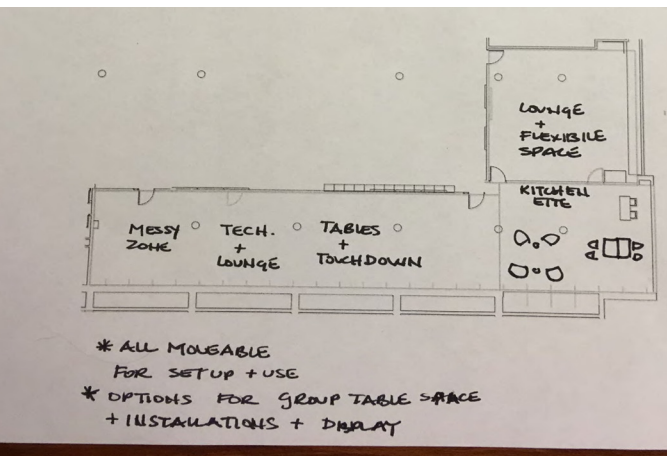
Figure 106: "Charrette" Participants responses

by Dana Tapak

Figure 107: "Charrette" Participants responses

by Akansha Osmond

Figure 108: "Charrette" Participants responses

by Brittany Fernandez
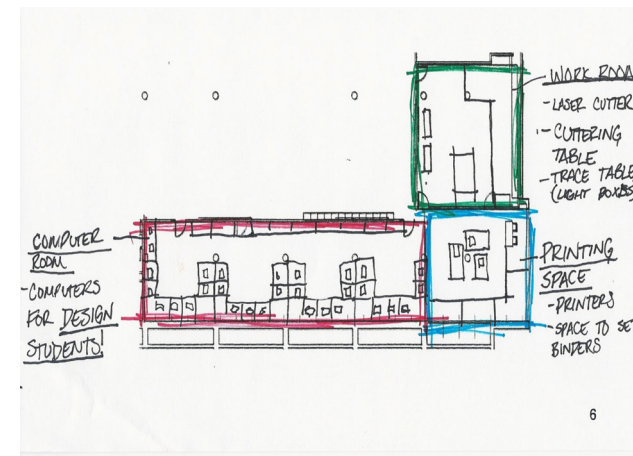
Figure 109: "Charrette" Participants responses

by Clare Formosa
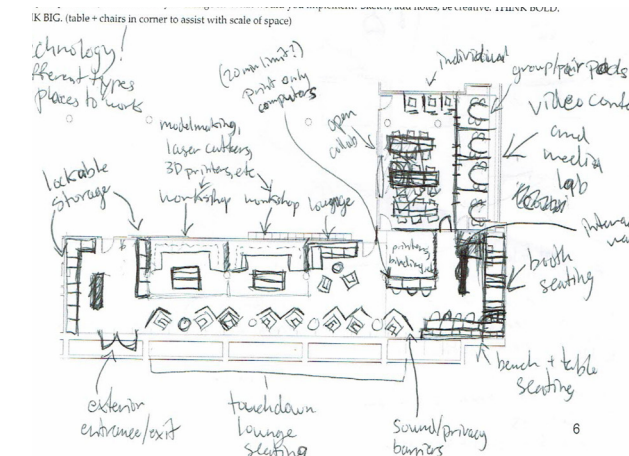
Figure 110: "Charrette" Participants responses

by Emily Kusec-Ashcroft

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)
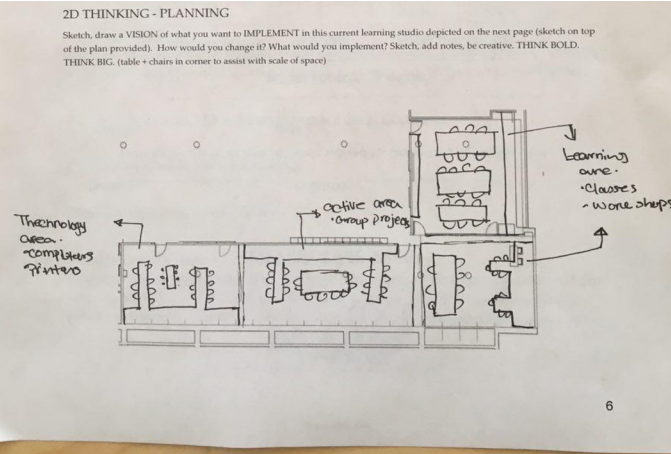
Figure 111: "Charrette" Participants responses

by Farnaz Habibi
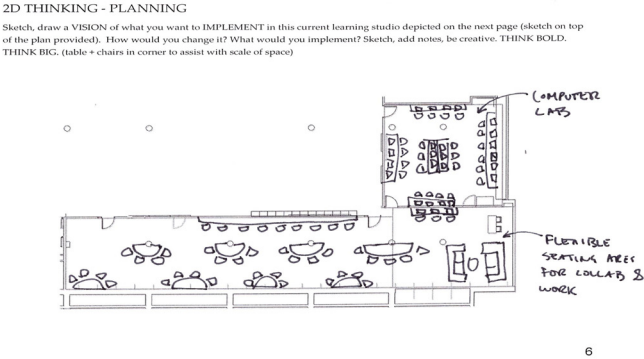
Figure 112: "Charrette" Participants responses

by Hang Truong
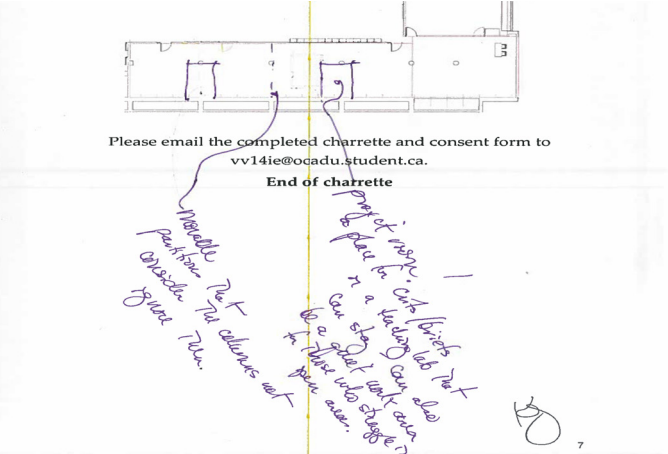
Figure 113: "Charrette" Participants responses

by Kelly Gluck
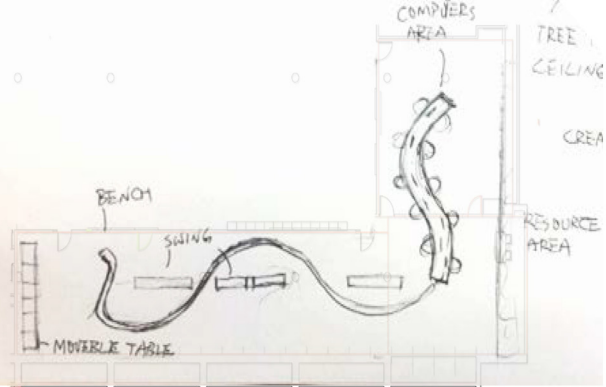
Figure 114: "Charrette" Participants responses

by Jing Wang

Figure 115: "Charrette" Participants responses

by Jacob Willow

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)
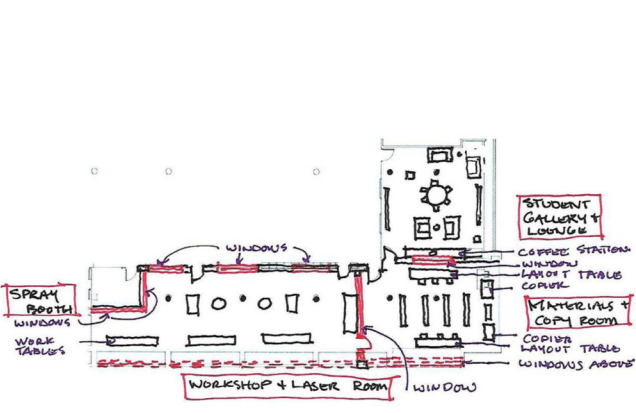
Figure 116: "Charrette" Participants responses

by Lesley Taylor
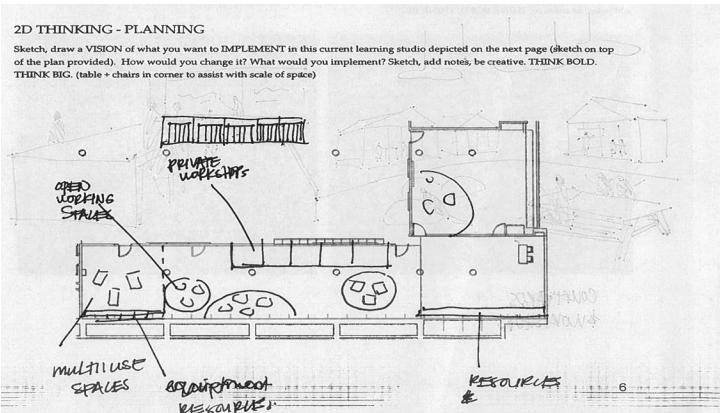
Figure 117: "Charrette" Participants responses

by Meliza Macapinlac
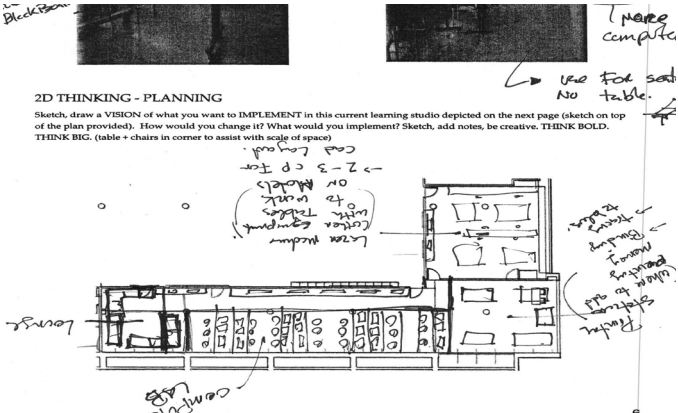
Figure 118: "Charrette" Participants responses

by Natascha Del Prete
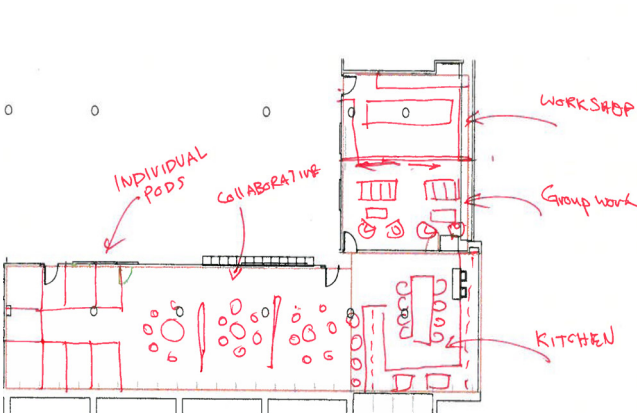
Figure 119: "Charrette" Participants responses

by Rami Dawood
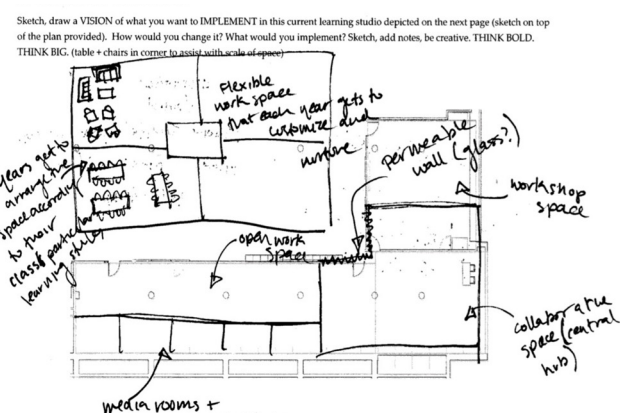
Figure 120: "Charrette" Participants responses

by Rachel Irving-Beer

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)
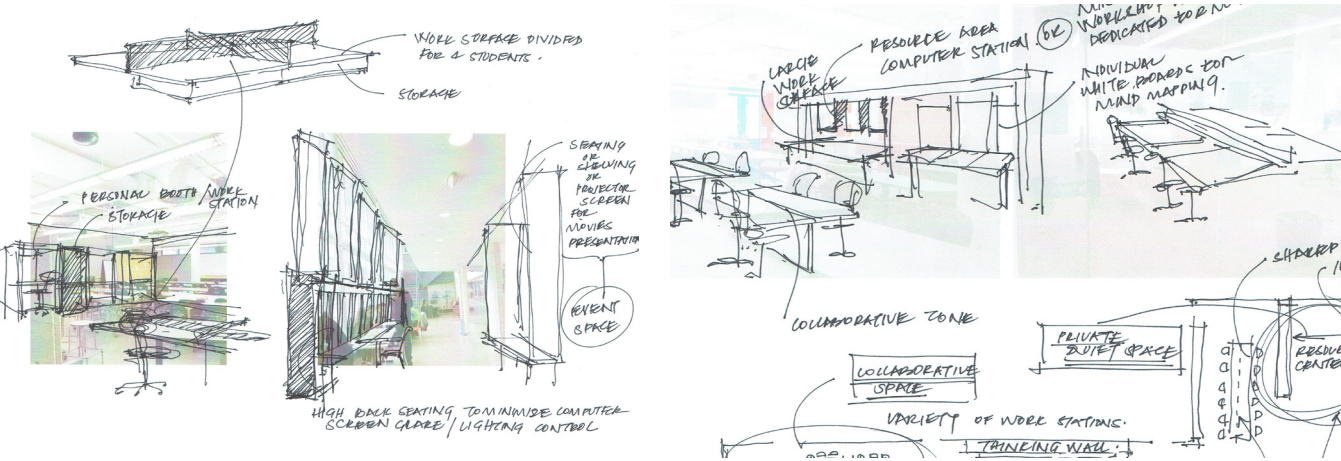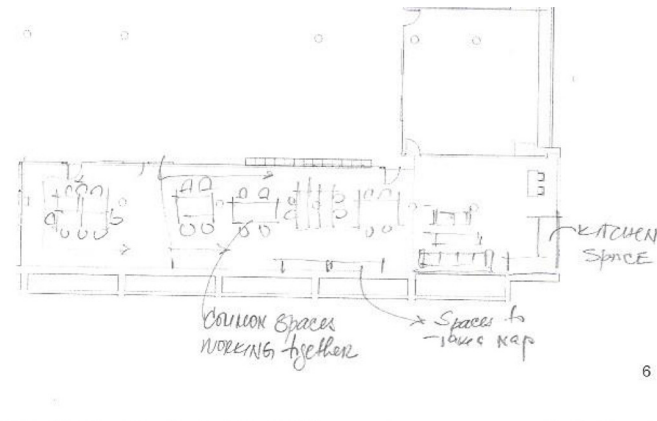

Figure 121: "Charrette" Participants responses

by Tsvetelina Rabashki
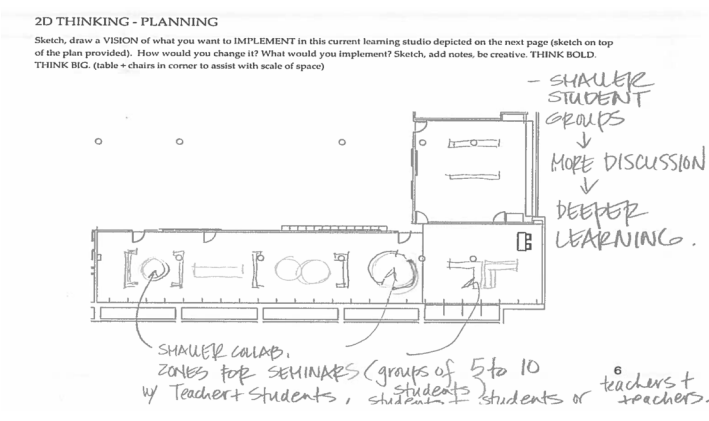
Figure 122: "Charrette" Participants responses

by Zaiba Mian
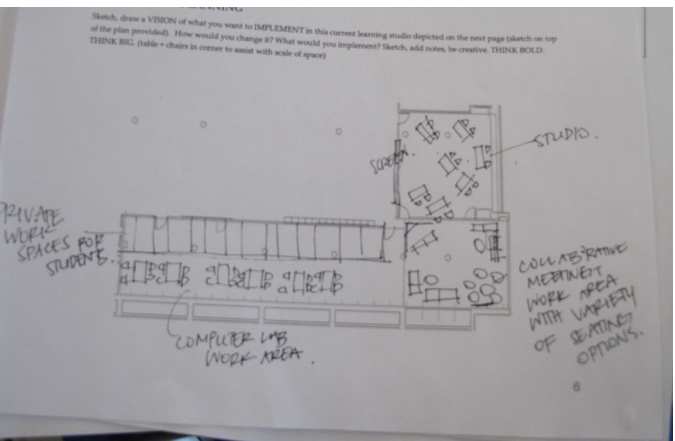
Figure 123: "Charrette" Participants responses

by Kristen Dibattista
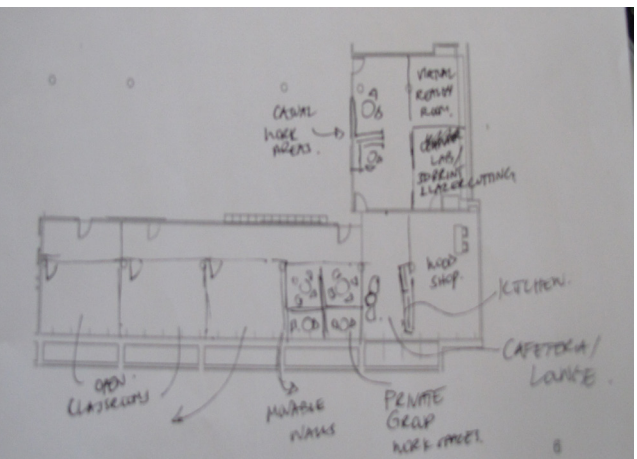
Figure 124: "Charrette" Participants responses

by Ruxandra Patrasc
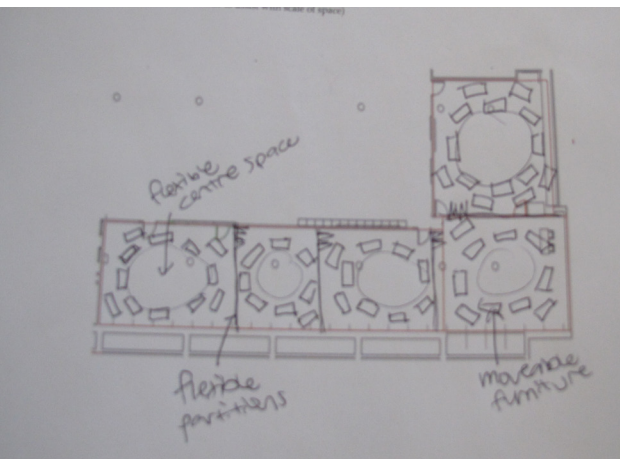
Figure 125: "Charrette" Participants responses

by Stephanie Trfymowjch

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)
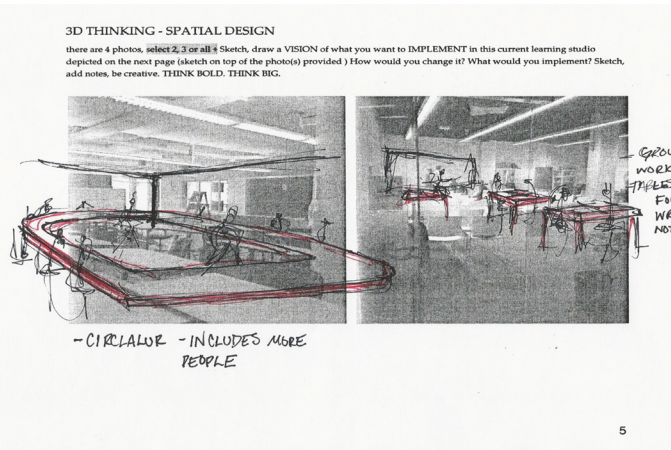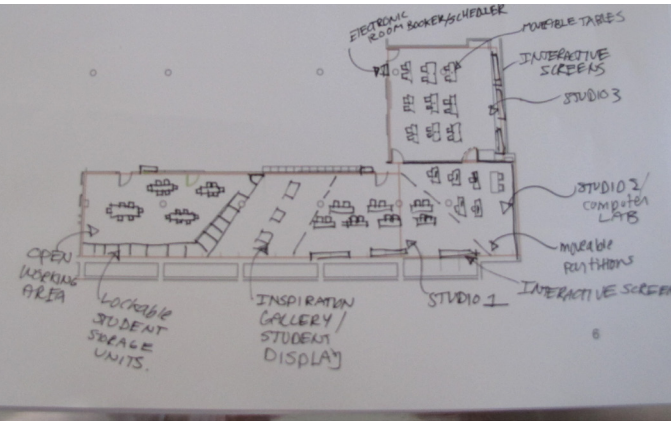

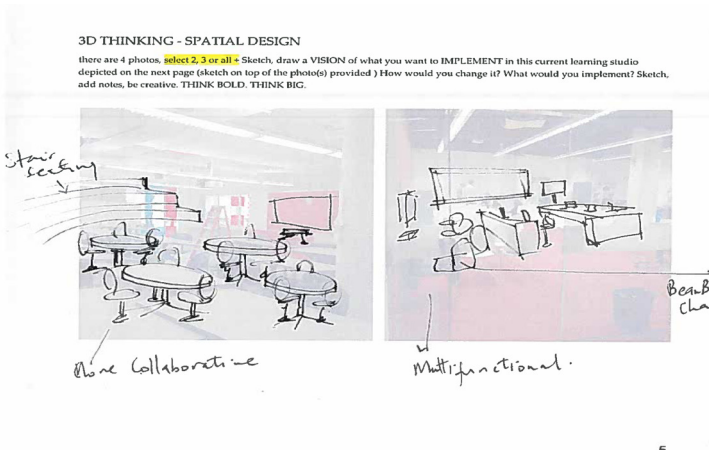Figure 126: "Charrette" Participants responses

by Renya Tensuda
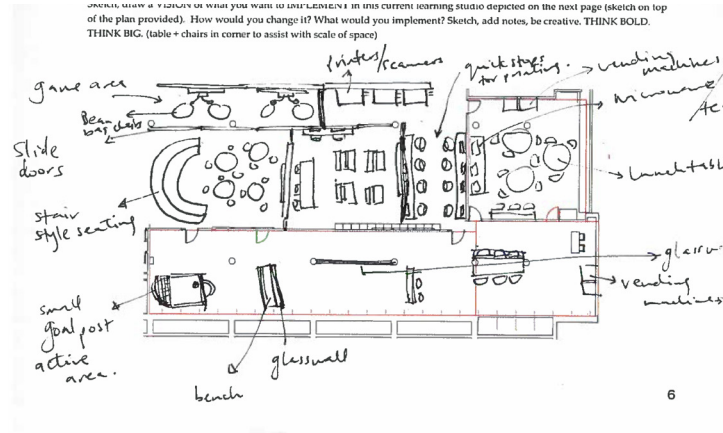
Figure 127: "Charrette" Participants responses

by Mohafizali Merali
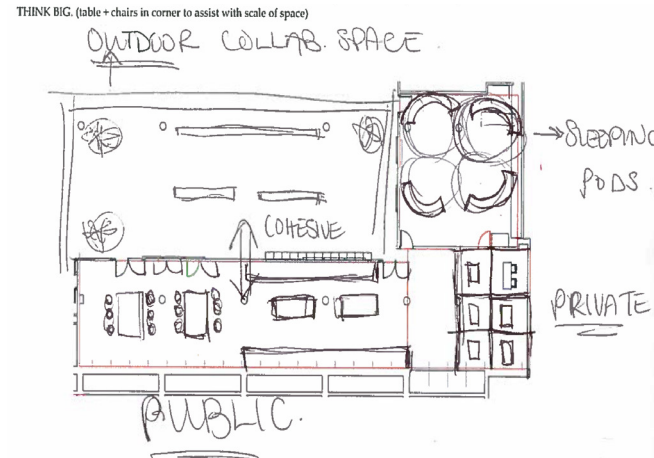
Figure 128: "Charrette" Participants responses

by Leah Watling
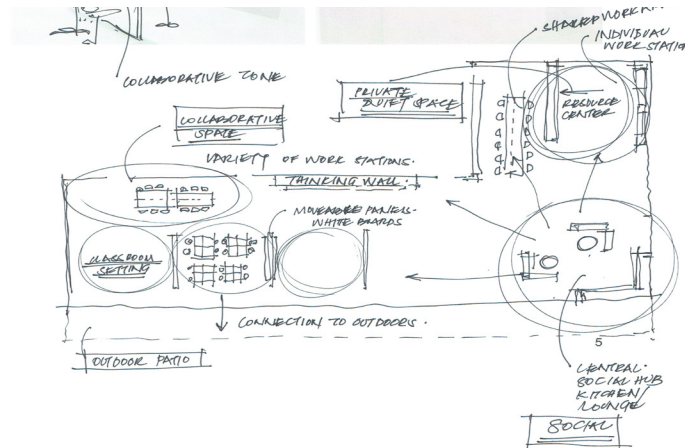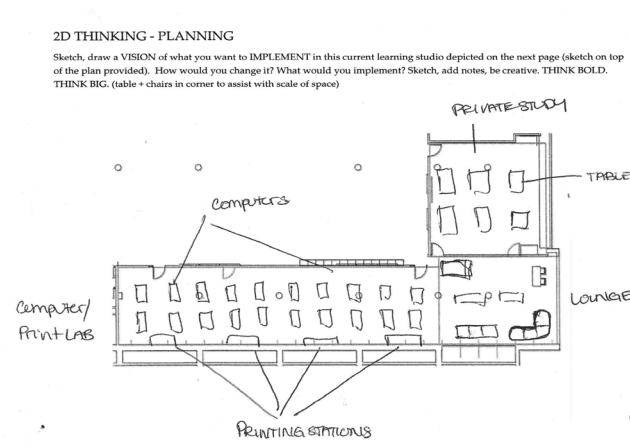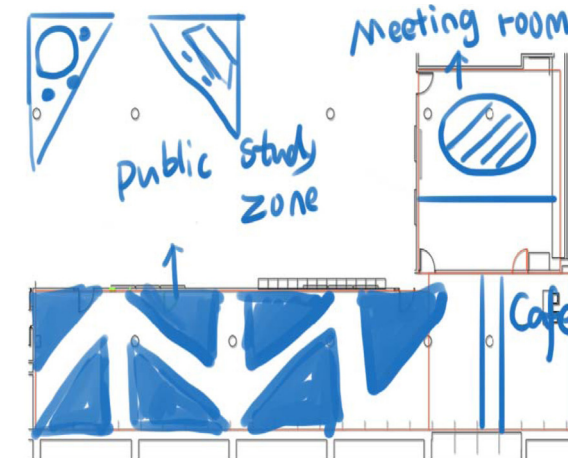

Figure 129: "Charrette" Participants responses

by Jingyi "fairy" Lai
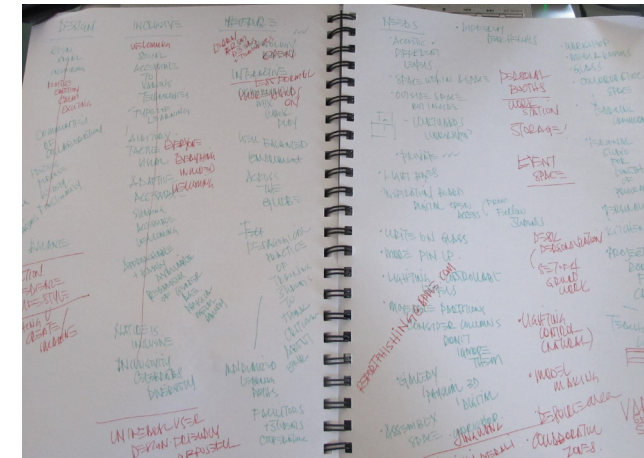
Figure 130: "Charrette" summary notes

by Author

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. IIDEXCanada, 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" (IIDEXCanada, 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 into offices t o w ork? I n t his h ighly i nteractive f acilitated w orkshop, y ou w ill 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?" (IIDEXCanada, 2015).

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

Workshops could be part of the research recipe which contributes to the space between.

researcher, designer, author

A very inspirational workshop by Teknion, by Gregg Dekker; **Why did George Jetson still commute to work?** Set the stage for this study's engaging session.

All of these activities were designed to extract information and ideas from the participants regarding their ideas and individual approaches.

researcher, designer, author

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 Photos 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.

EDUCATIONAL SPACE
where do you most of your learning?

concept adapted + based on workfloMAP © byTeknion
component of The Future of Work, will George Jetson still commute?
workshop developed by greg dekker \ director \ workplace strategy \ teknion \ greg.dekker@teknion.com
by. v.ve, ocadu student. MDes, Inclusive Design, 2016

SINGLE STUDENT

FOCUS \ QUIET ROOMS   LOUNGE TABLET   OPEN / SHARED TABLE   LOUNGE SPACE   TOUCHDOWN

PARTNER AREA

TEAM DESK   PRIVATE COLLABORATIVE AREA   OPEN / SHARED TABLE   OPEN COLLABORATIVE   LOUNGE SPACE   COLLABORATIVE "CAFE" BENCH STYLE

PROJECT TEAM

COLLABORATIVE ROOM WITH MEDIA   OPEN COLLABORATIVE   TEAM TABLE   PRODUCTION print CENTER   LOUNGE SPACE   COLLABORATIVE "CAFE" BENCH STYLE

CLASSROOM + STUDIO SPACE

TEACHER CENTERED - LECTURE HALL TYPE   GROUP FLEX. TYPE   SEMINAR TABLET. FLEX TYPE

OTHER + WISHES

CAFE
LIBRARY
RESTAURANT BAR
HOME
WORKSHOP
INSPIRATIONAL ZONE

AT WORK
OUTDOORS
GYM
TRAVEL
PRINT SHOP
PHOTOGRAPHY LAB

Figure 131: "Workflow MAP Educational Space"

by Adapted from Teknion, Gregg Dekker's WorkFLOW map

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 workfloMAP 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.
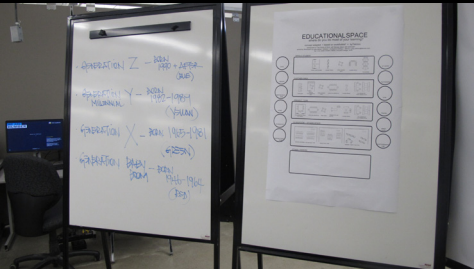
Figure 132: Photo set up of Part 1 of the workshop "Workflow MAP Educational Space" Adapted from Teknion, Gregg Dekker's session.

Figure 133: Photo students engaging in Part 1 of the workshop "Workflow MAP Educational Space" Adapted from Teknion, Gregg Dekker's session - **HOW THEY WORK NOW.**

Figure 134: Photo students engaging in Part 1 of the workshop "Workflow MAP Educational Space" Adapted from Teknion, Gregg Dekker's session. **HOW THEY WORK WANT TO WORK. Where would you do most of your learning?**

Figure 135: Photo students engaging in Part 1 of the workshop "Workflow MAP Educational Space" Adapted from Teknion, Gregg Dekker's session. H**OW THEY WORK WANT TO WORK. Where would you do most of your learning?**

Figure 136: Right: Photo students engaging in Part 1 of the workshop "placing their dots of HOW and where they currently work"

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 functions 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.
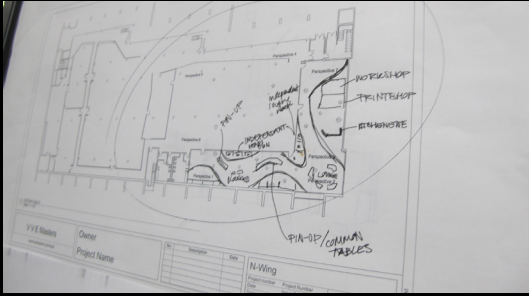
Figure 145: Photo of a sketch,

ideation by Emma Christensen

Figure 146: Photo of enthusiastic participants discussing and contemplating decisions.
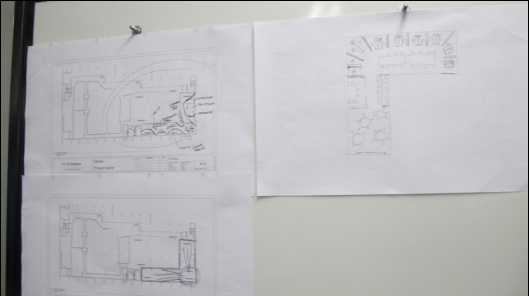
Figure 147: Additional sketches

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.

Figure 148: Photo of enthusiastic participants collaborating on planning.

Figure 149:   Photo of enthusiastic participants working drawing in 3d, as the planning is taking a vision.

Figure 150: Photo of 2d and 3d **coming together.**

Figure 151: Photo of a 3d sketches taking form.,
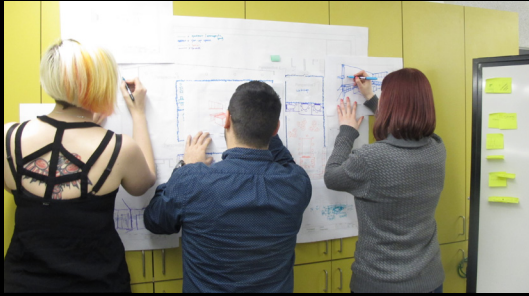
Figure 152: Photo of enthusiastic participants sketching ideas.
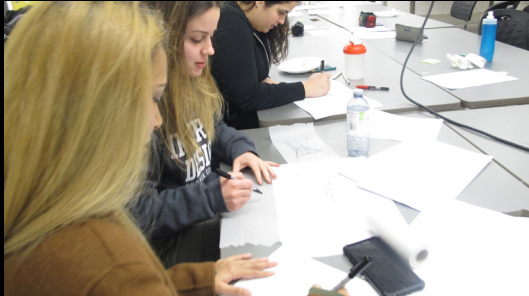
Figure 153: Participants sketches ideas in 3d

WORKSHOP PART 2C: Planning together

Incorporating everyone's ideas, requests on to one CO designed plan / drawings.

Figure 154: Photo of enthusiastic participants getting ready to discuss direction of co design.

Figure 155 : Photo of co design collage 2d and 3d
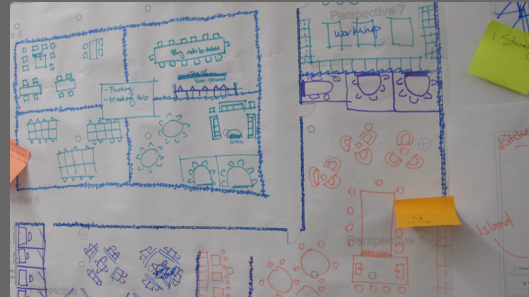
Figure 156: Photo of co design linking original posted notes.

Figure 157: Photo of final co design workshop session.

Design by: Akansha Osmond, Cedar Samaha, Emily Kusec-Ashcroft, Emilia Majerus, Emma Christensen, Ruxandra Patrasc, Renya Tensuda, Kristen Dibattista, Nicole Czachor, Omar Rivera, Rachel Irving-Beer, Rami Dawood, and Stephanie Trfymowjch.

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
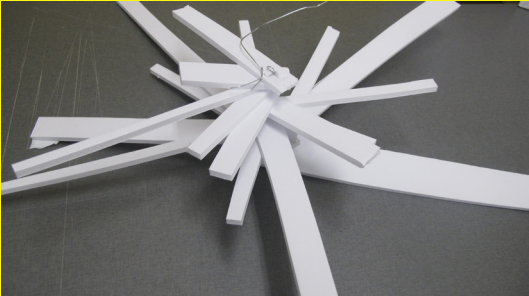
Figure 158: Diversity working towards one vision.

Ideation by: Akansha Osmond
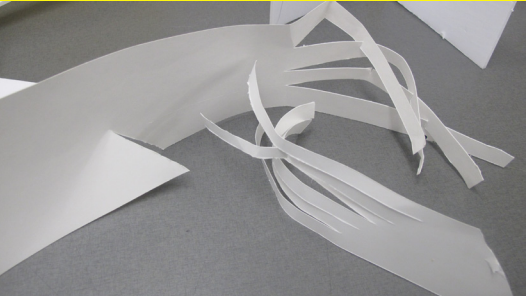
Figure 159: Flexibility and Visibility and Transparency

Ideation by Emma Christensen
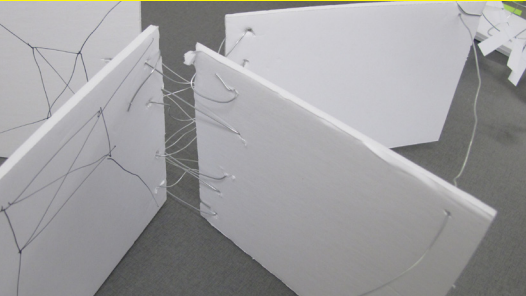
Figure 160: Central idea with changing planes

Ideation by Omar Rivera
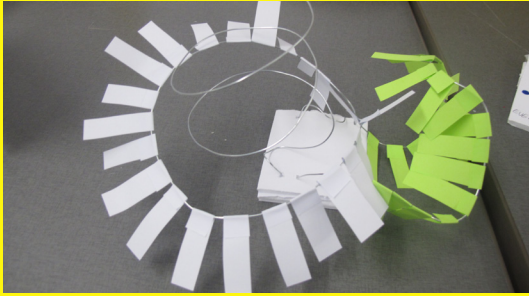
Figure 161: Inclusive "open space" meets
              exclusive "limited space"

ideation by Rami Dawood
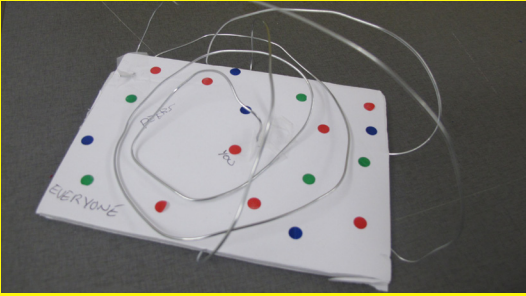
Figure 162: You, Peers and Everyone spiral.

Ideation by Emilia Majerus
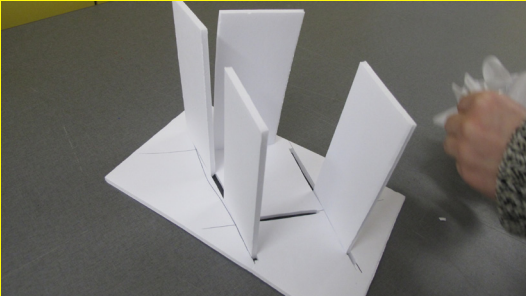
Figure 163: Solid forms can be reorganized

ideations by Rachel Irving-Beer

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

Figure 169: Diverse journey toward one GOAL

ideation by Renya Tensuda

Figure 164: Blossom in your preferred space

Ideation by: Kristen Dibattista
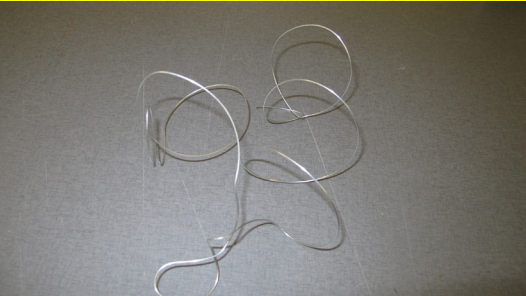
Figure 165: Changing options ONE THING in EVERY WAY

Ideation by Stephanie Trfymowjch
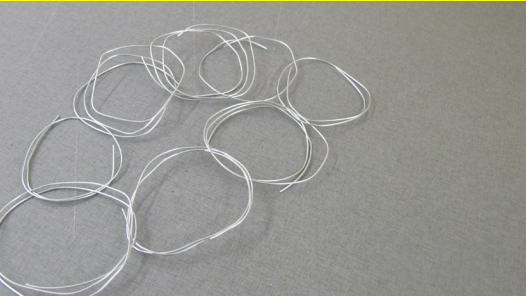
Figure 166: Connected to make larger IDEA

Ideation by Cedar Samaha
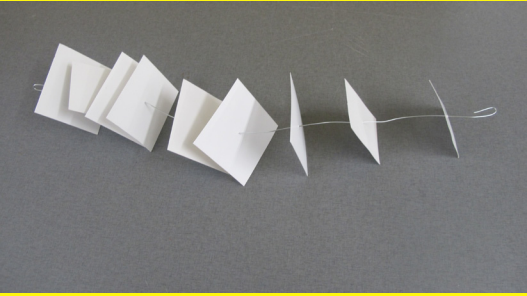
Figure 167: Collaboration meets Independence

Ideation by Nicole Czachor
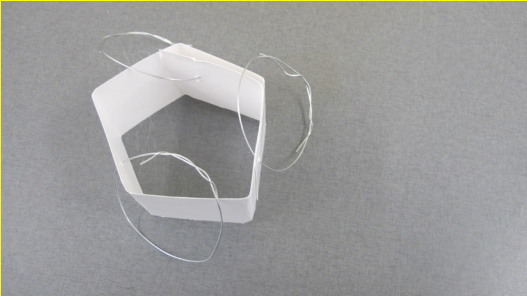
Figure 168: Central goal everyone connected

Ideation by Ruxandra Patrasc

Figure 170: Connected Cycle of Collaboration

Ideation by Emily Kusec-Ashcroft

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, Ruxandra Patrasc, Renya Tensuda, Kristen Dibattista, Nicole Czachor, Omar Rivera, Rachel Irving-Beer, Rami Dawood, and Stephanie Trfymowjch.

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, Ruxandra Patrasc, Renya Tensuda, Kristen Dibattista, Nicole Czachor, Omar Rivera, Rachel Irving-Beer, Rami Dawood, and Stephanie Trfymowjch.

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

Figure 175: A word cloud representing the user needs
from the Survey

Created on Wordle.net

Figure 176: A word cloud representing the user needs from
the Charrette

Created on Wordle.net

Figure 177: A word cloud representing the user needs from
the Workshop

Created on Wordle.net

5

EVIDENCE
BASED DESIGN

5.1 Design Direction - Solutions

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

"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 results 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)

Figure 180: Left. Sketches for a solution

By Author

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 a 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 on 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 mediation**. 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 complied them into typical categories to adapt with the system.

Designing with no constraints provides new possibilities and innovations.

Figure 181: Right. Sketches for a solution

By Author
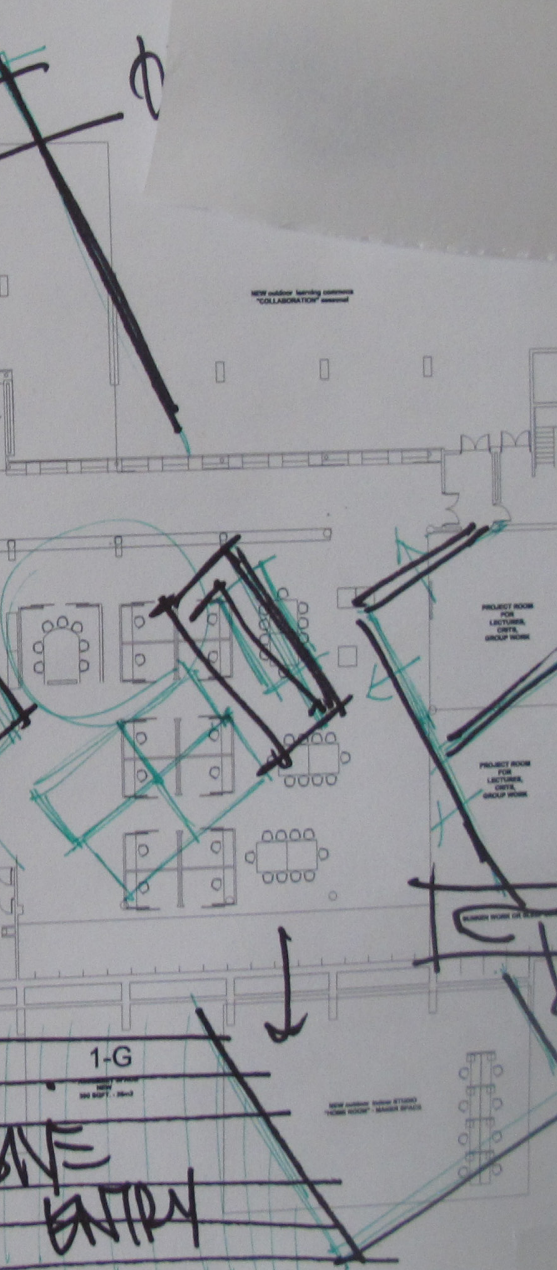
5.2 Additional inspirational case studies linking to PAR requests

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/bid/109751/Five-Trends-in-K-12-School-Design-Everyone-Should-Consider

5.2 Additional inspirational case studies linking to PAR requests

Figure 187: Bar height collaboration zone.

Source: http://www.rosanbosch.com/en/project/bornholms-eft-erskole

Figure 188: Lounge area for collaboration

Source: http://www.rosanbosch.com/en/project/bornholms-eft-erskole

Figure 189: Marshmallow type stools for prompt and easy mobility.

Source: Photo by Susan Young
https://www.alumni.hbs.edu/stories/Pages/story-bulletin.aspx?num=1032

Figure 190: Flexible pods, working rooms for independent learning, partnership, collaboration, easily reconfigured.
.
Source: Photo by Neal Hamberg
https://www.alumni.hbs.edu/stories/Pages/story-bulletin.aspx?num=1032

Figure 191: Flexible pods, working rooms for independent learning, partnership, collaboration, easily reconfigured.

Source: Photo by Neal Hamberg
https://www.alumni.hbs.edu/stories/Pages/story-bulletin.aspx?num=1032

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.

Source:http://www.fastcodesign.com/1662762/a-21st-century-school-on-the-cutting-edge-of-learning-slideshow/9

Figure 193: Sunken zone, multiple uses

Source: http://www.fastcodesign.com/1662762/a-21st-century-school-on-the-cutting-edge-of-learning-slideshow/9

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

Source: http://www.rosanbosch.com/en/news/free-school-born-holm-building-project-initiated

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

Source:http://www.fastcodesign.com/1662762/a-21st-century-school-on-the-cutting-edge-of-learning-slideshow/9
.

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/838185.jpg?1335113550

Sketches by Author

5.3 3d Ideation Sketches
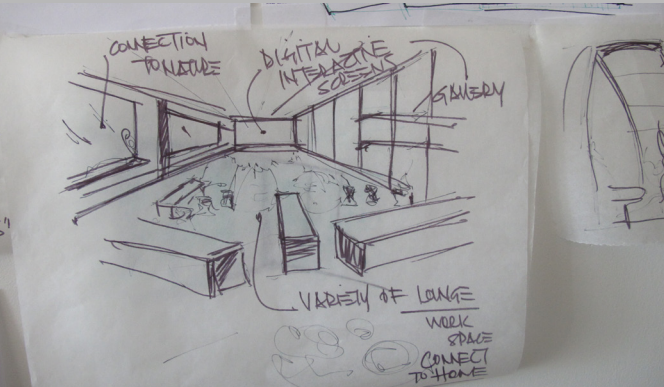
Figure 197: 3d sketch - space connecting to nature, digital active screens, a variety of lounge seating and digital gallery.
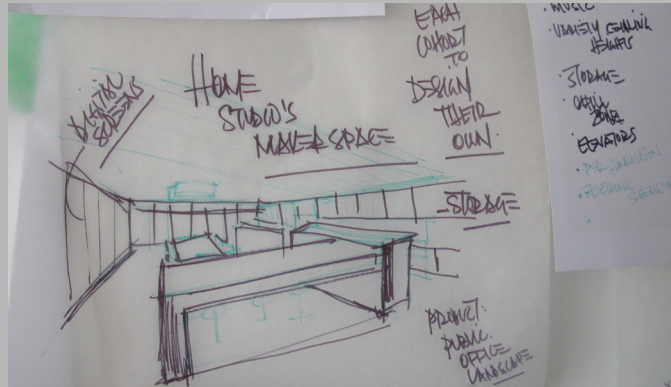
Figure 198: Home room, studio concept "maker space" each cohort to design their own. digital screens and storage

Figure 199: Acoustic pods for independent learning or partner ship, inspired from case study BBC North / ID:SR.
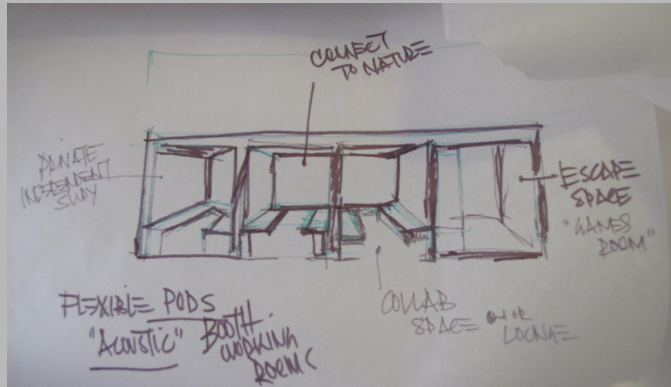
Figure 200: Flexible pods, working rooms for independent learning, partnership, collaboration, or an escape pod (with a connection to nature.)
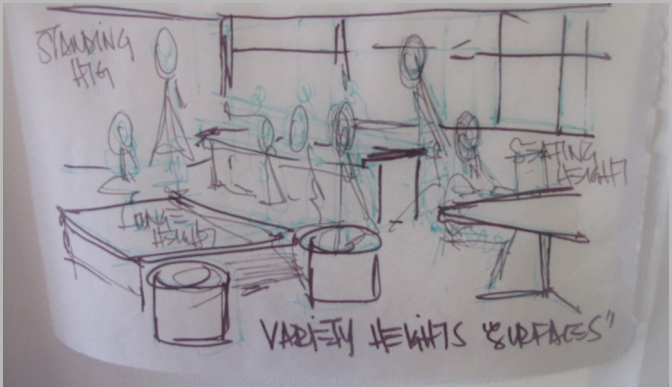
Figure 201: Sketch with a space with a variety of surfaces. Standing height, desk height and lounge height. Providing students with choice where they want to work.

Sketches by Author

EDUCATIONAL SPACE
where do you do most of your learning?

concept adapted + based on workfloMAP © by Teknion
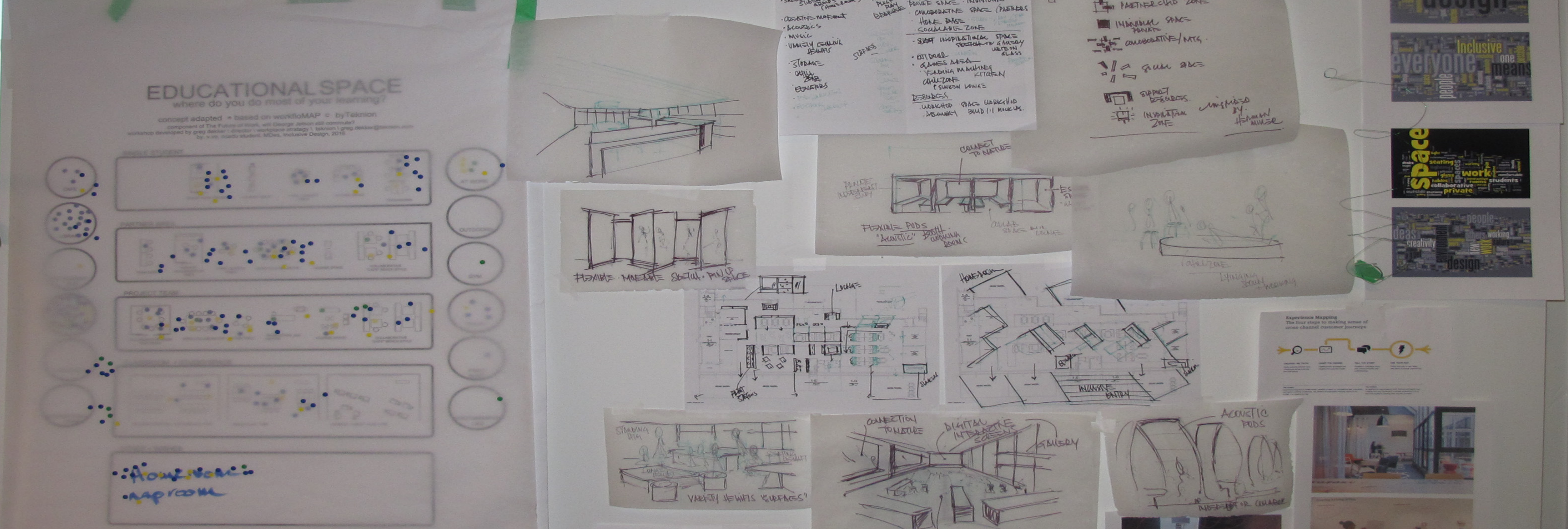
Figure 202: Process work "in progress" - ideations connecting PAR to the solutions

The diagram embedded into this spread shows how PAR activities were integrated in to 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.

Home Base

Independent

Partnership

Collaborative

Social

Support

Inspirational

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
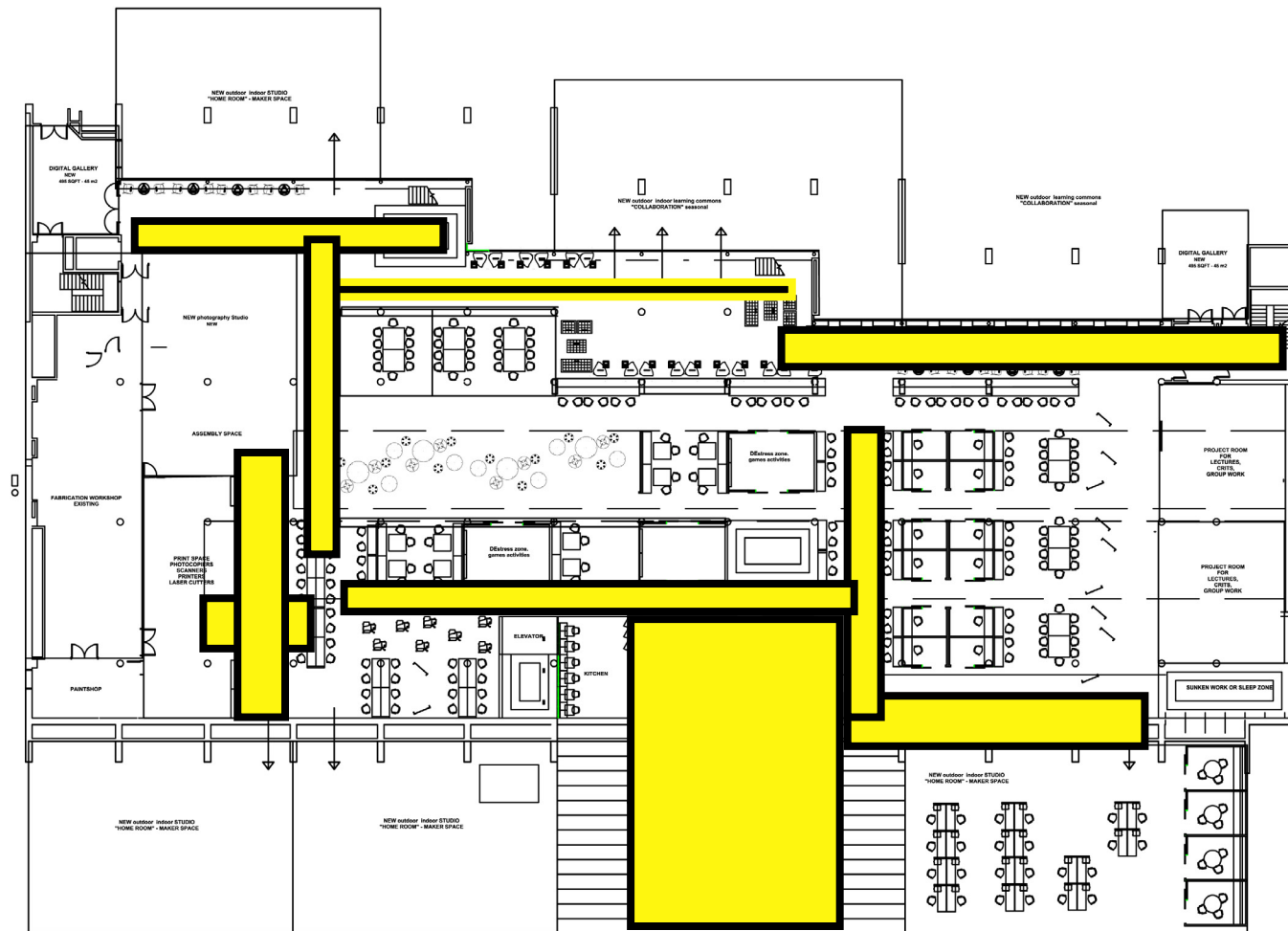
Figure 206: Plan Ideation - option A- highlighted zones of "spaces in between"

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.
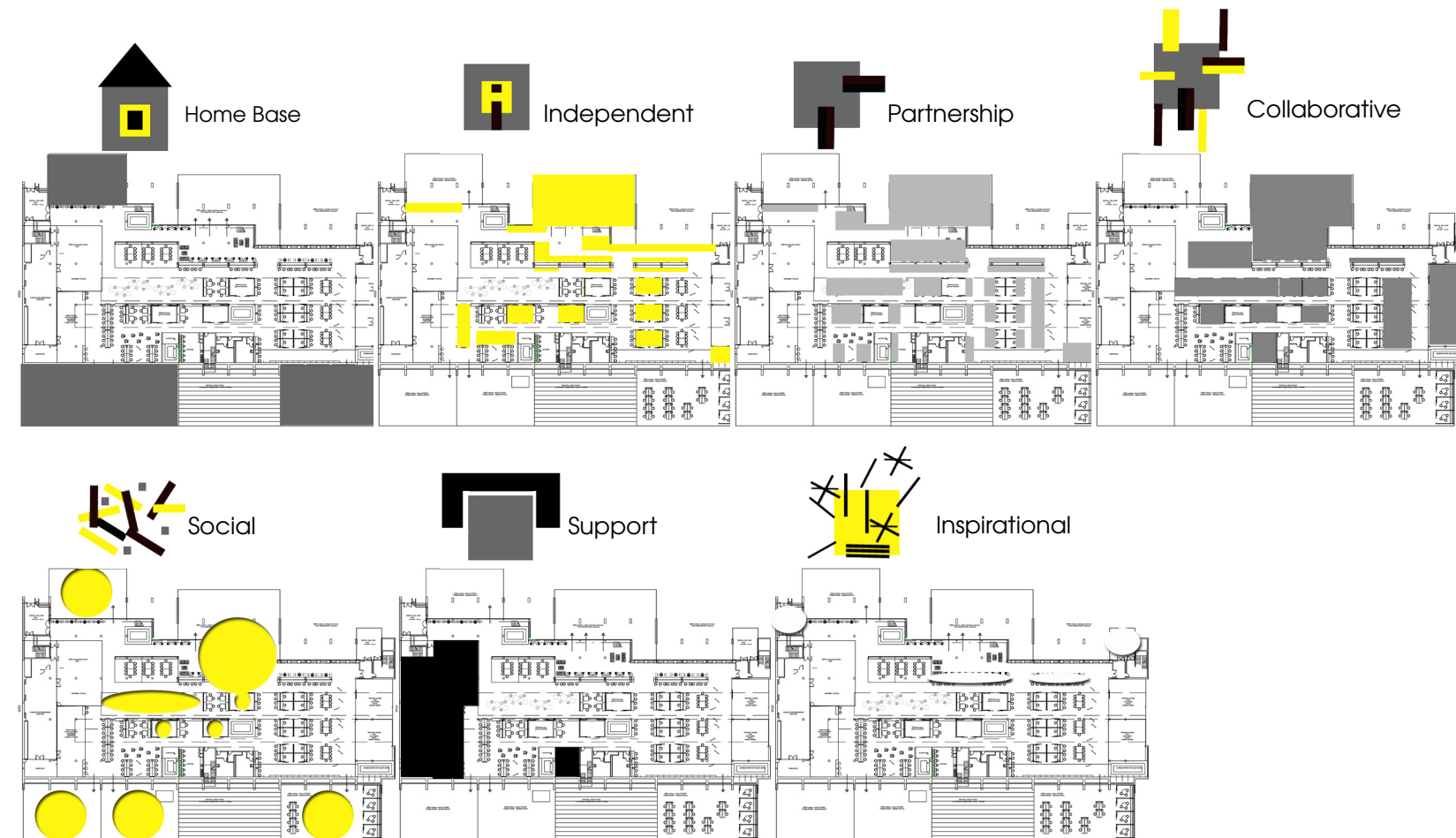
Figure 207: Plan Ideation - option A- highlighted plans indicate the specific nodes of home base, independent, Partnership, Collaborative, Social, Support + inspirational (gallery).
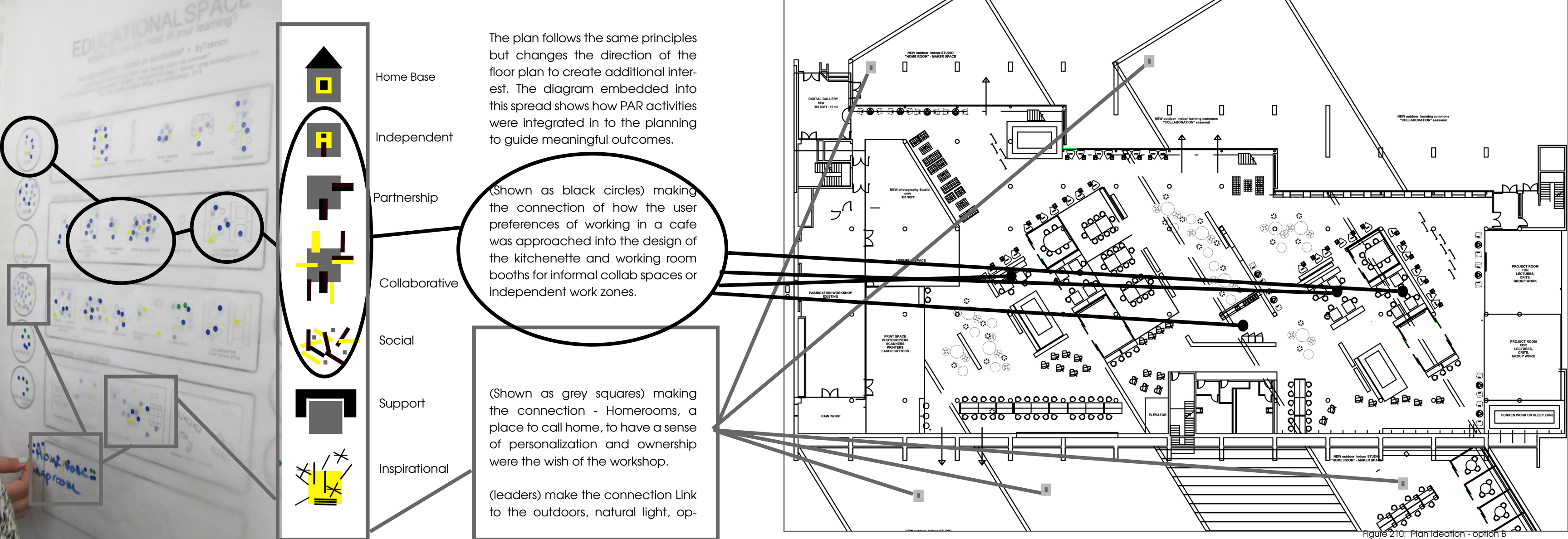
Figure 208 : Left, WorkFLOW map from workshop
Figure 209: Top, NODE ICONS, created by Author

Home Base

Independent

Partnership

Collaborative

Social

Support

Inspirational

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 in to 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, op-

Figure 210: Plan Ideation - option B

By: Author inspired by PAR
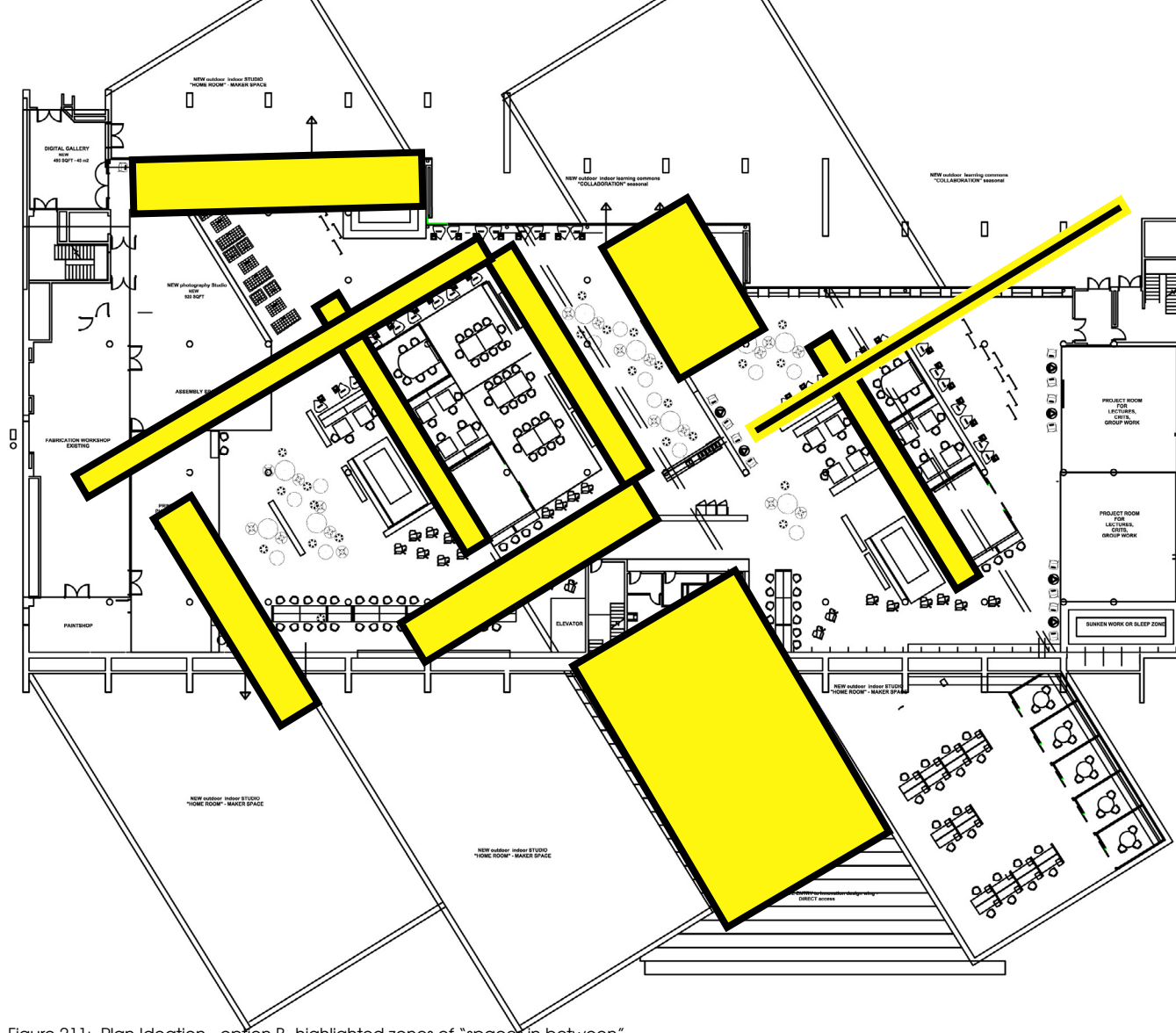
Figure 211: Plan Ideation - option B- highlighted zones of "spaces in between"

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.

Home Base

Independent

Partnership

Collaborative

Social

Support
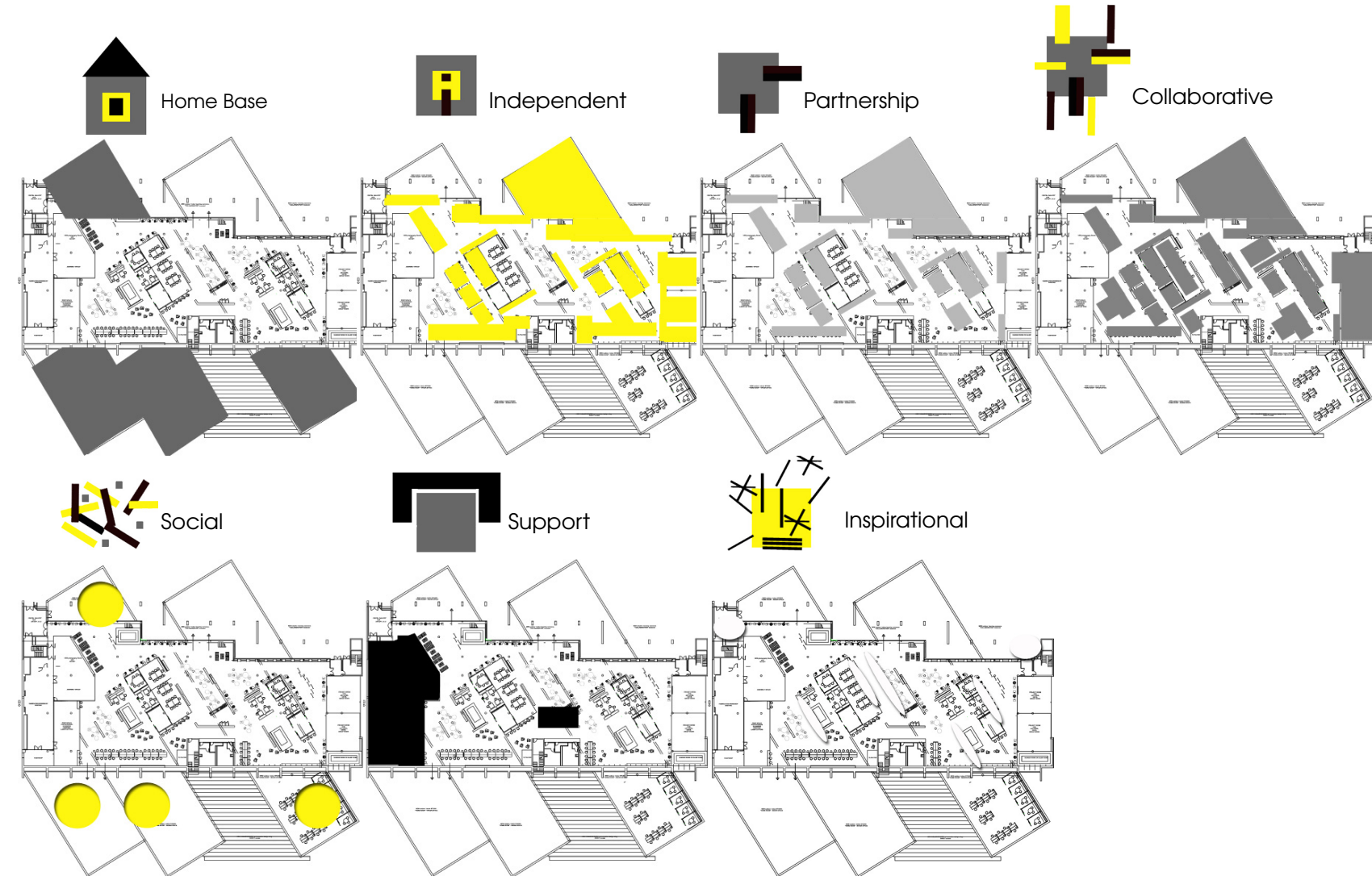
Inspirational

Figure 212: Plan Ideation - option B- highlighted plans indicate the specific nodes of home base, independent, Partnership, Collaborative, Social, Support + inspirational (gallery).

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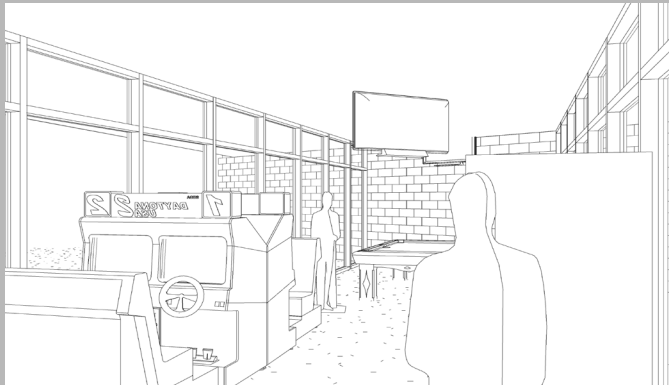
Figure 215: Games room with de-stress options to be re inspired.

Figure 216: Flexible pods, working rooms for independent learning, partnership, collaboration, or an escape pod (with a connection to nature).
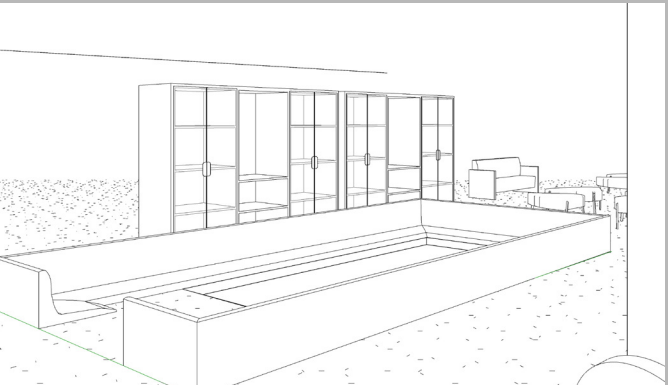
Figure 217: A sunken seating for collaboration, chill zone or SLEEP space.

3d Revit sketches by Ennio Firmani

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 suited to 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-Ashcroft, Emilia Majerus, Emma Christensen, Farnaz Habibi, Hang Truong, Ruxandra Patrasc, Renya Tensuda, Jing Wang, Jingyi "fairy" Lai, Jacob Willow, Kelly Gluck, Kimberly Czornodolsky, Kristen Dibattista, Leah Watling, Lesley Taylor, Mohafizali Merali, Marcin Kedzior,

Meliza Macapinlac, Natascha Del Prete, Nicole Czachor, Omar Rivera, Pablo Lopez Castillo, Pamela Mayhew, Rachel Irving-Beer, Rami Dawood, Tsvetelina Rabashki, Stephanie Trfymowjch, Susan Topping 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 form 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 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 a 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
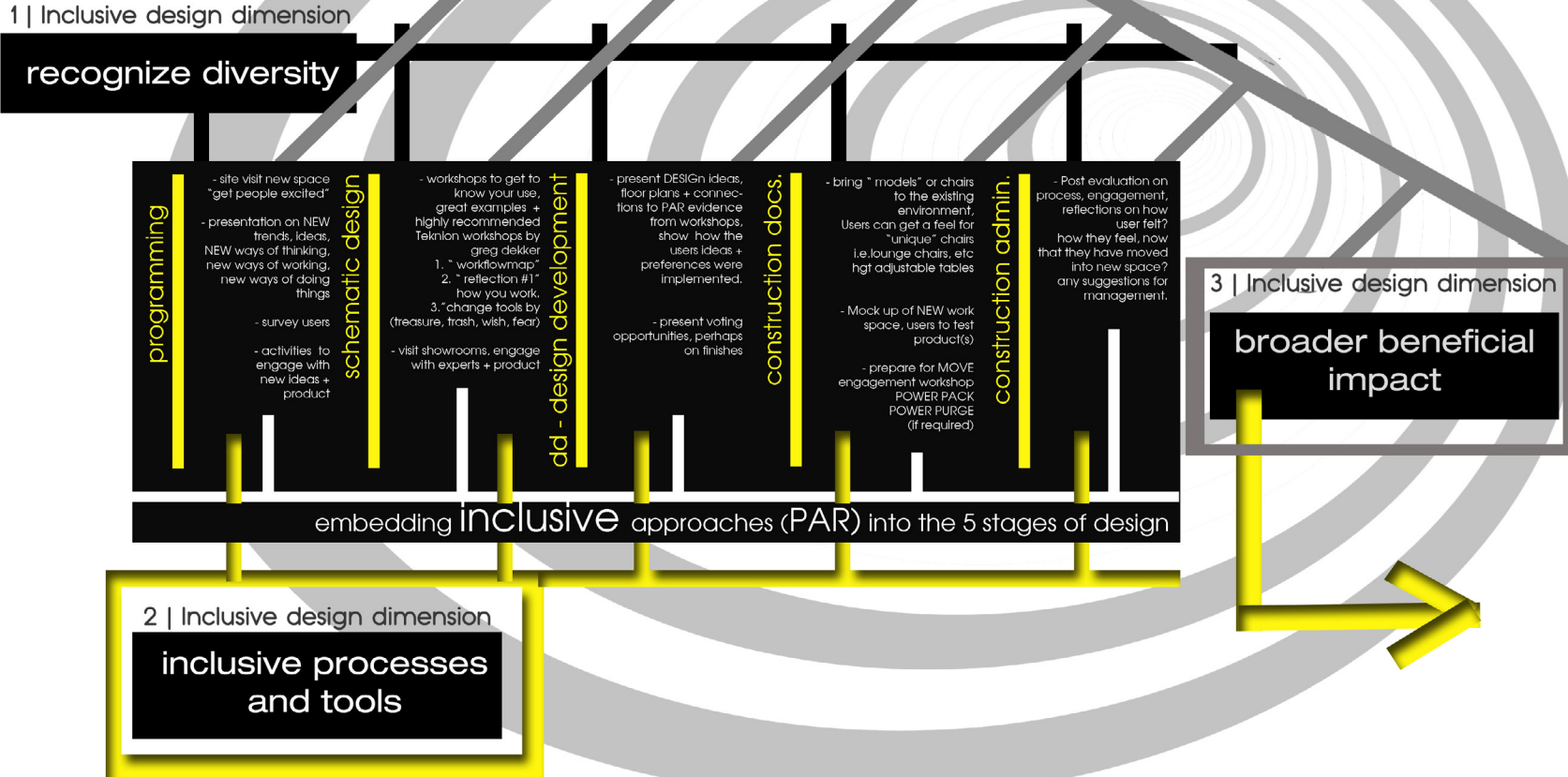
Figure 218: In progress diagram to visualize how PAR fits into a design project time line.

6

FUTURE

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 obverse 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.)

GLOSSARY 7
OF TERMS

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)

co-design | 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)

Human Centered Design

User-centred 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/2981) (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 / synergos, meaning "working together". (Wikipedia, 2016)

8

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APPENDIX

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 undernoted 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 questions or concerns.

Best regards,

Vanessa Vilic Evangelista
Second year student
Master of Design program in Inclusive Design
OCAD University, Toronto, Canada
Phone: 416 970 9232
Email: vv14ie@ocadu.student.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 on creating an inclusive learning environment for post secondary design education. To this end, I am conducting a research study that investigates learning environments with the objective of enhancing engagement and outcomes for design students.

If you an adult student or faculty member in a design program, I invite you read through the details given at [link to survey with information and consent] and, if you consent to taking the survey, 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 29, 2016.

Vanessa Vilic Evangelista
Second year student
Master of Design program in Inclusive Design
OCAD University, Toronto, Canada

Appendix B - Survey

MRP - Creating an Inclusive Learning Environment for Post Secondary Design Education

Focus on You
Who are you?
The following 13 questions - Tell us about YOU.

* 2. Which institution are you with?

- [ ] Humber, ITAL
- [ ] OCAD University
- [x] Algonquin College
- [ ] Ryerson University
- [ ] Sheridan College
- [ ] Other (please specify)

* 3. What design cluster are you part of? Learning and or Teaching. Multiple options are possible.

- [ ] Architectural Technology
- [ ] Design Foundation
- [ ] Graphic Design
- [x] Industrial Design
- [ ] Interior Design
- [ ] Interior Decorating

- [ ] Inclusive Design
- [ ] Other (please specify)

* 4. Please indicate which age group (generation) you are?

- [ ] Adults born 1990 and after (Generation Z)
- [ ] Born 1982 – 1989 (Generation Y, Millennial)
- [ ] Born 1965 – 1981 (Generation X)
- [x] Born 1946 -1964 (Baby Boom Generation)
- [ ] Born 1925 -1945 (Silent Generation/ Traditional)

5. Would you identify yourself as:

- [ ] Male
- [x] Female
- [ ] prefer not to say

6. Are you a design educator or design student or both?

- [ ] Design Educator

- [ ] Design Student
- [x] both

7. EDUCATOR - why did you choose to facilitate at your institution? Select all that apply + add other(s). Students please move to the next question.

- [ ] location
- [ ] program
- [x] reputation of the program
- [ ] team of people - other faculty
- [ ] convenience
- [ ] space - design architecture - learning zones
- [ ] technology
- [ ] hands on approach to design
- [ ] the students
- [ ] the philosophy of the institution - mission (of the program)
- [ ] online learning capabilities
- [ ] Other (please specify or specify n/a)

8. STUDENT: Why did you choose to study at your institution? Select all that apply + add other(s).

- [ ] location
- [x] program

- [ ] reputation of the program
- [ ] team of instructors
- [ ] convenience
- [ ] space - design architecture - learning zones
- [ ] hands on approach to design
- [ ] technology
- [ ] online learning capabilities
- [ ] the philosophy of the institution - mission (of the program)
- [ ] Other (please specify or specify n/a)

9. If you are a design educator, please indicate what courses you teach; click all that apply. If you are a student, please respond with n/a.

- [ ] Studio - Hands on course
- [ ] Theory courses – primarily lecture based
- [ ] Computer program courses – AutoCad, Photoshop, 3d digital,
- [x] n/a
- [ ] Other (please specify)

10. Are you an online educator? select yes or no. If you are a

Appendix B - Survey Continued

student, please respond with n/a.

[▼]

* 11. What **type of learner** do you think you are? See below for definitions provided by (Cranton, 2000, p. 39) Please select the one that **MOST suits your learning style. (everyone to respond, please)**

- [ ] "Convergers" - are the active, conceptual experimenters.
- [✓] "Assimilators" - favour the concept approach to things but also learn through observation.
- [ ] "Accommodators" - prefer experience, validation and experimentation.
- [ ] "Divergers" - work best in the tangible experience and through reflection of observation in stages

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

⠿	[▼] Environment	■ n/a
⠿	[▼] Facilitator	■ n/a
⠿	[▼] Technology	■ n/a
⠿	[▼] Type of activities	■ n/a
⠿	[▼] Type of assignments	■ n/a
⠿	[▼] Type of lecture(s)	■ n/a
⠿	[▼] individual based assignments	■ n/a
⠿	[▼] group work	■ n/a

MRP - Creating an Inclusive Learning Environment for Post Secondary Design Education

Motivation of your Design Environment
The following 15-23 questions - **Critique** your space

[▰▰▰▰▰▰▰▰▰▰▱▱▱▱▱]

15. What is design to you?

[   ]

16. What is **Design education** to you?

[   ]

17. Indicate one **item/ influence** in your current learning or teaching **environment** that you find **motivating?**

[   ]

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

[   ]

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

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.

⠿	[▼] Collaborative space	■ N/A
⠿	[▼] Open Studio Space	■ N/A
⠿	[▼] Lab areas with computers	■ N/A
⠿	[▼] Workshop	■ N/A
⠿	[▼] Advanced Technology	■ N/A
⠿	[▼] Online Learning	■ N/A
⠿	[▼] Online Collaboration	■ N/A
⠿	[▼] Other - A	■ N/A
⠿	[▼] Other - B	■ N/A

20. If indicated Other A + B from the previous **question (19)**, please specific other. Otherwise enter n/a

[   ]

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

Select all that apply, add additional + rate / critique
(1 - awesome, 2 - good, 3 - fair, 4 - weak, 5 - n/a)

	Rate / Critique
Collaborative space	[▼]
Open Studio Space	[▼]
Natural light	[▼]
Quality of Resources, Workshops, library,	[▼]
Printing resources	[▼]
Production area - messy zones	[▼]
Photography resources	[▼]
Advanced Technology + connection to technology	[▼]
Online Learning Capabilities	[▼]
Personalization within the studio (for ownership of space)	[▼]
Flexibility within the space with mobile furniture and laptops	[▼]
Inspirational space	[▼]
Deep Surfaces	[▼]
Outdoor learning spaces	[▼]
Location	[▼]

Appendix B - Survey Continued

Staff

Curriculum

Advertising

Natural Light - sorry twice, please select 5-n/a

Storage / Lockers

22. In addition to the list above, are there any features or amenities that are currently missing from your design learning environment, that would improve learning and/ or teaching experiences and approaches.

23. At your institution, how satisfied are you with your learning / teaching environment?

Please explain answer
I am satisfied because...
I am dissatisfied because...

Prev **Next**

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MRP - Creating an Inclusive Learning Environment for Post Secondary Design Education

The **FUTURE of Design** Learning Environments
LAST page - The following questions: 26-35 ....

ask your opinion about ....Inclusive environments, design + the future of learning

24. What does **inclusive** mean to you?

25. What **features** would your **Inclusive design** studio have and why?

26. What would YOU need in a design studio environment to meet **your needs + preferences?**

27. As you are a designer (either an educator or student) - what does **inclusive design mean to you**?

---

28. Please rate where your institution is weak in fostering an inclusive learning environment for each of the following elements. Meaning, what areas need to be improved in your opinion in order to create an INCLUSIVE learning environment.

Select all that apply, add additional + rate the importance of your selection
(**1 - VERY weak**, 2 - weak, **3 - Neutral**, 4 - n/a

	1 - VERY weak	2 - Weak	3 - Neutral	4 - n/a
Location	☐	☐	☐	☐
Physical Facilities – Architecture	☐	☐	☐	☐
Physical Facilities – Interior Spaces / planning	☐	☐	☐	☐
Staff - approaches	☐	☐	☐	☐
Graphics - Signage	☐	☐	☐	☐
Curriculum	☐	☐	☐	☐
Delivery of Curriculum	☐	☐	☐	☐
Advertising	☐	☐	☐	☐
Technology	☐	☐	☐	☐
Online Learning options	☐	☐	☐	☐
Power + Communication	☐	☐	☐	☐
Other "A"	☐	☐	☐	☐
Other "B"	☐	☐	☐	☐
Other "C"	☐	☐	☐	☐

Other (please specify other a, b, c or n/a)

---

29. Do you think online learning delivery can effectively be incorporated into a design **studio course**?

Can you please explain your anwser

30. STUDENT: If you had the choice, would **you take all** your courses online? 100%?

Please explain your response or indicate the percentage in which you would like to take online courses.

31. EDUCATOR: if you had the choice, would you **TEACH all courses online**?

Please explain your response or indicate the percentage in which you would like to teach online courses.

32. Any **final ideas**, thoughts or **requests** about **future learning environments**, specific to design education you would like to express or share?

33. Part 2 of this process is an **quick, fun, CREATIVE, ONLINE charrette**. Would you be **interested** participating in a little creativity charrette? It will document your visual ideas to CHANGE and shape the FUTURE design-learning environment.

Appendix B - Survey Continued

If you wish to participate, please check the box below, provide your and I will email you information about the charrette. Your responses remain confidential.

your email ID below:

34. THANK YOU! **THANK YOU!**

Prev | Done

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See how easy it is to create a survey.

Appendix C - Charrette

Appendix C
Charrette information and consent form

OCAD University
Faculty of Design

205 Richmond Street
Toronto, ON
M5V 1V6 Canada
www.ocadu.ca

Date: March 3, 2016

Creating an Inclusive Learning Environment for Post Secondary Design Education

Principal Student Investigator:	Faculty Supervisor:
Vanessa Vilic Evangelista	Prof. Jutta Treviranus
Master of Design (Inclusive Design) 2nd year	Faculty of Design
OCAD University, Toronto, Canada	OCAD University
Phone: 416 970 9232	jtreviranus@faculty.ocadu.ca
Email: vv14ie@ocadu.student.ca	(416) 977 6000 ext. 3951

INVITATION
Thank you for completing the online survey for my research. You are invited to contribute a charrette to my design study.

CHARRETTE DEFINITION
Wikipedia defines a **charrette** (pronounced [shuh-ret]), often Anglicized to **charette** or **charet** and sometimes called a **design charrette**, is an intense period of design or planning activity.

WHAT'S INVOLVED
Information about the charrette is given on pages 4 and 5 of this document. You could either complete it digitally - or print, complete and scan it - and email it back to me. This could take you 10 minutes to 2 hours to complete, as you would choose. If you wish to participate, then please indicate your consent on Page 3 and send the consent form along with the charrette.

POTENTIAL BENEFITS AND RISKS
There is no direct benefit in participation but you would be contributing to improving the learning environment for future design students through the ideas that you share. There are no known risks in participation.

1

CONFIDENTIALITY
All data that you provide through the survey and the charrette will be stored securely and processed confidentially with access only to myself and my Faculty Supervisor. All data will be disposed of securely after my Major Research Project is completed.

VOLUNTARY PARTICIPATION
Participation in this study is voluntary. Should you decide to withdraw from this study at any time, please email me before April 1, 2016. I will then delete all data associated with you and confirm withdrawal via email. There will be no penalty for withdrawing from the study.

PUBLICATION OF RESULTS
I would be presenting the results from this study in conferences and publishing them in my Masters research project report and in journals. In any of these, I will report data only in aggregated form to ensure participant anonymity. Your name will not be associated with any quotation unless you indicate your consent in the form on page 3 by checking the relevant box.

I will be writing up a summary of the outcome of the project. If you wish to receive a copy, please indicate your preference in the consent form on the next page by checking the relevant box and I will email you a copy.

CONTACT INFORMATION AND ETHICS CLEARANCE
If you have any questions about this study or require further information, please contact me, Vanessa Vilic Evangelista, the Student Researcher, or my Faculty Supervisor, Prof. Jutta Treviranus, using the contact information provided above. This study has been reviewed and approved by the Research Ethics Board at the Ontario College of Art & Design University [2016-09]. If you have any questions or concerns, please contact the Research Ethics Office Manager, Christine Pinesa, via email at cpineda@ocadu.ca. This research also has the approval of the Research Ethics Board of Humber College, ITAL, Toronto, Canada [to fill in approval # after REB approval]. If you have any questions about your rights as a participant in this study or any concerns or complaints, you may contact the Humber College Ethics Review Board Chair, Dr. Paul Griffin, at paul.griffin@humber.ca.

2

PARTICIPANT CONSENT FORM

I agree to participate in the charrette. I have made this decision based on the information I have read in this document. I have had the opportunity to receive any additional details I wanted about the study and understand that I may ask questions in the future. I understand that I may withdraw from the study at any time before April 1, 2016.

Please check the boxes as appropriate:

☐ I consent to participate in the charrette.

☐ I wish to receive a copy of the study feedback article by email.

☐ I wish to be attributed for my contribution to this research study. You may use my name alongside statements and/or quotations and/or work sketches and ideas that I have contributed as part of my responses.

Name: _____

Signature: _____   Date: _____

Thank you for your assistance in this project. Please keep a copy of this form for your records.

3

Creating an Inclusive Learning Environment for Post Secondary Design Education

Charrette

Thank you for your survey response and for consenting to participate in the charrette.

This Charrette explores your own visual ideas based on intense individual thinking in order to CHANGE and shape the FUTURE design learning environment. It is a sketch to extract your visual ideas about your design school. You could complete it digitally - or print, complete and scan it - and email it back to me.

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

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
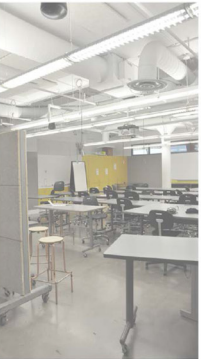
2D THINKING - PLANNING

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)
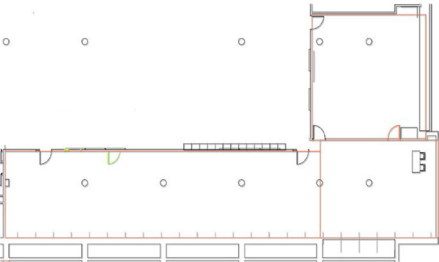
Please email the completed charrette and consent form to vv14ie@student.ocadu.ca.

6

End of charrette

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-consent document to faculty, graduates and students in the design department.

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

Best regards,

Vanessa Vilic Evangelista
Second year student
Master of Design program in Inclusive Design
OCAD University, Toronto, Canada
Phone: 416 970 9232
Email: vv14ie@ocadu.student.ca

Wish list: Story board "thoughts of a user"

Do you have WISHES that you would like to explore in order to CHANGE the FUTURE design learning environment?

WOULD you be interested in being involved on 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.

Appendix E - Information and Consent Workshop Session

Appendix E
Information and Consent Form for Workshop Session

OCAD University	205 Richmond Street
Faculty of Design	Toronto, ON
	M5V 1V6 Canada
	www.ocadu.ca

Date: [Note: *Date will be inserted before issuing the letter*]

Creating an Inclusive Learning Environment for Post Secondary Design Education

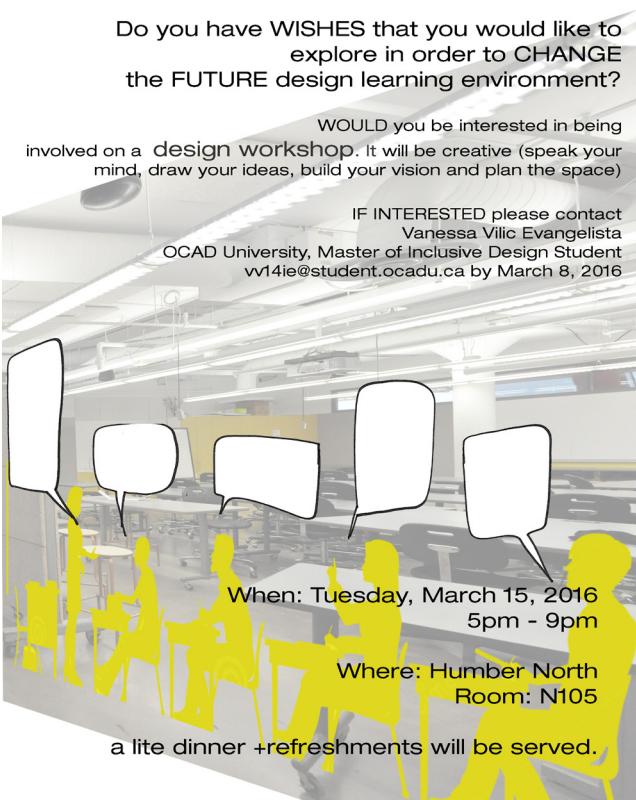| **Principal Student Investigator:**	**Faculty Supervisor:**
Vanessa Vilic Evangelista	Prof. Jutta Treviranus
Second year student	Faculty of Design
Master of Design program in Inclusive Design	OCAD University
OCAD University, Toronto, Canada	jtreviranus@faculty.ocadu.ca
Phone: 416 970 9232	(416) 977 6000 ext. 3951
Email: vv14ie@ocadu.student.ca	
Whatsapp: V.ve	

INVITATION
Thank you for consenting to participate in my research. I invite you to participate in a design workshop in Humber College to be conducted in March 2016.

WHAT'S INVOLVED
The workshop session will be held at *205 Humber College Blvd* on (*date of focus group session*). In this session, I will seek your feedback and opinion on how we can implement changes to our learning environment in design education. The session might take about four hours and would have 10 to 15 participants including you. The session will be audio recorded with the consent of all participants. Photographs will be taken of the design artefacts and of participants, individually or in groups. Please indicate your consent on Page 3 to being recorded as well as being photographed. If you have provided consent to be photographed, you would be included in the shots. We will respect your choices. You will be provided snacks and beverages during the session.

POTENTIAL BENEFITS AND RISKS

in participation. However, confidentiality of what you say cannot be guaranteed because this is a group session and I have no control over what any of you might choose to share with others.

CONFIDENTIALITY
All data that you provide through the workshop will be stored and processed confidentially. I will store your name and email ID separately in a master file along with a code number assigned to you. In the data file, I will use only the code identify your data. I will safely store all workshop data in a secure, password-protected computer. Only myself, as the student researcher, and my Faculty Supervisor will be able to access these details. All data will be disposed of securely after my Major Research Project is completed.

VOLUNTARY PARTICIPATION

Participation in this study is voluntary. If you wish, you may decline to answer any questions in the workshop or refuse to participate in any component of the study. You may also decide to withdraw from this study, in which case, please email me before April 1, 2016. I will then delete all data associated with you and send you an email confirming your withdrawal from the study. There will be no penalty for withdrawing from the study.

PUBLICATION OF RESULTS
I would be presenting the results of this study in my Masters research project report and in academic publications. In any of these, I will report data only in aggregated form to ensure your anonymity. If you would like your name to be associated with quotations from your responses, please indicate your consent in the form on the next page by checking the relevant box.

I will be writing up a summary of the outcome of the project. If you wish to receive a copy, please indicate your preference in the consent form on the next page by checking the relevant box and I will email you a copy.

CONTACT INFORMATION AND ETHICS CLEARANCE
If you have any questions about this study or require further information, please contact me, Vanessa Vilic Evangelista, the Student Researcher, or my Faculty Supervisor, Prof. Jutta Treviranus, using the contact information provided above. This study has been reviewed and approved by the Research Ethics Board at the Ontario College of Art & Design University [2016-09]. If you have any questions or concerns, please contact the Research Ethics Office Manager, Christine Pineda, via email at cpineda@ocadu.ca or phone at 416 977 6000 x 474. This research also has the approval of the Research Ethics Board of Humber College, ITAL, Toronto, Canada [to fill in approval # after REB approval]. If you have any questions about your rights as a participant in this study or any concerns or complaints, you may contact the Humber College Ethics Review Board Chair, Dr. Paul Griffin, at paul.griffin@humber.ca..

<u>PARTICIPANT CONSENT FORM</u>

I agree to participate in the workshop described above. I have made this decision based on the information I have read in the Invitation Letter. I have had the opportunity to receive any additional details I wanted about the study and understand that I may ask questions in the future. I understand that I may withdraw from the study any time before April 1, 2016.

Please check the boxes as appropriate:

☐ I consent to participate in the workshop session.

☐ I consent to the session being audio recorded.

☐ I consent to being a part of photographs taken during the session.

☐ I consent to the photographs that I feature in being used in presentations/publications. I am aware of the possibility of being recognized if any such photograph is included in a presentation/publication.

☐ I wish to receive a copy of the study feedback article by email.

☐ I wish to be attributed for my contribution to this research study. You may use my name alongside statements and/or quotations and/or work sketches and ideas that I have contributed as part of my responses.

Name: _____

Signature: _____   Date: _____

Appendix F: Workshop Session Protocol

[OCAD UNIVERSITY logo]

OCAD University   205 Richmond Street
Faculty of Design   Toronto, ON
                                         M5V 1V6 Canada
                                          www.ocadu.ca

Creating an Inclusive Learning Environment for Post Secondary Design Education

Pre-session (before participants arrive):

• Print the completed Consent Forms received from participants.

• Record participants' numbers on their respective Consent Forms.

• Check the audio recording device.

• Fill in the session information as below.

• Read out and record the session information into audio recorder.

Session information

Date:
Location:
Facilitator:
Session start time:
Session end time:

Workshop session guide

Researcher Introduction:

Hello - My name is Vanessa Vilic Evangelista, a Masters student in Inclusive design at OCAD

Thank you all for volunteering to participate in my research and for being present here this morning. I appreciate your attendance and look forward to having your input. Some of you may have completed the online survey or 'survey + charrette' prior to this workshop. In today's session, we will be building on some of the ideas brought forward by design students + faculty like yourselves. I have summarized the key concepts and today we will be exploring and building on these ideas. How? By design. This focus group has four parts with adequate breaks in between:

1. **Brainstorming – REFLECTION of education space – NOW + FUTURE (30min)**

2. **Priorities + Planning exercise – inclusive wishes (30min)** What would YOU need in a design studio environment to meet your needs + preferences?

3. **Inclusive concept 2d + 3d ideation (30min)** What does inclusive mean to you? What features would your Inclusive design studio have and why?

Before we start, have any of you taken part in a workshop before? There are a few basic ground rules to keep in mind when participating in a group:

1. There are no wrong answers and all ideas are welcome – you are here because we value your opinion whatever that might be. Also, please be respectful of the answers of your fellow participants.

2. If you find a question uncomfortable, you are not obliged to answer it. You are also free to withdraw from this study at any time without negative consequences.

3. This session is being audio-recorded for which you have provided consent. Photographs will be taken of all the design artefacts. If you have provided consent to be photographed, you could be included in the shots individually or in groups. This is important for us to be able to capture all your ideas as a transcript at a later time and analyse the data. Keeping that in mind, we will have a difficult time listening to the recording if everyone is talking at once. Therefore, it is important that one person talks at a time. Please wait until a person finishes speaking before offering your thoughts.

5. Please be aware that confidentiality of what you say cannot be guaranteed when conducting a workshop because this is a group session and I have no control over what any of you might choose to share with others. Also, please try to keep what you hear in this session to yourselves.

1. Brainstorming (40min) Function of space
Q1. Please tell us your first name, some information about yourself, especially why you feel motivated to co-design and be part of designing a future classroom with me. Also tell us one

have been indicated to be the most important. There are 4 post-it notes. On the insert colour post-it note, please select and note your #1 choice as a requirement for the future classroom. On the insert colour post-it note, please select and note your second choice requirement for the future classroom. On the insert colour postit note please select and note your third requirement for the future classroom. On the insert colour final post-it, please feel free to add something that is not on this list.

Once complete, please place your post-it notes on the posters provided on the wall.
Once everyone has completed, we will discuss the results. Could each of you please speak, starting at this end.
[As they talk, relevant comments are captured on post-it notes and stuck on the poster. At the end, a summary is done of their collective comments]

Break

2. Planning exercise (40min)
Q3. As a collaborative group, we are now are going to designate each of the functional components we earlier discussed in the design centre and in the future classroom.

Snacks and beverages

3. Brainstorming (40min) Design of the space – Spatial experience
Q4. In front of you is a list of concepts or ideas of how the spatial design should feel. Again there are 4 post-it notes. On the insert colour post-it note, please select and note your #1 choice as a requirement for the future classroom. On the insert colour post-it note, please select and note your second choice requirement for the future classroom. On the insert colour post-it note please select and note your third requirement for the future classroom. On the final post-it insert colour post-it note, feel free to add something that is not on this list.

Q5. In front of you is a list of sketches how the spatial design should feel. Please select your top three design preferences; indicate #1 for your choice, #2 for your second choice and #3 for your third choice. Please use the tape provided and place them on the posters provided on the wall.
Let's discuss your selections and continue to build on these sketches.
Once everyone has completed this, we will discuss the results. Could each of you please speak, starting at this end?

Break

4. Application of shared knowledge(60min) MODEL building
The final component of today's workshop is to build a mini model individually or in groups of 2 to express one of the ideas discussed today. We will be using design tools familiar to you: xacto knives, foam core, sketch paper, markers glue, pins. Use what ever your wish. For the final hour please quickly build one the ideas discussed today....
        Such as ... or ...

Once complete, please bring your model forward and discuss your approach.

Session Conclusion

This concludes our session. Thank you very much for your participation.
Feel free to call me if you remember any other points you wanted to make or additional models.
When I finish making an online version of this design, I will share the link to it with you by email. Please write to me your thoughts after trying that out, if you wish to.
Let me thank you once again for your participation.

Post-session:

- Turn off audio recorder.
- Take final photos of all work.
- Note session end time.
- Check recording.
- Ensure audio file is transferred to the computer securely and appropriately named.

Notes: