transformation

the changing nature of design education in the 21st century

2015 Design
Educators Conference
Proceedings

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2015 Design Educators Conference Proceedings

This publication is a collection of papers presented at the 2015 Design Educators Conference which took place in Toronto, a collaborative effort between the George Brown College School of Design and the Association of Registered Graphic Designers of Ontario. The third Design Educators Conference gathered renowned national and international design scholars from around the world to explore the transformative nature of design education in the 21st century.

Presenters and participants shared new models of collaboration taking form at the intersection between academia and real world projects. Design practitioners and scholars investigated the following questions:

- How can design curriculum respond to the external pressures of evolving technologies, labour market demands and professional practices?
- How are design schools moving beyond traditional modes of communication to embrace new models of collaboration and holistic education?
- How can design pedagogy offer a nurturing and compassionate experience in light of changing student needs?
- How does design education empower students to create change?
- What are the design practices and techniques that facilitate profoundly transformative experiences?

We would like to thank the wonderful support of our colleagues who were involved in the writing and reviewing process of the papers as well as copy-editing and design. We hope that this work creates a platform of continuous scholarly dialogue within our community of practice.

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why aren't design students more creative

a casestudy of the George Brown College Ideation Bootcamp

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Linea Bering, Master's in Operations and Innovation Management (cand. techn.), Aalborg University in Denmark. Her research focuses on ideation and innovation for companies and organizations and how these entities include ideation and end users in the process of developing and implementing innovative concepts and products. As a consultant she works with networking and events, in an association for academics in the public and private sector.

Abstract. This paper presents original research examining the role of ideation techniques in the innovation process and the impact of teaching ideation skills. The setting for the research is one four-day educational workshop at George Brown College (GBC) in Toronto, Canada, called the Ideation Bootcamp. At this workshop, Graphic Design and Interaction student participants are studied with the aim of measuring the impact of intense ideation training on their creative problem solving skills. The research aims to address the hypothesis: *By teaching ideation theory and techniques during a four-day Bootcamp, consisting of lectures and exercises, the participants will increase their creative thinking skills and in particular their divergent thinking abilities. Furthermore, giving participants a better sense of their creative process will allow for more creative courage and risk taking.*

Through the quantitative method 'Guilford's Alternative Uses Task', participants are tested pre- and post-training in order to assess how their creative thinking skills have developed. Qualitative methods such as observation and analysis of personal journal entries created by the participants, were used to identify how participants actively partake in the ideation process and if and how various techniques impact divergent and convergent thinking.

The research indicates that participants initially tend to have a convergent approach to innovation but this develops through the Bootcamp sessions to become a more divergent approach. The research shows that post-Bootcamp, participants increased their abilities to produce ideas with higher fluency (a larger volume) and flexibility (more categories of ideas).

The case study also examines the participants' understanding of and influence upon a creative climate along with the importance and the challenges of working in teams. The research found that intense ideation training has an immediate and valuable impact on the participants' approach to innovation, their ability to apply appropriate techniques to tasks, their ability to work in diverse teams and to contribute to a positive creative climate.

Keywords. Creativity, design, ideation, innovation

Why Aren't Design Students More Creative? Through several years of teaching, Connie Wansbrough, faculty at the George Brown College School of Design in Toronto, observed students shying away from taking creative risks in their projects. In her class, students could often produce one or two interesting solutions to a design brief, but they struggled to revise their ideas or to adjust them in response to feedback. Most often, when asked for new concepts, students would present multiple variations of one idea, rather than diverse concepts. This observation led to the question, why was it such a struggle for these students to come up with a more varied range of ideas?

Similar observations were made by a visiting staff member, Mie Bjerre Wester, from the Copenhagen School of Design and Technology (KEA). During a design charrette in Winter 2015, Mie observed a multidisciplinary group working on creating an innovative solution to building a community space in a challenging environment. The group came up with only one idea, which was to move the community space away from the initial area. When they were asked about their process, they said that they thought their solution had to be realistic and affordable. The solution was not particularly innovative, nor did it push boundaries. Mie expressed her thoughts on the experience to the researcher, Bering, "To me it was a picture of how little they understood the challenge of actually being creative and brave." (Wester, M.B., personal interview, January 23, 2015).

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From these experiences, Connie and Mie saw a pattern and a problem they stated as: "Why are these students shying away from more bold ideas? After all, this is a design school." Further to their observations, it was apparent that students were taught brainstorming tools, but not how and why to use them. (Wansbrough, C., Wester, M.B, personal interview, January 23, 2015).

In order to research and answer this question a four-day "Ideation Bootcamp" was developed consisting of eight external lectures discussing and practicing divergent and convergent ideation techniques. Linea Bering, guest researcher from Aalborg University, Denmark, conducted the quantitative and qualitative research about the Ideation Bootcamp.

Two Elements of Creative Thinking. American psychologist J.P. Guilford defined two types of creative thinking: divergent and convergent. Divergent thinking is the ability to think of many different solutions to a problem. The solutions of the divergent thinker can span many different categories. This is also known as flexibility. Conversely, convergent thinking is a linear, structured and result-oriented approach. Solutions are mostly feasible and described in greater detail resulting in ideas that are more elaborate. Both approaches to creative thinking are useful and necessary; neither is 'better' than the other. With divergence a multitude of choices are created and with convergence choices are made (Guilford, 1967).

Students of design are expected to be process focused, strong divergent thinkers, stereotypically very creative, and often assumed to be artistically creative. In contrast, students of engineering are generally seen and expected to be very result-oriented, convergent thinkers.

Our research, through observations and participant journal expressions, shows the design participants as very result-oriented and solution-focused, disregarding a divergent process. On a continuum of divergent and convergent approaches, this finding shifts our perception of where the design student lies. Our research looks at one approach to help students develop a more balanced process.

What is Innovation and Ideation? 'Ideation' is rooted in innovation, being amongst the first steps of an innovation process and deeply connected to creativity. The ideation stage is 'a land of possibilities' where ideas should be produced and explored free from judgement and feasibility concerns. In short, ideation is the act of forming an idea and innovation is the grand process of introducing and implementing the new idea (Tidd & Bessant, 2013). It is the intention of the authors, and the purpose of the research, to explore if and how we can activate and liberate this powerful ideation skill with design students.

The Research. The research seeks to answer the question, "*how can teaching ideation techniques contribute to the development of individuals' ideation skills and their approach to innovation?*". This question tests the hypothesis, "By teaching ideation theory and techniques over the course of a four-day Bootcamp, consisting of lectures and exercises, the participants will increase their creative thinking skills and in particular their divergent thinking abilities." This question is the first step in addressing a longer-term goal which questions if having a better sense of one's creative process would allow for more creative courage and risk taking.

Research Process. An Institutional Research grant from GBC allowed for a research component within the Bootcamp enabling the researchers' collection of data and observations of the students' ideation process. The research was designed to collect both qualitative and quantitative data through primary data, consisting of pre- and post-Bootcamp creativity exercises (Guilford Alternative Uses Task), observations, and participants' reflective journals.[1] Secondary data, including demographic/background questionnaires and interviews, were also collected. Students from all disciplines in the Centre for Arts, Design and Information Technology were invited to participate. A small, yet focused and determined group of nine Interaction and Graphic Design students attended the full four-day Bootcamp. Participation in the research aspect of the Bootcamp was optional and anonymous.

Limitations of the Study. The Bootcamp had a lower than desired number of participants. Of the 13 students, only nine students completed the full four days. Therefore, quantitative results are viewed as indicators of how the Bootcamp contributed to the changes in creative thinking skills. Qualitative results are derived from patterns of behaviour or expression in reflective journals and observations. In other words, the research shows themes and patterns that can help identify and hopefully shine light on existing limitations on divergent thinking skills.

How Can We Measure a Student's Ability to Produce Ideas? Creativity is not something that can be easily evaluated. However, the Guilford Alternative Uses Task, allowed the researchers to collect quantitative data specific to ideation and to provide metrics which

[1] The authors would like to thank Nastaran Dadashi, faculty, School of Design George Brown College, for her help designing the research and Guilford Task scoring.

help describe the development of the participants' creativity-relevant skills. The Guilford Alternative Uses Task measures and scores the individual's responses in four categories: originality, fluency, flexibility and elaboration. The task is simple both in terms of resources and direction, making it easy to complete. Without any elaborate instruction, the participant is presented with a commonly used object (e.g. a spoon), and asked to think of and list as many uses for the object as possible. The test has a time constraint, in this case, two minutes. After completion the facilitator scores the test in the four different categories. Through this activity it is possible to measure and isolate divergent and convergent thinking of a participant.

Definitions of Guilford's four categories (Guilford, 1967):

Originality	Scoring the "originality" of ideas by the percentage of times the idea has been mentioned in the group. (divergent)
Fluency	Fluency measures the number of responses. Responses are simply added up without any further evaluation of the idea. (divergent)
Flexibility	Flexibility looks at how many different categories the responses cover. The more categories the individual covers indicates a higher level of flexibility. (divergent)
Elaboration	Elaboration scores each response in terms of the amount of detail per response (mostly convergent)

What was this 'Bootcamp'? The Ideation Bootcamp consisted of eight lecturers each followed by an activity delivered over the course of four days. The workshops were mostly structured as teamwork, with some individual input (e.g. sketching). Teams and roles were new in every workshop as were the workshop tasks. The structure of the workshop was shared with the presenters: the first two days focused more on divergent thinking and the second two on convergent thinking. Presenters were also given a suggested title for the lecture component; however, they had freedom to develop the content and exercises as they wished or as best suited their expertise. The following table shows each lecture, its relative divergence or convergence and the key takeaways from the researchers' observations.

Day	Lecture topic	Divergent/convergent	Observations/key takeaways
1	Design Thinking	Divergent and convergent thinking	- Participants only discussed ideas verbally - Participants quickly attempted to come up with a solution - Participants tried to come up with ideas, as a solution to the presented task, that were based on existing products or services - Participants quickly dismissed ideas that were deemed outside of their knowledge base or technical skills
1	Connect the unconnected	Divergent thinking	- Participants' first instinct was to work independently with no interaction or discussion of possible approaches or ideas - Participants were critical of own work, expressed through comments like "ps. I don't draw well" and "mine is the color of vomit" - Participants glanced at others' work suggesting an interest in what the others produce

2	Disruptive design norms and technological trends	Divergent thinking	- Participants did not acknowledge each other's ideas as 'valid' before they were explained thoroughly - Physical work space influenced the group members' interaction and work. E.g. if all participants stood on the same side of the table, some participants' vision was restricted and their ability to actively interact equally with the other group members became limited - The observed group pursued one solution quickly, before exploring other ideas (convergent behaviour)
2	Wicked problems	Divergent thinking	- Ideas were presented by the designer/creator to the group in a negative/derogatory manner, e.g."This is kind of a stupid idea."However, the researcher observed that the suggested idea actually had substantial potential and originality. The "stupid" idea was often chosen as the direction to pursue by the group - Lack of domain knowledge made it difficult for certain students to contribute to an empathy map - Group members with characteristics of a leader took charge and dominated the ideation process

3	Idea generation and concept development	Convergent and divergent thinking	- Groups used previously introduced ideation techniques on their own initiative
			- Throughout the process, the importance of empathy mapping and asking "why" was evident
			  - Used themselves as potential end-users
			  - Used personas to convey end-user personality and needs
			- The group worked physically closely together, gathered around shared group board
			- Prototyping occurred, but there was a lot of focus on detailing rather than rapid mock-ups

3	Idea selection from a gaming perspective	Divergent thinking	- Participants shifted back to working individually and sketching ideas with great detail - Participants were heard presenting their work with negative comments - A focus on the end product superseded the process of generating multiple ideas - A time limit resulted in the same amount of output but forced more interactivity and quick decision making - The unrealistic/no limits nature of the gaming world ("it's a video game, anything goes") validated any idea no matter how 'crazy' ("no limits is refreshing")
4	Lean innovation	Convergent thinking	- Participants were limited in their participation by their assigned role/task. Students rarely challenged the brief or rearranged/shifted to a different perspective - Solutions were often down to earth and realistic
4	Idea development as a group	Divergent thinking	- Ideation techniques were used successfully - Sketching and drawing was used to communicate ideas - Participants were constrained by the design brief and their assigned role (e.g. the leader) - Ideas produced were 'feasible' and 'down-to-earth' solutions - Participants were stopped and reminded that they were 'allowed' to think outside of the box

What did the Guilford Task Show Us? The Guildford Alternative Uses Task was completed by Bootcamp participants on the first and last day, as a measurement tool to see how the individual participant's creative thinking skills changed. The hypothesis is, that by teaching an individual ideation tools and techniques to manage their creative process, their creative thinking skills will increase. Therefore, the participants completed the activity before any lectures were given (day 1) and after all lectures and workshops were completed at the end of the Ideation Bootcamp (day 4).

The most significant results were within the categories of fluency and elaboration. In fluency, participants, on average, increased from producing 8.6 ideas per person on day one, to producing 13 ideas per person the last day. Conversely, with elaboration, participants had a significant decrease in the amount of detail per idea. Scores dropped from 0.43 to 0.17 between the first and second test. These results suggest that when fluency increases, elaboration decreases which indicates an increase in divergent thinking. The results support the approach of the Bootcamp, which fostered more divergent thinking than convergent thinking.

Furthermore, while the research shows that there was an increase in divergent thinking, the analysis indicates that people with previous experience using ideation techniques are less likely to develop their skills further. The growth in divergent thinking was seen most in people new to the techniques. These indicators are particularly important in developing and constructing future Ideation Bootcamps, suggesting Bootcamps should be customized to different levels of creativity-relevant skills.

Bootcamp Findings

Convergent (result oriented) thinking dominates the participants' approach to innovation in terms of idea selection and prototyping.

Throughout the Bootcamp, the participants' approaches to the workshop tasks were very focused on coming up with a single solution. This suggests that participants were more familiar with a traditional approach to the innovation process (Tidd & Bessant, 2013), rather than a 'Design Thinking' approach. However, the research established that over the course of the four-day Bootcamp, participants developed ideation and innovation skills.

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One technique that proved to be a powerful change agent was empathy mapping. Having an external focus develops awareness of customers, but it also allows new stimuli from outside (Tidd & Bessant, 2013). On occasion, empathy mapping was seen to be a benefit in overcoming a lack of domain knowledge which had proven to be a barrier in some brainstorming.

Another powerful technique, as observed during the Bootcamp and identified in the journals, was the use of the '5-WHYs' technique. This was a real eye-opener for most of the participants and it seemed to dramatically change and challenge their process. An example, written in one journaling session stated:

> On one hand, being result driven can cause a person – myself included – to make huge assumptions about the purpose of their design. Asking the why is key because it means changing your thought process (Journal entry, day 2, participant 24K).

For some individuals, a simple design brief and explanation of the circumstances of the 'problem' might be enough to understand the task at hand. For others, it might take longer to understand the user and problems. In this case, ethnography and field research might be of higher importance and a necessity in order for the students to understand the 'problem' and engage in an ideation process.

Familiarity with and practicing ideation techniques improved participants' ideation process. Practicing ideation techniques in the first two days had a positive effect on the participants' innovation and ideation process. Starting on day 3, participants automatically used brainstorming tools (e.g. empathy mapping, mind-mapping or 100 ideas), as their first step in their innovation process. The ideation process improved since all the participants in the group were familiar with the technique and its purpose. This familiarity seemed to encourage a cultural openness to divergent thinking and a focus on process, rather than results.

Participants introduced their own 'out-of-the-box' ideas in a derogatory manner. On several accounts, the researcher highlighted how participants introduced their own 'out-of-the-box' ideas in a derogatory manner (e.g. "This is kind of a stupid idea" observation, workshop #4, September 1st 2015). This affects the ideation process, since potent ideas may never be put on the table. The cause of this is not examined in this paper but appears to be influenced by the social environment.

A supportive social environment is necessary for ideas to flourish and be harvested (Tidd & Bessant, 2013; Amabile, 1983). It was obvious that participants were nervous about how their ideas would be received by peer participants. As already noted, this was observed during workshop sessions. It was also explicitly expressed in personal journal entries:

> I would say, the biggest fears for me pushing ideas to the edge is, overreaching, peer critique and be viewed as controlling or pushy… I worry I take things further than my abilities (Journal entry, day 3, 11X).

However, the Bootcamp provided an environment encouraging the expression of all ideas, no matter their feasibility:

> I learned that it is important to express our ideas no matter how silly it could be, be open to hear ideas from others and more importantly team work is always important in creative process since 2 heads think better than one and it helps to develop solutions (Journal entry, day 1, participant 15B)

This statement is a good example of how teaching ideation techniques also informs how individuals should work with ideation both individually but also in a team context. Unfortunately, many organizations do not nurture this climate, according to Tidd & Bessant:

> Many organizations have reward systems which reflect the performance of repeated tasks rather than encourage the development of new ideas (Tidd & Bessant, 2013, p. 141).

Teamwork. According to Teresa Amabile, faculty at Harvard Business School and expert in creativity, creative ideas arise in carefully designed teams which include diversity of perspectives and backgrounds, various intellectual and work approaches (Amabile, 1998). Such a creative group must also share excitement, willingness to support teammates and acknowledge their group diversity as an asset rather than a set-back. Bootcamp teams were not carefully constructed, but rather, members were randomly selected to work together. The consequences of this were expressed in both observations and journal entries. Observations showed: "Group members work individually, no interaction or discussion of possible approaches or ideas" (observation, Bootcamp, session #2). This observation could either be a consequence of lacking creativity-relevant skills or perhaps a consequence of a poorly constructed team. This could indicate that the group lacks diversity in work approaches, which results in the group being 'stuck' and struggling with how to approach the task at hand.

The following observation also showed a consequence of randomly constructed teams:

> Group members with leader characteristics take charge and dominate the ideation process (Innovation Process Observations from the Ideation Bootcamp, session #4).

This observation shows how a team which has not been carefully constructed leads to an imbalance in certain team roles. In this case, the presence of too many leaders in one team, results in domination of the ideation process. This may cause other team members to repress their own ideas, because they do not feel a space to express themselves when other members dominate.

Insights. Ideation is a process of generating ideas, a process influenced by an individual's own creativity components: motivation, domain expertise, creativity-relevant skills and the social environment in which the ideation process is completed. In order to actively partake in an ideation process, domain-knowledge can benefit the ideation process, but fresh perspectives also contribute to ideation.

The analysis of the participants' development identified the following:

- Students, who attend a short but intensive educational workshop (e.g. an Ideation Bootcamp), mature in their approach to innovation, moving from a convergent to divergent process.
- Idea fluency and flexibility abilities are increased as a result of teaching and practice.
- Having previous experience with creativity-relevant skills and being skeptical towards new techniques, may limit further development of creative thinking abilities during training on basic techniques.
- After participation in the Ideation Bootcamp, participants became better equipped to partake in group work, due to their familiarization with the organizational factors involved (e.g. teamwork and a creative climate).

Indicators show that the presentation of theory and techniques in the Ideation Bootcamp contributed to the development of participants' approaches to innovation. Ideation techniques such as empathy mapping and '100 ideas' specifically contributed to the development of a more divergent innovation approach, resembling the 'design thinking' ideology of a user-centered and hands-on approach to innovation. By learning these creativity-relevant skills, the individual expands his/her ideation skill-set and thereby becomes better equipped to engage in the ideation process.

By having stronger ideation skills, the individual becomes aware of the process behind a solution, and is therefore pulled out of simply being result-oriented, becoming more focused on exploring ideas as potential solutions.

The research uncovered two main insights on innovation and ideation with regard to the participants. First, these design students tended to be convergent thinkers, looking for results rather than exploring options. Second, creative confidence, or lack thereof, significantly undermined the students' ideation process.

By having stronger ideation skills, the individual becomes aware of the process behind a solution, and is therefore pulled out of simply being result-oriented, becoming more focused on exploring ideas as potential solutions.

The unacknowledged component of creativity, creative confidence, has a major impact in the ideation process. Multiple participants showed fear of judgement during workshops by introducing their idea in a derogatory or deprecating manner to their team members. This hinders the ideation process as the divergent thinking skills are constrained by the fear of ridicule or not being taken seriously by peers. This results in ideas not being vocalized. The authors speculate that this could also be a core reason why the convergent innovation approach is used; linear and feasible ideas are less risky and thereby stand less chance of not being accepted by peers. This raises the questions for further research: Do we as society or academic institutions celebrate/reward result-oriented convergent people to a larger degree than the divergent creatives? And what is the consequence of this favouritism?

Today's emphasis on innovative solutions to meet industry and consumer demands means that it is important to acknowledge how we work innovatively and that creativity and divergence are crucial influencers on that work. However, if in our educational institutions, we a) favour and reward convergent behaviour, b) have a misconception of what professions have a convergent approach (e.g. engineers) and a divergent approach (e.g. designers), and c) do not have the ability to elicit creative confidence, then it is time to question if we are doing a disservice to the students who have chosen this career path. This research has shown that teaching and practicing ideation techniques contributes to the growth of creative skills, which can help to overcome unspoken creative confidence problems and contribute to building stronger creative climates where our young designers can thrive.

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the study of research in design:

a review of some recent contributions to a growing field

Brian Donnelly did his BFA in fine art, became a self-taught graphic designer and art director, and then received his Ph.D. in art and design history in 2005. Brian has been a Professor at Sheridan College since then, but also taught on contract at Queen's, York, and at OCADU. Brian's research area is Canadian graphic design history, and has taught such studies courses as: introductory courses in theory; survey histories of art and design; design research, management, economics, semiotics, and philosophy; and history courses in Canadian graphic design, information design, typography, and graphic design in media. Brian has been published in Journal of Design History, Communication Arts, DA (Devil's Artisan), and in anthologies, notably the forthcoming Graphic Design Reader (Triggs and Atzmon).

Abstract. Some of the content and rationale for teaching research methods as a liberal arts or studies course within a studio-based design program are outlined, together with responses to a number of recent publications on approaches and uses for research in design. Works discussed are by Roger Martin, Marc Stickdorn and Jakob Schneider, Ezio Manzini, Terry Irwin, and Anthony Dunne and Fiona Raby. While methods in design research are becoming increasingly speculative and richly complex, many remain focused on how user-centered research and speculative thinking can enable the design process itself; they thereby remain within the parameters of improving design studio practice. The study concludes that there is more that designers could do to make their political position more explicit and apply design to social need.

Keywords. Design studies, research methods, reviews

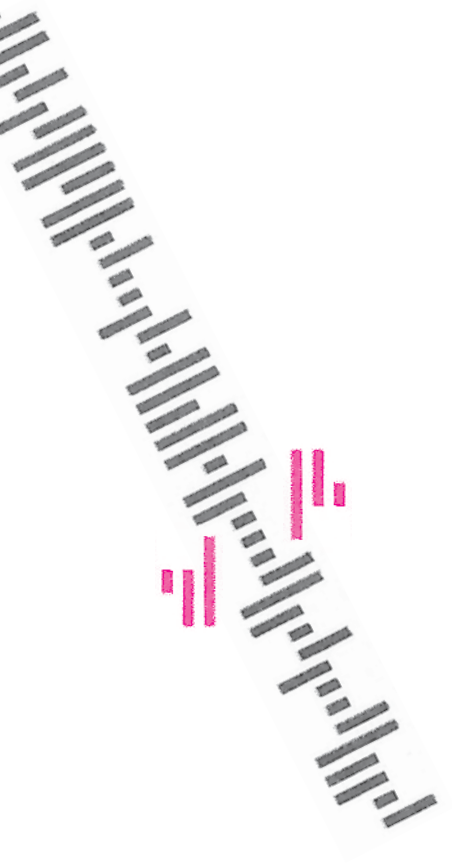
A recent article by Sara McLean Knapp, of OCAD University, discusses the central problem of building graphic design studies in Canada: the lack of dedicated programs or degrees in the field (2015). While Canada is rich in studio programs, post-secondary institutions here have so far lacked the desire and the means to develop and support the distinct disciplinary methods and specializations needed to teach and certify design studies, the "theory, history and context" of the form (p. 22). As with any constructed, invented practice, knowing the past and present state of design is key to its future. In particular, McLean Knapp criticizes the persistence of canonical, conservative history surveys that borrow existing methods from art history, or media and visual culture studies. Her article makes clear that the proper study of design, and especially the study of design in Canada, needs to begin with the expansion of design education in Canada. We need to give emerging designers the intellectual tools to ask important questions, identify work of significance, and define what that means for themselves.

We need to give emerging designers the intellectual tools to ask important questions, identify work of significance, and define what that means for themselves.

My research focus is Canadian graphic design history. I teach in a studio-based graphic design program jointly run by two schools, the York University/Sheridan College Program in Design, where design studies courses make up 24 credits out of the four-year, 120 credit Bachelor of Design degree. These eight required studies courses, which students choose from amongst almost 20 different offerings, are divided between design history (a general graphic design survey and other more focused design histories), critical theory (not always as directly applied to design), professional practice (including a placement), and research methodology.

Easily one of the most controversial and divisive areas within the program has been, perhaps surprisingly, the study of research in design. Simply put, I have had to fight within my program to retain a studies course on the subject of how designers use research to inform their design thinking and creation. This discussion never implied abandoning the study and use of design research; it only involved whether or not it should be the sole province of the studio courses. For me, nothing better suggests the differences, and even the contradictions, between the approaches and goals of design studies and design studio than to ask: Is graphic design an applied art? Or should it also be a liberal art, an object of study and a form of learning engaged in for its own sake, rather than solely as the means to the formation of practicing designers?

The latter, of course, suggests impartially teaching ideas and appreciating designs which instructors might not themselves like or even agree with, simply because they are part of the history and the discourse. It demands a critical approach which might in fact lead design students to decide not to be a designer *per se*. (I have seen this work out extremely well for some, including myself). More likely, though, engaging students in thinking about the role of research in design, outside of the context of learning to successfully *do* it, might just be the best way for them to rethink what design is. That is, thinking through how we think through



design strikes me as an excellent way for students not to abandon design but change it beyond recognition, just as graphic design itself became distinct in large part when printing and typesetting evolved beyond aesthetic traditions and technological limitations inherited from the Renaissance.

Richard Buchanan (1992, p. 5) famously traced design's development from a trade to a profession, to a "*field for technical research*", and on to what he called "a new *liberal art of technological culture*". Research and design studies are places where these changes can and must be put into words but not necessarily into practice. Study is something that necessarily involves stepping away, even if just for a while, from the demanding practice of making designs.

Teaching Design Research. Research in Design is a required course in the York/Sheridan program, covering theory, terminology, and practical methods, although it does not engage students in the applied practice of research methods. They study and write about what research is, whether for design, or into design, or about design; but because they are not practicing to become anthropologists, sociologists or marketing professionals, they do not conduct, for example, live interviews, surveys, or focus tests, or other methods of information gathering from the social sciences or business.

Subject to change, students in the course read D. Norman (n.d.), J. Frascara (1988), and R. Buchanan (1992) on terms and theories in research; B. Laurel (2007), C. Crouch and J. Pearce (2012), J. and K. Visocky O'Grady (2009), and J. Fulton Suri (2005) and B. Moggridge (2007) on problem definition, re-framing and asking the right question; and Z. Ryan (2010), R. Poynor (2009), P. Antonelli (2008, 2011), and A. Dunne and F. Raby (2013) on recent design exhibitions that showcase critical and speculative design thinking. Students draft a research proposal involving a self-defined problem in the suburban landscape, and they move from the empirical to, ideally, the abductive, to imagine something beyond "style options, corporate propaganda, or designer self-promotion" (Dunne & Raby, 2013, p. 33).

In this context, the present paper will look at some current writing and thinking about research in design, part of what makes the subject worth studying and worthy of inclusion in our current programs in graphic design. A number of relatively recent texts take design further into the outside world, engaged in new ways of thinking about research in design, and I will discuss some of the ones I have been engaged with here.

Applied Abduction. Roger Martin is clear about his intentions for *The Design of Business* (2009), especially by chapter three, "Design Thinking", where we learn "How thinking like a designer can create sustainable advantage" (p. 57). Good design is good for business, he argues, and spends a fair bit of the chapter heaping praise on Canadian telecom giant Research in Motion (RIM) and the design of its Blackberry phone. Design makes things work beautifully, as well as making beautiful things. Mobile e-mail was the innovation which drove the company to $11 billion in annual revenues in February 2009. The application of design thinking gets credit, defined in a quote from Tim Brown, of IDEO, as using "the designer's sensibility and methods" (Martin, 2009, p. 62) to meet needs with technology, link it with business strategy, to generate value and market opportunity.

Martin notes that the Blackberry didn't ding or buzz as soon as an e-mail arrived; it would wait until the message had fully loaded before the phone demanded your attention. Messages could be read immediately, in other words, and not leave the user staring at their device, waiting for data. He stresses always asking the right questions, getting the right information, and finding answers "between art and science, between intuition and analytics, and between exploration and exploitation" (p. 62).

A useful digression in this chapter involves abductive reasoning, which jumps to new, speculative knowledge, beyond the old standbys of deductive reason (drawing conclusions from known truths, or from what *is*); and inductive reason (drawing new rules, or what *must be,* from fact and observation). Martin discusses some powerful tools of measurement business can give to designers, such as the R^2 of regression analysis, and also powerful principles we might productively proceed from. But abduction supplies something more: how to apply and work from our research findings to the truly unexpected. He follows American philosopher Charles Sanders Peirce, who argued that necessary, new solutions are never fully provable from past experience or past data. We need to make logical leaps, focusing precisely on those data that don't fit in the present, and by wondering 'what if' (p. 62).

Usually, products fit themselves into what is technologically feasible, from an existing problem or business case. But designers and corporations need abduction to solve paradoxes: how do you fit a keyboard on a phone? The ten-finger keyboard is unusable below a certain size threshold; you have to logically leap to something so small you must turn your wrists, swivel your hands around, and enable your thumbs to do the typing. Being able to type on a small device also enabled the realization of the holy grail, merging voice, data and email (and ultimately photography and video and more) into the smart phone. Design thinking about the phone, coupled with new technologies, business strategies, and market opportunities, seem to have quickly made the telephone almost irrelevant.

Beyond the siloes of our design disciplines comes the strength of looking at the wider picture, to see how objects and experiences, including those from print and digital graphic designs, are always part of a larger, human interaction, a service exchange.

Thinking About Service Design An increasingly important genre of design research is profiled in some detail by M. Stickdorn and J. Schneider (2011) in their book entitled *This is Service Design Thinking*. Beyond the siloes of our design disciplines comes the strength of looking at the wider picture, to see how objects and experiences, including those from print and digital graphic designs, are always part of a larger, human interaction, a service exchange. The thesaurus of best-practices is applied here, calling for design methods to become user-centered, co-creative, sequencing, evidencing, and holistic. This is a huge toolbox, perhaps too detailed and complex for the undergraduate designer, but does impart

a wealth of smart tools for using conversations, leading collective idea generation, creating blueprints, interpersonal interactions and maps through psychology, staging and prototyping, iterative methods and more.

It presents a remarkably well-structured and supported body of knowledge, an experience-based encyclopedia for putting the design process on a firm basis. But I couldn't help recalling the question that arose from past teaching situations, where liberal studies departments were fighting to go beyond their secondary status as service departments to larger, studio-driven programs: merely a means to an end and without degrees of their own. I found myself wondering, 'service design thinking, but in service to what?'

The text dives deep into knowing your user, but does it go beyond being a new-fangled way to generate old-fashioned market research? In *Research and Destroy: Graphic Design as Investigation*, Daniel van der Velden (2011) uses the real-life example of whaling ships illegally harvesting whales, with the word *Research* on the side of their boats in giant letters (p. 16). The metaphor is meant to sting: When we build all this research into the front end of our design work, are we also asking the right questions of our clients? Or is it a cover for business as usual?

A New Economic Model. E. Manzini (2015), in his book *Design, When Everybody Designs* takes up this challenge, with the clear intention of using design for social change, as a tool to achieve sustainability (or at the very least, leave whales in the sea). He wants professional designers to engage with and "support individual and collective projects" to redesign the world (and he says so right on p. 1). A "great transition" is underway, he notes, based on understanding the limits of the planet, and which is already supplanting the paradigm of limitless growth. Presumably, as he suggests, this will require a change as big as the move from feudalism to industrial capitalism, a revolutionary process creating sustainable, survivable, new ways of living.

Manzini foresees this arising like the small, active islands that mark the rise of a new continent. Local products, services and experiences will find themselves linked in potentially unlimited interfaces, as nodes in powerful, cooperative and distributed systems (Manzini, 2015, p. 4). More than the star designer who solves social problems individually, "the whole of society should be seen as a huge laboratory of social experiment" (p. 5). At one point he sums it up neatly (and apparently, unironically) by suggesting we need to understand "why sustainability is hotter than electric underpants".

Manzini poses the need for "answers that change the questions themselves" (p. 14), like mobile devices so powerful and multi-purpose the idea of building a better 'telephone' becomes vestigial. But isn't that the definition of science? At its best, doesn't science constantly experiment out of dissatisfaction with old truths, and ruthlessly change its research questions—and even entire paradigms—precisely because new findings don't fit with previous explanations?

We are already building, he suggests, "a brand-new production and economic model" (p. 11), one which (in one example) similarly ensures the elderly are engaged in meeting their own needs, and not just passive clients for ever more invasive professional services. Manzini also

cites other case studies: Design for Social Innovation and Sustainability (DESIS), a network of laboratories for social innovation sited in design schools; another case study is of a city/organic farm exchange in China, which allows fair and direct trade from producer to consumer. Design, he argues, is really about building cooperative links, the creative recombination of existing assets, where everything is part of a distributed system: energy, water, food, manufacturing, in smaller, more local economies (DESIS Network, 2016).

But again, I found myself making abductive leaps. Now, I am completely in sympathy with these goals, and even with such disciplinary-specific benefits as taking graphic design, and design generally, far beyond its craft basis. However, this is emphatically not that clichéd point in the academic paper where the author breaks you from your dream to suggest that, while these are lovely ideas, of course they can't ever really happen. I think it is self-evident that, very simply, they *must* happen; that, as one Dutch design book (Bruinsma et al., 1999) entitled *De Wereld Moe(S)T Anders: Grafisch Ontwerpen En Idealism/The World Must Change: Graphic Design and Idealism* put it, and economic democracy is precisely what is necessary to build an economy that serves *demos*, the people. But can a town and country co-op, or a field to table movement, be actually or even partly outside the existing economic and productive model?

The clear desire to redesign a dysfunctional and unsustainable world system of production and distribution is so necessary as to be, by definition, beyond rational choice or cynical doubt.

So, while Manzini does recognize the economic nature of design challenges, I find he falls some way short of a full appreciation of the political nature of economic challenges. The clear desire to redesign a dysfunctional and unsustainable world system of production and distribution is so necessary as to be, by definition, beyond rational choice or cynical doubt. In the absence of an adequate political understanding of the problem, design for social change simply seems to be moving into the void left by neo-liberalism, with its narrow and increasingly exclusive focus on the global market and profit-driven solutions, and active opposition to social, collective projects in design or anywhere else.

And anyway, do we, or could we ever, live the fully human lives we choose in a purely local economy or society? What is truly produced locally, which for me means in Oakville, Ontario? We live in a world, for better or worse, of Ikea furniture, fresh fruit in February, solar panels, instant digital books, doctorates in studio-based disciplines, excellent Korean cars, and so on, *etc.*, not because of rampant consumerism and mercenary capitalism, frankly, but in spite of it: because design retains the idealistic impulse to make things better. Would that people and designers truly had the collective means to write their own (electric?) design briefs.

Transition Design. One proposal for learning how is supplied by T. Irwin, in her article "Transition Design: A Proposal for a New Area of Design Practice, Study, and Research" (2015). Given the world's "wicked problems" (Buchanan, 1992), the environment, energy, inequality

and injustice, if design is to lead the change to a sustainable future it must engage in the "reconception of entire lifestyles" (p. 229). This meta-discourse is a plea for new rubric and new approach, Transition Design, part of a higher level of design education. She outlines a paradigm shift, in effect recapitulating the arc of the three approaches I have just touched on above: moving from Design Thinking (with its promise of business advantage), to Service Design (widening design's research methods to include multiple stakeholders and ecologies of experience), to Design for Social Innovation (design in its larger, economic and political context), and finally to Transition Design.

Being a graphic designer, Irwin effectively uses diagrams, and the first one shows the discipline scaling up such that time, engagement and level of social change all increase. This is a map or a plan for long term transitions, nothing less than planetary redesign: local and place-based but immersed in (economic) global links and (political) feedback circuits. The following diagram, Figure 2, uses the word 'new' no less than 12 times, and 'transition' six times. It invokes consideration of design's "mindset, posture, and temperament," and even calls for "optimistic grumpiness," which I quite like (Irwin, 2015, p. 232).

These are somewhat unusual terms for design writing, in an unusually sweeping and idealistic article even given the current discourse about design research and its role in the current state of the world. Indeed, it is hard to do justice to a futurist blast which calls for existing professional programs, rooted as they are in visual aesthetics, to achieve a "deep grounding in future-oriented visions," using speculative, transdisciplinary processes, to engage wicked problems. It is a short manifesto but bursting with terms and ideas—indeed, fully half the article is notes and bibliography, clearly demonstrating that the discourse she wants to summit is large and rapidly growing. And how essential research has become simply to the definition of what design is, let alone what it must become.

How can design intervene and direct us to the preferable?

Future Speculation. Finally, consider Dunne and Raby's latest book (2013), *Speculative Everything*. I had the pleasure of hearing them speak at the Knotty Objects event hosted by MIT's Media Lab in July 2015, in Boston. They present what I want to call, yes, optimistic grouchiness, a wonderfully clear eyed, humorous mindset, posture and temperament. It is an attitude suited to, or maybe the perfect antidote against, the reactionary politics of TINA, There Is No Alternative (beyond capitalism, *i.e.*).

How can design intervene and direct us to the preferable? William Morris, they note, lived his professional and political lives in opposition to capitalist industrial production, and not only for the look of its shoddy products and mawkish marketing. Problem solving, craft skills, tend to be defined, or confined, by medium and disciplinary silo (*e.g.* graphic/object/fashion/architectural design); their vision moves to "how things could be" (Dunne & Raby, 2013, p. 2), by necessity going beyond the currently possible. They do not pretend to predict the future, but foresee it needing both fine art and radical social science (p. 3).

Dunne and Raby prioritize open discussion, debate, and desire, and begin their reimagining of the everyday through a quick survey of the unreal (in the good sense) utopian designers and collectives from the height of the great postwar boom, in the 1960s and '70s: Archigram,

Archizoom, Ant Farm, Victor Papanek. Then, calamity: "During the 80s, design became hyper-commercialized" (p. 6). Design lost its role as a parallel channel for the extreme, imaginative, and inspiring, becoming R&D and corporate brainstorming on a global scale. Even if "the dreams of the 20th Century were unsustainable" (p. 8), they were at least dreams and not technocratic solutions. Concepts drive our ideas, solutions, research process and proposals. Such things need to be large, bigger even than the global system of design and production.

Like Irwin, Dunne and Raby survey the growing number of rubrics alone for this process: conceptual design, critical design, design futures, radical design, adversarial design, and so on. Perhaps they have become known for extraordinary and even unrealizable design because words are starting to fail us. The book is wide-ranging but unfailingly edgy, sampling things such as: Metahaven's *Facestate,* a form of gallery installation as political critique, design that appropriates the white rooms of the art world (p. 15); and a well-known student piece by Thomas Thwaite, *Toaster Project,* which takes reverse engineering to a ridiculous and literal extreme. Thwaite built a toaster from scratch, only to learn that even this ubiquitous, cheap, and seemingly simple appliance actually has 404 parts. So he went to the mines, to find mica, plastics, copper, iron and nickel. The result was a distinctively deformed if "almost working toaster" (p. 82). Or Droog's Bottoms Up Doorbell concept (Droog Company Website), where a visible hammer strikes a wine glass and announces your arrival by calling for a toast.

Dunne and Raby also include fashion, furniture, interactive restaurants performed as local picnics, what have you. They follow their unique and difficult design problems not to research quick solutions, but wherever the objects, materials, functions and concepts want to lead. This is research as useless but priceless speculation, speculative everything; it is the sort of self-examination or meta-thinking about objects that gives you, say, a urinal lying on its back in an art gallery.

Given this changing dialogue around design process and the role of research, how are we to judge success, especially in the context of undergraduate or even Master's level education in our field? Like language, where words only work within the system that gives them meaning, design needs to take the wide view of, well, everything, in order to really see itself. In Dunne's and Raby's words: "we are optimistic… to do this, we need more pluralism in design, not of style, but of ideology and values" (p. 9). I don't believe we can sustain design's role nor see its future solely as handmaiden to commercial profit. But we can't envision a wider social role and method for design without a clear, stated politics, and accepting that might be the best starting point for our ongoing redesign of design education.

Looking Ahead. These books all raise important questions, which is why I teach from many of them even if I don't fully endorse any of them. These are all, in fact, manifestoes for political movements, but largely by proxy. Design is not neutral, and it needs to be explicit about its politics. If, as T. Piketty (2014) argues in *Capital in the 21st Century*, the system of markets and capital necessarily produces growing inequality, makes available fewer resources for change, and erects ever greater resistance to visions of real change, then research in design is asking a lot of the wrong questions.

Do all of these ever more sophisticated design and research methods create more than minor adjustments, new products and services, clever apps and gadgets? Or might they also come to include the methods, methodologies (the study of methods), and motivation to analyze and address *systemic* issues and inequities? Research in design, and design studies generally, is one place, and possibly the best place, to try to work this out.

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facing change:

online teaching in a design context

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Abstract. Although distance education has a long history, current communication technologies have made it an increasingly practical, common, and promoted form of educational deliver. Caution is needed though, because economic and other forces may lead to the employment of distance education for reasons other than trying to achieve an optimal pedagogical outcome. This paper looks at the recent history as well as the advantages and disadvantages of online courses, both synchronous and asynchronous, in post-secondary education in general and design education in particular. It notes issues of intellectual property, developer contracts, and how the online model of teaching is implicated in the economic relationship between faculty and institution interests, and considers the potential strengths and weaknesses of online education for design and other students, and how economic and power relations influence the decision to implement online courses.

Keywords. Design education, educational economics, online learning

Introduction. The idea of distance education has been around since the 1800s. Its first iteration was correspondence courses, which lasted well into the second half of the 20th Century, and later by radio, and later yet, using television. The School of the Air in Australia famously held classes using short-wave two-way radio in the 1950s until the 2000s, as did educators in other sparsely populated areas in the world, including Canada. Using the media of radio and television are also examples of technology-enhanced learning, as is the use of microphones and projection in large. However, it is the technologies of the Internet that made distance education widely seem a practical alternative to live education. Many schools have embraced online education, and much effort has been spent both promoting it and working on making online education as good as possible. This is true across the educational spectrum, including in undergraduate graphic design programs.

On-line vs. in-class: making a case. Innovation in learning. More accessible courses. Better learning outcomes. Facilitation of learning in cases where it might be difficult otherwise. These are the laudable arguments that are widely used to support the implementation of online courses. And there is no doubt that online education, or distance learning, whether as complete courses, or part of a hybrid or blended model, has its place. However, it is important to consider the strengths and weaknesses of different learning media.

Success or failure depend on the effectiveness of the use of the available situation.

In any educational context or medium, success or failure depend on the effectiveness of the use of the available situation. Chittering and Gamson (1991) propose seven principles of good practice in undergraduate education. They suggest that good practice:

1. Encourages contact between students and faculty
2. Develops reciprocity and cooperation among students.
3. Encourages active learning.
4. Gives prompt feedback.
5. Emphasizes time on task.
6. Communicates high expectations.
7. Respects diverse talents and ways of learning

Online communication can facilitate some of these, but is likely to hinder others. On the one hand, feedback and teacher/student communication can thrive, if classes are not large, and for some students, the ability to pace themselves and have alternate paths for communication of information and expectations can be very advantageous, particularly in an asynchronous course. This can be particularly true for students who are English-language learners. On the other hand, contact mediated by the computer has less bandwidth than personal contact; the body language, verbal interchange, and the common community environment are missing. Active learning, in the form of writing or other assignments is possible online, but is one of the great strengths of the community of the studio, when students are learning together, from their own actions, but also directly from the experiences of others, and in critiques, when spontaneous reactions are experienced not only in words, but in the physical reaction of students.

Time on task, or time management, can be a weakness of online teaching. Students in contact with each other often remind each other of deadlines, and encourage each other to meet them. Communicating high expectations is likely to be more effective in person. The last of these points is where online media are likely to be strongest: if offered with other formats, they may allow students a path to learning. Isolated students, busy students, students who are learning English, all may find online formats a valuable alternative.

there is a lot of promotion of online learning, but it is seldom analyzed in comparison to more traditional methods, and it is worth asking why.

Certainly efforts have been taken to make online teaching effective, with books being written for example by Athabasca University in Edmonton, that examine and define best practices for online education (Anderson & Elloumi, 2004), and it would be very difficult to disagree with the idea that online education is much better than no education at all.

It is important to keep in mind that the possible formats for online education are much more variable than the pure classroom model. Asynchronous or synchronous? Part of a blended/hybrid course? And if this is the case, is it a flipped course? Asynchronous classes, in which the students watch and engage with the material at times of their own choosing make for maximum flexibility, but offer relatively little in the way of personal engagement, though discussion groups are often established to mitigate this. Synchronous teaching (i.e., classes where the students are physically distant from the classroom, but are virtually present by the use of Adobe connect, Go to meeting, or similar software) enables a higher degree of engagement, but a lower degree of flexibility (though a recording of synchronous meetings can be useful.) These are important considerations, yet online education is sometimes treated as if it is a single method by those interested in promoting it.

In an overview of perceptions of online and in-class teaching, Ya Ni concludes that proponents of online learning suggest that it can eliminate barriers, increase convenience and flexibility, allow greater currency of material, and allow for customized learning, and better feedback over a traditional face-to-face experience, while opponents are concerned that an online learning environment may leave students isolated, make students confused, leave students frustrated, reduce interest and learning effectiveness (2008).

This balanced view is found relatively rarely; there is a lot of promotion of online learning, but it is seldom analyzed in comparison to more traditional methods, and it is worth asking why. If we divide the major stakeholders of education into interest groups, there are three major groups directly affected: Educational management, faculty, and students. There are, of course other groups, large ones, for which education is part of a larger view influenced by economics, politics, such as general society (represented in Ontario by the Ministry of Training, Colleges and Universities, or MTCU), and small ones, such as the administrative staff who are often hired to facilitate and prepare the introduction of online courses.

An important question should be, as educational policymakers, institutional managers, faculties, and students would no doubt agree, is how effective is online education compared to traditional forms? "Effective," of course, is a word that needs examination. Is effective economically efficient? Or does it mean the most efficient means of meeting learning outcomes? Or does it mean that education leads to successful employment in a field of study? There is no shortage of studies that find that online education is as effective as in-class learning. However, these studies are often financed by those who have an interest in promoting online education for financial and management reasons. An example is the Online Consortium, whose mission "is devoted to advancing quality online learning by providing professional development." The consortium is non-profit, but whose funders include commercial educational interests Pearson, Tyton Partners, and StudyPortals, all of which have interests in promoting online education (Allen & Seaman, 2015). Few are financed or run by faculty or student groups. (The OCUFA survey referred to herein is an exception.)

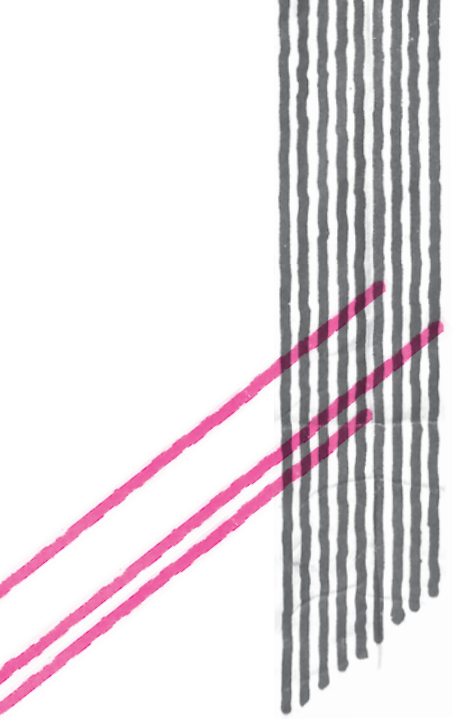
Consequently, it is hard to get an unbiased understanding of how well online education serves the interests of students. Is it a means to provide a better education to a greater number of students?

Academic administrators tend to be in favour of online teaching (Allen & Seaman, 2015). So are agencies, such as Ontario Online Learning Consortium and OntarioLearn who are both funded by the MTCU whose mandate is to expand the delivery of online courses. When we do hear from faculty and students themselves, it is often informally, or in reaction to course evaluations, rather than as a coherent point of view. To further distort perceptions of online teaching the (often contractual) staff hired to help plan and prepare materials for online teaching depend on the perceived value and success of the implementation of online teaching for their employment.

The drive to increase the online percentage of education encounters disapproval, if not actual resistance, from faculty. A 2015 national survey of online education, finds that "only 28.0% of chief academic officers say that their faculty members accept the 'value and legitimacy of online education,' a rate substantially the same as it was in 2003" (Allen & Seaman, 2015).

This is not to deny the value of online formats, which can enhance education, and provide a means to make education accessible to those who might otherwise not be able to pursue it. But it does suggest a cautious approach. If all you are hearing about is the benefits and superiority of online learning, you might ask yourself where the other side of the argument is. There is little economic advantage in presenting the drawbacks of online education. There is much economic advantage to funders of education in promoting online education as an alternative.

Consequently, it is hard to get an unbiased understanding of how well online education serves the interests of students. Is it a means to provide a better education to a greater number of students? Or is it a continuation of the Taylorist approach that works to make individual ability less important and valuable? There are indications that online education



is part of the corporatization of higher education that increasingly focuses on cost-cutting, on growth in the number of consumer-students, and attention to a profit-and-loss mentality that leads to larger classes, and to an increasing reliance on flexible and impermanent contract labour (Petrina, 2005).

Supplanting in-person classes with online courses serves the management drive to save money, to have less reliance on individual teaching personnel, and recruit an increasing number of students. Online teaching holds the promise of scalability; more students can be included in a class without hiring primary professors, instead replacing them with teaching assistants or relatively inexpensive sessional faculty. In a classic vicious circle, the focus on increasing numbers of graduates means that the educational institutions have an increasingly large and desperate pool of academic labour willing to accept ever-worsening pay and conditions. The importance of the individual becomes less important, as cheaper sessional instructors or teaching assistants can 'deliver' the material. It is not difficult to find examples that show that faculty are against the expansion of online teaching (Allen & Seaman, 2015). This does not mean that faculty do not see the value of online methods in teaching. In 1999 a study of 70 teachers who had taught the same course both face to face and on online, compared their perceptions of each teaching format. When teachers were asked to rank how they would prefer to teach, the majority would have preferred a combination of both face-to-face and online instruction, followed by face to face. Teaching completely online was the least preferred approach.

Advantages and disadvantages of on-line education in graphic design. Engaging faculty members to develop and deliver online courses often takes place outside of existing labour agreement, meaning that development contracts define the rights, roles, and responsibilities of each party. These development contracts are often largely outside faculty agent/management bargaining processes. What is considered reasonable compensation for preparing an online class varies widely. And since such contracts are for preparation of materials, not for a period of time, in most cases, once a faculty member, in the role of 'developer' has planned, prepared, and delivered course materials, they have no right to teach or control course materials. This may not be a problem for those with job security, but contract or sessional faculty may be paid for preparing course materials and then not be rehired to teach it.

The affordances of online education can make the difference between access or lack of access to those who are isolated by location or other factors, to those for whom the language of instruction is challenging, and for those whose life circumstances prevent them from attending school regularly or at all. So distance education technology is an excellent resource, making educational experiences available to those who might otherwise find education inaccessible. *Enhancing* educational offerings with communication technologies seems unequivocally positive. *Replacing* live classes with online content and communication seems likely to impoverish the educational experience.

While the benefit of making educational content available online is clear, it is hard not to wonder if the advantages of exclusively online education are in some way accommodating, and thus removing pressure to change, other problems that characterize the socioeconomic environment. The problems of attending live classes can in some cases be attributed to real

estate prices that force lower income students away from school locations, or a lack of transportation infrastructure and services. In other cases, the appreciation of students of online education may be associated with the lack of affordable daycare. Also, and often simultaneously, online education may be needed because of low wages that necessitate individuals holding several jobs simultaneously.

It is also important to consider who the student is. Young students, those in their late teens or early twenties, are social beings. They value what they consider the university experience, and they tend to have time management problems that may be mitigated by physical proximity to other students with the same deadlines. As one writer points out "maturity, high motivation levels, and self-discipline have been shown to be necessary characteristics of successful, satisfied students (Sampson, 2003).

The ability to see and hear another's reaction to one's presentation provides different information than reading the reaction or critique that is written by a classmate (who perhaps has never met the student) on a discussion forum.

Criticisms of online education are not new. They have been made convincingly and frequently by writers and commentators, notably by the late David Noble, in his *Digital Diploma Mills* of 2001; the early 2000s were a time of considerable focus on this area. More recent years have shown less argument from the faculty side against this corporatization and 'technologicalization', and a generally wider acceptance (or perhaps resignation): "There is one ray of hope for academic leaders planning on growing online programs: the proportion of leaders who rate the issue of faculty acceptance (or lack thereof) as a significant barrier has decreased somewhat over time" (Allen & Seaman, 2015, p. 22).

Whatever the benefits and drawbacks of online teaching, the case of teaching design, particularly studio subjects, requires even more caution than does the teaching of more traditional lecture subjects.

Studio education depends even more strongly on the interaction between the student and peers as well as the instructor than lecture classes do. This applies to the skills of critical thinking, to presentation skills, and to the experience of critique of art and, particularly, design. Often, just as the creative process often involves unarticulated processes, the reaction of the viewer also may not be articulated. The ability to see and hear another's reaction to one's presentation provides different information than reading the reaction or critique that is written by a classmate (who perhaps has never met the student) on a discussion forum. As educational theorists Chickering and Gamson wrote in 1987, "Learning is not a spectator sport… [Students] must talk about what they are learning, write about it, relate it to past experiences, apply it to their daily lives. They must make what they learn part of themselves" (p. 64).

The experience of creating design in practice is essentially a collaborative one. It may be explicitly collaborative, as designers often work in studios, where the critique and contribution of others is a central part of the design process. In other cases, a designer may work alone, but will still be involved in dialogues with and presentations to clients and potential audiences. These practice-related and disciplinary experiences, which almost invariably involve personal proximity, cannot be duplicated in an online course.

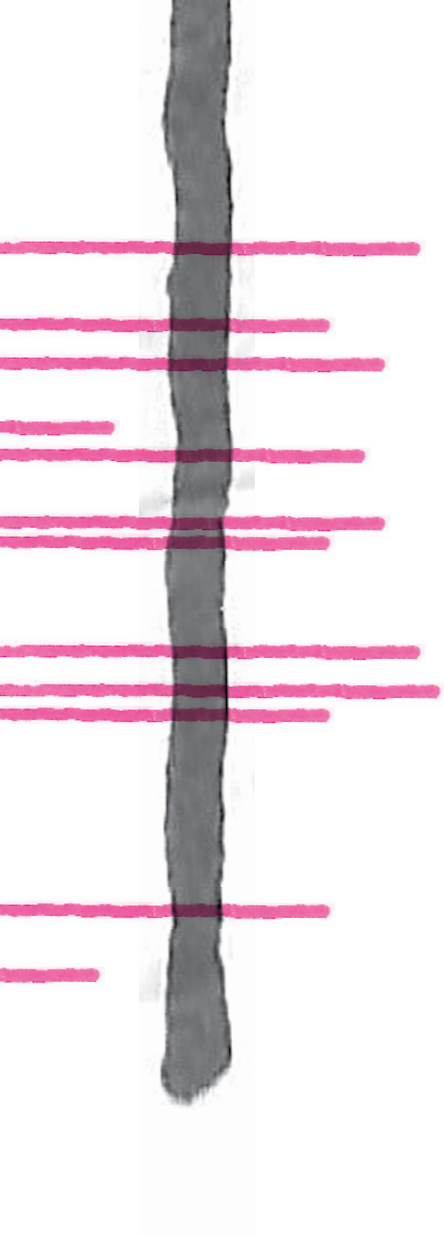
It is also possible that many graphic design students may be particularly poorly suited to online formats. B. Cramond discussed this in "The Coincidence of Attention Deficit Hyperactivity Disorder and Creativity" (1995). The kind of lateral thinking that characterizes much of creative and original thinking is associated with the difficulty in self-discipline and self-regulation that are necessary for successful outcomes in an online course. According to Cramond, online delivery of course content may be useful, whether for those who cannot attend classes for various reasons, or for those who for language or other reasons, can benefit from recorded lectures or critiques, but for graphic design students, who often have different styles of learning (1995) the greatest number of ways to learn is preferable. The addition of online means is welcome, but as a replacement for in-person classes, it is worse, as there are more channels for learning in a studio class than there are in an online-only version.

Like the history of distance learning generally, the history of art education at a distance is also lengthy. Correspondence art schools started in the USA in the early 20th Century. It is not clear how effective this was; there are no statistics available for the success or lack thereof of graduates of these schools. Significantly (with particular reference to my earlier mention of student feedback to an online course I taught), they were considerably cheaper than physical art schools, charging from a quarter to a third of the annual tuition. (Heller, 2008) Also significantly, they tended to focus on commercial artwork, an area in which collaboration and cooperation is less germane that it is in graphic design. But it is a reminder that distance education has a place, and sometimes is the only option for potential students.

We do not ask students what we should teach them; a basic premise of education is that the educators have knowledge not only of the subject, but how to teach and what is important to know. But asking them how we should teach them is a much more reasonable question. Different students have different learning styles, and the more options we can offer them, the better. So adding online options to traditional classroom or studio methods is likely to be beneficial. Replacing in-person classes with online methods is less likely to be so.

In teaching graphic design, it seems doubtful that the personal contact between students as they comment on each other's work and exchange ideas can be satisfactorily replaced with electronically mediated contact. Similarly, the interpersonal contact between students and teacher in discussions of work, requiring a nuanced balance of encouragement, critique, suggestions, and discussion, will also be difficult to replicate on a screen.

Conclusion. In conclusion, I suggest that as teachers of graphic design, we have to be cautious, even sceptical about the claims that proponents of online teaching make. This is not to deny the value of online formats. But it does suggest a cautious approach. If all you are hearing about is the benefits and superiority of online learning, you might ask yourself



in whose interest this argument lies. There is little economic advantage in presenting the drawbacks of online education. There is much economic advantage in promoting online education as an alternative.

Governments and school administrations benefit from the promotion of online learning as a way of reducing costs. A government of Ontario document states: "Efficiency is central to the financial management decisions at Ontario universities, as we educate more students with less provincial funding per student than universities in any other province," and makes several references to online learning as a part of this efficiency. (Government of Ontario, 2015). However, online education does offer the opportunity for education to those to whom it might otherwise be impractical or unavailable.

The use of online technologies is best when it forms part of an approach to education that focuses on the most effective delivery of education. The form that such online teaching takes must be carefully thought out and evaluated. The theories and principles that are promulgated by institutions that will benefit financially and organizationally form such changes must be tested in the laboratory of the classroom. To ensure that the advantages of modern communication technologies are not to be outweighed by the disadvantages, given the characteristics of the subjects being taught and the students being taught them, we as graphic design teachers must not be persuaded to adopt formats and methods unless they clearly contribute to the education of our students.

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conceptual constraints and the graphic design process:

an investigation into creativity and how self-imposed conceptual constraints can affect banal information

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Abstract. The discipline of graphic design has an important role to play in developing how information is conveyed and consumed. This paper focuses on uncovering how including self-imposed conceptual constraints in the design process can encourage creativity. Using weather data, I explored how such constraints can be used to liberate banal information from its structured, restrictive and mass-consumed context, and ultimately participate in developing alternative meanings.

Thus, through an exploratory approach to design practice, this investigation examined how conceptual constraints under three "creative operations" (combination, analogy, mutation) structured my work to allow for richer visual interpretations of banal information.

Furthermore, by juxtaposing conceptual constraints with the "creative operations," I generated different visual propositions in order to disrupt routine processes in design and promote new and different designs. This research demonstrated how rules and conceptual constraints are viewed inside the context of graphic design. It also demonstrated how this framework for exploration can contribute to my own practice by allowing me to develop alternative design processes, and, ultimately, richer visual propositions for a given design problem.

Introduction. Access to news and information is more convenient than ever. People can easily obtain regular updates on relevant data they want and need. Some of this information is vital because it allows specialized groups or individuals to make key decisions that can have a major impact on the lives of others. For example, according to current or predicted weather conditions, air traffic controllers may decide to delay the departure of an aircraft, which could potentially avoid an incident. Or, on a less impactful level, weather data may influence what an individual chooses to wear on a particularly cold day.

However, weather data is often perceived as banal, uninspiring and dull despite its importance in everyday life. This perception is driven by two factors :

- The overabundance of available data (Nealon, 2013,111)
- The lack of written expressiveness (i.e. uninteresting content) (Goldsmith, 2005)

Despite the limitations posed by these factors, the discipline of graphic design has an important role to play in shaping how banal information is conveyed and consumed. This investigation explored the viability of reinventing conventions of representation used in the display of weather information, thus challenging how banal information is commonly viewed.

This research also examined how conceptual constraints may be satisfied under three "creative operations," in order to allow for richer visual interpretations of banal information, more specifically weather data, and to empower readers to develop alternative meanings from the information presented.

...the discipline of graphic design has an important role to play in shaping how banal information is conveyed and consumed.

Research statement. Banal information, such as weather data, is typically displayed via a neutral visual structure that sacrifices originality and creativity for speed and ease of reading. As a result, the way in which people interpret and perceive banal information can be compromised. The content is not the root cause of this perception, but rather, it is the uncreative, un-engaging and uninteresting manner in which it is presented.

This document therefore focuses on how self-imposed conceptual constraints could be included within the design process in order to encourage creativity and to liberate weather data from its structured, restrictive and mass consumed context, ultimately allowing readers to develop alternative meanings from its interpretation.

The approach used in the development of this document promoted transparency with respect to integrating visual propositions within my design process. This was accomplished via specific "creative operations," which unleashed a new visual experience, and opened new horizons in my work. Ultimately, my goal was to change the perception of how rules and constraints may be viewed inside the context of graphic design. I endeavored to demonstrate that constraints are not necessarily restrictive and limiting. Rather, if used effectively, conceptual constraints can enable new levels of freedom. This is especially the case when such constraints (i.e. rules)

are voluntarily designed, conceptualized and implemented, rather than being forcibly imposed. In such instances, they can become a source of inspiration, and encourage critical thinking and creativity.

My investigation also aimed to advance the role and perception of professional graphic designers. That is, instead of viewing graphic designers as exclusively generators of visual solutions, this research emphasized that they should be perceived as visionaries who make and enforce their own rules and also as curators of visual outputs.

According to Nigel Cross, a specialist in design methods and head of the design department at the Open University, the design process can be divided into three stages: analysis, synthesis and evaluation (1984, 84). He believes that this approach allows for both logical and pragmatic thinking, as well as imaginative and creative thinking.

During the analysis stage, the main objective for a designer is to frame the design problem. Thus, by observing, collecting and classifying information related to the design problem, the designer can define his or her objectives, as well as set the criteria for evaluating successful propositions.

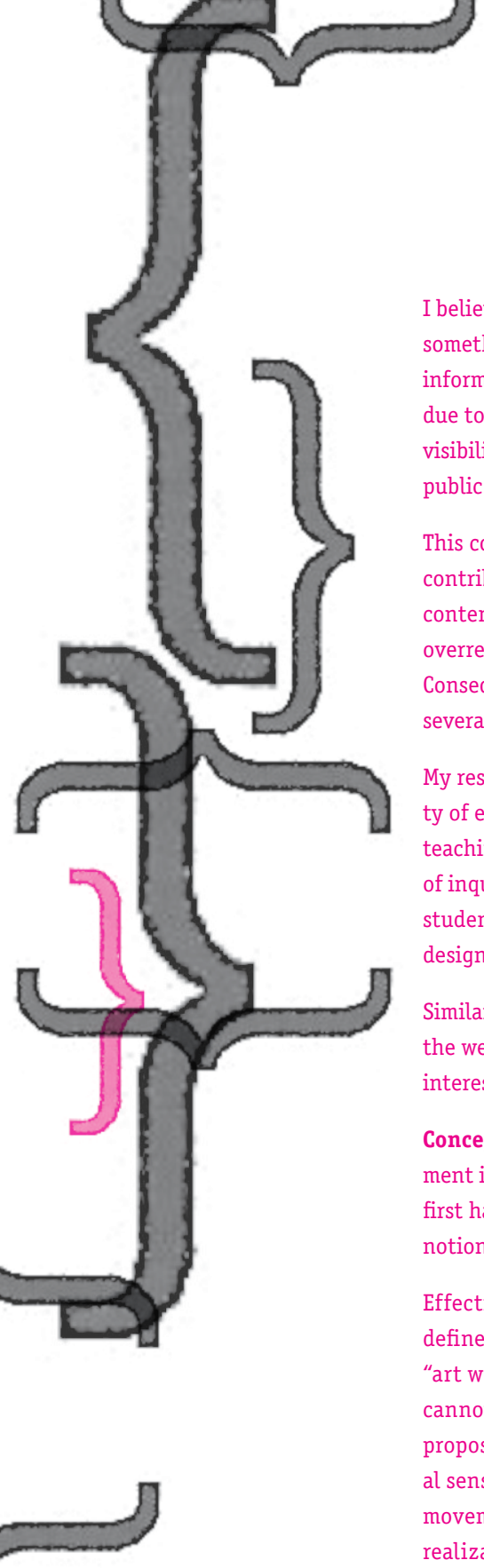
In the synthesis stage, the main objective for a designer is to maximize creativity and imagination, in order to develop visual propositions as per the objectives established in the preceding analysis stage. Also in this stage, a designer can generate several proposals, either in part or whole, that ultimately can be linked and combined.

In the evaluation stage, the main objective for a designer is to determine if the suggested proposal or proposals are satisfactory. This can be done via a performance evaluation methodology by checking to see if the criteria established in the analysis stage has been partially or completely satisfied. Furthermore, the evaluation stage can also take into consideration a designer's subjectivity. That is, this stage allows a designer to interpret the objective and goal to be achieved by understanding and controlling visual forms. This stage helps advance the designer towards the ultimate goal of evaluating the advantages and disadvantages of proposed solutions, as well as generating comments and feedback on visual propositions for correction and adjustment.

In light of Cross' above-noted propositions, this visual exploration was undertaken to determine if weather-related content could invoke more than a single reading experience, by being re-invented visually into something original and dynamic. Ultimately, an attempt was made to apply conceptual constraint-driven tactics in order to open doors for creativity for both designers and readers, with the aim of transforming what has historically been a dull and neutral framework for disseminating weather data, into something expressive and meaningful that would invite new understandings, and encourage new interpretations.

Concept of weather as banal. As explained by Dr. Jeffrey T. Nealon, professor of English and philosophy at Penn State, the fundamental ordinariness of the weather translates into everyday life as well:

> There is nothing more banal and boring than the weather. In fact, the weather often functions as a privileged figure for banality itself; the lingua franca of everyday



> speech. The weather constitutes a pervasive discourse, nearly devoid of content, in which we can all safely engage; as such, connecting with others superficially, without running the risk of offence (Nealon, 2013, 109).

I believe that the research of Nealon provides a framework for observing weather content as something that is: banal, due to excessive visibility; necessary, as it allows viewers to make informed decisions within their daily lives; and socially relevant, as it allows us to connect due to its universal acceptability as a topic for discussion with strangers. The excessive visibility of the data generated by the overabundance of diffusion platforms augments the public perception of weather data as banal information.

This concept can be grasped through a cultural studies perspective, based on theoretical contributions of the aforementioned Dr. Jeffrey T. Nealon and Dr. Gregory Seigworth, who contend that "banal information is broadly associated with the negative aspects of media: overrepresentation, excessive visibility and information overload" (Nealon, 2013, 111). Consequently, the information has less impact and importance, especially since it is updated several times a day.

My research attempted to steer away from this standard approach, and explored the possibility of enhancing the meaning of weather data through original visual representation. The teaching practice of American educator and designer Dan Friedman explored a similar line of inquiry. Effectively, The Weather reports, a student project developed in the 1970s, asked students to explore new visual possibilities and grasp how a re-interpretation of graphic design elements could turn quantitative inputs into fresh, new qualitative outputs.

Similarly, this research project was an attempt to establish an original relationship between the weather content and its visual display, so that it would be perceived as rich, engaging, interesting and surprising.

Conceptual art. My historical overview for this project begins with the conceptual art movement in the 1960s, which rejected the dominant conception of art practice that shaped the first half of the 20th century. More specifically, proponents of this movement rejected the notion that art practice necessarily relied on the creation of a physical end-product.

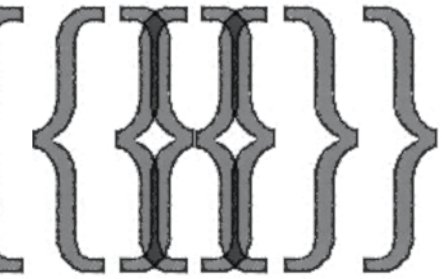
Effectively, the Conceptual Art movement viewed art as something that was not exclusively defined by aesthetic properties, but also by concepts and ideas themselves. In this sense, "art was not only about forms or materials, but also about ideas and meanings; and as such, cannot be defined in terms of any medium or style" (Godfrey, 1998, 4). Also the term "art proposition" was used instead of artwork, because a conceptual work of art in the traditional sense is a contradiction in terms (Kosuth, 1969). In other words, the Conceptual Art movement proposed that artistic emphasis should be on the concept itself, and not on the realization of the physical work (i.e. end product).

Despite his high profile in the Conceptual Art movement, the American artist Sol LeWitt was not in total agreement with purists who focused exclusively on the "thinking" (Godfrey, 1998, 152). He believed that the process of creating was of equal importance to the concept.

As such, in "The Location of Yellow and Red" (1976) and "Art" (1972), LeWitt demonstrated how an execution, or process, resulting from previously-defined rules and decisions relating to form and composition could be used to provoke an interesting mental reflection for the artist, and for spectators alike (LeWitt, 1967, 80). As Godfrey points out, LeWitt refused to believe that the existence of a "thing", or just an idea can be a complete work itself. Rather, he believed that the idea and the art were part of the same cycle (Godfrey, 1998, 152). LeWitt felt that a process must follow its own path, and that it is possible for some results to emerge that the artist had not imagined.

Thus, the work of LeWitt demonstrates the possibility of using instructions combined with forms as a source for visual exploration. In the context of my research, LeWitt's philosophy is of interest because, compared to the purist idea of conceptual art which stated that the idea was the project itself, he believed that art was a combination of ideas, concepts and realizations. In other words, rather than leading to a limited set of solutions, conceptual constraints could inspire many potential solutions. In this sense, rules do not have to be viewed as a limiting element, but rather as a guideline to explore multiple variations.

As a basis for this research, I establish a connection between conceptual constraint-driven tactics and the Conceptual Art Movement. However, similar to LeWitt, I don't associate with the part of the movement that focuses on the concept itself while rejecting the need for the creation of a visual artifact. Rather, I establish a link between my exploration and the part of the movement that emphasizes the relationship between conceptual constraints, process, intuitive input from designers and, ultimately, visual artifact propositions.



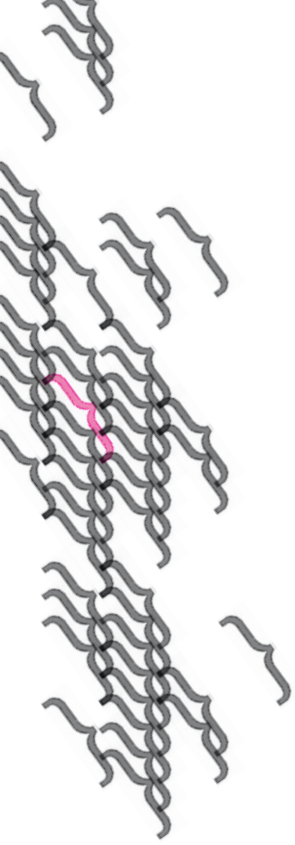
First principles in graphic design and conceptual constraints. In the book *Graphic Design: The New Basics*, Ellen Lupton and Jennifer Cole Phillips describe first principles (Figure 1) in the context of graphic design as a method for framing problems (2008). They also suggest that experimenting with and examining visual forms by isolating elements or limiting variables within a graphic design context can lead to the development of a visual language that is engaging, communicative, persuasive, and designed to draw attention to dynamic, living content (Lupton & Phillips, 2008, 10). As such, these principles can be viewed as formal factors that influence the design process and contribute to a result.

Principles of graphic design

Point, line, plane	Rhythm and balance	Scale	Texture
Colour	Figure/ground	Framing	Hierarchy
Layers	Transparency	Modularity	Grid
Pattern	Diagram	Time and motion	Rules and randomness

Figure 1.
List of Principles of Design Analysis explained by Ellen Lupton and Jennifer Cole Phillips (Lupton & Phillips, 2008, 10).

I integrated first principles as a general approach to explore and drive various possibilities throughout my research. In this study, I drew from the formal principles of graphic design: rhythm and balance, scaling, color, framing, layers, hierarchy, grid, plan, rules, and randomness as ways to manipulate quantitative information into something visually more



enticing and engaging. These principles, combined with selected conceptual constraints, allowed me to enrich the visual experience of this content, and thus invite readers to enjoy a richer and more meaningful experience.

The term constraint can be defined in multiple ways, and as such it is important to note that my research did not examine constraints in a business context (e.g. time constraint, budget constraint, customer requirements, etc.). Rather I viewed constraints as formal factors that influence the design process and contribute to a result. I combined the use of conceptual constraints and various first principles within my design process, in order to emphasize specific elements of meteorological content, and ultimately alter the way we perceive and read this content.

I view these first principles as positive, systematic framing to sharpen my perspective on the design process and stimulate play. Rather than suppressing creativity, using first principles in combination with conceptual constraints is a means by which to extend boundaries and push the creative envelope in the graphic design discipline. Ideally, this combination may even create new and exciting methods of working within the design process, because, when used properly, both the first principles and conceptual constraints might steer me away from obvious solutions and allow for an in-depth investigation to help me overcome personal boundaries and routine solutions.

Creative operations. In order to generate a variety of rich visual explorations and methodologies, each research project was developed within a specific "creative operation." John S. Gero, a research professor in the Department of Computer Science and the School of Architecture at the University of North Carolina, specializes in cognitive studies of computing behavior. Together with Michael A. Rosenman, researcher at the Key Centre of Design Computing, Department of Architectural and Design Science, University of Sydney, they proposed four models of creative design that derived from computer modeling: combination, mutation, analogy and first principles (Gero & Kumar, 1993). Gero further added a fifth model of creative design, which he dubbed "emergence" (Gero, 1994).

From a computer modeling perspective, John S. Gero asserts that these models of creative design give rise to engaging concepts for design researchers for three reasons: they provide a framework in which to explore ideas about design; they provide a schema to model human designing; and they allow for the development of tools for human designers (1994, 9). Nigel Cross, a specialist in design methods and architecture, supports these models as a means to "promote creative thinking in design" (1997, 432). This philosophy has been developed further in Cross' article entitled Descriptive Models of Creative Design (1997), which proposes five models in the context of product design process.

It is also important to mention that according to some specialists and teachers, the concept of creative operations is variously referred to as procedures, models of creative design, or creative design processes. In the context of this research, I used the term "creative operations" when I refer to analogy, combination and mutation, and first principles. Each "creative operation" contains specific characteristics:

Combination. Creative design by combination occurs by combining features from existing designs into a new combination or configuration (Cross, 1997, 433).

Mutation. Creative design by mutation involves modifying the form of some particular features, of an existing design (Cross, 1997, 435).

Analogy. Creative design by analogy is defined as the product of processes in which specific coherent aspects of the conceptual structure of one problem or domain are matched with and transferred to another problem or domain. (Gero, 1994, 16).

First Principles. Creative design using first principles involves generating forms or structures based on pre-defined requirements. It is often described as a way to generate "good/or creative designs" (Cross, 1997, 437). In the context of graphic design, these pre-defined requirements, or guides for creation, can easily be associated with the principles of graphic design listed by Lupton and Phillips—scale, hierarchy, framing, grid, etc. (2008, 10).

My investigation was shaped by three "creative operations:" combination, analogy, and mutation (Figure 2). As stated by Gero: "these three specific operations allow for exploration to start from existing elements—either in the domain or outside of it—which could then be modified to produce elements that did not exist before" (Maher & Gero, 1990). These operations were relevant for this research given that existing content (weather data) was used as the basis for creation.

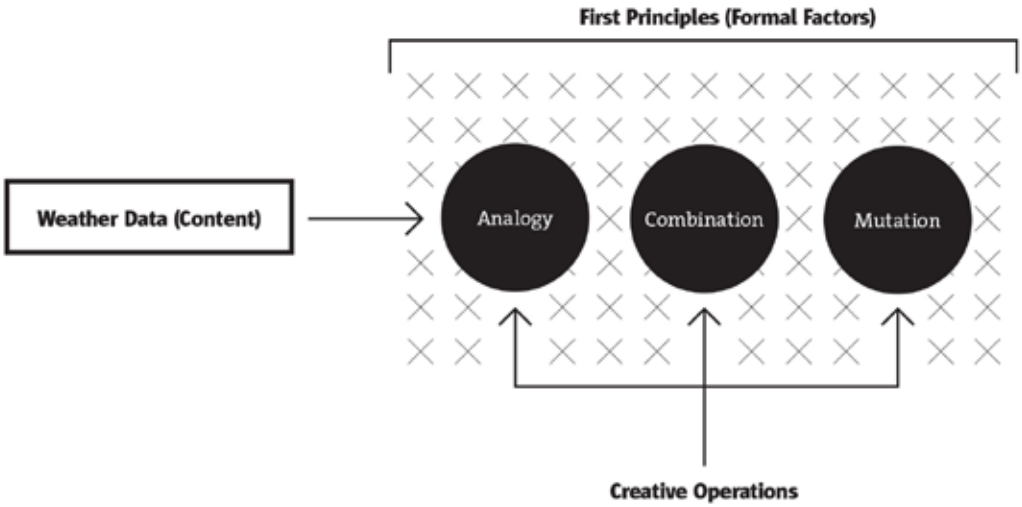
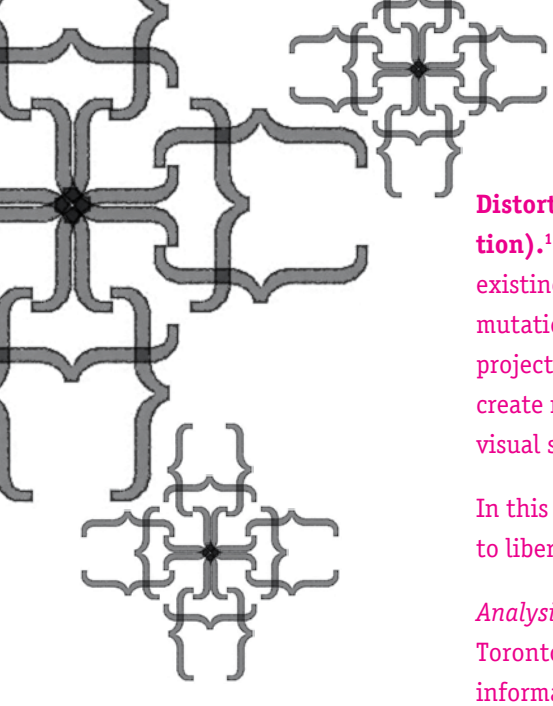


Figure 2.
Investigation of thesis subject through three "creative operations". (Jean, 2015)

My decision to use these "creative operations" was based on the fact that they facilitate the creation of an engaging and persuasive visual communication, break the routines present in traditional design process, push the boundaries of creation, and enable the exploration of alternative methods for creation, all of which generate new visual possibilities and were vital to each step of my exploration.

As for first principles, rather than using it as a specific operation in my research, I opted for its integration as a general approach to explore and drive various possibilities in combination with the three "creative operations" that shaped my investigation.



Distortional weather report poster (mutation as creative operation for design exploration).[1] With the mutation operation, the form of some particular feature, or features, of an existing design is modified (Cross, 1997, 435). It derives from computer modeling, where mutation is the alteration of a structure variable by an external agent (Gero, 1994, 15). In my project, mutation enabled me to transform the content from one form to another, in order to create new visuals, while maintaining the original characteristics, as well as the original visual structure as a starting point.

In this project, I explored how distortion can be used with the mutation operation in order to liberate banal information from its conventional context and neutral visual structure.

Analysis. For this project, I used the weather report from April 21, 2015 for the city of Toronto as forecasted by the *Toronto Star* newspaper. I selected weather reports because the information is presented in a consistent neutral format on a daily basis (i.e. the fixed hierarchy and layout did not allow for visual variations according to temperature, wind direction, ambient temperature, etc.) and because it generally appears in the same location of the newspaper each day, thus not allowing readers to rediscover the data based on a change in its presentation and surroundings, a recurrent issue with weather data representation.

I established that a visual proposition was successful if it emphasized the connection between the visual organization of the piece, the format of presentation, and the perception that the reader has of the content, all the while proposing an alternative that could offer a different reading of weather information not possible in the standard weather format. I established specific mutation techniques to explore various visual possibilities. Specifically, using manipulation techniques such as collage, scanning, duplications, etc., I distorted the various elements contained in the original layout of the weather report, while making sure that they remained recognizable and readable.

The content of each time period was then manipulated separately and a poster was designed for each of them. The decision to use a poster format was based on the fact that the large size would allow for a visual impact that cannot be achieved in the traditional newspaper format. Additionally, the poster format allows a change to the context in which the weather data is presented (i.e. on a wall, possibly in a public environment, rather than in the newspaper and examined in a private setting). This displacement encourages readers to pay more attention to both the visuals and the content, generating an experience that is out of the ordinary, refreshing and thought provoking.

Synthesis. This project was quite stimulating, because all of the conceptual constraints established during the analysis stage were sufficiently clear to provide specific direction, while leaving enough room to explore a diverse range of methodologies for visual creation.

I interpreted the content and structure of the original weather report as elements that could be altered. I opted to explore various ways to distort the elements by photocopying and repeatedly scanning the original layout. Once satisfied with this first visual alteration,

[1] To optimize this article, only one of the projects produced is explained in further detail. However, the full publication is available online through York University's library catalogue. https://www.library.yorku.ca/find/Record/10315-30719

I used collage to create a composition that juxtaposed the newly created visuals with the original weather report.

Four different compositions were created, each one corresponding to a different period of the day. However, some visual systems were duplicated and used in each composition in order to maintain some degree of visual consistency from poster to poster.

Within these four posters, all systems of mutation were designed to respond to the value of the content:

- all geometric forms (lines, circles, triangles) present in the grain of the paper and the halftone texture of the ink were used in the collaged elements and associated to a specific element of the weather report (temperature, ambient temperature or wind);
- the mentions of time of day were cut and manipulated via photocopying; hand gestures were used during the photocopying process to create a "stretched" look, which emphasized the differences between the four time periods; and
- specific keywords were underlined in each textual description to emphasize the variations of the weather conditions throughout the day.

The overall hierarchy from the original matrix was modified to increase the connection between content and visual elements, and offer a new reading experience.

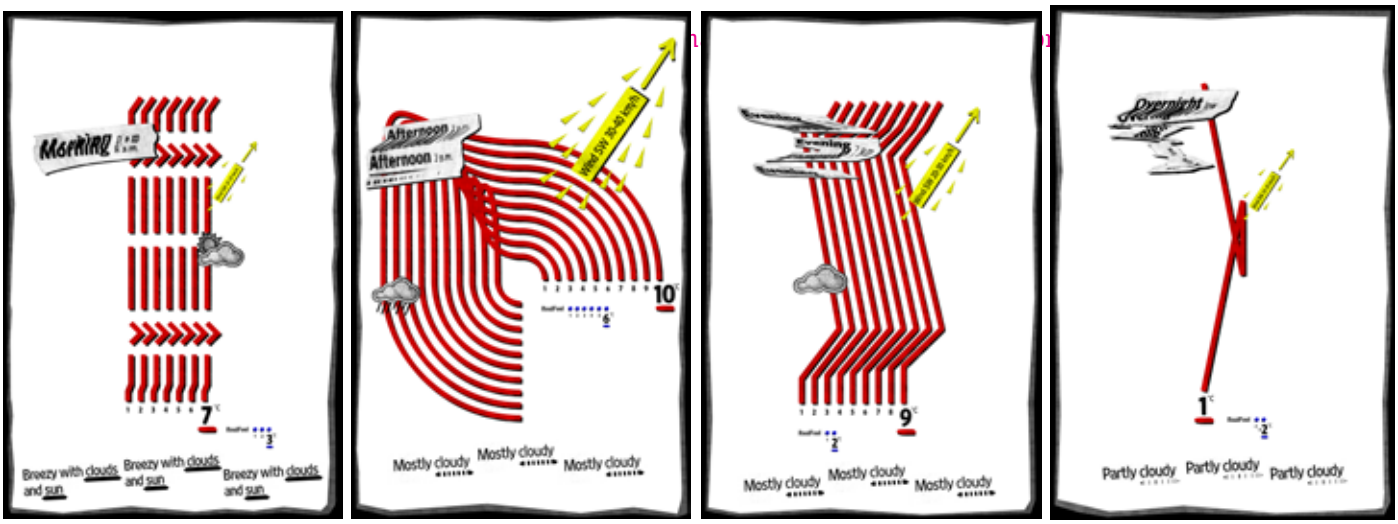
Evaluation. Combining mutation with the use of distortion as a manipulation technique empowered me to break certain design routines, and inspired me to familiarize myself with new approaches to making. In particular, the conceptual constraint of distorting physical material (printed version of the *Toronto Star*) gave me an exceptional starting point to explore.

(Left to right)
Figure 3.
Weather forecast for the morning of April 21, 2015. (Jean, 2015)

Figure 4.
Weather forecast for the afternoon of April 21, 2015. (Jean, 2015)

Figure 5.
Weather forecast for the evening of April 21, 2015. (Jean, 2015)

Figure 6.
Weather forecast for the evening of April 21, 2015. (Jean, 2015)



between mutational distortions, visual elements, and data. Several iterations were needed between the synthesis stage and the evaluation stage, in order to find the right balance between clarity of communication and freedom of interpretation.

This project succeeded in its attempt to liberate banal information from its conventional context and visual structure as it ultimately presented weather data in an alternative and more emotional, engaging manner. This was achieved by maintaining some visual features

of the original weather report, and mutating them through distortion techniques in order to create a whole new visual approach. This approach gave a more dynamic and expressive quality to the original content, which was originally presented as neutral and banal. Through mutation, this content was refreshed and re-invented. This re-invention was further enhanced by the use of the poster format, and even more, by placing four posters side-by-side as this new visual display powerfully changed the context of the information and, as a result, changed how the content was interpreted.

Effectively, the private reading experience normally associated with "checking the weather forecast" in the newspaper was transformed into a public experience through the use of the poster format. Since the viewing context was changed, the meaning of the data and the reading experience were altered despite the fact that the content was left unchanged. The final output thus invited readers to view the information in a new and more engaging way.

Conclusion. In this research, I investigated how conceptual constraints can be used within the design process to facilitate the creation of visual propositions that liberate banal information from its structured, restrictive and mass consumed context and allow the development of alternative meanings with weather data. The distortion-related conceptual constraints with physical material (specifically, the printed paper version of the *Toronto Star* newspaper), transformed what was originally a banal, neutral representation and unleashed a much more vivid, visual display. In this sense, the process of mutation gave the original material a new life, a more vivid and memorable appeal, and a more dynamic connection between the value of the content and visuals.

Also, by using a poster format and side-by-side positioning, the visual display powerfully changed the context of the information and, as a result, changed how the content was interpreted.

As a whole, this framework for exploration allowed me to break routine in my design practice and encouraged the exploration of a structured working method that could lead to new visual possibilities. The question now emerges: what "creative operation" is the best or most interesting? I do not believe that an objective answer exists. Each "creative operation" represents an excellent platform for developing new visual possibilities, and can therefore inspire an immense amount of creative thinking. In my view, the creative essence of this research was a protocol examination that emerged between me as the designer, the diverse methodologies, and the "creative operations." Furthermore, I do not believe that an absolute solution or a single best approach to visual creation exists. Rather, I believe in combining an unrestrained and personal form of exploration with a pragmatic approach, while using the "creative operations" as a protocol reference, or as a means to overcome creative blocks that emerge during the process. The original goal of my research was to demonstrate how conceptual constraints can be used by designers to develop an environment that fosters creativity.

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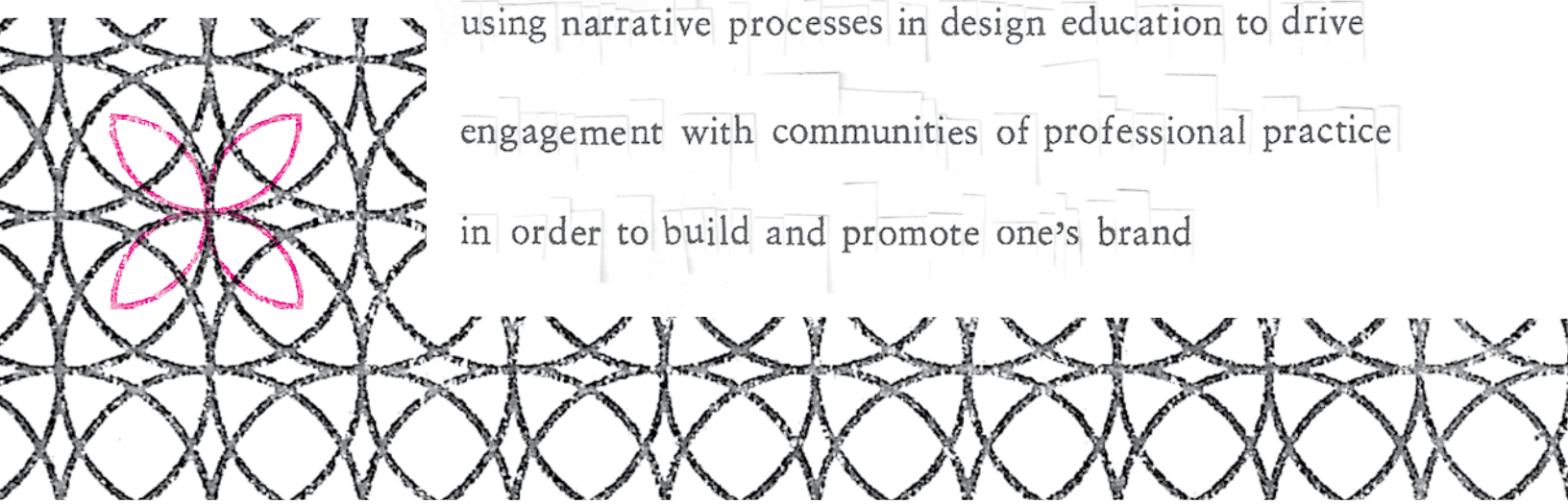
creating value in an economy of abundance:

using narrative processes in design education to drive engagement with communities of professional practice in order to build and promote one's brand

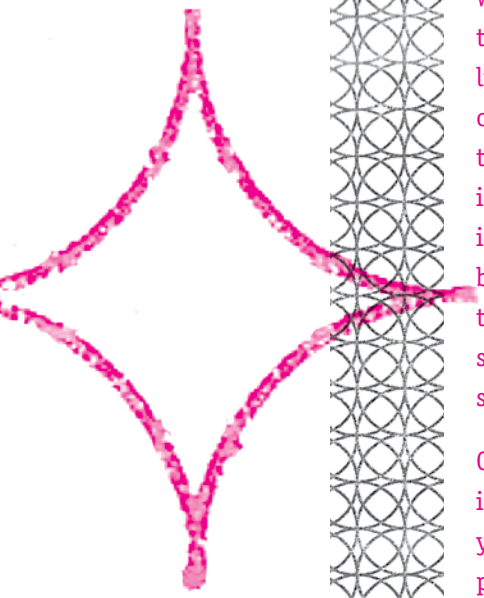


Jim Kinney is an instructor in the design space with a McLuhanistic focus on adaptive strategies in rapidly innovating and obsolescing environments, recognized for developing (2003-2007) RISK (Rapid Integration of Skills & Knowledge)-based learning methods—an early "flipped" pedagogy. He is focused on transforming teaching and learning using ACE (Actively Curated Education) group narrative as a method for evolving crowd-sourced knowledge resources and building personal brand value in Communities of Practice through cogent storytelling.

Abstract. This piece shares best practices and insights on helping emerging designers to develop the habits of work and mind that result in positive, active and engaged digital citizenship and results in the promulgation of professionally-relevant digital instances of their ideas, opinions, know-how, processes and creative output in order to develop the foundations of a professional digital footprint that helps to optimize their exposure and engagement with their respective communities of professional practice.

Given that the activities that the design industry is typically associated with are creativity in general and visual production in particular and given that the internet is saturated in a near-infinite number of digital image artefacts, the cultural and economic value of these artefacts and the people who produce them are much diminished in this context. The work described here focuses on trying to offset this devaluation trend by using social media tools and platforms to facilitate and promote more cogent and intimate levels of engagement with content creators and their work by using narrative as a value-added dimension of the artefacts of their work.

Keywords. adaptability, agility, authorship, behance, branding, communities of professional practice, copyright, curation, digital artefacts, digital citizenship, digital footprint, digital rights management (DRM), digital storytelling economy of abundance, engagement, innovation, intellectual property, interaction, metanarrative, metrics, narrative, open network, pedagogy, phpFox, rhetoric, secondary orality, simulacrum, social capital



According to Mary Meeker's Internet Trends 2015 Report for Kleiner Perkins Caulfield Byers, the world adds roughly 1.8 billion images daily to an already mind-numbing repository of digital artefacts that exceeds one trillion. This hyperbolic wave of digital content is ushering in the emergence of an economy whose end artefacts have little or no value in the classical economic sense. The mobile social digital world challenges the basic tenets of classical economics and its supply and demand style of valuation. The digital economy, by contrast, builds capacity and assets through a crowd-sourcing process to produce a staggering array of options whose end products can be infinitely duplicated and simultaneously distributed across the globe. This constitutes what has come to be known as the economy of abundance—an economy where the end point artefacts are widely available for free or near nothing. Some may argue that the Apple iTunes store model proves my thesis wrong; however, the fact that Apple managed to convince consumers to pay for something that the majority of people were already able to obtain for free was not that they created better .mp3 files and limited their distribution, rather, they created a community who rallied together around compelling evocative and emotional symbolism delivered eloquently by expert storytellers—good old marketing and advertising. To my mind, the story that Apple crafted was one of revolution—of people, empowerment, creativity, individuality and simplicity. In my opinion, every innovation that ever saw the light of day is inextricably tied to a compelling narrative that invites us all to dream of something better and incites us to act in a manner consistent with bringing that change about—whether it be voting with a ballot or a wallet or rallying others to cull their time and talents towards the project of change. Understanding the importance of story is an essential stepping stone to effectively participate and create value in the emerging social digital economy.

One of the biggest challenges, in my opinion, is determining where the locus of value lies in this emerging economy. I believe that locating (or building such resources that do not as yet exist) communities of online professional practice where one can actively participate in positing and engaging others with important issues and activities is essential to effectively instantiating one's agency online, attaining a position of leadership and creating value in the eyes of the community and having that value accrue to one's name or company brand.

Leveraging the power of social media platforms to develop and deliver a compelling narrative and to enable meaningful engagement with their community members, then, is crucial to building and maintaining a successful company and career—creative careers being no exception. It is a truism of the digital age but one worth re-iterating and that is that one's online activities leave impressions whose number and quality comprise one's "digital footprint." Underpinning this footprint are profiling and engagement metrics—a well-spring of data—that determine everything from one's search relevance to being an aggregate monument to the quality and direction, the narrative arc, of one's life. In my opinion we have never before been so inextricably involved (sometimes in blissful ignorance) in the process of autobiography. We write the minutiae of our existence every time we interact with social mobile technology and the internet of things. It is my opinion that engaging with these autobiographical technologies, platforms and processes is key to increasing one's exposure and building value in a world that is inundated with a deluge of media.

As creatives we are often in the business of creating images for a living, yet, an image—no matter how unique and compelling it may be—is literally one in a trillion and the likelihood that an internet search will reveal your work to anyone seeking such an image is slim at best. Chances are there are untold thousands of unique and compelling images featuring the same subject matter. To experience this firsthand, I would suggest performing a Google image search of the Sydney Opera House or the Brooklyn Bridge to get a sense of how saturated most subject matter is when it comes to digital instances—its almost pointless taking a camera with you when you travel! How is one's work found in a world that is awash in imagery. Even if, by some miracle, someone managed to find digital artefacts of your work it is even more unlikely that they would be willing to pay for it!

Culturally and economically, digital artefacts have little or no value and much litigation is waged over trying to stem the hemorrhaging of intellectual property (IP). Age-old legal and economic tactics of creating combines, patents, monopolies and charters are ill-suited to this new milieu and legal and business gurus continue the struggle to assert and tightly consolidate their control over this ever-expanding domain by conceptualizing new tools and frameworks like Digital Rights Management (DRM).

Opposing this attempt to re-invigorate old legal and economic paradigms is the prevailing mind-set that deems that if something is digital it should be free. Perhaps it is naivety. We are still in the early stages of our information, technology and communications revolution and the pendulum could conceivably swing back to an economy of scarcity as innovators find ways to lock down digital creations but that approach seems diametrically opposed to the raison d'être of the internet with its promise of democratizing engagement in the connected society. It is worth considering these prevailing (and opposing) sentiments around this digital horn of plenty and how we might adapt—at least in the short term.

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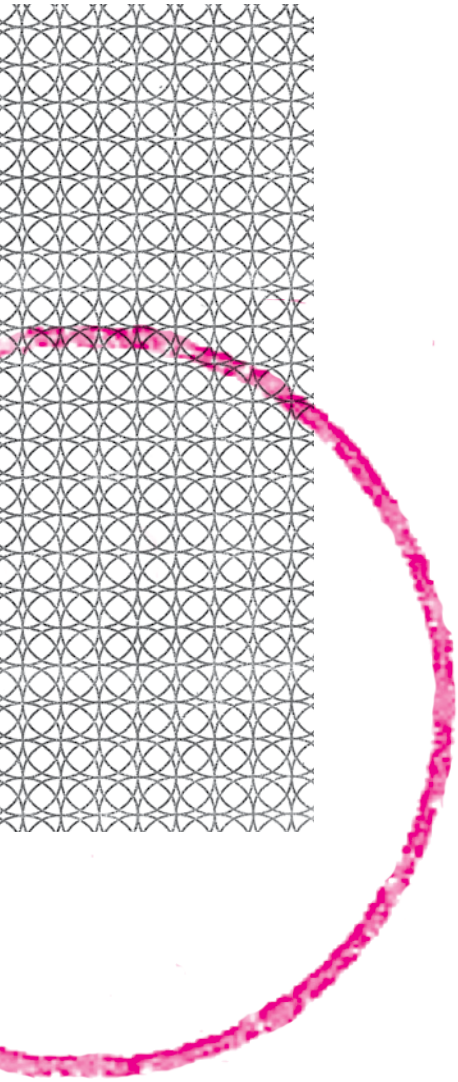
As a professor in a school of design I take the opportunity at the beginning of each year to informally assess the prevailing attitudes of new entrants regarding their chosen field of graphic design—a career typically associated with image making. With that in mind I ask my students "Who has downloaded images from the internet?" Invariably all hands fly up. I follow that inquiry by asking them "How many of you have paid for those images?" and I can honestly say that only two people in nearly four years of asking have raised their hands! Statistically that is a compelling anecdote. I then ask them to consider how they expect to make money in a field where even they won't buy its end products. The classroom typically

falls into an awkward silence. I explain to them that in all probability somebody will to hire them to do something—but the chances of selling their images on the internet are slim at best. You may have better luck convincing them to buy a hat or a t-shirt or a bag emblazoned with your art—some concrete, physical instantiation of your work—but you will probably see hell freeze over before anyone forks over their hard-earned cash for a digital version of it. Certainly, there is an abundance of stock libraries through which one can proffer one's work, yet the sheer magnitude of digital assets set against a prevailing attitude of digital equals free makes it an unlikely economic channel for most.

Despite their seemingly laissez-faire grasp of arcane notions of authorship and intellectual property, [students] are deeply invested in the social dynamics of this digital world and spend countless hours forging, cultivating and promoting relationships that resonate with emotional ties and provide them with a sense of belonging and well-being in many cases.

The students get it. They are a generation of digital pirates—nay citizens — who have been raised on a steady diet of free games and free apps. Despite their seemingly laissez-faire grasp of arcane notions of authorship and intellectual property, these same individuals are deeply invested in the social dynamics of this digital world and spend countless hours forging, cultivating and promoting relationships that resonate with emotional ties and provide them with a sense of belonging and well-being in many cases. Leveraging the power of their relational capacity in a manner that helps to convert social capital into professional capital and monetize activity is the focus of part of what I am trying to share with students and my peers. I have introduced digital citizenship and digital storytelling to our curriculum as part of an initiative that I dubbed "Critical Mass". Critical Mass is focused on transforming the teaching and learning experience in ways that engage faculty and students with digital environments, tools and protocols in ways that help us to work more efficiently, effectively and ethically and prepare our students for the rigors of the emerging economies of the 21st Century.

As an introduction to the digital citizenship and digital storytelling components of my course I ask my students to consider social media and work to get them to understand how social capital—the number of followers, likes, comments and so-on—has a bearing not just on their sense of self-worth, rather, that it is critical to their economic success. I have my students consider the notion of embedding their digital mobile social activities within the context of communities of professional practice (what I like to refer to as COPPs for short). Facebook for professionals is one way I relate COPPs to them. Many of the students, particularly those in senior years, are already gaining traction on social platforms such as LinkedIn for preparing their job search. Others have curated their work on portfolio sites such as Dribble, Deviant



Art or Flikr. I introduce them to the Behance platform (originally developed by Scott Belsky, founder of 99U and recently acquired by Adobe Systems Inc.). Behance is a fully integrated online community platform that includes capacity for showcasing one's work, soliciting and providing feedback, monitoring audience engagement as well as a job market with talent prospecting and management components. While I do collaborate in a non-profit capacity with Adobe Systems to help provide insight into the education space, it is my unbiased opinion that, with the exception of Dribble.com, the Behance platform sets itself apart from competing platforms for its ability to deliver a social commons that enables rich levels of interaction between its members—everything from finding exemplary work and mentors to sharing one's work, tips, tricks, know-how, encouragement, criticism and so on. The platform provides an excellent context for introducing the concept of digital citizenship which I would define as agency aimed at online activity that is consistent with becoming a responsible, active and engaged participant in creating and maintaining an online community of strategically aligned, mutually supportive and respectful peers. Behance, in my opinion, provides an excellent base on which students can leave their first professional digital footprints (the aggregate impression of their online activities).

My students immediately appreciate how powerful the community is—its vibrant marketplace for selling one's talents, finding and posting jobs, gathering formative feedback and so on. The metrics dashboard, accessible via members' profiles, helps participants to clearly identify who the community leaders are. Students are acutely aware of the fact that the leaders have the highest number of views, likes, comments, etc. and that for every member that likes or comments on one of their works (particularly those well-endowed with followers) this can connect them and their work to an entirely new layer of members. This snowballing or multiplier effect has the potential to instantly catapult a relatively unknown member to notoriety—it is the YouTube star phenomenon that they are quite familiar—and taken—with. I remind my students that a community member who has cultivated a large base of followers can convert that following into a revenue stream through sponsorships, ads, product plugs, speaking engagements and commissions and that it doesn't necessarily begin or end with someone looking at and appreciating one's work. There are other avenues for engaging an audience such as sharing know-how, tips and tricks, feedback and other forms of mentoring and advice. What is important is to become a valued member of the community—to be seen as an indispensable resource or authority on some aspect related to the collective interests of that community and to attain a position of leadership within it.

It is worth noting that constructs like class and schedule seem arbitrary and out of touch with new environments like Behance. I try to get my students to see themselves in a broader, more global context where I am on a more-or-less equal footing with them—we are all bound by the tacit quid pro quo of the social contract of the community. I provide feedback to members of my community simply because those are the understood rules of engagement. I don't draw an arbitrary line in the sand that says I will only give feedback to you if you are officially a registered student of mine. These old school classifications seem like anachronisms in this environment. Everyone is welcome to the table and there are no "class" distinctions. We are, ideally, committed to one another's betterment. Devoid of classical hierarchical and "authoritative" structure, feedback is a compound and collective phenomenon—the vox populare.

While the court of public opinion works well for design, it could be a more problematic terrain for, say, medicine and science. As eHealth communities emerge, this natural crowdsourcing of wisdom from the masses will prove to be difficult and foreign terrain for medical professionals who have been classically trained to adhere to a very rigid chain of command and authority. That said, for the members of my community, such platforms provide abundant opportunities to engage people with our thoughts, our ideas and their representations.

The end-point artefacts of our working processes—flow-charts, mind-maps, rough diagrams, words, thumbnails, etc.—simply provide the means for beginning a conversation about what and how we think and that conversation, in turn, is the means to building relationships. Those relationships—the number of people over whom one has a degree of influence—can be taken to the bank, as it were. As an artist or designer, passively curating a collection of silent images on a web domain is simply not enough—and expensive attempts at increasing your search relevance using web optimization strategies will likely also fall flat due to the sheer magnitude of competing content. As was mentioned earlier there are trillions of artefacts out there and we are over-saturated and overwhelmed by them. It is those people who are skilled in the art of rhetoric and conversation—those who can lead and inspire others, those who give freely of their time and talents to others, those who begin by watching and listening intently and then responding in a personable, intimate, candid yet sensitive manner—who will be most valued in this new economy. Serving this capacity will be the ability to tell a good story. "Why pay for it when I can get it for free?" was the same burning question that companies like Apple had to answer when they launched their hugely successful iPod/iTunes pairing to the world. The question was adroitly answered with emotionally cogent and inspiring storytelling that was anchored to the collective attitudes, ambitions, hopes and fears of its intended audience. This is the same question that students entering this new marketplace must also answer in novel and compelling ways.

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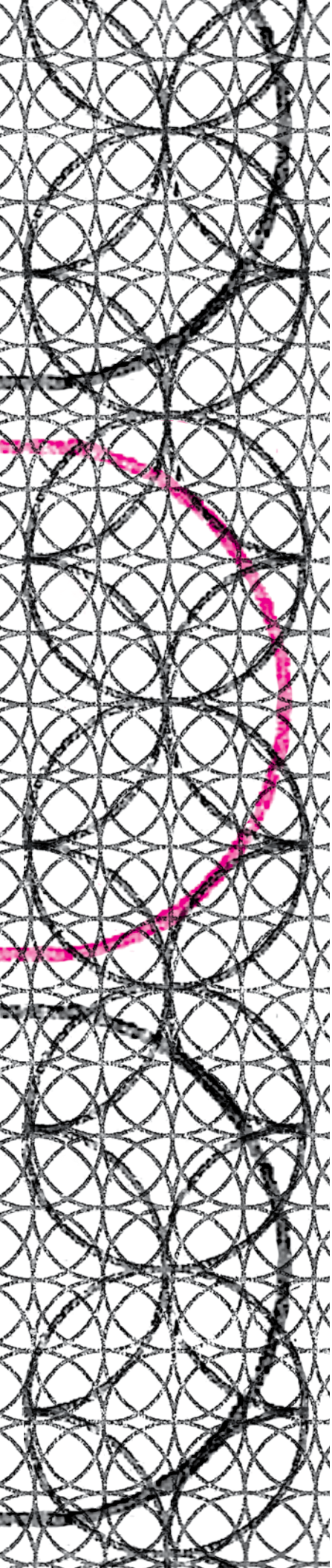
The profoundly connected mobile social world has ushered in what media theorist, Walter Ong (1982), referred to as the age of "Secondary Orality" (p.10). The ability of the current ecosystem of technologies to connect us, bring us together and make us, in some respects, omnipresent within our spheres of interaction constitutes the digital equivalent of sitting around a campfire where we share aspects of ourselves, our time, talent, wisdom, advice, criticism, encouragement and so on, and it is around this metaphorical fire that we will inspire others to lay their trust in us—to invest time and other resources in our talents. The tools with which to tell our stories and the community platforms on which we share them are crucial to this new economy and the overwhelming expectation of its participants is a relatively intimate, authentic and engaging level of interaction with the members of the communities

to which they subscribe. Conversations may be one-to-one, one-to-many or many-to-many but the one thing that they will hold in common is the expectation that access will not be contrived, restricted, buffered or tiered—that one be unrestricted, authentic and available whether you are the CEO of a major corporation or the front line worker in a call centre.

Teaching people how to frame communications in ways that are authentic and compelling requires engaging them with storytelling technologies, platforms and techniques that are central to preparing them for success in the economy of abundance. Beyond the obvious benefit of becoming a better communicator, the process of telling one's story using digital storytelling technology and platforms has ancillary pedagogical effects insofar as metacognition is concerned. The content/story producer is simultaneously teacher and learner.

Beyond the obvious benefit of becoming a better communicator, the process of telling one's story using digital storytelling technology and platforms has ancillary pedagogical effects insofar as metacognition is concerned. The content/story producer is simultaneously teacher and learner.

Initially, with the help of one of our IT staff, we constructed a simulacrum of a community of professional practice using an Open Source tool called phpFox. This custom social media platform, called the "Open Network," enabled secure, ad-free, internal Facebook-like interactions between students in order to enculturate best practices for interaction, personal profile development, posting work and providing feedback. After their initial introduction, students were brought into commercial platforms like Adobe's Behance.net to experience what an actual community of professional practice looks and feels like, and to learn and apply the protocols for engagement unique to these environments. This constituted their first foray into building a profession-centric digital footprint. Students were tasked with discovering and following at least five professional artists whose work they admired and at least five classmates whose work they were responsible for monitoring and providing regular feedback to. They were also responsible for building a professionally-focused profile. Besides the social engagement required, the students were also tasked with storytelling their work in the form of a "metanarrative"—a written reflection on at least three major projects from any class that they were taking, supported with images and/or video. The basic structure of the metanarrative included: an introduction that provided the scope of the challenge presented to them in the project; the materials used (conventional art supplies, software, hardware and platforms); creative processes detailing how they approached and arrived at solutions to the problem; production methods and workflow detailing key steps in how the work was created, and a workflow schematic or flowchart showing the flow of production from beginning to end.



Most of the innovation in the use of these technologies is happening at the primary school level—as abundantly demonstrated by practitioners in the Apple Distinguished Educators community—another community of professional practice to which I belong. Due to privacy and age of consent restrictions, the K–12 space typically has limited interaction with social platforms at least on an institutional level. Higher education, however, lags behind in the technology engagement piece because engaging students with technologies is typically predicated on instructor familiarity and competency with respect to technologies and procedures. In this context, where learning is predicated on instructor know-how, expertise unfortunately becomes a barrier to agility and adaptability in learning. This engagement gap presents a significant challenge to higher education that needs to be addressed in order to prepare students for an economy whose hallmarks are agility, adaptability, innovation, creativity and abundance as opposed to the old economy that was characterized by patent, process, productivity, conformity and scarcity.

While much can be said about the power of virtualized environments to connect people, their ideas and the artefacts of their creative sweat, good old face-to-face should not be overlooked or underestimated. Organizing local meet-ups should be an essential corollary of online activities to aid in instantiating and consummating relationships established online. Meet-ups help to strengthen the connective tissue of the community and render it more tangible. I organized one such meetup as part of a semi-annual global "portfolio week" activity—a grass-roots, volunteer-driven event that provided an opportunity for a community celebration that included face-to-face portfolio reviews, networking and socializing with students, alumni and industry professionals alike.

It has been my experience that anchoring the meetups to a specific industry-relevant theme with topical speakers helps to shape and give focus to the broader conversation between members of the community. Savanna Jackson (2015), a recent graduate now in her second year of her Masters in Medical Imaging at the University of Toronto, gave an eloquent keynote address at the Centre for Art Design and Information Technology, George Brown College, that adroitly encapsulated the zeitgeist of the aspiring Millennial artist/designer of the mobile social age. I would like to share a small glimpse of her thoughts regarding the challenges and opportunities that she sees:

> Now, I believe that I have pinpointed the singular aspect of the current internet culture that has most significantly affected the way we think and act in the world, and that is **exposure**. The internet has multiplied global exposure by an unfathomable amount. It has given us the opportunity to both expose ourselves completely to the global community of internet users, and to access a substantial amount of information about virtually everyone and everything else in the world. The internet is really the only true remaining middle-man, and that completely changes the way we make our mark as individuals. Because isn't that what we all want to do, on some level? Whether in the context of our families, social circles, or careers, we want to be acknowledged; we want to be relevant; we want to be ***significant***.
>
> So in the world of art and design, how does one establish significance? Well, quite frankly, it means developing a visual product that will **sell**. And I don't mean "sell" in the sense that people will exchange straight dollars for it, but in the sense that it will

capture attention, interest, and enthusiasm. But here's the thing: anybody can post anything on the internet. Relevant, good quality images are a dime a dozen…deciding which image to use or even just look at can be extremely overwhelming. So with the enormous amount of exposure that we now have access to, how do you sell your visual product in an online world containing an almost infinite number of images? How does a new artist or designer—somebody whose entire professional purpose is image creation—set themselves apart? In other words, what ***sells***?

… images themselves are no longer enough; consumers want to connect with the visual product on a deeper level. Now more than ever, people want to be able to relate to the humanity behind the art; they want a narrative. They want to understand who made it, why they made it, and how. They want to imagine themselves standing beside the artist as they work, experiencing the ups and downs of the creative process firsthand. Consumer attention is the new currency, and as the creators of visual commodities, we—through storytelling—need to give consumers a reason to invest in our products.

So that's the first major shift that's occurred: to set yourself apart, you don't just need a good product, you need a good **story**.

The second major consequence of the exponential upsurge in exposure we're experiencing is that, now, anybody can gain worldwide recognition and relevance. …the world is full of examples of globally recognized figures who made their starts posting content from their bedrooms. …The global community of web users then has the opportunity to weigh in on that content's value, which can earn the poster worldwide recognition if the ruling is favourable.

So what does this mean for those of us in the art and design world? Well, no longer do artists have to score coveted positions in galleries to share their masterpieces with the public; the internet acts as a gallery with a reach far greater than any one exhibition could possibly provide. No longer do amateur designers have to work their way up the corporate food chain, overcoming arbitrary bureaucratic obstacles, or "paying their dues" in order to achieve success. Any designer can post a logo, a piece of digital art, or an app interface on the web, and regardless of whether they've got 3 months or 30 years' experience, that image is directly accessible to potential clients and collaborators. Best of all, no red tape. The internet provides the freedom to eliminate unnecessary obstacles to artistic recognition, thereby shifting the industry's focus onto one thing and one thing only: the raw and authentic talent that lies behind an image.

It was refreshing to hear the Millennial perspective articulated so clearly and passionately; however, Savanna was an exceptional student endowed with almost limitless potential. Her perspective helped to validate my commitment to exploring the dimensions of online engagement and storytelling as it pertains to building brand value—or, as Savanna puts it, "significance"—for all students. It behooves us as educators to ensure that we and our students are aware of what tools, platforms and techniques enable and enhance cogent storytelling, where their communities of professional practice are, what protocols of engage-

ment govern their use and how one can attain a leadership role within them. Students who understand the concept of digital citizenship and the importance that storytelling plays in that context will seize on these new digital tools and will win the day but, despite that fact, they will always leave something behind for the rest of us—for we must all participate quid pro quo and give of ourselves because, in the economy of abundance, the more you give the more you receive!

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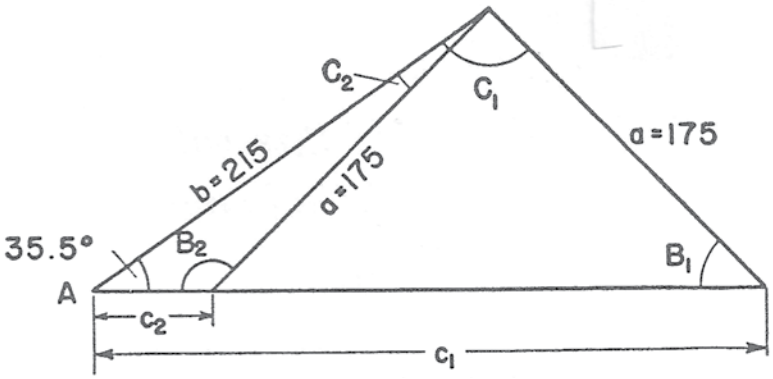
rethinking media design:

the dimensions of social impact media



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Abstract. The EGM-Integral model is an interdisciplinary approach to research, design, and education for those interested in ecologically responsible, socially responsible, and socially conscious media design—increasingly known as social impact media. This article introduces the EGM-Integral model to design educators interested in interdisciplinary media design education. Key features of the model are described including ten interactive dimensions of human activity and transception, a construct that posits the use of digital technologies to extend the faculties that make us most human, including compassion and generosity. An overview of case studies from contemporary media (advertising campaigns and films) that exemplify the goals of the ten dimensions is provided, followed by detailed descriptions of case studies that represent the social action, economic, and wellness dimensions. Social media campaigns are shown to be a practical means for bringing transception from the realm of theory into action and play an important role in the design of media for social impact.

Keywords. Evolutionary guidance media, integral media, interdisciplinary design, social impact media, socially responsible design education

Introduction. We are living in century of unprecedented challenges, but also at a time in history when a great deal of what is good for humanity is known. As designers, it is our responsibility to put that knowledge into practice such that we promote healthy synergy between humankind and the greater web of life- but how? We begin by asserting that *design*—dynamic, creative, decision-oriented inquiry in which *imagination* is made manifest through the integration of knowledge, skill, and insights—can and should be used for human and planetary betterment. By opening ourselves to such a perspective, we simultaneously place ourselves on an evolutionary journey. Rather than designing to maintain the status quo, we design from an empathic perspective, fully engaging our senses in the process by considering the impact of our designs on the wider web of life. Designing anew keeps our species evolving- the difficult part is letting go of what no longer serves our betterment.

As the primary communicator of new ideas and information to the masses, *media* plays a pivotal role in steering the direction of societal evolution. In a world saturated by more products and forms of media than ever before, *designers* have a heightened responsibility to convey messages and means through which we can co-create healthy ways of being in the world. This places a great deal of responsibility on the shoulders of design educators. The E*volutionary Guidance Media-Integral (EGM-Integral)* model is designed to support such efforts, and involves the "conscious creation, use and evaluation of media that aims to guide the evolutionary development of the body, mind, and spirit, in self, culture and nature" (Klisanin, 2010, p. 148).

Rather than designing to maintain the status quo, we design from an empathic perspective, fully engaging our senses in the process by considering the impact of our designs on the wider web of life.

As future-oriented research, the EGM-Integral model presaged current interest in social impact media. Once the purview of Public Service Announcements (PSAs) and a handful of socially conscious media makers, in the past decade, advertising campaigns and feature films that include content related to human rights and environmental responsibility are becoming increasingly common (e.g., An Inconvenient Truth, Brokeback Mountain, The Cove). Likewise, primetime television programming is being scripted to include content related to a wide variety of health related topics. For example, Hollywood, Health & Society, "provides entertainment industry professionals with accurate and up-to-date information for health and climate change story-lines, through expert consultations and briefings, panel discussions and online tip sheets" (2016). With funding from the United States' "Center for Disease Control and Prevention, and several other agencies and foundations, the program recognizes the profound impact that entertainment has on behavior" (Hollywood, Health & Society, 2016).

This tailoring of content is due to a confluence of evolutionary forces driving the awakening of social and environmental consciousness- forces that include, but are by no means limited to: recognition by governing bodies that addressing complex issues, such as climate change, will require the adoption of new mindsets and value systems; the rise of corporate social

responsibility in tandem with increasing public demand for transparency. These forces are heightening the need for ethical design education capable of supporting and empowering a new generation of impact media designers. Just as Findeli (2001, p. 6) sought to rethink design education through encouraging "a non-materialistic, non-positivistic, and non-agnostic, non-dualistic worldview," the EGM-Integral model seeks to rethink media design education and design practices. There is an ever-increasing need for such education: beyond the aforementioned interest by primetime television producers and socially responsible corporations, media moguls such as Facebook are making commitments toward social good (Fiegerman, 2015), and events such as the Social Good Summit (2016) and the Media for Social Impact Summit (2016) are gaining momentum. The Social Good Summit is a "conference examining the impact of technology and new media on social good initiatives around the world, while the Media for Social Impact Summit (2016), is " an … event that unites representatives of leading media companies, advertising firms and creative agencies with high-level United Nations representatives and communication experts to highlight the power of media to drive social change and strategize campaigns around pressing global issues."

Designing for impact: new directions. The EGM-Integral model is a meta-model that brings together the 'Evolutionary Guidance System Design' (EGS) model of educator, B. H. Bánáthy (1996; 2000), and the 'AQAL model' of Integral philosopher, K. Wilber (1995).

Each of these models has been the subject of numerous books and elaboration by scholars across many disciplines. Rather that providing a description of the way the EGM-Integral model was designed, or an overview of all its features, this article focuses on sharing an in-depth look at one crucial design feature- a series of interactive dimensions that make up the *body* of the model. Individuals interested in an overview of the model's design features are referred to previous scholarship (Klisanin, 2010; 2010b).

The interactive dimensions have their origin in Bánáthy's EGS design model which includes five design spaces: Exploration/ Image Creation, Design Solution, Organized Knowledge, Evaluation/ Experimentation, and the Space of the Future System, as well as a "system of interactive dimensions." Bánáthy considered the interactive dimensions as necessary for designing social systems capable of taking into account the "multidimensional unfolding" of evolution (1996, pp. 329–330). In general, evolutionary guidance systems are those that guide the development of human systems such that the systems created are able to encourage the holistic development of both individuals and their systems. Because media is both a co-creator and reflector of the entire gamut of human social systems, the interactive dimensions took central stage.

In the EGM-Integral model, ten interactive dimensions serve as goal-oriented repositories filled with purposeful data (Klisanin, 2005; 2010; 2010a). Nine of these dimensions were suggested by Bánáthy as a generic guide for the design of evolutionary guidance systems. The dimensions represent the major areas of human endeavour and are well suited to interdisciplinary design scholarship and practice. As applied to media, they were originally intended to 1) delineate specific values and goals; 2) guide research and design efforts; and 3) serve as a repository of pertinent data.

Before exploring examples of these dimensions, an important feature of the EGM-Integral model, must be briefly introduced- *transception*. Transception is a construct that posits the use of digital technologies to extend the faculties that make us most human, including "loving-kindness, compassion, self-restraint, social responsibility, and generosity" (Klisanin, 2007, p. 2). The construct was proposed before the advent of social media, anticipating the need for an ethical foundation for digital technologies. To design with transception means to take into account how we might use social media to extend these faculties. For example, asking whether a social media campaign enables participants to engage in social responsibility, acts of kindness, compassion, generosity, and so forth. It is an important construct for media that seeks to promote social good.

In Table 1. *Case Studies Across Ten Dimensions*, the goals of the various dimensions are described, and case studies from contemporary media (e.g., advertisements, films, et.) are provided. Three of these case studies are then examined in greater detail.

Table 1. Case Studies Across Ten Dimensions

Dimension	Goal	Case Study	Specific Goal
Social Action	Facilitating social justice; increasing cooperation at ever-higher levels of complexity; encouraging and enabling compassionate action on behalf of self, culture, and nature.	"Kony 2012" Invisible Children, (2016).	Facilitating social justice.
Economic	Facilitating economic justice; nurturing social capital, ecological capital, & caring economics; supporting and enabling indigenous development.	"Africa Works" United Colors of Benetton, Fabrica, (2008).	Facilitating economic justice through micro-finance.
Moral	Strengthening self-realization; promoting social and ecological ethics; facilitating the emergence of conscious evolution and integral ethics.	"Love Has No Labels," Yehuda Duenyas, Ad Council, (2016).	Promoting integral ethics.
Wellness	Nurturing the physical, mental, emotional, and spiritual health and well-being of the individual and the society.	"Like a Girl" Always, Leo Burnett, Lauren Greenfield, (2016).	Nurturing mental and emotional wellbeing, promoting gender equality.
Environmental	Preserving and protecting the natural world; enhancing humanity's recognition of the inherent value of the natural world; facilitating action on behalf of the natural world.	"The Cove" Ric O'Barry & Participant Media, (2016).	Preserving the natural world, i.e., dolphins and facilitating action.
Design, Learning, Human Development	Nurturing the full development of individual, social, and societal potential; Facilitating holistic, integral modes of inquiry; facilitating alternative modes of learning; extending creativity and harnessing it on behalf of the global society.	Emily's Oz, Goodby Silverstein & Partners, Xfinity—Emily Oz, (2016).	Promotes alternative modes of learning/knowing.
Scientific	Nurturing the development of ethical science mobilized for the enhancement of societal evolution; promoting human and social betterment; extending our sense of wonder and curiosity about the unknown.	"We Can Explain," Science World & Rethink Canada, (2016).	Extending wonder and curiosity.

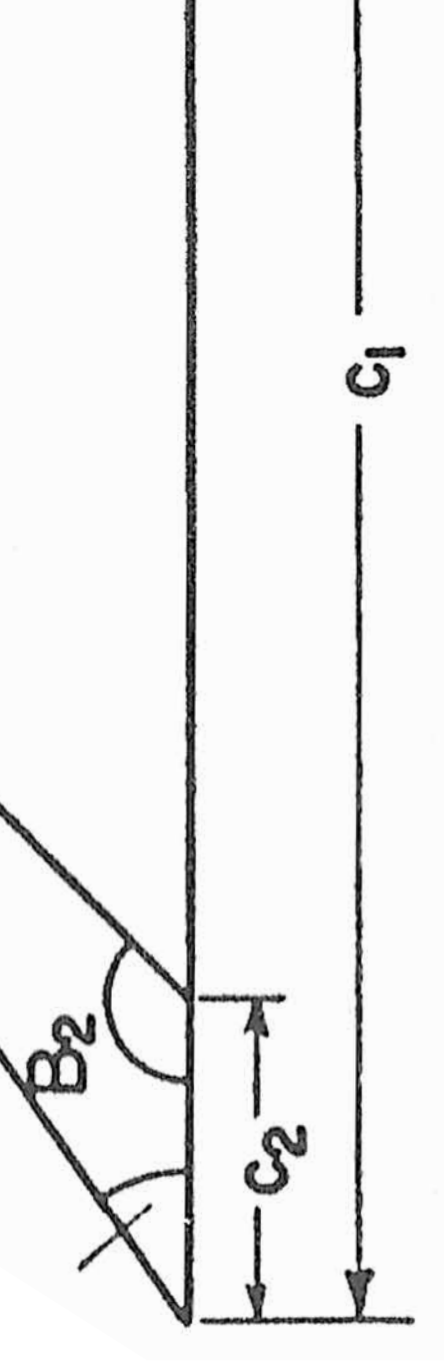
Technology	Promoting respect for each other and concern for the natural world; applying principles of biomimicry; facilitating the development of transception; supporting interpersonal contact between human beings and between humanity and the natural world.	"The Power of Love," DTAC, Y&R Thailand, (2016).	Supporting interpersonal contact between humans.
Aesthetic	Reflecting creativity in all aspects of life; promoting beauty, cultural diversity, and spiritual values; enriching the inner quality of our lives; enhancing our relationships with the natural world.	"Giving is the Best Communication" Truemove-H and Ogilvy & Mather (2014).	Promoting the spiritual values of kindness and generosity.
Polity	Enabling self-determination and self-organization; promoting genuine participation in governance; nurturing peace making and social reconciliation; facilitating improvement of the human condition and the welfare of our ecosystem and its preservation..	"Yesterday, Today, Tomorrow," Lucille Clerc, (2015).	Nurturing peacemaking.

Social action. The purpose of the social action dimension is to facilitate social justice; increase cooperation at ever-higher levels of complexity; encourage and enable compassionate action on behalf of self, culture, and nature (Klisanin, 2010). An example of the social action dimension is found in *KONY 2012*, a social media campaign designed by Invisible Children, a non-profit organization working to stop the Lord's Resistance Army, known for acts of kidnapping, rape, torture (2016). The campaign was designed to bring the world's attention to Joseph Kony, the leader of the Lord's Resistance Army.

The KONY 2012 campaign started as an experiment. Could an online video make an obscure war criminal famous? And if he was famous, would the world work together to stop him? The experiment yielded the fastest growing viral video of all time. The KONY 2012 film reached 100 million views in 6 days, and 3.7 million people pledged their support for efforts to arrest Joseph Kony (Kony 2012, 2016).

The film's message spread virally through use of the hashtag #Kony2012. Viewers were able to engage in transception through the pledge feature of the campaign (i.e., in this example, using digital technologies to support social responsibility). Although Joseph Kony was not arrested, the campaign led to a bipartisan resolution in the United States Congress; the African Union and the United Nations released a LRA strategy; over 3.7 million Kony pledges were delivered to the United Nations; and the U.S. Senate State and Foreign Operations Subcommittee approved $10 million dollars in humanitarian aid for LRA-affected communities (Kony Annual Report, 2016).

Economic. The purpose of the economic dimension is to facilitate economic justice; nurture social capital, ecological capital, and caring economics; supporting and enabling indigenous development (Klisanin, 2010). Microfinance is an example of data pertaining to this objective. Microcredit involves lending small amounts of money at low interest to new businesses in the developing world. A campaign that placed microfinance upfront in its design, is Benetton's 2008, MicroCredit "Africa Works" campaign (Benetton –Africa Works, 2016). The campaign was developed by Fabrica and highlighted entrepreneurship in Africa through promoting the Birima micro-credit program in Senegal, a co-operative credit society founded by the



Senegalese singer Youssou N'Dour. The campaign featured Senegalese workers, who had used micro loans to start small businesses. They were portrayed by photographer James Mollison, with the tools of their trade against a neutral background creating a campaign in which "everyday people became tangible symbols of an Africa that uses the dignity of work to fight poverty, promote equitable development, maximise its resources and take back responsibility for creating its future" (Benetton–Africa Works, 2016). In addition to the print campaign, the campaign included the following:

A series of projects and events: a special supplement distributed with Colors 73 about money in its myriad forms and substances; a new version of Birima, song recorded by Youssou N'Dour … a videoclip of the song; a cartoon about micro-credit produced specifically for the Senegalese community and African TV channels; a Benetton website devoted to the campaign and its related events and the www.birima.org portal. (Benetton–Africa Works, 2016)

In addition to spreading awareness about microcredit to a wider (mass market) consumer, the Benetton Group gave financial support to the Birima microcredit program in Senegal (Benetton–Africa Works, 2016). The campaign is a fine example of EGS, however, it missed an opportunity to enable viewers to use digital technology to engage in generosity (i.e., transception). This element could have been added, for example, through partnering with Kiva.org (2016), an organization "with a mission to connect people through lending to alleviate poverty." Such a partnership would have enabled the campaign's viewers to personally provide micro-loans to Senegalese workers and/or others.

Wellness. The purpose of the wellness dimensions is to nurture the physical, mental, emotional, and spiritual health and well-being of the individual and the society. An example of the expression of these goals is seen in Always' #LikeAGirl Campaign, designed by Leo Burnett Chicago, London and Toronto, with the help of documentarian Lauren Greenfield (Kauffman, 2015). Based on evidence showing that half of girls lose their confidence at puberty, the campaign set out to bolster girls confidence through reversing the negative connotations associated with the words, "Like a girl."

"Like a Girl" takes issue with generations of playground taunts about running, throwing or fighting "like a girl," asking, "When did doing something 'like a girl' become an insult?" It went viral when it debuted in June 2014 and wound up getting a slot during halftime at the 2015 Super Bowl." (Diaz, 2015).

Adobe ranked "Like a Girl" the top digital campaign of the Super Bowl, based on an analysis of mentions on a variety of social networks and Internet platforms" (Berman, 2015). It also won the 2015 Outstanding Commercial Emmy (Diaz, 2015).

The campaign …was built around a social experiment to show the impact the phrase 'like a girl' had on society, especially on girls pre and post-puberty. The centrepiece was a video that captured how people of all ages interpret the phrase 'like a girl'. "We thought the best way to start a movement and spark a conversation was to create a video that would encourage people to share and participate,"…The experiment also showed how a little encouragement can go a long way in changing perceptions of what 'like a girl' means.

Social media campaigns are shown to be a practical means for bringing transception from the realm of theory into action.

The social hashtag #LikeAGirl was introduced as a rallying cry and was considered essential in uniting people, as were "the relevance of the insight, the power of the creative idea and the authenticity of the responses we captured on film" (D&DA, 2016). What about transception? Although the campaign does not directly enable viewers to take action to support the cause, the hashtag #LikeAGirl enables viewers to spread the campaign's message which indirectly encourages others to learn about the issues of gender equity and girl empowerment. The campaign also includes extensive resources for parents and educators (Always, 2016). Through enabling campaign viewers to use digital technology to take direct action the campaign would more fully exemplify transception.

Conclusion. The EGM-Integral model was designed with the premise that design can and should contribute to the betterment of humanity and the natural world. Individuals interested in ecologically responsible, socially responsible, and socially conscious media design- increasingly known as social impact media- can explore the EGM-Integral model as a new approach to research, design, and education. An overview of the ten interactive dimensions and an introduction to the construct of transception has been presented with the goal of introducing educators to key features of the model. Social media campaigns are shown to be a practical means for bringing transception from the realm of theory into action. Through infusing qualities such as loving-kindness into social media campaigns and enabling individuals to take personal action, the power of media for social impact expands exponentially.

The demand for social impact media is likely to increase as government officials, corporate leaders, and civic activists, seek to communicate sustainable solutions, and convey the need for collaboration, in response to climate change and other global challenges. The EGM-Integral model is one approach that educators can explore in tandem with a new generation of designers: it is ripe for further research, exploration, and application.

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on-site design projects as an industrial design studio model in design education

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Abstract. Although the role of the designer and design practices continue to evolve, design education remains conservative in some ways. By focusing on "the basics," design education does not easily enable students to acquire the skills needed for contemporary design approaches. If design is a living practice that comes from life, exists within, and adds value to it in return, it is to be learned and lived outside school. The world is full of individuals with diverse perspectives, experiences, abilities, skills, and cultures. These are unique design inputs that can be turned into something useful, meeting a need. Including these individuals in educational, on-site design projects through the application of various participatory and inclusionary methods and tools, can motivate design students to learn within a renewed design studio model. By engaging in on-site projects that take place within a limited time, and by living, sharing, and immersing themselves in future users' lives, design students can learn more than in the design studio through collaborative and exploratory activities. In the scope of the Turkish context, this study aims to present two inspirational cases, and discuss their educational and social values, as well as their motivational force. This study introduces a new product design studio model based on participatory methods and drawing on personal experiences and insights within the framework of experiential learning.

Keywords. Experiential learning, industrial design education, participatory design, Turkey

Introduction. Design education is experiential and practice-based, and students learn through engaging with projects, due to the nature of the profession (Sara, 2006). It involves both theoretical and practical courses. Theoretical courses provide students with the necessary design information and knowledge to gain an understanding of the profession to apply in practice-based courses—especially design studios. Design studios are the main project courses that equip students with various creative, generative, and exploratory tools and methods to be used in any project. Students are enabled to choose from among these tools and methods by analyzing the given tasks and applying those that are appropriate. One of the essential aspects of design education is enabling students to manage any creative design process by recalling and applying these tools and methods, and drawing on their experiences in their future projects (Lytle, 2009). These are central skills in all design disciplines and imply both a process and a place (Sara, 2006). Design studios ideally should be a kind of simulation of the professional practice, reflecting its nature and preparing students to work after graduation. In that sense, it is of great importance that design studios provide students the opportunity to improve their decision-making and creative thinking skills, analysis and synthesis abilities, as well as their own style and professional approach. Therefore, design education should offer new methods and parallel the design profession outside school, including its changing direction both in theory and practice.

Theoretical courses provide students with the necessary design information and knowledge to gain an understanding of the profession to apply in practice-based courses—especially design studios. Design studios are the main project courses that equip students with various creative, generative, and exploratory tools and methods to be used in any project.

As Lyon (2011) states, learning through doing, i.e. experiential learning, is one of the characteristics of design education that "relies upon being a part of a specific professional group and understanding their values and practices" (p.80). It often implies studio practices and the acquisition of certain skills and abilities. However, students have little or no experience in design and creative thinking with conscious awareness before starting their design education. During the process of learning in design education, students learn how to reflect the knowledge they gain in practice, how to combine that knowledge meaningfully and creatively, and how to produce new knowledge by transferring the information they gather through the experience of making (Raein, 2003 cited in Lyon, 2011). It requires being open-minded to new experiences, and for that reason, design education should provide opportunities to undertake unique projects that match learning objectives and involve critical thinking, experiments, and intense research.

Design studios…are reflective learning environments and reflective courses, in which students are encouraged to develop their own design strategies as reflective practitioners.

In traditional design education, both theoretical and practical courses are often instructor-led, having their roots in the master-apprentice model and learning through demonstration. Instructor-led courses put students in a less active role and both the acquisition and the transfer of knowledge and skills are from the instructor to student. However, practical design knowledge cannot be transferred directly by verbalizing it and by positioning the instructor as the authority, putting students in the role of observer, imitator, and reproducer (Lyon, 2011). Moreover, when students are limited to stay in the role of an apprentice, their skills in exploration and experimentation are limited as well (Li, 2009). Design knowledge, as tacit knowledge, can only be uncovered and made conscious through an active role in learning. In that sense, the designer is a "reflective practitioner", improvising and reflecting the inputs in action harmoniously throughout a continuous learning process (Schön, 1983). Design studios, in that sense, are reflective learning environments in which students are encouraged to develop their own design strategies as reflective practitioners. Therefore, design studios should provide the foundation for students to improve their skills in questioning and exploring, and encourage them to take experiential actions. This perspective calls for a shift toward a new design education with a renewed design studio model both in terms of content and application. This studio model is non-linear and adopts a more exploratory, participatory, and experiential learning process, in which students acquire the skill of linking information and knowledge gained from a diversity of disciplines (Dabros, 2009).

Experiential learning and participatory design. Learning is a dynamic process leading to action that starts with the participation and involvement of people in experiences (Kolb, 1984; Young, 2006). Education is the "emancipation and enlargement of experience" (Dewey, 1910, p.340), meaning that our experiences are deepened as they are built up. Experience itself is also a dynamic and reciprocal process, during which we have an impact on the world and vice versa through our actions (Dewey, 1916; 1938).

Experiential learning is an immersive method of instruction, which acknowledges "learning by doing" and encourages students to apply the knowledge to experience to develop skills and new ways of thinking (Lewis & Williams, 1994). It is based on interdisciplinary and constructivist learning, allowing students to establish their own understanding with the guidance of the instructor and the participation of all. Experiential learning, as one of the characteristics of design education (Lyon, 2011), is based on three assumptions: (1) the most effective learning is being personally involved in the learning experience, (2) the individual should discover the knowledge that has any significant meaning to him/her or that has the potential to make a difference in his/her behaviors, and (3) individuals should be free to set their own learning objectives within a given framework in order to achieve the highest personal commitment to learning (Smith, 1980, p.16).

Learning from experience is not possible simply from being engaged in an activity. The activity should be based on a series of working principles that are present to varying degrees and required regardless of what the activity is and where it takes place (Chapman et al., 1995). Chapman et al. (1995) provide a list of characteristics of experiential activities or methods:

1. Mixture of content and process
2. Absence of excessive judgement
3. Engagement in purposeful endeavors
4. Encouraging the big picture perspective
5. The role of reflection
6. Creating emotional investment
7. The re-examination of values
8. The presence of meaningful relationships
9. Learning outside one's perceived comfort zones

In experiential learning, the instructor is no longer in the leading role and passes much of the responsibility to students. Students manage their own learning, in terms of what to do and when.

In experiential learning, the instructor is no longer in the leading role and passes much of the responsibility to students. Students manage their own learning, in terms of what to do and when. The context is also different. For instance, the course may take place outside the school or there may not be any academic texts to study. Moreover, the course outline and the curriculum may be different in that the tasks are not clearly identified, meaning that students "may have to identify the knowledge they require and then acquire it themselves, reflecting on their learning as they go along" (Moon, 2004, p.165). According to Wurdinger (2005), there should be a major project to focus on for the entire course in order to motivate students with a clearly defined goal. There should also be additional activities and readings to keep the course interesting and avoid distraction, as well as helping students complete their major project. The activities should challenge students' comfort zones, yet be manageable. Even though students have the responsibility of planning and managing their own projects, the instructor should still follow their process to make sure that they are able to complete them. The expectations from students should be clear; therefore, precedent projects (if there are any), assessment criteria, etc., should be presented to students. They should also be allowed to take the time they need for identifying, clarifying, and keeping focused on their projects and to change direction if they lose interest in the task.

Experiential learning imparts several qualities. Students acquire skills in changing their conception of a topic, reasoning, identifying the purposes of tasks, and self-management. They become more aware of the general rules and principles of their discipline and become more open to working in collaboration with other people from different backgrounds and disciplines (Moon, 2004). Experiential learning promotes this diversity, i.e. the inclusion

Considering the current design approaches in professional practice, and the current state of design education, participatory design seems suitable as a method to adopt in design studios.

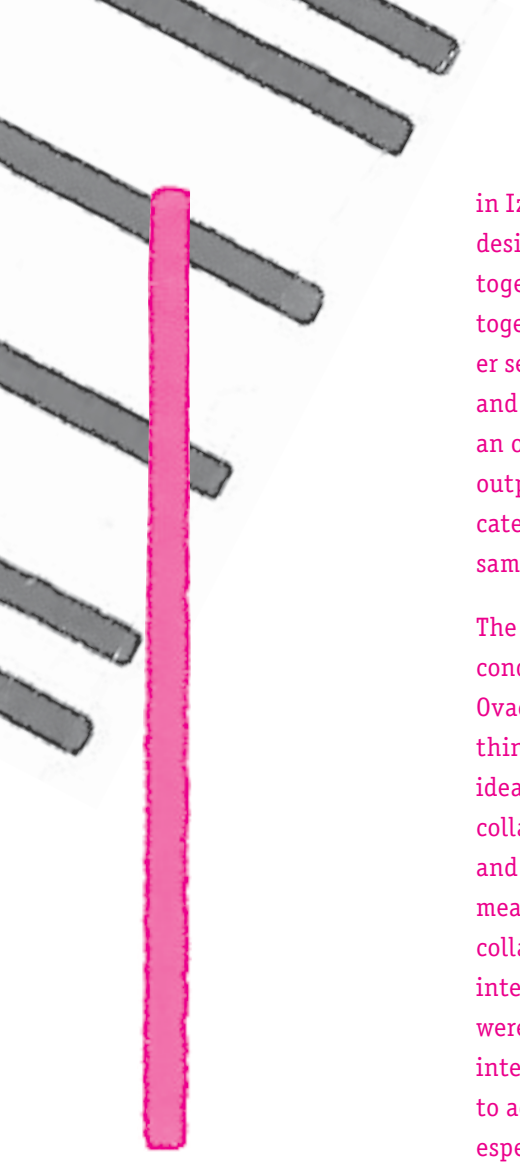
and participation of others, and listening to their voices in order to extend the designer's knowledge. Therefore, experiential learning functions to provide students with the necessary skills to be used in their professional lives (Cantor, 1995; Moon, 2004).

In the framework of participatory design, participation is defined as a mutual and continuous learning process, both for designers and non-designers, throughout which they acquire the necessary information about existing situations, practices, opportunities, and future possibilities through collective activities (Robertson & Simonsen, 2012). In that sense, participatory design is a research methodology on the basis of research and knowing by design. Each designer and non-designer participant is considered an active researcher, learner, and research subject at the same time, while being equally engaged in the design process (Couto, 1987; Spinuzzi, 2005; Blessing & Chakrabarti, 2009; Greenbaum & Loi, 2012). It also enables the researcher to learn more about themselves through the process of doing, which is empowering (Couto, 1987; Sanoff, 2000). Therefore, participatory design is a democratic, human-centered, and inclusive practice, which ensures an in-depth investigation of the tasks at hand, and provides social benefits by immersing the designer in participants' lives and incorporating their everyday experiences, ideas, skills, and abilities. Within this perspective, the design process is a social process that extends beyond designers' activities and draws on the diverse perspectives of all participants, who are regarded as the experts in what they do and give meaning to a design through their active participation (Reich, Konda, Monarch, Levy, & Subrahmanian, 1996; Sanders, 2001; Luck, 2003; Sui, 2003; Lahti & Seitama-Hakkarainen, 2005; Sanoff, 2007).

Considering the current design approaches in professional practice, and the current state of design education, participatory design seems suitable as a method to adopt in design studios. It can encourage students to engage in an active learning process, during which they can develop skills to collaborate with non-designers depending on the contexts of their projects, and using a well-managed design process allowing them to take responsibility for their own learning as well. Some design schools, e.g. National Institute of Design in Ahmedabad, India, and the Institute without Boundaries at George Brown College in Toronto, have long histories of such participatory projects that provide real life experiences on site. They are precedents to be developed further as a design studio model in design education.

Inspirations for an industrial design studio model in design education. The following two case studies are inspirational for developing a design studio model, based on their outcomes and their effectiveness, both as design processes and learning experiences.

Yahsibey Design Workshops. Yahsibey Design Workshops is a non-profit, international project initiated by the Emre Senan Foundation for Design. Workshops take place in a special, dedicated building—villagers call it 'the school'—in the Yahsibey village of Dikili,



in Izmir, Turkey. The workshops aim to bring design students together in an enjoyable design experience and in a creative environment where they can benefit from working together. They have discussions about design, identify problems, and think and design together in a 15-day workshop conducted by a project leader. The project leader is a designer selected by the foundation's advisory board who decides on the theme of the workshop and the profile of the participant students. All participants meet in Yahsibey and produce an output, which can be a written text, an exhibition, a product, a presentation, etc. The output is presented live at the end of the workshops and all participants receive a certificate for their participation. During the workshops, participants live together under the same roof, sharing daily life and chores.

The author attended the 30th workshop, Yahsibey Make-Overs: Play, Repair and Co-Design!, conducted by Prof. Dr. Lydia Matthews and Asst. Prof. Dr. Mine Ovacık, as the assistant of Ovacık and a designer participant. The brief was to critique the habits of discarding broken things and explore the ways of adding value to them by repairing in a playful manner. The idea of upheaving and transforming social relationships through creative attitudes and collaboration, especially the collaborative exchange between the workshop participants and the residents of Yahsibey, was of great importance. The histories, stories, and personal meanings of these broken objects were investigated, and the residents were invited to collaborate and co-design with the designer participants. There was a cross-cultural and intergenerational group of participants, and a series of "workshops within the workshop" were organized in order to activate the collective imagination. The workshop was mainly interested in answering the question, "what happens when designers become a catalyst to activate people's creativity and making skills through playfully repairing in, and especially with, a local community?". The chronology of the workshop, called the "Diary of an Evolving Collaborative Design Process" by Matthews and Ovacık, was as follows:

Aigai & Pergamon: Archeological work as a form of material and historical repair
Dikili Bazaar: Dynamics of social/economic exchange
Village Field Work: Scavenger hunt for broken things
The Vinyl Social Action
Yahsibey Repair House Action: A workshop within our workshop
Village Voice Action
Yahsi Games and People's Map Action: Amplifying local landmarks & stories

After the research had started, participants discovered that having something broken was not as much of a problem as it is for people living in big cities, and that repairs were already common practice for residents of the village. However, there were other things that caught the attention of the designers, such as a strong need to enhance social and intergenerational relationships, and to transfer the values of the village to the younger generation. Therefore, the workshop theme shifted toward repairing social relationships. At the end of the workshop, a treasure hunt and a memory card game were designed, incorporating the values and characteristics of Yahsibey. The bus station was renewed and covered with a map, including local landmarks and stories.

During the workshop, it was most motivating to live with others in a shared environment where the whole design process took place. Living in the village allowed us to spend time

with the villagers at any moment, to immerse ourselves in their lives, get to know them more, and establish a trustful and sincere relationship. The framework of the project was already set but it was still flexible enough that the direction could shift when needed. The group was a creative community, deciding everything together, setting their own rules, objectives, and deadlines, and managing themselves. Moreover, the structure of the process enabled voices of all participants to be heard, and "the project leaders" were not considered as leaders but as facilitators. Therefore, the workshop process was a democratic one, allowing everyone to take part actively. It was also a dynamic learning process, since it not only allowed foreigners to learn about a different culture, but Turkish participants also learned about the local culture, and villagers and residents learned more about their own culture and values. In addition to having a unique local experience, participants acquired new design methodologies, both theoretical and practical, as well as other skills including local craft techniques. The time was limited but the process was intense and engaging; therefore, the focus was very clear and deep.

A master thesis on participatory design with children with autism. The author conducted a case study for her master thesis, supervised by Associate Professor Dr. Deniz Hasırcı from the Department of Interior Architecture and Environmental Design, Izmir University of Economics, focusing on participatory design with children with autism. The study aimed to explore ways to involve children with autism in participatory product design processes by giving them a central role, and by giving a voice to their teachers and parents who are also affected by the disorder. Since children with autism have impaired skills, such as interaction, communication, sensory processing, and learning, understanding the nature of autism and how these children interact with their social and material surroundings, as well as the problems they struggle with in their daily lives, is of great importance in the design process. Considering this, a case study was conducted with eight industrial design students, eight children with autism, seven parents, and seven teachers at a public special education center in Izmir, Turkey. The design task was to reconsider the conventional trampoline design with respect to the benefits it provides, based on patterns of behaviors, actions, and movements documented through observations, interviews, and questionnaires, as well as collaborative meetings and discussions. The case study revealed several findings about conducting a participatory process with children with autism, the roles of the participants, interaction and communication among them, their attitude toward and interest in participatory design, and the potential benefits of the design process and ideas for the children with autism.

It took a total of six weeks to complete the case study, including a short meeting before the study, four days of intense workshops at the school with the participants, a one-day discussion meeting, and a presentation day. Therefore, design students came together for seven days in total, and they worked individually for the rest of the time. It was a very limited time period for such a study and there were a number of components that required more time for deeper research; however, the results were quite satisfying. The originality of the context of the study was interesting for the students and being part of the project attracted their attention. It was exciting for them to be involved, since they had no previous experience with non-designer participants. The framework of the study was also encouraging, allowing them

to manage their own process and act freely within the given framework. The whole process was participatory, from the identification of the problem to the assessment of the process and design ideas as the outcome.

This study has social value due to its inclusive attitude toward a so-called minority group, who can achieve an increased quality of life with the help of a design process that incorporates their contributions. It also has educational value for the designers throughout the study. The designers were second and third year industrial design students, who had not used such participatory methods or designed for or with children/adults with special conditions. In that sense, this study allowed them to gain experience in a very specific area in product design, which increased their awareness of the potential of design in such cases, and enabled them to acquire new design skills. The self-assessment of the students suggests that the whole process was motivating and encouraging, and made them feel more self-confident and self-aware. It was also observed that even though time was limited, the intensity of research with a diversity of participants, the immersion in participants' daily lives within the context of the study, and the succession of the project stages, gave students the opportunity to work with great motivation and focus.

Considering that design studios usually take place within the walls of the classroom, on certain days and hours prescribed by the academic schedule, and that the integration of fieldwork in these courses is rare and only organized at certain stages of projects, the structure of workshops gives students a clearer goal to focus on and leads to greater motivation, enthusiasm and personal connection to the projects.

On-site projects as an industrial design studio model. The case studies presented above are inspirational from the perspective of the personal experiences of the author. They also indicate that participatory, site-specific learning is an effective educational model with the potential for social and environmental benefits. Regarding their effectiveness, workshops have the power of engaging people more in the design process with greater focus and motivation through exploratory, experiential, and collaborative research and doing/making activities. Workshops, in that sense, provide experiential learning. Moreover, workshops are scheduled for a limited time, but the activities are often successive, allowing participants to stay on track without being distracted. For instance, the case studies were completed in a very limited time period but they had their own flexibility in practice and duration, which increased their effectiveness. Considering that design studios usually take place within the walls of the classroom, on certain days and hours prescribed by the academic schedule, and that the integration of fieldwork in these courses is rare and only organized at certain stages of projects, the structure of workshops gives students a clearer goal to focus on and leads to greater motivation, enthusiasm and personal connection to the projects. Moreover, lived

experiences are of great importance in design education, which can be gained from being involved in on-site practices and immersed in related contexts. Therefore, the educational model for design studios can be renewed and transformed to adapt the structure of workshops, providing a different learning experience integrated with contemporary design approaches.

The proposed model for design studio courses involves successive workshops, to be conducted in a predetermined time period allowing possible flexibility in duration, depending on the content and the context of the project, rather than being separate, discontinuous projects. The learning outcomes for such a design studio should be well-structured and planned. Theoretical courses may be integrated with the design studio and act as vehicle for fulfilling the practical requirements of projects by giving students the opportunity for reflection, i.e. to apply and test the theory in practice in order to transform it into immediate experience on-site. For that reason, the participation of non-designers, i.e. professionals from other disciplines and/or users, is of great value. Therefore, having the course on-site, making it a real-life learning experience, is the most beneficial as it allows for immersion and high motivation. It is also important to hold briefing sessions with students to make sure that the process and the expectations from them are well-understood.

Enhanced and enlarged experiences will bring self-confidence to students, and will encourage them to take initiative, improvise, develop their own design strategy and style, and evaluate their own performance.

In this design studio model, students are in charge of their own learning experience and the instructor is no longer the leading authority, but rather a facilitator, a guide, a resource, and a support (Warren, 1995). During this learning experience, students will learn how to collaborate among themselves and with other people from outside their discipline through learning and applying the theory of participatory and collaborative design methods and tools. They will struggle with various problems occurring in practice; however, this struggle will help them acquire various professional skills, including risk-taking, self-management, process-management, engaging non-designers and coping with problems in practice, as well as interacting, communicating, and dealing with people with diverse backgrounds. Moreover, they will also explore the limits and principles of their discipline through experience and reflective practice. Enhanced and enlarged experiences will bring self-confidence to students, and will encourage them to take initiative, improvise, develop their own design strategy and style, and evaluate their own performance. Evaluation is another important issue in design education that limits students' exploratory, experiential, and participatory actions, and keeps them away from trials and error. However, in a participatory learning process, students are not evaluated and graded only by the instructor, but rather by all students through collective assessment. The assessment is no longer the measurement of the end product alone, but of the whole process, including self-assessment (Warren, 1995; Wurdinger, 2005; Qualters, 2010; Wurdinger and Carlson, 2010),

precursor, concomitant, and post-experience variables (Ewert & Sibthorp, 2009). For that reason, the assessment criteria and system should be set beforehand and clearly explained to students so that they will be aware of expectations and free of the pressure of evaluation and grading.

Through on-site design projects, students can be well prepared with skills that meet the requirements of current and future design practices, both in terms of professional and personal skills.

…both the social and physical structure of the design studio should be questioned and alternatives for encouraging students to explore, as well as engage in experiential activities through intense participatory research and practice, should be investigated.

Conclusion. Design has been shifting towards a more inclusive, participatory, collaborative and process-oriented social practice. Design education should be adapted to this shift in order to raise students as qualified designers, who can fulfill the requirements of the profession. Therefore, both the social and physical structure of the design studio should be questioned and alternatives for encouraging students to explore, as well as engage in experiential activities through intense participatory research and practice, should be investigated. From this perspective, design education should shift toward a non-linear educational model that uses a participatory methodology, not only for projects, but for a broader holistic approach to the design studio. Following current practices in the design profession, there have been changes in educational models, and in the roles of the instructor and students; however, today's design education system cannot easily integrate the participatory model. In order to make this radical change in the structure of the design studio, the whole design education system and the curriculum should be revised and new regulations are needed. It gives great responsibility to instructors in forming the content of courses. They have to make sure that students consent to take responsibility for their own learning, establish a vision that incorporates certain course goals, and create an initial structure with a clear focus. Instructors must also set the basic principles for the studio, such as active listening, inclusive language, and peer-encouragement, and provide the necessary methods and tools. Short time periods seem to be a limitation; however, when the pace is fast, the motivation and concentration is high, and a great variety of insights can still be gained from different participants and real life experiences. In this way, the time limitation stands out as a catalyst in such projects.

In light of experiential learning, participatory design, and design education literature, on-site design projects offer an alternative educational model that can meet current and future requirements of the design profession and close the gaps between design education and practice. Considering the potential of the proposed model, it is hoped that this study will initiate new discussions and inspire researchers and faculty to further develop this model and other alternatives for design education.

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beyond the visual:

designers with a seat at the table

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Abstract. Our role as educators is to prepare young designers for positions that have yet to be clearly defined but will inevitably move beyond acute visual and technical skills and demand clear written and verbal communication skills, adept research and analytical skills, the ability to empathize with their audience and their client, and a deep understanding of the power of design in the context of and in relationship to other industries and disciplines. A survey of the role design is playing in business and other sectors will provide an overview of the situations we are preparing future designers for. To keep pace, our curricula, assignments and evaluation methods need to emphasize these skill sets and not simply privilege visual skills. Two course examples structured using Fink's "Taxonomy of Significant Learning" will be used to illustrate how individual educators can implement projects within their courses to better prepare students for strategic roles in non-design industries.

Keywords. accreditation, curriculum design, design as process, design thinking, significant learning, strategic design, unstructured problems

Introduction. The role of design and of designers is increasingly shifting towards innovation, creative problem-solving, co-creation and cross-disciplinary collaboration. Designers are increasingly invited to the table to tackle complex business, social, and environmental problems that require much more than a visual solution. Design in these contexts is more complex than styling or making; it is an iterative process of redefinition that often produces products, services and experiences that continue to evolve over time.

The cultural shift in attention towards design largely coincides with the prevalence of digital culture, digital products and services like Uber and Airbnb, and the maturation of the web. Momentum in this direction was already fairly strong in 2005 when AIGA shifted from referring to itself as the American Institute of Graphic Arts to AIGA, The Professional Association for Design. The business sector seems to have fallen in love with design: technology startups put design at the forefront of their business models; large global corporations like Pepsico have begun to privilege design at the executive level in roles like the Chief Design Officer, the Chief Technology Officer, and the Vice President of Design. In 2014, even the US government took action to embrace design by establishing the US Digital Service.

Higher education, a sector that is largely risk averse; full of disciplinary silos; and far from following agile practices, struggles to keep pace with industry shifts in its curricula.

The skills and processes used to develop digital and virtual experiences are now applied to entire brands, processes, and unmediated experiences. Joe Rinaldi, the president of the well-respected digital studio Happy Cog, captures the demands on junior designers entering this landscape when interviewed by Gary Rozanc (2015) for the Design EDU today podcast:

> We are very clear in our preference to look for designers, not decorators. And designers are problem-solvers and if you have a graphic design output then you've solved several problems to get there. I want to know what those problems were; I want to know what failed solutions you tried before you arrived at the right conclusion; what conclusions you drew from your results and then how extensible those conclusions are (Rinaldi, para. 35).

Rinaldi demonstrates that an emerging designer needs to enter the field with skills beyond the visual to be successful in the industry today. Successful graphic design requires an understanding of the business problem, the audience, and how the design output supports the stakeholders and their needs.

Higher education, a sector that is largely risk averse; full of disciplinary silos; and far from following agile practices, struggles to keep pace with industry shifts in its curricula. The National Association of Schools of Art and Design (NASAD), an entity that accredits design programs, changed their standards significantly in 2013 to define a set of "common curricular elements" for all design programs separate from the fine arts and a set of "essential competencies" for specific design disciplines to nudge institutions of higher learning to better prepare students for their professional lives (NASAD, 2013). Despite a landscape where new

programs and degrees often take years to become a reality, changes at the course level (assignments, learning activities, projects, etc.) in the purview of individual design educators can be used to help students fortify a skillset that expands beyond visual and technical skills to prepare them to confidently participate in changing terrain.

Designers in the Wild. Good design is an expectation of everyday life by everyday people. There is a vibrant culture of makers (read amateur designers) that has developed out of the DIY movement in conjunction with the democratization of design tools. Design is no longer an elite and exclusive language of luxury products, brands, and services. In this capacity, a designer is no longer viewed as privileged genius, but rather as a strategic partner in a range of contexts from startups to large corporations and governments.

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Airbnb, Slack, Pinterest, and Cotton Bureau reflect a trend in designers co-founding digital product startups (take a look at producthunt.com to see the magnitude of digital products that enter the field daily). Designers as entrepreneurs is not a new idea; designers have a long and strong history of running freelance businesses and design studios. What has shifted in recent years is that the enterprises designers are now founding are not "design" businesses, but a product or service where design plays an important role. Cotton Bureau is a specific example of a product based business that spun out of a more traditional client services design studio, Full Stop Interactive (Cotton Bureau, n.d.). According to the 2016 Design in tech report by Kleiner Perkins Caufield & Byers (KPCB), in the past year over one third of the most successful venture-capital funded startups in the Internet Sector were co-founded by designers and that number is projected to increase further (Kleiner Perkins Caufield & Byers [KPCB], 2016). This trend is supported by the growth of designers working at venture capital firms including organizations like the Designer Fund that specifically invest in businesses co-founded by designers (KPCB, 2016). Venture capital is generally used to grow businesses. The consistent growth in financially backing startups co-founded by designers demonstrates that the market values design and that funders see significant value in maintaining that design focus with designers at the executive level. Although designers in these roles may steer a product or service's visual presence, they are predominantly contributing a commitment to user/customer experiences while still keeping the business' goals in focus.

Despite the perception that corporate culture evolves at a much slower pace than the often agile nature of startups, Fortune 500 companies that are not design studios or digital products are creating new positions at the executive level that place emphasis on design. It is becoming common to see designers at the top with titles like Chief Design Officer, Chief Creative Officer or VP of Design at companies like Hyundai-Kia, PepsiCo, Capital One, Johnson & Johnson, and

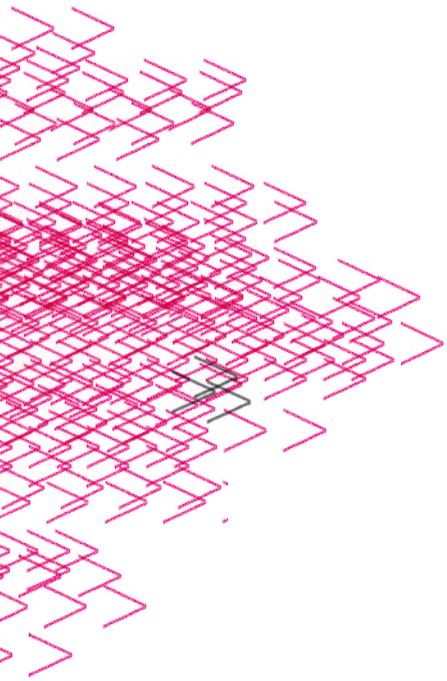
3M. Correspondingly, business oriented trade magazines and journals increasingly have articles centered on design and design thinking. Surveying articles in the Harvard Business Review reveals that designers (not fashion designers) are mentioned as early as 1932 but rarely (not even once in a year in many cases) until 2001. After almost seventy years of design barely entering the conversation, an explosion of digital articles about design thinking, participatory design and the design of the customer experience were published in 2009 including 'Learning How Designers Think and Work' (Bermont), 'Why Design Thinking Won't Save You' (Merholz), 'Design Your Customers' Decisions' (Sviokla), 'Yes, Your Social Media Strategy Needs Design' (Armano), 'Involve Your Customers In Design Decisions' (McGrath), and 'Critique Me, Please' (Maeda). Since then, design has become a regular theme in the publication exemplified by an entire print issue dedicated to design in September 2015, 'The Evolution of Design Thinking' (Ignatius, 2015). Prior to the booms in user experience, product and service design, the design industry was much more of a disciplinary silo, sought out as a service needed occasionally. In contrast, design is now embedded into conversations about the strategic directions of companies of all sizes.

With design culture embedded within organizations, the relationship between designers and their "clients" has begun to shift from an "expert" culture to one of "peer" culture.

With design culture embedded within organizations, the relationship between designers and their "clients" has begun to shift from an *expert* culture to one of *peer* culture. In theory, this dynamic shift primes the process of design to emphasize power-sharing and learning (experimentation, iteration, etc.). When designers work alongside other stakeholders within an organization design solutions are likely to have a greater impact because the team likely has greater access to data useful and relevant to the problem, exposure to different perspectives and interpretations of that data, and strategic collaborative decision-making. James de Vries, Pepsico's Chief Design Officer explains, "Design is more than just aesthetics and artifacts associated with products; it's a strategic function and focuses on what people want and need and dream of, then crafts experiences across the full brand ecosystem that are meaningful and relevant to customers" (2015). Classifying design as key to corporate strategic planning beckons designers to develop business savvy in order to be involved in key initiatives from the beginning. A recent survey, conducted as part of the Creative Team of the Future program, indicates that just under one third of in-house designers will "always be tapped for input at the initial stage of a project" and just under two thirds "expect to be included at least sometimes (The Creative Group, 2016)". Although those numbers may seem low on the surface, they do not reflect potential differences between respondents that are entry-level designers in comparison to more seasoned creative directors who may be more likely to be involved. If businesses truly embrace design thinking it is likely that over time more and more lower level designers will be tapped to participate in the beginning stages of projects.

Corporations committed to embedding design thinking into their practice have not only placed designers at the executive level but have also initiated or expanded in-house design

Corporations committed to embedding design thinking into their practice have not only placed designers at the executive level but have also initiated or expanded in-house design teams.



teams. Non-design organizations are becoming the largest employers of designers. At last count, IBM had over 1,100 designers on its team and 10 design studios world-wide, making it the largest employer of designers (Lashinsky, 2015). This trend is reflected in AIGA's membership; over 50% members are in-house designers (2016). In addition to hiring sprees, Fortune 500 companies have begun to acquire design studios like Adaptive Path, Hot Studio and Fjord to expand their internal design capacities (Fabricant, 2014). Since the earliest acquisition in 2004, the strategy has become a regular practice with a 50% increase from eight in 2014 to 12 in 2015 (KPCB, 2016). Early acquisitions were made predominantly by the technology industry but are now dominated by the financial and service industries (KPCB, 2016). An increase in internal demands for design will likely continue the growth of in-house teams and challenge the role of client services oriented design studios. Currently, in-house teams remain relatively small (81% are teams of 10 or fewer) but almost half supplement their teams with freelancers and consultants when necessary (The Creative Group, 2016). Some free-standing design agencies have embraced this need and function as temporary extensions to the design team and business. Work & Co did this by relocating part of their team to Virgin America while collaborating on their website, which allowed the design team to have direct access to key stakeholders and decision makers (Memoria, 2015). Emphasis was placed on iterative prototypes and the elimination of "slick presentations" (Memoria, 2015). Their collaborative process was situated like an in-house project rather than an external one, which is a fundamentally different role for a digital agency to take, but one that may keep this particular agency relevant.

Design teams embedded within large organizations is not just a trend in Fortune 500 companies. In 2014, President Obama launched the US Digital Service (USDS), "a startup at The White House" that uses "design and technology to deliver better services to the American people" (US Digital Service, *Our story*, n.d.). The USDS now has 151 members and operates like a digital agency: they have a similar dress code, have a portfolio of their work on their website and have developed a set of design standards for U.S. federal government websites (US Digital Service, *U.S. web design standards*, n.d.). The USDS has done internal projects like the US Digital Services Playbook (US Digital Service, *U.S. digital services playbook*, n.d. in addition to multiple projects in collaboration with other federal agencies including Vets.gov, Digital Immigration, and Hack the Pentagon to improve interactions with government services. In addition to USDS, President Obama has embedded designers in other spheres of the government. Examples include hiring game designer Constance Steinkuehler as a senior policy analyst for the Office of Science and Technology Policy in 2012 and the Presidential Innovation Fellows, a program initiated in 2012 (U.S. General Services Administration, n.d.). Each of these designers is positioned to collaborate on complex governmental issues across a wide variety of agencies and departments, maximizing the influence they each have on the larger organization.

Designers in government demonstrate that designers are increasingly summoned to work on complex organizational, social, economic, and environmental issues. In 2007, Cooper-Hewitt, National Design Museum, presented a powerful showcase of design that addressed populations often underserved by designers in the exhibition, *Design for the other 90%* which was later followed by *Design with the other 90%: Cities* and the launch of the *Design Other 90 Network* (Smithsonian, n.d.). These exhibitions expose design as a historically privileged and exclusive endeavor and demonstrate that the expertise of designers have the potential to make a positive and powerful impact on communities world-wide. Movements and projects like AIGA's Design for Good, A Better World by Design, Games for Change, The World Bank's Social Enterprise Innovations and Project M all situate design as an important part of the conversations about the world's toughest problems. Financing this segment of the industry to make it sustainable is a challenge but many foundations, NGOs and charities have begun to invest in design to support their missions. One successful example is IDEO.org, a non-profit spin-off of its parent company IDEO, that partners with NGOs and communities around the world to improve quality of life (IDEO.org, n.d.). In addition, IDEO.org launched a Design Kit that provides teaching and training tools to enable other organizations do similar work. Designers who enter this realm have real challenges but also have the opportunity to make an impact. Although visual organization skills will likely be valuable to designers in this segment, their ability to research and analyze complex systems, source local materials, iterate, troubleshoot and revise, and co-create with the communities impacted by the design project will be key to their success.

Although design studios and full service digital agencies are far from extinct, the role of designers is expanding beyond the visual. Designers are increasingly involved in strategic decision-making and institutional problem-solving that take advantage of a designer's ability to clarify problems, visualize, ideate, and prototype. Designers from multidisciplinary backgrounds with experience in the social sciences and business are positioned to be competitive in this new era of design.

The urgency to adapt curricula to prepare students to play a strategic role as designers addressing a wide variety of complex systems and problems in collaboration with non-design professionals is not lost on design educators, design program accreditors, or the design industry.

Slow Moving Institutional Change. The urgency to adapt curricula to prepare students to play a strategic role as designers addressing a wide variety of complex systems and problems in collaboration with non-design professionals is not lost on design educators, design program accreditors, or the design industry. Collaboratively these constituencies helped to document the evolving role of designers while framing the current standards for degree programs in communication design first published in the 2013 edition of the "NASAD Handbook" (NASAD, 2013). This edition was the first time the professional practice of fine art (Standards for Accreditation IX) was established as distinct from design (Standards for

Accreditation X). The publication established a set of "common curricular elements" specific to design including: context, complexity, people, technology and research; and defined a more rigorous set of "essential competencies" for Communication Design that places significant emphasis on research (people and context), analysis, decision-making, ethics, and collaboration in comparison to earlier iterations of "essential competencies" established for Graphic Design that privileged visual form and communication solutions (NASAD, 2013).

The conversation leading up to the aforementioned changes in accreditation standards unfolded over the course of a decade as design professionals sorted out how to better prepare emerging designers for the field. For example, in 2003, a year before the first design studios were acquired by Fortune 500 companies, one of the first books to address design research methods was published. The book, Design Research: Methods and Perspectives (2003) was edited by B. Laurel and provided a survey of research practices in the industry. Articles on the AIGA website related to research started to emerge around the same time. Since then, a number of books on research methods have been published, with a boom in publications since 2012 with many titles targeted directly at practicing design professionals. Following suit, 'A Design Researcher's Manual' (2009), is listed as required reading in preparation for the Registered Graphic Designers certification exam in Canada. This is just one set of examples that demonstrate how the design industry has begun to supplement holes in design education. Although changes will be seen in design curricula over time, institutional change is slow and often takes years rather than months. In many cases, caution is warranted when design programs have a deep symbiotic relationship with studio arts programs reflective of a time when design was more visually centered. Likewise, embedding interdisciplinary study into degree programs has impacts beyond the design program. In some cases, determining how to financially support endeavors like this at institutions organized around disciplines, which, by extension, often means funds flow through these disciplines, requires larger policy and structural changes at the institutional level. As design educators do the slow and diligent work necessary for structural and institutional change, they can leverage course decisions left to the discretion of individual faculty members to design meaningful learning experiences that better prepare students for the new order of the design industry.

Preparing the Designers of the Future. An additive strategy of layering more onto what already exists into our curricula would require more credit hours to be added to programs, which is impractical. A shift away from a number of small projects focused on visual solutions in a single class towards a larger and more complex project which is tackled iteratively places focus on process and decision-making relevant to contemporary design professionals. M. Davis challenges, "Can we afford to continue offering design curricula that move from simple to the complex, when contemporary design problems are all about relationships- a complicated web of interaction among people, settings, activities, and technology?" (Davis, 2013). Knowledge building and fluency in the principles of design and the media in which designers work is not sacrificed when working on complex challenges; in fact, the necessity of such fluency is clarified and reinforced for students. Addressing more competencies in a single course requires redesigning the student experience so that more "sticks" with students in an efficient and meaningful way without creating unrealistic expanded expectations of time dedicated to a course by a student.

One model to create high impact student experiences is Fink's *Taxonomy of Significant Learning* which introduces six non-hierarchal categories of significant learning: Foundational Knowledge; Application; Integration; Human Dimension; Caring; and Learning How to Learn (Fink, 2013). Foundational knowledge are language and concepts essential to a field or discipline and generally equates to the information a professional recalls and uses without consciously thinking about it. Application or applied learning refers to moving from theory to practice. The integration category includes opportunities for students to make connections between disciplines, prior knowledge and new knowledge, and between the classroom and their personal and professional lives. Significant learning takes place when students recognize that information and skills do not exist in disciplinary or classroom silos but are connected in complex ways. The human dimension category focuses on relationships with others and self-knowledge. Significant learning happens when students are able to reflect and continually self-evaluate, self-define and redefine, and contextualize themselves within the landscape of various communities. The category of caring refers to the idea that significant learning occurs as a student becomes personally invested or committed to the subject, assignment, the field, the process of learning, etc. What hooks someone into caring is different from person to person and can be different for one individual from project to project. The last category of significant learning is learning how to learn. Significant learning occurs as students develop metacognition and discover more efficient and effective ways to learn, ask their own questions and find their own answers, etc. Combined, the categories in Fink's taxonomy offer a "user-centered" framework for curricula/courses that easily supports and reflects the complexities of being a professional designer in contemporary society.

Significant learning takes place when students recognize that information and skills do not exist in disciplinary or classroom silos but are connected in complex ways.

Conveniently, Fink's taxonomy aligns well with design as a disciplinary practice (especially the user-centered variety), making it a useful framework for organizing a course. In a design course, foundational knowledge might include concepts like the elements and principles of design, typography, usability, accessibility and sustainability. Application generally requires skills beyond what might be labeled as foundational knowledge or skills in design or visual communication. For example, designers routinely need to balance client needs with end user values within the context of a specific budget. To do this requires creative, critical and practical thinking skills in addition to project management, time management and collaboration. Integration is a form of significant learning that is important throughout the life of a designer. Understanding how complex systems interact and how design can complement business philosophies is core to successful in-house design teams, startups and the increasing culture of strategic design. Likewise, the human dimension captures the need for designers to recognize that they are not necessarily the audience they are designing for.

Developing empathy and compassion for people different from oneself takes practice, but is necessary for successful collaboration with non-design colleagues and designing solutions for

end users from around the globe. The caring category aligns well with the need for designers to be committed to and excited about the work that they do. Developing a new set of skills might motivate a designer in one instance but subject matter of the design artifact might motivate them in another. Identifying how to connect to each project is important for designers to feel fulfilled professionally. Finally, curiosity and lifelong learning, important habits that develop as a result of learning how to learn, are central to a discipline whose tools and technologies change and evolve rapidly. To further develop this idea, Figures 1 and 2 map NASAD standards—used as a summary of competencies considered essential for an emerging designer—to Fink's taxonomy.

NASAD standards	Taxonomy of significant learning
Context (usefulness, usability, desirability, sustainability, feasibility, viability)	Foundational Knowledge Application
Complexity (interdisciplinary collaboration, designing at the level of systems, geographic dispersal of effort, issues of lifespan and sustainability)	Integration
Designing for and with People	Human Dimension Application
Technology (learning how to learn technology, make critical choices among different technologies, design tools and systems)	Learning How to Learn Application
Research	Learning How to Learn Application

Figure 1.
NASAD Standards for Accreditation: Common Curricular Elements Incorporated in All Specific Professional Undergraduate Degrees in Design Mapped to Fink's Taxonomy of Significant Learning (Mushtare, 2016)

NASAD standards	Taxonomy of significant learning
The ability to conceive and to design visual communications and systems involving various integrations of the elements of professional practice.	Application
Understand and use of basic visual communication principles and processes.	Foundational Knowledge
Ability to incorporate research and findings regarding people and contexts into communication design decision-making.	Application Integration
Acquisition of collaborative skills and the ability to work effectively in interdisciplinary or multidisciplinary teams to solve complex problems.	Integration Human Dimension
Understanding of and the ability to use technology.	Foundational Knowledge Learning How to Learn
Understanding of and ability to use basic research and analysis procedures and skills.	Application
Functional knowledge of professional design practices and processes, including but not limited to professional and ethical behaviors and intellectual property issues such as patents, trademarks, and copyrights.	Foundational Knowledge Human Dimension
Experience in applying design knowledge and skills beyond the classroom is essential.	Application Caring

Figure 2.
NASAD Standards for Accreditation: Communication Design: Essential Competencies, Opportunities, and Experiences Mapped to Fink's Taxonomy of Significant Learning (Mushtare, 2016)

The framework offered in Figures 1 and 2 can be used to develop high impact assignments in both lower level and upper level design courses that provides relevant training to future design professionals. Lower level courses should support learners by providing a safe environment to "fail" and refine their practice (gaining self-knowledge in this way aligns with the human dimension category of significant learning). Circumstances like traditional "client" projects do not provide this safety net because they position student designers as experts. This is not to say that we want to give these designers "simple" problems to work on as M. Davis warns us against, but rather provide structured guidance through "messy" unstructured and open-ended problems.

One way to do this is to develop "simulations" that reflect realistic complex projects while reducing the noise of extraneous factors to help students to see relationships more clearly and to take advantage of the integration category of significant learning. Simulations do not necessarily need to be digital or complicated to be effective. A simulation in an introductory web design course can be set up by doing the following:

- Create faux small local business "clients". Small businesses are unlikely to have an in-house designer and likely have complex challenges to address but within a scope more appropriate for a novice designer. These faux clients should have small back stories, a basic visual identity and business owner with their own back story and personality. These narrative components help to immerse students in the experience.
- Present student design teams with a goal like "establish a web presence" and "sign up for courses online" that students need to dig into in order to determine the why and whether or not the "solution" presented by the client is what the client needs to reach their business goals.
- Allow students to communicate with the client through email and in-person meetings (the faculty member can role play by setting up a distinct email account for each client and creating low tech "disguises" to use for in person meetings).
- Introduce students to industry project management tools to facilitate collaboration.

Such a simulation project can be structured around each of the six dimensions outlined in the *Taxonomy of Significant Learning* while incorporating a number of the NASAD competencies. Students develop *Foundational Knowledge* as needed throughout the process rather than solely at the beginning. For example, when students need to learn more about their very specific intended audiences, research methods can be introduced and practiced; similarly, technical skills can be introduced when students need them so that they can implement a particular solution. One benefit of this strategy is that students are more likely to remember the information when they understand the application of that information. In this respect, *Application* is also embedded throughout the project, giving students ample opportunity to practice new skillsets within the context of the simulation from research methods to peer/competitor analyses to site development. The *Integration* of business objectives with user needs and the competing values of each group reveals complexity and demonstrates how research feeds and improves practice and product. Student learning is situated within the *Human Dimension* as students reconcile that their own aesthetics, preferences and experiences may not match those of their collaborators, including clients and end users. Troubleshooting communication issues and technical issues, with the guidance of the instructor, throughout the process helps

students *Learn How to Learn* in a very practical way. In the context of a simulation, students can practice skills like client communication and get feedback, recalibrate, and try again. Such experiences give students the opportunity to experiment with various strategies without any significant risk. Finally, the structure of the simulation project invokes the *Caring* dimension because students begin to imagine themselves as professionals. Simulations like this one will help students to understand design within business contexts and the strategic role design can play in market-driven contexts.

Provoking students to become deeply invested in the real possible outcomes of their projects strongly exercises the caring dimension of significant learning.

In more advanced courses, framing a class project around a social or environmental issue can provide a more complex learning opportunity that promotes significant learning in a similar fashion. Dealing with real world problems without the constraints of a client can open the opportunity for students to "own" the process and the project that is somewhat analogous to the entrepreneurial spirit of startups or pioneers attempting to solve some of the biggest world problems with design. Provoking students to become deeply invested in the real possible outcomes of their projects strongly exercises the *Caring* dimension of *Significant Learning*. Inserting constraints, particularly as they relate to sustainability and feasibility help students to stay practical in their proposals. One such project challenged students to address the question, "How does Alzheimer's and dementia impact our local community?" using paper and small 30 second audio recording modules. To design effectively, students had to gain foundational knowledge in non-digital interaction and the subject matter of the project, Alzheimer's and dementia. The project encouraged significant learning in the *Integration* and the *Human Dimension* categories as student designers reconciled the multiplicity of voices represented in the interviews conducted with caregivers, older adults, and family members about the impact of dementia on their lives and relevance of these stories to the students on campus, including the designers themselves. Students were exposed to new research methods, prototyping processes and interactive design techniques as needed throughout the semester but were responsible for diving deeper into the methods that best suited their needs.

Ultimately, the assignment resulted in two interactive installations that highlighted content co-created with the local community. One piece, *The Pathway*, included a path of suspended cards that juxtaposed a statistic/fact on one side with an image or quote from the community on the other (Figure 3). Another piece, *Cards of Compassion*, is a collection of greeting cards that hang together to create an image of butterflies (Figure 4). Each individual card has an embedded audio recording and a text excerpt from that recording that starts to unravel the complex narrative of dementia using a variety of voices from the community. These works were initially created for an exhibition called 'Recollection: A Memory Loss Awareness Project' initially hosted on campus with a special focus on establishing the subject as relevant to the student population (SUNY Oswego Website, 2014). Although not initially planned, the exhibition traveled to a number of adult care facilities and has inspired a new series of projects with

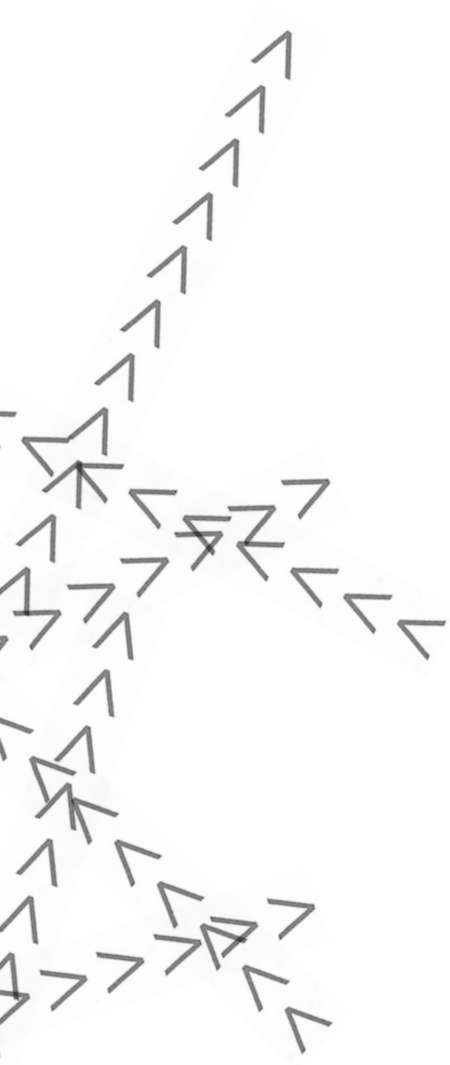
Figure 3.
The Pathway, installed at an adult care facility in Syracuse, NY. Photo courtesy of the author.

Figure 4.
Cards of Compassion, installed at Tyler Art Gallery at SUNY Oswego. Photo courtesy of the author.

this intent in mind. The students in this course made a significant impact on the exhibition viewers and contributors. The students who worked on these projects demonstrated significant growth as designers while expanding their own understanding of a social issue that will be of even more significance as this generation of designers reaches middle age.

Projects, like the examples outlined above, can be optimized for significant learning by building each of the six dimensions introduced by Fink. In doing so, such assignments will inevitably challenge students to grapple with complex problems that require continual re-clarification of the problem at hand as new information is collected and applied iteratively. Emphasizing the process over the product will help carve the space for students to develop strategic, analytical, critical and creative thinking skills. In this shift towards process over product, educators have a responsibility to coach students through the reflective process necessary to effectively document projects for their portfolios. Portfolios for the design careers of tomorrow should not simply demonstrate fluency in the elements and principles of design, but, rather, highlight how design decisions are made in response to information revealed through explorations, experiments, testing, research and collaboration. Portfolios should also evaluate how effective the solutions were at addressing the goals of the project and the needs of users. These additions to the portfolio demonstrate a preparedness for design as an ongoing process rather than as a series of deliverables or products.

Conclusion. The future of the design profession is bright, despite a decline in traditional design studios. Designers embedded in non-design organizations are increasingly involved in decision-making conversations that determine the strategic direction of businesses, products, services and initiatives. These opportunities are exciting and increase the impact design makes on society. Although institutions design educators work within are often not nearly as nimble as the industry they prepare students for, their classrooms and courses often are. Many educators are situated within curricula developed for more traditional visual communication and organization problems but often have the leeway to innovate within their own



classrooms. Using models like Fink's *Taxonomy of Significant Learning* to restructure classroom experiences for higher impact learning will better prepare students for professional practice and increasingly complex design problems.

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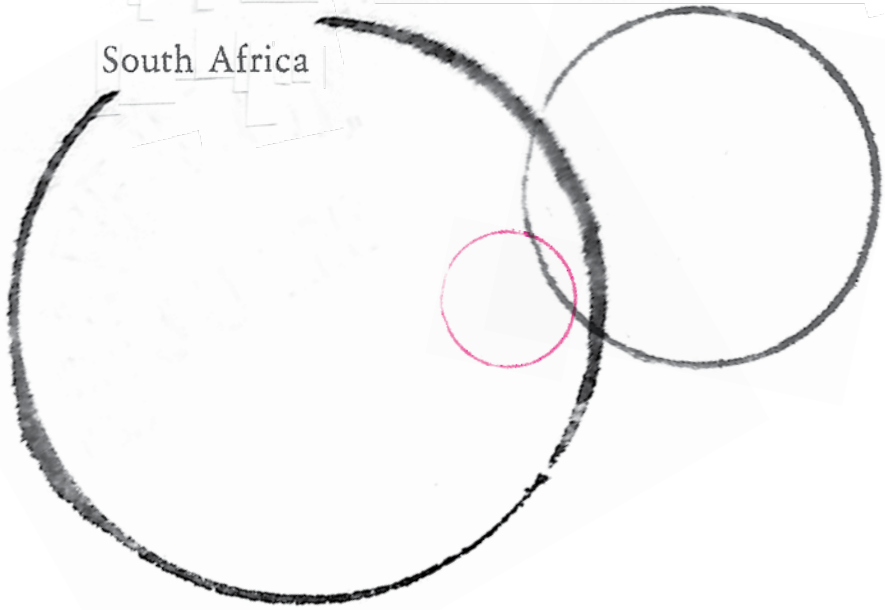
evaluating a community engagement initiative that aims to further socially responsible design education:

lessons from South Africa



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Abstract. The demand on higher education institutions in South Africa to incorporate community engagement into their offerings is gaining momentum. Similarly, the demand on design educators to instill a sense of social responsibility and equip students with the requisite skills to apply social responsibility is also growing. A private college reports on an initiative it runs in order to further both of these aims. The paper highlights the main findings of a mixed-method evaluation of the initiative, leading into a discussion of the kinds of issues and debates education providers need to engage with to advance both community engagement and social responsibility in design.

Keywords. Community engagement, design education, evaluation, social responsibility

Introduction. In South Africa, the Department of Education's White Paper on the Transformation of Higher Education speaks of community engagement as a function of Higher Education institutions. One of the goals is for education providers to "demonstrate social responsibility and their commitment to the common good by making available expertise and infrastructure for community service programs" (Ministry of Education, 1997). Similarly, the Higher Education Quality Council (2004) identifies community service, alongside teaching and research, as the core activities of higher education institutions. Higher education providers are thus expected to include some form of 'engagement' between learners and communities for the benefit of both, though the nature and form of such engagement is not prescribed.

Within the field of design, concepts such as user-centered design, participatory design, empathic design, socially responsible design, value-sensitive design and responsive design are commonly celebrated (Papanek, 1971; Roser, 2010; Tromp, Hekkert & Verbeek, 2011; IDEO, 2014). This is particularly evident in documents expressing multinational commitments to design for public benefit, such as the Kyoto Design Declaration (Sotamaa & Yrjo, 2009) and in the goals of the International Federation of Interior Designer (2014) and the International Council of Graphic Design (2015). Whilst there are important differences in these concepts and goals (Pope and Turner, 2014), for the purposes of this paper, the term social responsibility will be used as a generic term to referring to the acceptance of the value of designing with people as opposed to for people, accounting for context, and generating designs that legitimately improve (or at least don't worsen) the circumstance of the persons the design artefact is intended for. Greenside Design Center (GDC) is a college of design in South Africa, and has attempted to meet these two aims (incorporating community engagement into higher education, and furthering socially responsible design) through a specific initiative, named 10Percent. The initiative is so named as it sees ten percent of the curriculum (roughly three weeks) dedicated to community-based design projects. Essentially, a mix of students from different design programs form teams that work with an external community or on a humane cause, applying their design expertise for the benefit of that community or cause. The projects are led by lecturers from the interior, graphic and multimedia design departments.

As part of the college's quality assurance processes, an evaluation of the initiative was conducted by the Head of Quality Promotion at the college. The purpose was to determine whether the initiative was achieving its aims, what the strengths and weaknesses were, and generally how the initiative could be improved on. This research report details the key findings of the evaluation. In so doing, the paper hopes to stimulate debate about the best way to conceptualize and implement community engagement that fosters social responsibility in design students.

The Initiative. Each year, the initiative commences with lecturers putting forward proposals for a project. Thus, lecturers are tasked with identifying a community and project, for which they then submit a proposal. In the proposal they explain the circumstances of the community, envisaged project outputs, suitability of the work for GDC students, and expected costs. In most cases, the proposal is based on conversations lecturers have had with the community, ensuring that it is relevant. At times this is not possible, for example when the project focuses on a cause or issue. A Community Engagement Committee of the college then meets to vet the

proposals, ensuring that selected projects are feasible, and entails students contributing to a worthy cause as opposed to simply providing free labour for any client. The college typically runs seven projects each year. During the initiative, normal class structures fall away and students from the first, second and third years of study from the graphic, interior and multimedia design degree programs, form multidisciplinary and multilevel teams. Each team works collaboratively to explore the given community's need and the role design can play to respond to that need. Each project commences with a briefing from the lecturers in which the issues at play in the project are unpacked. A community representative is invited to present their situation to the students, and where possible, a site visit is conducted. Students then break into smaller groups to conceptualize and produce designs that speak to the needs of the community. The final work is presented to all staff as well as the community representatives, and all outputs are forwarded to the community. Figure 1 below is a collection of images take of the students at work and some of the final designs to illustrate the nature of the initiative.

Over the years of its existence, the 10Percent initiative has seen close to 1000 GDC students working with real communities facing real problems, using design to improve life. Some examples of the work include:

- Various interventions to address the water crisis in South Africa
- Awareness campaigns for the South African Depression and Anxiety Group
- Development of relevant design artefacts that can be reproduced in the Fabrication Laboratories of the Department of Trade and Industry
- Urban regeneration activities for the local community in Greenside
- Design of products to be manufactured and sold by non-governmental organizations (for example organizations that support women affected by HIV/Aids)

Evaluation Methodology. A mixed-methods approach was adopted for the evaluation. Data was collected from multiple sources using different methods over several years (for example document reviews, questionnaires, focus groups) and the data was predominantly qualitative (Coolican, 2004). The evaluation was exploratory in nature and aimed to surface the strengths and challenges, as well as opportunities for refinement. Emphasis was placed on gaining insight and understanding of evaluation from different stakeholders, and depth of information was favoured over breadth and representation (Creswell, 2007). This is particularly important to note given the multiple focuses and outputs of the initiative. Seven different projects are run each year, and for each the brief, process and outputs are different. In some cases, contrasting findings emerged through the evaluation, making it difficult to arrive at generalized findings for the entire initiative. To accommodate for the mixed feedback, the results are presented as a theme, noting both the successes and risks that were identified.

Findings.

Finding One: There is a risk that the projects are poor in quality and have little impact, although they have the potential to make a genuine difference. For some projects, stakeholders expressed some dissatisfaction with the ultimate impact of the projects for the community. One lecturer described it as such: "Beautiful proposals of what great designs can look like is impressive, but if a tangible outcome is not really feasible, what is the use?". This comment referred to the fact that many projects resulted in design proposals, for example a plan for how a space can be repurposed, which were unlikely to be realized. A visiting lecturer noted

that the project they were involved in did not incorporate planning for fundraising, implementation, continued management and sustainability at the end of the three-week project. This resulted in the project concluding with only a proposal, and not actually making a change.

Another visiting participant also observed that as a design college focusing on interior, graphic and multimedia design, many of the outputs were more aligned to product design. The challenge to the students has been that the college does not have access to manufacturing resources, and students frequently outsource the production of their prototypes. As the participant noted, outsourcing production is generally not feasible for a community with limited resources.

In contrast to the above finding, for some projects the outcome has been commendable. Firstly, in one project, GDC students collaborated with the South African Depression and Anxiety Group. The design artefacts created by students (profiles of heads) were incorporated into the community's existing media coverage and assisted in creating awareness. The artefacts were also auctioned by the community allowing them to generate funds. The project thus resulted in tangible successes.

In other projects, having a prototype as a design output was arguably an appropriate output. In the FabLab project, students were tasked with generating design prototypes that can be manufactured by entrepreneurs in underserved communities. The college partnered with the Fabrication Laboratories, which contain industry level manufacturing equipment. The resource is made freely available to the surrounding community and is sponsored by the South African Department of Trade and Industry. Because the community already has resources to carry out the manufacture, producing a prototype was an appropriate output.

Finding Two: Students are exposed to the real world, but with a risk of a lack of genuine engagement and demonstration of cultural sensitivity. The value of exposing students to the *real world* as readily acknowledged by all stakeholders involved in the evaluation. For example, staff identified this point as one of the biggest success of the initiative. They also rated the engagement and the participation levels of students as good, describing them as "passionate" and "positive". Many students themselves reflected on the project very positively, with comments such as:

- "the 10% initiative made me aware of the community and how as a designer I have a responsibility"
- "as a designer designing for the less fortunate brought a smile to my face because it shows that we take everything for granted"
- "it gives you a new and different perspective on the outside world of design"

Other students described it as a waste of time with no valuable contribution to themselves or the community. This is illustrated in the image below, with several students engaged with their mobile phones at the briefing at the site of the community. Staff corroborated this finding by reporting that some students were inactive and seemed disinterested, with the lecturers concluding that they didn't see the benefit of the initiative.

Perhaps more significant, though, was the finding that some students' engagement was superficial, even when the student was active and interested. One visiting participant

explained that the introductory lectures for the project were not successful in sensitizing students to the issues (in this case around mental health). The project aimed to create awareness amongst the general public around the stigma of mental disorders, the harm of prejudice and stereotypes, and yet students within the group continued to stigmatize and stereotype sufferers of ill health throughout the project. The risk, in this instance, highlighted the failure to cultivate in students a sense of empathy and sensitivity to a community and their socio-political context.

...students benefitted from exposure to different skills and design processes from the three disciplines involved (interior, graphic and multimedia design).

A similar concern pointed to the limitations of students' investigation into a community's circumstance and need, resulting in superficial and unresponsive design outputs. For example, one of the lecturers in the Fablab project indicated that insufficient primary research was done with the surrounding community in order to arrive at a prototype that the community would find useful and relevant. Students are expected to engage with the community in order to research possible research interventions. A disappointing finding was that at least some students made assumptions about what prototypes were valuable, thus failing to fully understand their situation and therefore failed to work with the community.

Finding Three: The benefits and challenges of multi-disciplinary and multi-level groups. This feature of the initiative was seen as both a strength and a challenge. In terms of strength, it was recognized by lecturers, students and visiting participants that students benefitted from exposure to different skills and design processes from the three disciplines involved (interior design, graphic design and multimedia design). Communities also benefitted from a variety of different types of outputs. For example, work produced for the Johannesburg Parent and Child Counselling Centre included a design for a website, plans for layouts of the space, and a new corporate identity.

As to be expected, lecturers frequently found it a challenge to get the groups to work efficiently and effectively toward the same goal given the different expertise. Multidisciplinary projects are not typically included in the curriculum and lecturers are thus only exposed to this once a year. A similar issue was that students from higher levels of study were more competent in design skills, with the younger students being less able to contribute. This finding was common, though the converse was also noted. Several lecturers noted occasions where younger students adopted a leadership role, helping the group to achieve its goals. A further finding regarding the group work pertained to assessment. The assessment of the project is based on an assessment of the group's final output (for which all students receive the same mark) as well as an assessment of each student's contribution to the project and critical reflection of the project, for which students submit a 'portfolio of evidence' and receive individual marks. There was some concern amongst both the staff and students that the assessment was not fair, because of the weight given to the group component.

Finding Four: Insufficient critique and evaluation. The project requires students to write an essay in which they explore the concept of social responsibility and apply it to their project. This is intended to encourage a critical reflection of the process and output from the student's perspective. The essay is assessed. In addition, the design outputs are assessed and feed into the students' overall grades for the year. These are ways in which the college successfully incorporates critique. What is lacking however, is a thorough critique from the community members and an evaluation of the long term impact of the designs. If the uplifting of communities becomes an objective for designers, then it is important that interventions are thoroughly evaluated using credible evidence and over time (Cooper, 2005). In addition, the extent to which students reflect on their role, behaviour and attitude in the project remains limited. Thus some students fail to grow in terms of sensitivity. These remain an objectives of the college.

…the impact of design interventions…brings into play questions about what type of community, what type of intervention, and what type of engagement is appropriate.

Discussion. Reflection on the findings above highlights important considerations for community engagement initiatives that hope to cultivate social responsibility in students. Discussions about the impact of design interventions (Finding One) brings into play questions about what type of community, what type of intervention, and what type of engagement is appropriate. The given initiative aims to serve both educational goals as well as community enrichment goals. At times, these goals can compete with each other and education providers need to carefully consider the parameters of an initiative. With the community engagement goals in mind, thought needs to be given to what defines a community, what kinds of outputs or interventions are appropriate and desirable, and how expectations from a community will be properly managed. With educational goals in mind, attention needs to be given to pitching a project that is both sufficiently challenging to be a learning opportunity for students, but also achievable and feasible. Ideally the expectations of both the community and students should match, so that both parties can be satisfied with the outcome. Another important element in these considerations is how much time should be allocated to a community project. Too little time threatens to undermine the impact of the study, whilst too much time may detract from an educational curriculum. Similarly, one must consider how much time to allocate to researching a community's needs in order to avoid superficial understanding and generating design outputs based on unfounded assumptions.

Finding Two, regarding the students' actual engagement with the real world, raises questions about the level of engagement that is required, and moreover how this can be facilitated. To begin with, students may vary in their levels of participation and activity (as would happen in any education environment), though when working with a community, the impact of this is greater and has potential ethical implications. The role of the college and lecturer in managing the situation is highlighted. As the drivers of the initiative, the college and its lecturers assume ultimate responsibility for the initiative. Clarity on the

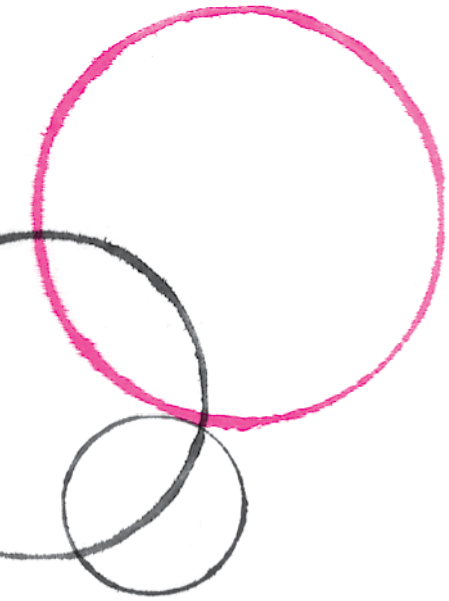
role they play in quality assurance, communication, and delivery is necessary. Whilst the college policy on Community Engagement references the management of stakeholder expectations, the findings of the study emphasis the need for more clarity.

Given also that students may be exposed to different cultures, value systems, attitudes and behaviours when working with communities, one must also consider if and how the students' interaction with the community should be mediated. This introduces a host of ethical issues, for example where the values of the community and the designers are different, and interventions become imperialistic and disempowering (Dorrestijn & Verbeek, 2013; Melles, de Vere & Misic, 2011). As a learning activity, one must accept that students are involved, and students are not yet mature as designers or adults. There is a real risk of students failing to be sensitized to the given community, and demonstrating inappropriate behaviour regarding or even toward a community. To prevent this, more responsibility is placed on the lecturer to contain and mold the situation. Whilst lecturers do assume the position of project leader, students are supposed to take ownership of the outputs as part of their learning process. A pertinent question of what other expertise is required to facilitate the process better. Important ethical issues come into play with community projects, for example, conceptualizing mental health, notions of 'the other', relating to people with different values etc. Is it fair to require a design lecturer to manage all this, or should other experts, such as sociologists, be involved?

Discussion about the multidisciplinary and multilevel group work (Finding Three) speaks more to pedagogical issues. Despite the challenges in managing and guiding the groups, the findings of the evaluation suggest that having the mixed groups was a valuable experience for students, and is a good preparation for the world of work. However, this does impact the assessment of work. Outputs cannot be standardized, and lecturers can offer only limited guidance to design work that is outside of their field. Likewise, the validity of the assessment can be called into question when the work produced may fall within a field that the given lecturer is not qualified in (for example an interactive designer assessing interior design works).

Important ethical issues come into play with community projects, for example, conceptualising mental health, notions of 'the other', relating to people with different values…

The finding that more can be done in terms of critique and evaluation is an important one. If design as a discipline is to embrace a role in the uplifting of communities as expressed by global design councils such as the International Federation of Interior Architects/Designers (2014) and the International Council of Graphic Design Associations (2014), then measures to support the validity, credibility and impact of design interventions is necessary. Students in particular should be encouraged to test the effectiveness of their interventions if they are to develop a sound and critical appreciation of the role of socially responsible, human-centered and sustainable design. Beyond assessment in the classroom, evaluations of this nature would arguably benefit from the expertise of other disciplines, such as social science researchers.



Conclusion and Recommendations. It is unlikely that a community engagement initiative will ever be flawless. Given that projects are completed by students who are still in training, that there are limited financial and physical resources, and given also the complexities of real world problems and real life contexts, it must be expected that any intervention will have challenges. We would argue that this does not mean such initiatives should be abandoned. Rather, active discussions and sharing of information needs to take place so that the problems can be mitigated. In this spirit, the following recommendations are put forward based on the current evaluation:

- At the stage of project proposal, careful thought needs to be given to the potential output of the projects, the appropriateness for the community, and the feasibility for students to engage with the process and deliver appropriate outputs.
- Collaborate with partners who can contribute to a more holistic intervention, particularly for funding, access to additional resources or providing additional expertise.
- Focus specifically on sensitizing students to issues socio and political. This may include a guideline of behaviours expected from students. Support and guidance should also be sought from other disciplines whose primary activity is community work, for example reference to the Code of Ethics form the American Psychological Association (2002), as well as literature on service learning.
- Emphasize primary research into the community's needs, as well as research into the impact of design interventions. This may require support from other professionals better equipped in research skills.
- Test the impact that the proposed project has on its targeted community so that issues that stem from the solution can be addressed (or circumvented) in future projects.
- Networking amongst schools and organizations that promote socially responsible design can serve to share insights and best practice.

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design beyond borders:

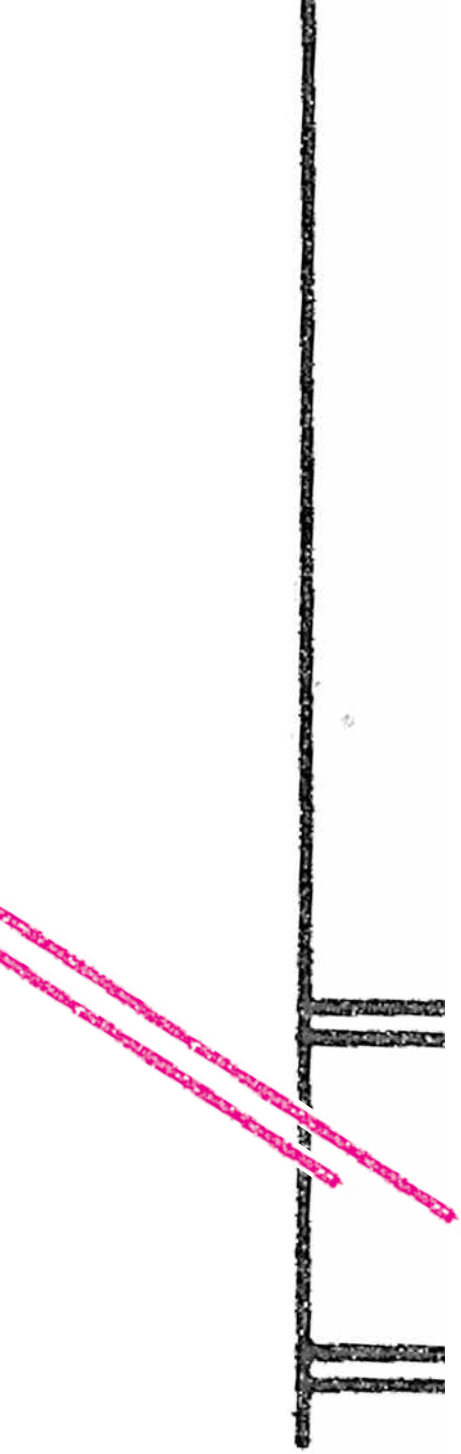
bicultural international project

Diana G. Robinson Trápaga was born in Mexico city. From 1989 to 1993, she studied Graphic Design at Iberoamericana University, Mexico City. From 1993 to 1996, Robinson worked as Junior and Senior designer at Entorno Tassier studio, developing branding, packaging and publishing projects. From 1996 to 1998, she worked at Mexico Communicates as a web designer, Veracruz Mexico. In 1996, Robinson opened Robinson Design Studio. Since then, she has worked on different design projects, mainly publishing, branding and marketing strategies. In 2000, she moved to Ensenada Baja California, Mexico, to join as a professor with the School of Design at CETYS Ensenada. From 2010 to 2013, Robinson completed a Master in Marketing at CETYS Ensenada. In 2013, she took up the post of coordinator of the career of graphic design at CETYS Ensenada.

Min Choi is a passionate designer & educator. Leveraging 15 years of brand identity, corporate communications, design for entertaining, environmental, infographics, packaging to interactive design, she has won numerous design awards, and owns Min Choi Design. Min imparts her knowledge and love of design to the next generation of designers by teaching at San Diego City College, San Diego State University and abroad. She has served AIGA San Diego as an Education Director, Vice President, and a current faculty advisor for City College student group.

Abstract. Classes from the CETYS University Ensenada School of Design in Baja California, Mexico and the San Diego City College Graphic Design Program, an hour across the U.S. border in San Diego, California, teamed up for a design project that gave the students real world experience in what it means to be global designers. The students learned to widen their vision beyond their own perspective to incorporate a different culture in their design considerations. The students gained an understanding of their place in the world as individuals. They learned to appreciate their own culture, while positioning themselves as designers on a global stage. For this project, a common product for both countries was chosen (beer), since beer, particularly related to microbreweries, is a growing market in both countries. Students developed a label for a fictitious beer for the Tijuana-San Diego border region. They named it, designed the brand and created a beer packaging. Students researched the social, economic, cultural and political issues of the border related to their product. Through the project the students found new ways to connect with cross-border students, teachers and schools, while taking advantage of the technological platforms that offer no boundaries.

Keywords. Beer, California, CETYS University Ensenada, cross-border collaboration, Ensenada, global design, Mexico, microbreweries, San Diego, San Diego City College



The Centre for Higher and Technical Education (CETYS University) is an educational institution of excellence in the State of Baja California, México. It was founded in 1961 in Mexicali, under the sponsorship of a group of parents, entrepreneurs, who craved quality education in the state. Today it has three campuses: Mexicali, Tijuana, and Ensenada. The Graphic Design program opened in August 2000 in Ensenada (CETYS, 2016).

The Academic program has a creative, technological, and business emphases. It encourages students to understand their culture and country in the context of internationalization. Since the Ensenada campus is an hour from the Tijuana-San Diego border, students visit companies, design firms, and museums in San Diego and Los Angeles to widen their vision of the world and enhance their work as Graphic Designers (CETYS Website, 2015).

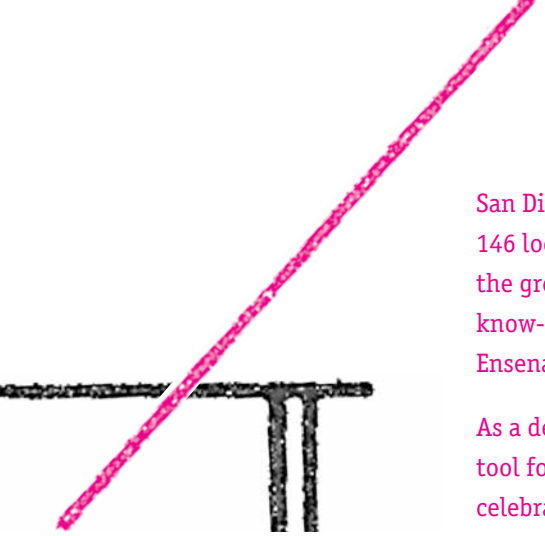
The award winning Graphic Design Program at San Diego City College is located in the heart of downtown San Diego, California. City College is part of the San Diego Community College District established in 1914, which also includes San Diego Mesa College, San Diego Miramar College and San Diego Continuing Education. The Graphic Design Program is known for mentoring designers, so they can make a difference in their community. Students learn to design for the real world through educators who are also talented working design professionals in the industry. With the proximity to the Mexico border, students are given opportunities to widen their vision of the world and their own perspective towards different cultures through multicultural projects.

Professor Diana Robinson teaches Packaging Design at CETYS Ensenada School of Design. The school has a close relationship with professional designers and academics in San Diego, CA. In 2014, under Robinson's advisory and leadership, students formed a student group and became members of American Institute of Graphic Arts (AIGA). They joined the San Diego chapter, since it was the closest location to Ensenada.

It was at a San Diego AIGA meeting that Professor Robinson met Min Choi, who at the time was the vice president of local AIGA chapter. Choi is a design professional and owner of Min Choi Design in San Diego. She is also a professor of beginning design, infographics, branding, packaging and portfolio at San Diego State University and she teaches ARTG 133 Intermediate Graphic Design II (with a focus of Identity Systems and Packaging) at San Diego City College.

As both professors got to know one another, they realized they shared common interests. In both their classes students design and produce brand identity, packaging design, and learn about the design process using different materials. They also both teach their students real world design in a globalized market. This is when they decided to team up. During one visit to San Diego, Professor Choi gave Professor Robinson's Ensenada students a tour of San Diego City College Graphic Design Department. They agreed to look for other opportunities to collaborate.

Case Study. In January 2015, Professor Robinson invited Professor Choi to work on a project with their students at both universities. The class activities occurred in the Spring semester of 2015, between February and June. The cross-border students operated with the similar guidelines and with the similar market and product. The objective was to design a brand for a common product for both countries. The proposed product was *beer*, since beer and microbreweries are a growing market in both cities.



San Diego has become well known as a microbrewery regional powerhouse. In 2016, there are 146 local microbreweries in San Diego and the number is growing rapidly. This has benefitted the growth of the industry in Baja, where there is a close relationship between clients and know-how. In Baja California there are approximately 120 craft beer projects: around 30 in Ensenada, 50 in Tijuana and 40 in Mexicali.

As a design project, creating a micro brewery's brand and packaging design was an excellent tool for students to learn a global visual language, develop an awareness of the meanings and celebrate the power of different cultures. The goal of the packaging design they created and promoted was to make social and ecological impacts.

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Project Guidelines. Students from both classes created a fictitious microbrewery to brand, including developing the name and designing the label. This brand's unique theme was to communicate effectively for the border market. Students were encouraged to embrace both cities' culture and unique geological location, as well as express their voices on social, political, and economical issues. For a visual reference, students were to search for existing packaging in the market, analyze local, national and international labels.

Product.

CETYS Class. The product was to be a crafted lager or pale ale beer with a bitterness level of IBU 30. The cost was to be $2.00 dlls. The consumer market was men and women who enjoy beer and are at least 18 years old in Mexico and 21 years old in the U.S.

City College Class. Students were asked to come up with three styles of beer and flavor, determine the cost, and distinguish its demographic based on their research and theme.

Design Process. The design process consisted of research/analysis, concept development and implementation of the final design. Although physically crossing the Mexico border for the U.S. students proved too bureaucratically complicated to achieve, it did not impede the project. Since the Internet is borderless, the students were able to share information via email, Dropbox, Voice over Internet Protocol (VOIP), and social media.

Research/Analysis. The projects were treated as real-life solutions and students evaluated current market trends in the microbrewery industry. They conducted qualitative and quantitative research, and analyzed their findings. In the literature review, they learned about specific themes such as 1) The process of making beer (Elaboración de cerveza, 2015); 2) Mexican and American beers consumed in California and Baja California (Cámara Nacional de la Industria de la Cerveza y la Malta, 2015); 3) The development of Mexican beers (Atúnez, M., 2013); 4) Design labels in Mexico (Cervezas mexicanas artesanales, 2015); 5) Design labels in the United

States (Stanger, M., 2014); 6) Beers in the world (Proceso de elaboración, 2015); 7) Labels in The U.S. (Riquelme, K., 2012); and 8) Issues in the border (Muro fronterizo de Estados Unidos-Mexico de vida o muerte 2015).

City College students had a shorter time frame of six weeks for the entire project and the class focus was slightly different due to class differences. Ensenada class spent from February to June to complete the project.

The students in Ensenada took field trips. They visited a local brewery, *Wendlandt*, to observe and learn about the production process, bottling and labeling of the product (Wendlandt, 2015).

They visited a label print shop, *Graphic Image,* where most of the wine and beer industry labels in Ensenada are printed. Students learned about the process, materials, inks, and printing possibilities. They received technical information such as file size, resolution, accepted formats, special issues to be considered as dark backgrounds colors, outline typography, textures, possible finishes: hot stamping, emboss, die cutting, different kinds of paper that are suited for beer labeling, which is exposed to ice (Graphic Image, 2015).

Ensenada students also attended a talk on the campus of brewer Dr. Carolina Armijo, owner of *Media Perra*, who explained about his company's brand evolution, vision of the market opportunities, and growth (McNally, 2008).

Preliminary Survey. To learn more about the preferences of beer from consumers in their U.S./Mexico border region, Ensenada students designed a survey, which was a collaborative work in class (Appendix 1). Using Survey Monkey, the Ensenada students shared it among their contacts. They also shared it with the San Diego City College students, so each class could apply the survey in their own country and in their own way.

Concept Design. Based on their research findings, students organized and analyzed information to build their concept. They developed a unique theme, name, identity and overall brand expression. Students were required to go through a naming exercise, develop a logo and develop a visual vocabulary with photography/illustration, typography, color, icons and patterns that accurately supported the brand to its targeted demographics. They designed bottle or beer can package mock-ups, showcasing three different styles. They also created a process book, including their findings from their research, conceptualization to final design.

Through a creative brief, students defined how their design and brand fulfilled current needs or trends within the specific market along with a mood board to set the overall visual look and feel.

The students started with hand sketches to explore ideas. In class, students critiqued each other's projects in a constructive and positive way, they gave each other feedback and suggestions that enriched their design.

After analyzing the image that best suited their concept, the students generated prototypes on the computer. Design elements were reviewed in class. Specific typographic elements including size, label color, forms, photography/illustrations were selected. Once the projects

were complete, they were photographed, which gave the students experience working with light reflected on glass.

Implementation of Final Design. Concepts were all very different, but students found a series of common features as they developed their naming and brand.

Names and concepts created by CETYS Ensenada students:

- *Front Beer* (Figure 1). Ocean eliminates the border. It can't be divided by a wall. Both countries share the ocean. Water is an element that flows, comes and goes and cannot be stopped. Even though it is regulated by governments, the ocean cannot be physically divided.
- *Road Trip* (Figure 2). It is based on the trip Mexicans and Americans do by car, they travel from one country to the other to have fun, visit friends, family, enjoy the experience, vegetation, ocean, sky, the wind in their face when they drive.
- *Tied by Science* (Figure 3). Ensenada has three of the most renowned scientific centers in Mexico: CICESE (Centro de Investigación Cientifica y de Educación Superior de Ensenada, UNAM (Universidad Nacional Autónoma México), and UABC (Universidad Autónoma de Baja California) scientists share their knowledge, with scientific centers in San Diego, such as Scripps Institute of Oceanography, Sanford Burnham Prebys Medical Discovery Institute, and the Salk Institute. Knowledge is untouchable. It is beyond the border. It enriches our culture and economy and contributes growth to both countries.
- *Party Nativo* (Figure 4). The border is about people and socializing. It is a social exchange between two cultures, restricted by the political field. Life on the border enriches people and the culture. It provides the opportunity to live unique experiences, see, do, listen, and feel different things, learn and expand the vision about others. Party is where you are.

Figure 1 (left).
Front Beer. Student Elsa Alba
Figure 2 (midle).
Road Trip. Student Barbara Ocegueda

Figure 3 (top).
Nativa. Student: Christoher Aguiñiga

Figure 4 (bottom left).
Tied by Science. Student: Iris Castellanos

Figure 5 (bottom right).
Aguilas Brewing Co.
Student: Salomon Fernandez

Names and concepts created by San Diego City College students:

- *Aguilas Brewing Co.* (Figure 5). Aguilas means eagle in Spanish. As U.S. and Mexico shares the same national bird, Aguilas, our brand brings both cultures together in an energetic form. The beer flavors are inspired by the locally grown plants and living natures.
- *1848 Brewery* (Figure 6). Since the Treaty of Hildago in 1848, the date in which San Diego was set apart from the Baja California, area of San Diego and Baja California have grown together but very much apart. 1848 Brewery tells the story of the very different, but intertwined flavors of the areas in and around this region.
- *Frontera Brewers* (Figure 7). The border region between San Diego and Tijuana has had a negative history in the news and media. Positive aspects of both cultures along the border are often overshadowed by reports of gang violence and drug trafficking. Frontera Brewers is a collaborative brewery between San Diego, CA and Tijuana, BC located in Barrio Logan.
- *Crossing Brew Co.* (Figure 8). Over 40 million people cross the border each year between Tijuana and San Diego, giving the region the busiest land-border crossing in the world. We think humor, great deign and great beer can reach a larger audience to shed light an issue, Open Borders, that instills fear in Americans.

Figure 6 (top left).
1848 Brewery. Student: King Arthur

Figure 7 (top right).
Frontera Brewing.
Student: Diolinda Monteiro

Figure 8 (bottom left).
Crossing. Student: Michelle Iverson

Figure 9 (bottom right).
Turnbuckle Brewery.
Student: Levi Christian

- *TurnBuckle Brewery* (Figure 9). Both U.S. and Mexico have a passion for the wrestling industry. The name of the company is named TurnBuckle Brewery. The name TurnBuckle comes from the corners of the ring that support the ropes. The product is a unique duo to its fun and colorful design with a vintage throwback. The label's design is inspired from various Lucha Libre.

Evaluation. Students on both sides of the border presented a book covering the complete project, from design methodology to research and prototype. The content of each book includes:

- The beer production process
- Documentary research—public and private information
- International and national beer
- Field research
- Sketching
- Prototypes
- Final Design
- Color guide
- Construction net
- Security space
- Annexed photography
- References

Both professors evaluated and graded their respective student projects. Robinson gave feedback to Choi's students and vice versa. The additional feedback provided a different perspective about the same design.

Skype was used as the connecting platform. The Ensenada students presented their work in English, which they were already used to doing. Taking advantage of this technological platform helped erase the boundaries between the classes, enriched the academic experience, and opened students to different design possibilities.

Conclusion. Through a common design project, university students were able to approach the reality of another culture, which created empathy and collaboration. This gave them the experience to look abroad with a different perspective. A well-done design is inclusive; it can arise and join values of different cultures. Graphic language encompasses more than spoken language, where understanding or translation is needed. Graphic Design creates a visual bicultural language. Design is a tool to transform, empower and unite. Furthermore, connecting with other schools, professors, students and taking advantage of the technological platforms, which offer no boundaries, and enrich the academic experience, open endless educational, business and undertaking possibilities. It is up to us to teach upcoming generations to become design entrepreneurs and to develop themselves professionally through the tools of *Design Thinking*.

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Appendix A.

Preliminary Survey

Sex: ☐ Male ☐ Female Age: ☐ 21–25 ☐ 25–35 ☐ 35–45 ☐ 45–55

Do you drink beer? ☐ Yes ☐ No

If your answer is "no", finish here the test. Thank you

What beer do you drink? ☐ Local Brewers ☐ Commercial Beer

If your answer was "local brewer", write the Brand you prefer: _____

_____

_____

What type of beer you prefer? ☐ Lager ☐ Dark

Have you tasted any Mexican beer from small brewers? ☐ Yes ☐ No

Which one? _____

Have you ever tasted any American beer from small brewers? ☐ Yes ☐ No

Which one? _____

What beer labels do you like or remember most? _____

_____

_____

who does this internet artwork belong to?

a study on remix culture and youth identity in a digital age

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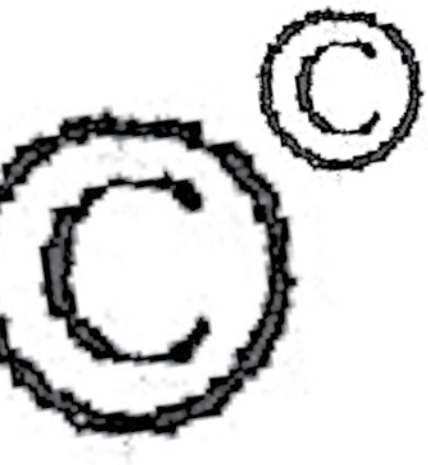
Abstract. This pilot study explores perceptions of remix culture in art and design education. As appropriation practices continue to expand with Internet use, the disciplines that fall under the umbrella of visual arts education also widen. Artists and designers who experiment with new technologies and methods of appropriation are influencing changes in teaching and learning. These emerging practices inspire young people to reframe their compositions through the lens of reinterpretation and remix. In order to analyze changes in appropriation practices, survey and interview data was collected. Responses suggest a growing intersection between media consumption, production, and a desire from participants to learn more about fair use. This study also explores the dialogue around remix culture and considerations related to the critical analysis of Internet artwork.

Keywords. art appropriations, copyright law, design, internet art, remix culture, youth identity

Introduction: a digital age of appropriation. The Internet and social media have rapidly reshaped the way youth engage with new media forms and their creative practices. Young people, who are now described as native speakers of the digital language of computers and the Internet, are adopting new technologies and methods of appropriation (Gardner & Davis, 2013; Prensky & Chen, 2012, p. 2; Sweeny, 2011; Turkle, 2011, 2015). Some of the most vital work conducted online is led by youth who design, remix and mash-up sources with ever-increasing ease, sometimes with little thought as to the sources they are drawing from. These remix practices bring to notice the issue of originality in art and design. This is a heavily scrutinized, debated and disputed concept that has long troubled visual art educators as they navigate issues of public domain, copyright law, and guidelines for fair use (Duncum, 2013; Krauss, 1989; McKay, 2011).

Some of the most vital work conducted online is led by youth who design, remix and mash-up sources with ever-increasing ease, sometimes with little thought as to the sources they are drawing from.



Artistic appropriation is both celebrated and contested, and is "brought into sharper relief in this copy-and-paste culture" (Gardner & Davis, 2014, p. 126). Appropriative practice—or the act of repurposing an idea, image or a piece of text for one's own work—challenges the politics of ownership in the digital age (Noiseaux, 2010). McKay (2011) relates this ownership paradox to Foucault's construction of power and knowledge—those in power control the knowledge (p. 149). Young (2008) called the act of appropriation immoral, describing it as a form of "aesthetic failure" (p. 2). This sentiment, which by implication delegitimizes a lot of Internet artwork and appropriation, is accepted by scholars and educators such as Young (2008) and Bataille (as cited in Hollier, 1992), but refuted by others such as Duncum (2013), Jenkins and Deuze (2008), Lessig (2008), Landes (2000), and McKay (2011). Lessig (2008) argues that creative practices often reflect on the past and as a result, the sharing, borrowing and exchange of ideas can naturally occur in cultures of creativity (p. 8).

Appropriative reproduction methods in art and design have long existed—from the famous works of Rauchenberg and Warhol, to other works by artists such as Shu Lea Cheang, Louise Lawler, Vik Muniz, and Elaine Sturtevant (McKay, 2011, p. 148). Looking further back, instances of art appropriation can be cited in early Christian art, a period in which an accusation of appropriation was more likely to occur if the artisan chose to include a subversive Christian representation (Kinney, 2012, p. 11). In a digital age, technology has accelerated appropriative practices despite having existed since antiquity. Young people have radically changed the way they gather inspiration, source materials, and design compositions. Through Internet use, the art and design research process is affordable, and, arguably, more democratized (Davidson, 2011; Duncum, 2013; Shirky, 2008). How does this deluge of visual information, which permeates cyberspace, influence the appropriative practices, and specifically, young artists and designers?

Background to the problem: young visual artists, Internet use, and appropriation in education. A lot of Internet-based artwork is widely accepted as prominent contemporary

art (Burton, 2011; Wands, 2010). However, these new media forms continue to carry a stigma of theft, aggressively sidestepping the conventions of authorship (Noiseaux, 2010). Appropriative artistic practices present educators with challenges in educational settings, where plagiarism and lack of proper attribution is a serious offense. McKay (2011) observed that the fear of copyright law in visual arts education has, in part, resulted from a climate of strict accountability in education (p. 147). In contrast, contemporary artists who engage in appropriative practices challenge the stigma associated with remix culture and Internet artwork. Internet artists such as Ryder Ripps, Alexandra Gorczynski, and Peekasso (whose very name is an appropriation) redefine artistic reproduction and inspire young people, artists, designers, and educators to reframe their artwork through the lens of remix (See Figures 1–4). The advent of Internet art had an impact on historical notions of what creative appropriative practice means in a digital, sharing culture (Duncum, 2013; Lessig, 2008).

Figure 1.
Alone Together at Red Bull Studios (Ripps, 2016, p. 12).

Photo of artist on the steps of the upstairs sculpture.

Figure 2.
Ryder Ripps at his exhibition *Alone Together*, Red Bull Studios (Ripps, 2016, p. 16).

Figure 3 (left)**.**
nyc memo 4 by Peekasso.
(Peekasso, n.d.).

Figure 4 (right)**.**
memo by Peekasso
(Peekasso, n.d.).

Figure 5.
Sun Stained, an animated gif by Alexandra Gorczynski (Gorczynski, 2015).

Over the past two decades, visual arts educators have been confronted by an unprecedented surge of artistic appropriation in their students' work as Internet use has dramatically soared (Gardner & Davis, 2014; Sweeny, 2011). New media forms proliferate websites, social media, and search engine databases. As Internet use increases, the debate around remix culture is now deeply embedded in public purview. As of 2014, 92 percent of teens in the United States between the ages of 13 and 17 years were online every day, with approximately 24 percent of these teens using the Internet continually (Lenhart, 2015). Sweeny (2011) explores the changing relationships between digital visual culture and the Internet, acknowledging that it is a network that will widen as technologies and individuals connect (p. xvi).

As digital networks expand, young people, their families, and educators are confronted by appropriation on a daily basis. Jenkins and Deuze (2008) called this a culture of "remix and remixability" and observed that the confluence of cultures of production and consumption has inspired an "emergent (still unnamed) field of scholarship" (p. 7). McKay (2011) observed that those who engage with the remixing phenomenon might have a positive effect in cultivating copyright expansion in the visual arts (p. 147). These changes in communication infrastructure integrate crowd-sourced participation and can generate opportunities for young people to act as independent producers (Jenkins & Deuze 2008, p. 9). Nevertheless, the fact that appropriative practices are frequently in contest with copyright laws can also generate panic (Jenkins & Deuze 2008, p. 146).

Research questions. As described in the "Introduction" and "Background to the Problem," reproduction methods continue to expand through Internet use, thus the disciplines that fall under the umbrella of visual arts education also widen. This understanding frames the following two research questions:

1. In a quickly changing digital landscape, how do Internet use and the appropriative practices of designers and artists shape how young people view and engage with their own work?
2. How does Internet-based artwork, such as Ripps' *Where's the Pixel* and *IPhone Poetry* assist in developing dialogue about appropriative practices?

Methodology.

Participants and setting. In order to explore digital age appropriation, this qualitative pilot study examined responses by young artists and designers to interview questions about perceptions of remix culture, fair use, and Internet use, and artwork by digital designer and artist Ryder Ripps. These perceptions were studied through the responses of twenty-two participants aged between 17 and 34 years. The data in this study was collected between March and December in 2015. Four participants from the New York (NY) metropolitan area—currently majoring in art or design in high school—were interviewed. I also interviewed 30-year old digital artist Ryder Ripps. The other seventeen participants were anonymous respondents from the United States (US) who self-identified as artists or designers and provided data through answering survey questions on Amazon Mechanical Turk (AMT). In order to qualify to participate in the survey, the AMT participants were required to have a visual arts background and be aged between 18 and 35. All of the interview and survey participants reported their perceptions on appropriation in general and on Ripps' artwork in particular. I transcribed the interview and survey data and examined emerging themes.

Limitations. This qualitative pilot study was limited by the size of the sample. However, the responses provided a variety of insights. Looking for patterns in the responses, this research was grounded by a constant comparative method—an inductive methodology used to form conceptual categories. According to the recommendations of Merriam (1997) and Seidman (2013) I took memos and color-coded the hardcopy of the transcripts to help reveal these themes (also see Glaser (1965) and Ridolfo and Schoua-Glusberg (2011)).

Visual artifacts: selection criteria. Part of the study methodology involved asking the participants to explore their perceptions of appropriation in art and design by analyzing

Ripps' artwork. The participants were asked a series of questions about the digital, interactive compositions *Where's the Pixel* and *IPhone Poetry*. Ripps' work (See Figures 5 and 6) was selected for several reasons: the artwork is conceptual and appropriates from well-known digital imagery; Ripps is an accomplished interactive designer and conceptual artist who explores themes related to the Internet and remix culture; and he has established a repertoire that engages with significant appropriative practice. He is also the Executive Creative Director of the advertising agency *OKFocus* (http://okfoc.us) and a fine artist represented by the Postmasters Gallery (http://www.postmastersart.com). Many young people find Ripps influential and his work actively engages his audience, prompting users to participate and generate other remixed work, which makes it a good fit for survey and interview-based research.

Study Results. The study suggested that young visual artists increasingly confront, interpret, and integrate aspects of appropriation and remix culture into their existing practices. The data also suggested that digital forms that appropriate from the Internet are progressively

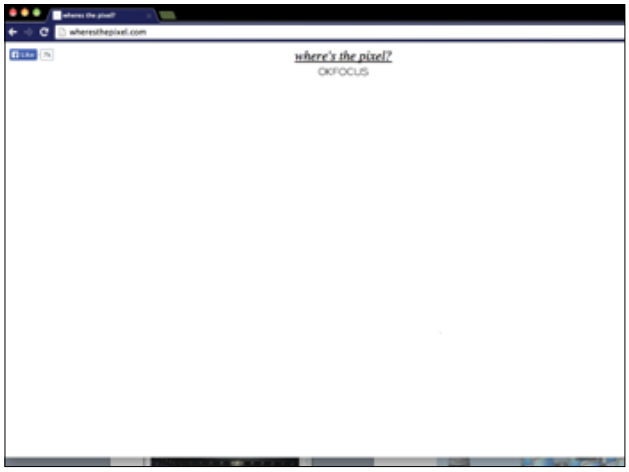


Figure 6.
Where's The Pixel? by Ryder Ripps (Ripps, 2016).

Figure 7.
IPhone Poetry by Ryder Ripps (Ripps, 2016).

integrated with identity formation. In summary, the study highlighted several themes, including perceptions of remix culture definitions, views on fair use, and views on identity issues in relation to appropriation practices. The final part of the study considered perceptions of *Where's the Pixel* and *IPhone Poetry*.

Remix culture: perceptions. Ninety percent of the interview and survey participants were cognizant of what remix culture is and what it means to draw from appropriated Internet-based sources. The interviewees were generally positive about remix culture. Two interview participants agreed that remix is a collaboration across mediums, cultures, and styles. The survey participants had mixed reviews, reporting positive perceptions of remix culture, along with concerns about relationships between remix, appropriation, and theft. Selections of observations about remix culture and appropriation included:

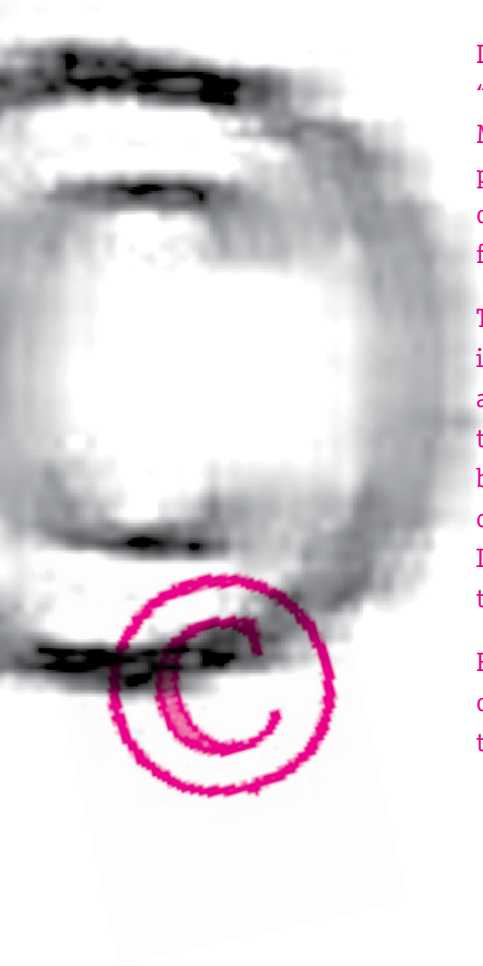
> "Re-mixing or mashing up means putting two things together, or reinterpreting something that's already been there, and adding different techniques" (Chet, interview participant).
> "The Internet is making it harder to understand the laws and I want to be able to share without harming the original artist" (Anonymous survey participant).
> "People are so caught up in remixes that they forget about the original songs or traditional art" (Anonymous survey participant).
> "[Remix] borders on infringement without going over the line. However, sometimes, the original work is improved upon and the remixed product is more appealing" (Anonymous survey participant).

Fair Use and Contemporary Artistic Sources. The participants demonstrated an interest to learn more about copyright law and had a varied understanding of the history of remix culture. A selection of observations about fair use and Internet sources included:

> "I would like to learn about the specific legal restrictions regarding fair use."
> "I dislike the fact that it is too easy to reuse familiar lines and phrases, thus not creating anything new" (Anonymous survey participant).
> "I would be interested in the legal ramifications of using too much of another's work" (Anonymous survey participant).
> "I think that in the past, a mashup or remix was considered different from what it is today… I think it's now important to make sure you cannot see the original inspiration" (Chet, interview participant).

In addition to concerns about fair use, this research also implied a change in how visual arts research is conducted. All the interviewees reported using the Internet as their primary platform for conducting research. Momena, Chet, and Liana preferred Tumblr, Google, and a combination of Tumblr and YouTube to find inspiration for art and design projects. On the topic of fair use and sourcing inspiration, Ripps recognized, "I'm definitely of the belief that most things don't come out of thin air… in order for something to be relatable it has to supersede everything that came before it."

Born digital: perceptions of identity and Internet use. The survey and interviewees in this research were all moderate-to-heavy users of Internet and social media. The interviewees



agreed that Internet use and electronic devices are now indispensable, woven into what it means to "grow up digital" (See Prensky, 2011; Shirky, 2008).

During the interview conducted on March 28, 2015, Liana noted that she uses the Internet "every waking hour" when she is not "occupied with school work or having a meal." Similarly, Momena noted, "On a day-to-day basis, I feel as though I am constantly connected to my phone or my tablet [...] digital technology has been developing ... it's pretty much a part of our lives." Chet, too, acknowledged that he spends a lot of time online. The interviewees found that growing up digital signifies belonging to a global network of artists and designers.

The interviewees were aware of what it means to construct an identity in a digital age, reporting that it comes from a hybridization of their online and offline communications. Ripps was an early adopter of the Internet, exploring his artistic identity through the Internet by using the computer as a creative outlet. In an interview on March 11, 2015, Ripps said that he avidly began using the Internet at the age of 10, when commercial Internet use was taking off. Chet concluded, "It means that I am connected to the entire world. I can talk to somebody in China. It means we're all connected in the same digital atmosphere." Liana enthusiastically shared that, "Being born digital means that most of my artwork is going to have to be online."

Reflections on what it means to be immersed in Internet use and build an identity online varied, encompassing a range of critical assessments. A selection of these observations included:

> "I think some of the most influential things that happen are on the Internet today. I feel that's how people mostly express their troubles, how different people experience their days" (Momena, interview participant).
>
> "I think today's digital youth culture [is] very free. For example, there are many different ways and very little restrictions as to how you can express yourself" (Momena, interview participant).
>
> "In general, I think today's digital youth culture isn't connected enough to the real world. I think they're connected to each other very tightly, but I feel like there's something missing ... like being and doing whatever you like, going to a park, experiencing nature. Most of the time, you're stuck on the Internet, or stuck at home" (Chet, interview participant).
>
> Ripps reported an interest in the "early days of the Internet" when Yahoo and Geocities were popular, and feeling inspired by a "more amateur Internet where things were a little more naïve, honest in a way, and raw" (Ripps, interview participant).

The interviewees in this study also observed that building an identity as an artist or designer online can feel connected but lonely. This is a well-studied area of research. In a recent study, Gardner and Davis (2013) noted that there has been an increase in themes of social isolation in artwork over the past twenty-years—increasing from 15% to 25% (p. 100). Gardner and Davis (2013) also found that when young people regulate their use of online communications, it has the potential to widen connections, spur sharing communities and support engagement with "diverse artistic genres" (p. 121).

Ripps has been particularly successful with researching and creating designs and artwork that question Internet use. While he is an enthusiastic Internet user he approaches it critically. In our interview, Ripps referenced his recent project *Alone Together* (Ripps, Alone Together, 2016), which integrates performance, sculpture and Internet use. *Alone Together* explores the concept that "the more connected we are online, the more physically withdrawn we become" (Ripps, 2016, p. 1).

Remix practices in the visual arts and the work of Ryder Ripps. The interview and survey participants were accepting of remixed art and design projects and a digital culture of sharing, borrowing and exchanging. They viewed Ripps' work as original and insightful. All the interview participants and Ripps engaged with different problem-solving methodologies in their approach to remixing artistic content. Momena reflected, "When I borrow some of the inspirations, I try to incorporate the artist's modern style with my work." Chet explained, "When I borrow work from other artists, I tend to change the message or change the technique they used, specifically with the fashion design." Elaborating on his process and projects, *Remix and Dump.fm*, Ripps noted in his interview:

> I've always embraced cutting and pasting images, and *Remix* and *Dump.fm* is all about this. There is a function where you can create a montage with two images; you can put one, and then you can add another next to it. …In digital media, particularly, it's really not productive to have some sort of ownership over something, because everyone has their own meaning and interpretation of things anyway.

Part of this research included making observations about Ripps' artwork. In response to *Where's the Pixel*, the interviewees agreed that the work was original, but at times confusing. Momena, Chet, and Liana spent a minimal amount of time looking for the pixel, and were instead drawn to the logo mark *OKFocus*. The interviewees' observations about *Where's the Pixel* included:

> "I think the website is original …what I think is important about this site is that the artist made the website in such a way that it didn't make me wait. Instead, it made me go to the company's website [*OKFocus*] directly" (Momena, interview participant).
> "I think the artist was trying to express how you can get so lost and caught up on different websites and different sources" (Liana, interview participant).
> "I think they've changed the source. I think they changed the view to convey the message" (Chet, interview participant).

Equivalently, Ripps' artwork, *IPhone Poetry,* was selected for discussion, conveying the symbiotic, but tumultuous relationship between an individual and their smartphone. Two interviewees, Momena and Chet, concluded that Ripps had re-contextualized the content in a new way. Liana's perceptions were directly linked to the amount of time spent using her smartphone. A selection of interviewees' responses to *IPhone Poetry* included:

> "Poetry can be expressed in any device, it doesn't have to be on paper" (Momena, interview participant).
> "We set up the IPhone to be annoying, to constantly alert us of notifications about the digital world" (Chet, interview participant).
> "I think the artist is trying to say there are different perks of having a phone…

> these are the kinds of things I'm going through having a phone. I take it to the bathroom. I take it when I go out… Yes, my phone is a part of me now" (Liana, interview participant).

The survey participants responded to Ripps' artwork more broadly. As part of the protocol, the seventeen participants were asked to browse Ripps' personal website (http://ryder-ripps.com) and respond to two of Ripps' projects. Six survey participants mentioned Ripps' digital Internet artifact repository, *Internet Archaeology*, describing that it "juxtaposes rudimentary images from the Internet" and that it was reminiscent of web surfing in the 90s. Three survey participants mentioned Ripps' website and poetry project, *200 Obvious Ideas*. *200 Obvious Ideas* was described as "a good way to start a conversation" and "an interesting take on everyday things." Survey participants also referenced Ripps' projects such as *Facebook Poetry, Phone Pix, Old Tools, git-poetry,* and *Overlayer*.

Discussion. For young artists and designers growing up with digital resources, there is a lot of ambiguity that can arise from working with Internet sources. In a survey of one hundred visual arts professionals, the College Art Association (CAA) reported that approximately 37 percent of artists use copyrighted works, and one in five artists bypass copyright issues (College Art Association, 2015). As I find in this study, perceptions of remix culture vary greatly. Digital remix culture is complicated, and as these complexities increase with Internet use, new approaches and interventions to navigate appropriative practices are critical. Heavy Internet use has become common and this raises questions concerning the relationships between Internet use, remix culture, and fair use (Lenhart, 2015; Rideout, Foehr, & Roberts, 2010). For young visual artists, questions about fair use are invariably present.

Internet use generates opportunities for artists and designers to network without geographical constraints, and there are many digital platforms for experimental self-expression. Erikson (1968) called the period when young people experience "the current influx of technological, ideological and economic change" an "affirmatively exciting time" (p. 129). Johnson-Eilola and Selber (2007) observe that remix practices involve "extensive research, filtering, recombining, remixing, the making of assemblages that solve problems" (p. 400). As digital modalities converge, there are many opportunities for youth to "reframe established information" and make critical observations about remixed artworks through a scholarly lens (Johnson-Eilola and Selber 2007, p. 400).

In a digital age, young people and educators are presented with new concerns in managing online and offline identities. Extant literature and examples from this pilot study indicate that young people now interweave their online and offline identities (Boyd, 2012b; Gardner & Davis, 2014, p. 63). As Internet use expands, young visual artists are confronted with a myriad of issues including what it means to grow up in digital environments and what it means to confront the emotional and physical challenges of continual digital immersion and a multimodal remix culture that permeates it. Thus, along with the advantages of growing up digitally, there are issues of constant immersion, such as fatigue and memory problems (Carr, 2010, pp. 191–192).

As visual arts education is reconceived through Internet and computer use, there is a lot to be learned from Internet artists. Studying the work of artists and designers such as Ryder

Ripps may aid young visual artists to become more critical and informed media consumers and develop a deeper understanding of fair use practices that can support unconventional approaches to visual expression (Sweeny, 2011). By embracing the study of Internet-based art, design, and appropriation, I contend that educators and their students can learn more about cultural production (See Bryant, 2010; Duncum, 2013, p. 17; McKay, 2011, p. 147; Lessig 2008). For example, Ripps' work challenges students to think about contemporary practices and originality in art and design, the design process and digital materiality, and the history of Internet art and digital design. In visual arts education, remix youth culture and Internet artwork acts as a lens into changing practices in the visual arts (Harlan, Bruce, & Lupton, 2012). By acknowledging appropriative practices, educators can address various topics, including: fair use guidelines and copyright law; generational gaps in visual arts education; and meaning making that comes from a digital culture of sharing (e.g. Lessig, 2008). This pilot study suggested the need for a greater discourse between visual arts educators and their students about developing trends in appropriation.

This study also suggested that in an "always-on" lifestyle, young visual artists frequently conduct Internet-based research (Boyd, 2012a; Kozinets, 2009). Exposure to digital materials has widened the space for articulation, making digital remix and collage popular media (Gardner & Davis, 2013, pp. 89–121). New media technologies, remix culture, and Internet use present young people with a different set of materials with which to build their identities and their work (Gardner, 1990; Gardner and Davis, 2013; Kroger, 2006). The digital age is changing the way young people think, interact, and engage with their practices, accelerating the phenomenon of exchanging, borrowing and appropriating visual information. There will continue to be legal challenges of "sourcing art that comes from other art", which "embraces all kinds of appropriation" (McKay, 2011, p. 148). As the processes of acquiring knowledge are reimagined through Internet use, artists, designers, and educators are called upon to develop new interventions to aid students in developing the skills needed to understand appropriation in visual arts production and research.

As the processes of acquiring knowledge are reimagined through Internet use, artists, designers, and educators are called upon to develop new interventions to aid students in developing the skills needed to understand appropriation in visual arts production and research.

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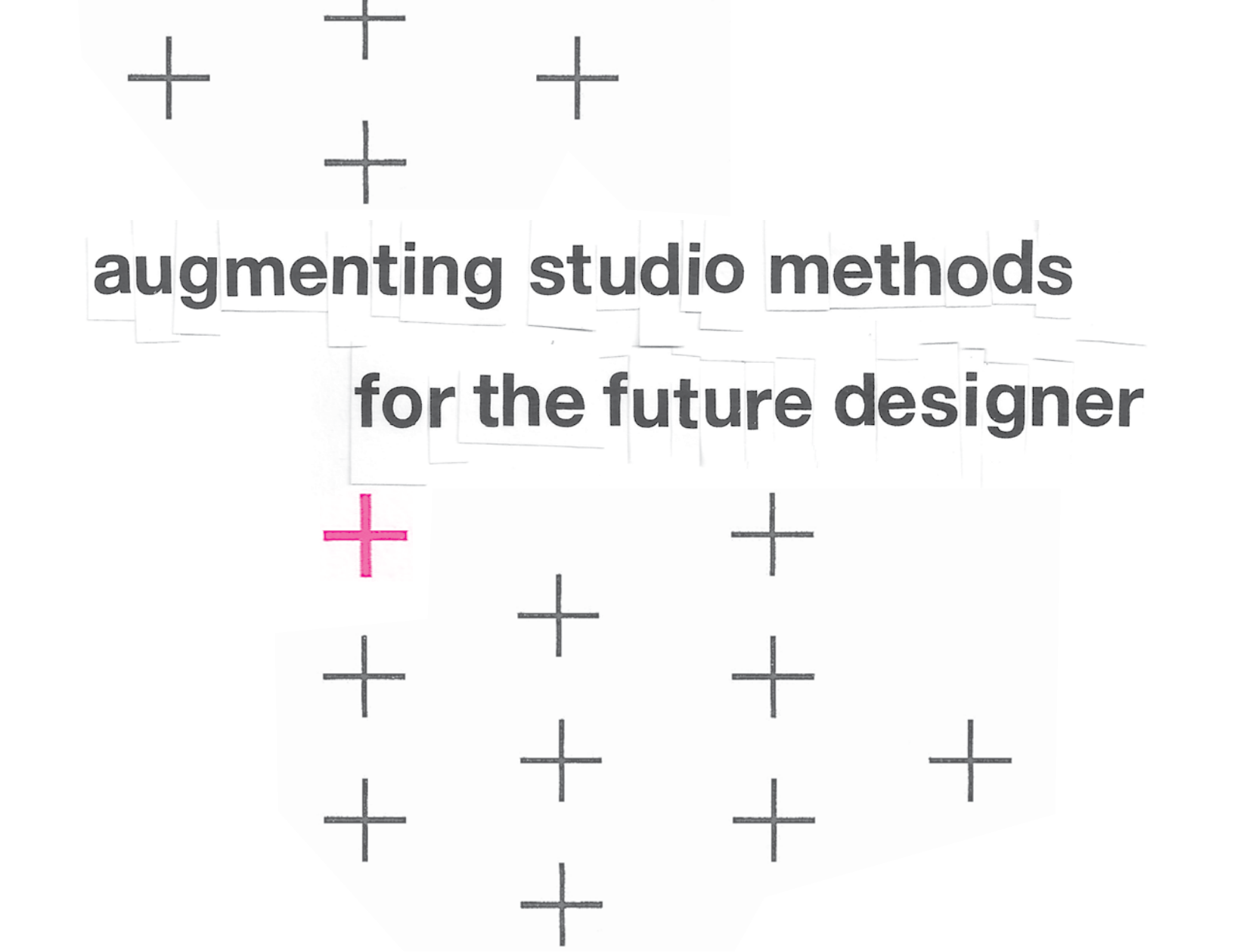

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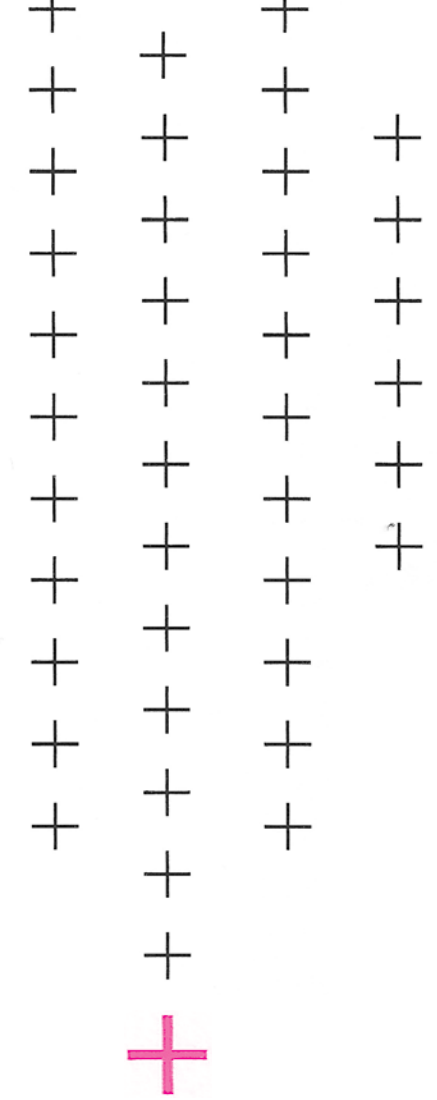
Abstract. Our first-year studio pedagogy augments style- and craft-based teaching approaches in order to prepare students for a future of design that considers complexity and interacting systems beyond those that directly relate to producing services or products. It is our belief that comprehensive skills in thinking and making allow an individual to make better informed decisions. First-year studio classes should be where design is demonstrated as more than enhancing content visually. Design framed as investigating and inquiring through the needs and motivations of the diverse range of humans that interface with it is more aligned with contemporary and future needs of both the design profession and societies at large. Essentially we want our students to be able to analyze a situation/opportunity/issue and be able to determine which method(s) will best serve the investigations and explorations they will need to undergo in a given context. The theories that we are presently researching include experiential learning and transformative learning. These two theories support our curriculum development to advance learning styles that place more import on research and process in the first and second years of education at OCAD University.

Keywords. design, experiential learning, pedagogy, transformative learning, writing, writing across the curriculum, writing as process, writing in the disciplines



This paper offers perspectives on the evolution of our first-year studio pedagogy as we work to prepare students for a future of design that considers complexity and interacting systems beyond those that directly relate to producing services or products. This is not a unique idea. Design educator Meredith Davis has been disseminating her beliefs that design education needs to be reconsidered for over a decade and often calls educators to action. Are the approaches we are taking in studio classes out of habit—this is how I learned, so this is how I teach—or are they attempting to address and prepare students for future needs? Davis sees a future that focuses on:

> If we shift the focus of projects from subject matter and specific formats to user experience and the consequences of design in larger systems, we make immediately apparent to students that a robust understanding of people, activities, and their settings is a necessary prerequisite to design action. This is not to say that the physical attributes of design objects aren't important, only that they are a means to accomplishing some goal beyond that of pretty things and that they must be justified in terms broader than their own internal structure (Davis, 2012).

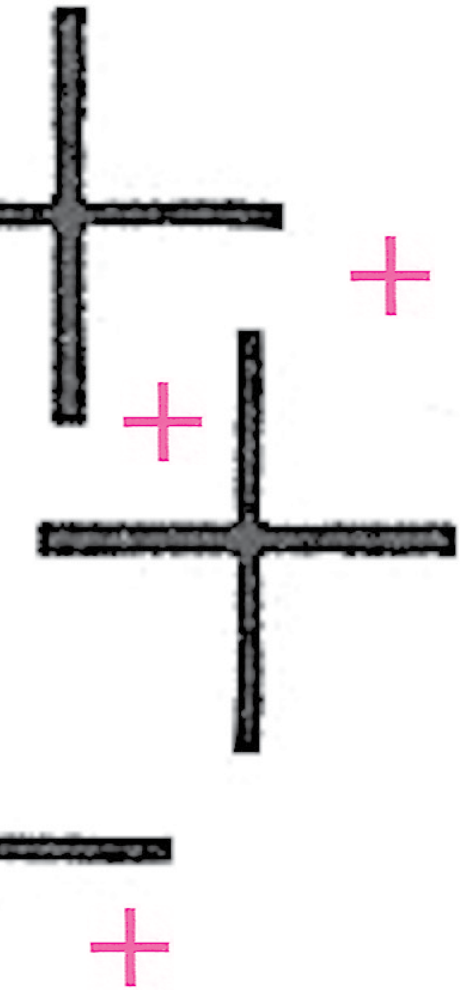
Essentially we want our students to be able to analyze a situation, opportunity, or issue, and be able to determine which method(s) will best serve their investigations and explorations within a given context. A comprehensive arsenal of thinking, making skills, and practices—in theory—should allow an individual to make better-informed decisions. To put it simply, in first-year studio, design must be demonstrated as more than enhancing content visually—because you cannot separate out content and form—rather it is about investigating and inquiring through the needs and motivations of the diverse range of humans that interface with designed things.

Essentially we want our students to be able to analyze a situation, opportunity, or issue, and be able to determine which method(s) will best serve the investigations and explorations within a given context.

Our goal is to develop students who are able to make decisions on their own and articulate their intent by the end of their four-year undergraduate education. In other words, from our pedagogical perspectives, first-year students should start off on the path to becoming autonomous designers—that is to say designers who manifest their will in that which they make.

In order to achieve this goal of autonomy, we have framed our pedagogy through experiential and transformative learning theories. For the purposes of this paper, we define each theory in the context of our intent, provide examples from assignments and student work that are evidence of this approach to learning, and identify the benefits and challenges we have observed.

Education experts Susan Warner Weil and Ian McGill explain that experiential learning can involve multiple meanings, practices, methods, and ideologies, which depend upon what challenges are being faced in personal lives, education, institutions, commerce, industry,



communities, and society (Warner Weil & McGill, 1989, p. 3). Approaches in experiential learning theory (ELT) that support the development of undergraduate curriculum for autonomous learning through exploration and experimentation are relevant to this paper. Here we focus specifically on (1) learning is a process and is not defined by outcomes—we learn by doing, by making, by experimenting, investigating, and exploring, (2) learning requires the resolution of conflicts—friction and disjuncture drives the learning process, and (3) learning is a holistic process of adaptation to environments—learners must be cognizant of the many environments in which they live and work (Kolb & Kolb, 2005, p. 194). Through these three points we can communicate and establish our expectations in the studio classroom to our students: process over outcome, reflection on actions, and resolution of conflicts in both thinking and making. In our studios we refer to this as empirical research where students experiment and explore the opportunities related to a practice, a material, an idea, etc.

An example of a project that encourages experiential learning as outlined above can be found in our first-year, second-semester communication design course. The project is called "visceral" and has students visually express the emotional and physical experience of a public space to someone outside of themselves. The project asks the students to: "Go and observe a public space. Use the principles and actions of design to visually represent that space to us." It is the responsibility of the students to determine what direction their communication needs to go in, and that direction emerges out of their observational and empirical research methods. Students have the option to explore any media in two, three, or four dimensions.

The "visceral" assignment is broken down into three stages: stage one–observational research, stage two–disciplinary research and composition exploration, and stage three–culmination. As educational theorists Kolb and Kolb explain: "To improve learning in higher education, the primary focus should be on engaging students in a process that best enhances their learning—a process that includes feedback on the effectiveness of their learning efforts" (Kolb & Kolb, 2005, p. 194). The intent with this staged approach is to have students feel supported in their exploration, experimentation, and risk-taking, and limit their fear of being penalized if trials do not go as intended. Feedback is given to students from peers and faculty through in-class discussions as well as from themselves through self-reflective writing exercises. Frequent feedback may also serve as a way to ensure that students keep the learning objectives in focus throughout the project.

The following student example briefly outlines the visceral assignment to demonstrate how a student may navigate a project informed by ELT. Student Alexander Acosta engages in learning as a process throughout the three stages of the project. As he works through his empirical research methods he engages in more rigorous exploration, which leads him to more closely realize his intent of communicating his experience of the space. This type of assignment entrusts students with discovering their own processes and defining their own outcomes based on their findings. An instructor cannot teach process—process is unique to everyone—but they can guide a student by breaking projects down into stages that help them find alternate approaches and perspectives. For example, in stage one, students are asked to visit a public space to observe sensory experiences (e.g. sound, temperature) and document in multiple ways: drawing, recording audio, texture samples/rubbings, colour swatches, plus a written component. The purpose of this stage is to have students question

preconceived notions of what sketching is. For example, how can sketching be more than realism? …can writing be considered a sketch? …how does the written word support making? See Figure 1 for samples of Alexander's process work for stage one.

Figure 1.
Samples taken from Alexander Acosta's observation of a public park for stage one of the assignment. His visual documentation includes photography, sound wave drawings, audio recording, video recording, relief texture. His written documentation: Touch (temperature), smell, sound.

This type of learning has its challenges in that the beginning design student tends to be unfamiliar with the uncertainty, continuous processes involved in empirical research, and with the benefits of learning through experience. Compounding this is that many students are not accustomed to creating their own content which is a fundamental aspect of empirical research in this context as it leads the student to their own end product.

As stated earlier, ELT acknowledges that learning requires the resolution of conflicts such as: becoming aware of, articulating, and analyzing the friction and disjuncture in their processes. We have found that the holistic integration of written exercises supports students with these challenges. Guiding students through integrated processes of making and writing reassures students that taking risks, exploration, experimentation, and working through uncertainty are integral parts of the learning process.

Stage two introduces precedent examples. In class, we shared inspirational slides, books, and samples covering contemporary designers working in two, three, and four dimensions as a way of contextualizing the project within a variety of design practices. By showing examples

of other designers' work, students become cognizant of the relevance of what they are doing in relationship to their discipline. Students then worked in small groups to discuss how the information gathered in stage one could be built upon with the intent to communicate sensory experience through primarily visual representations as inspired, contrasted, or influenced by the precedent examples. Finally, students created three distinct attempts at communicating a visceral response to their space. The purpose of this stage is to have students use materials and self-selected techniques to support the communication of their intent within their project. Students were also asked to write a succinct paragraph on one or more designers who they discovered in class or found on their own, explaining how that work inspired, influenced, or contrasted with their own. See Figure 2 for samples of a student's process work for stage two.

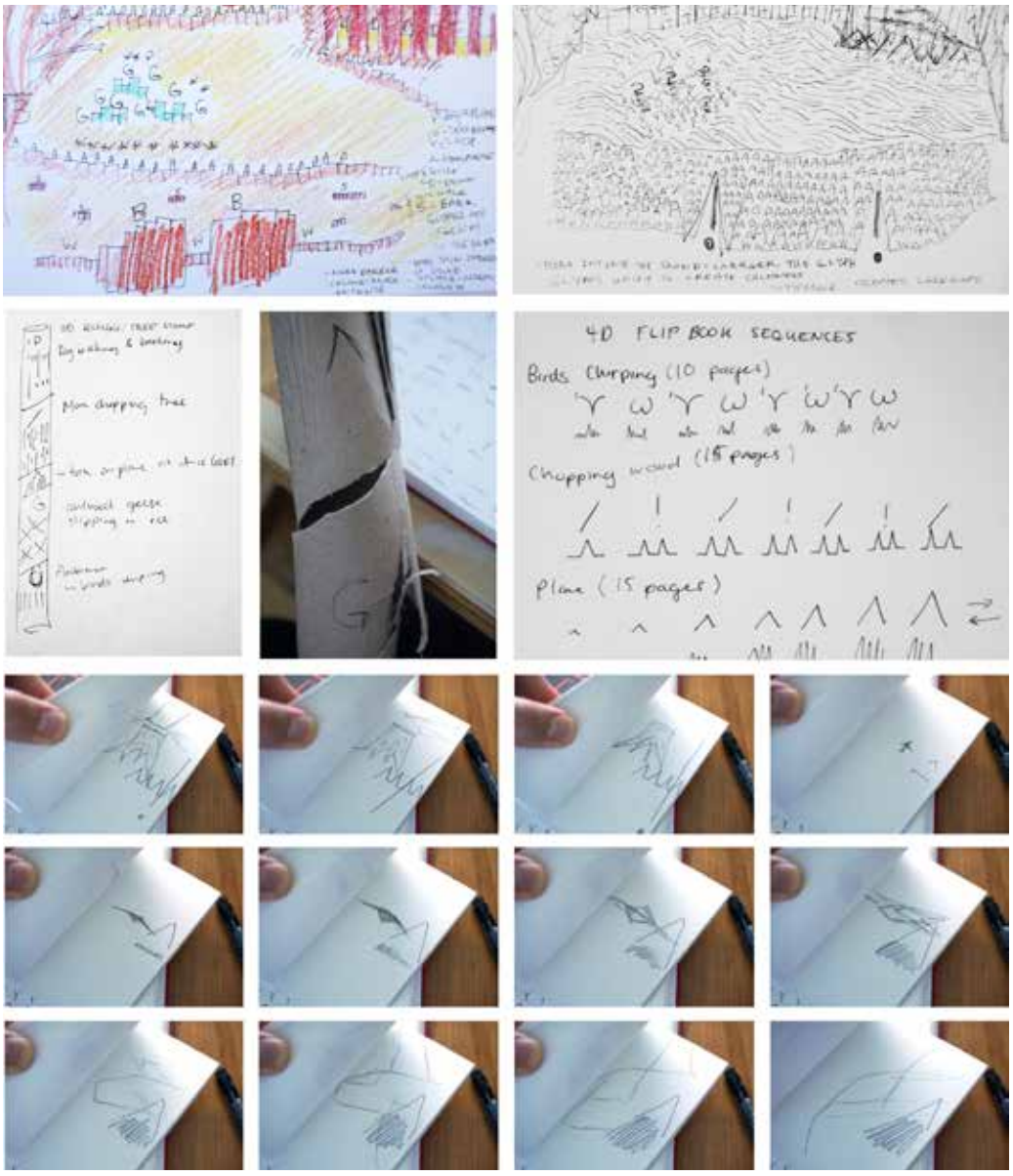


Figure 2.
Samples taken from Alexander's second stage process. The student created a map of the space, which plotted sound using colour, symbols, and bars (two-dimensional), a cardboard tube structure using texture to signify senses (three-dimensional) and an illustrative flip book. The flip book was his attempt at four-dimensional design. Alex was not familiar with four-dimensional software and thus shied away from experimenting with it. Alex found inspiration in Milton Glaser's bold use of flat colour, Ryuichi Yamashiro's use of typography and colour to create landscapes, and the work of video director David Wilson, making links between drawn sound waves and the video "Do You Wanna Know" by the Arctic Monkeys.

Finally, stage three has students referring to the feedback from in-class critiques, discussions, their initial observations, and explorations in making in order to revise and refine their work for discussion with the class (see Figure 3). The purpose of this stage is to teach

students decision-making skills based on intent versus subjectivity or familiar habits in making. Although ELT sees learning as a process and not as an outcome, students must recognize that projects have deadlines—although most creative processes could continue endlessly—at some point work must be refined and formalized. Emphasis is placed on the notion that design is inquiry—there is never one "best" answer—and choosing an option is guided by intent and context. In this case, communicating the visceral experience of the space, observation of the space, and influence or contrast to precedent examples.

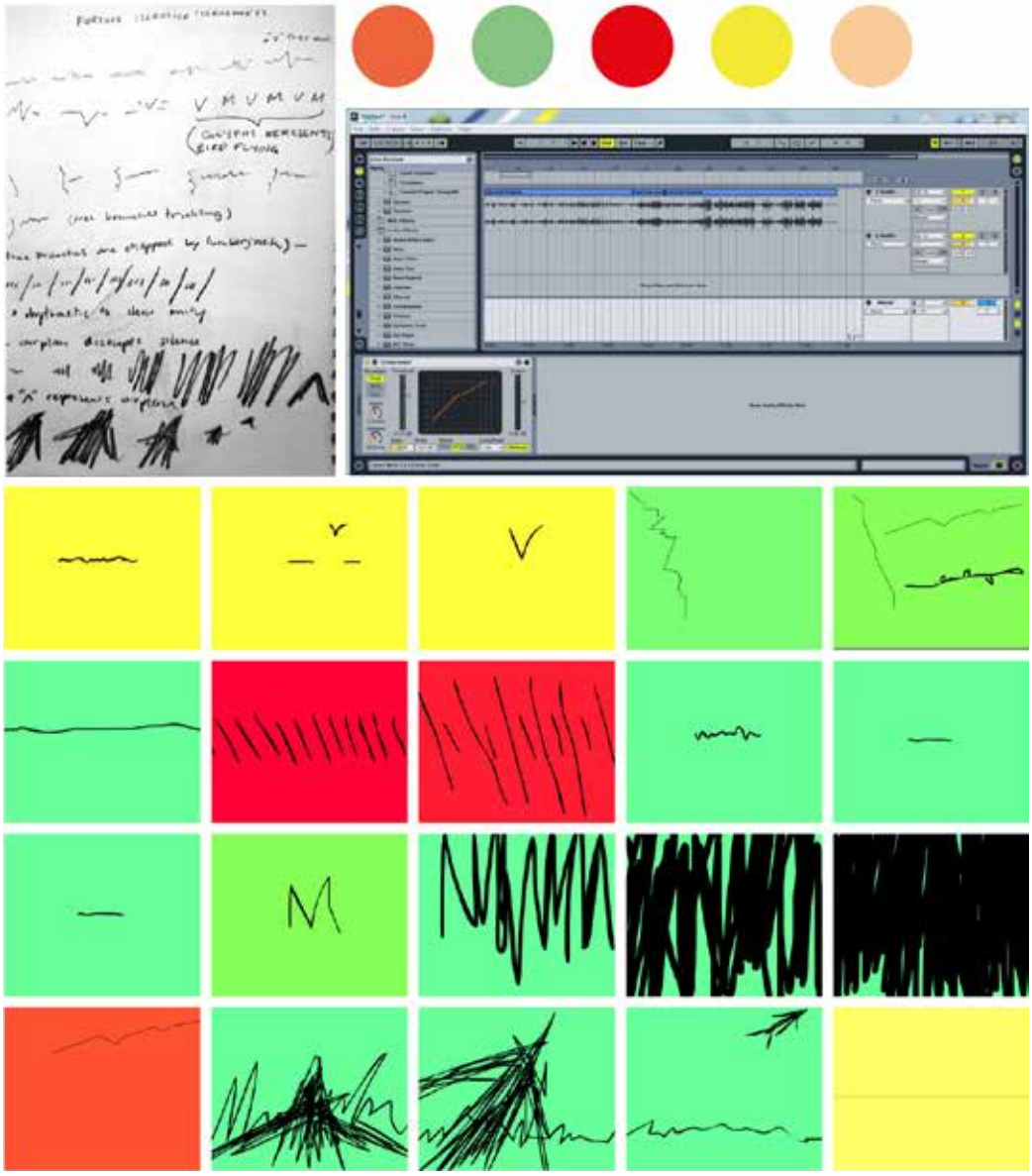
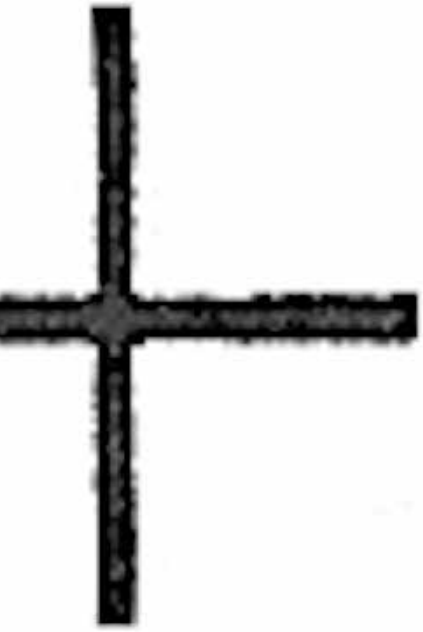


Figure 3.
Samples taken from Alexander's process for stage three. Through feedback Alexander realizes that the flipbook from the previous week was not communicating his intent successfully. Thus he translates the flipbook into a Flash animation. He also creates his own audio to accompany his animation by creating a piano composition inspired by the sounds he recorded in week one. He recorded the piece and plays it backwards in order to abstract the obvious voice of the piano and to communicate his intent: a peaceful park setting disrupted by the audio of machinery.

Scaffolded, process-driven, experiential projects help the beginning design students recognize that they have their own unique working processes and these processes may be very different from those of their instructor. Process-driven projects also promote a degree of uncertainty and friction within the students themselves and with their environments, which helps foster students' willingness to question themselves, their materials, and their methods. This not only encourages autonomy in learning, thinking, and making, but also meta-cognition. This type of learning may begin to reveal to the students that they have, and rely upon,



personal frames of reference. This revelation is essential in order for students to recognize their own biases in order to become more critically engaged not only with themselves, but also with the environments around them. This level of criticality is augmented and furthered by the use of transformative learning theory.

A student having undergone a four-year education should leave OCAD University autonomous in their making and thinking practices. While there are a few framings of transformative learning theory (TLT) that we believe contribute to the making of an autonomous designer, this paper focuses on American sociologist Jack Mezirow's framing of transformative learning as the altering of self, including revisions of belief systems and behavioural changes that are relevant for first-year learners (Taylor & Cranton, 2012). The master/apprentice model for design education emphasizes the craft aspects of design—the how-to as a kind of transmission education. While we believe that craft and form are essential to design practices, we use TLT to augment the students' learning experiences by emphasizing thinking on a more philosophical level. As outlined by adult education experts Taylor & Cranton in "Transformative Learning Theory: Seeking a Unified Theory," Mezirow grounded transformative learning theory through constructivist assumptions (Taylor & Cranton, 2012, p. 5). Mezirow argued that the world did not hold universal truths for us to uncover, but that we determine the meaning of our experiences (Taylor & Cranton, 2012, p. 6). Therefore, we see the world through the perceptions of those experiences which leads us to "develop habitual expectations based on past experiences" (Taylor & Cranton, 2012, p. 6). When we come to experiences that challenge those habits we have an opportunity to transform our perspectives. If our goal is to support students in becoming autonomous designers then teaching skills related to questioning, reflecting, and revising perceptions of experience should be introduced and reinforced each year, starting in first year.

We recognize that a transformative learning experience is rare because at its core someone is changing their worldview, their perspectives, and behaviours.

We recognize that a transformative learning experience is rare because at its core someone is changing their worldview, their perspectives, and behaviours. So for us in first year, TLT supports setting the stage for action and change within each individual student. We need to trust that individual students will find their own way at their own pace in relationship to their learning experiences. As instructors we then must be prepared for the strong and varied reactions that come with the terrain of this kind of educational philosophy and anti-passive learning approaches. We are here to provide the space, challenges, and support to foster transformative learning in order to create autonomous designers.

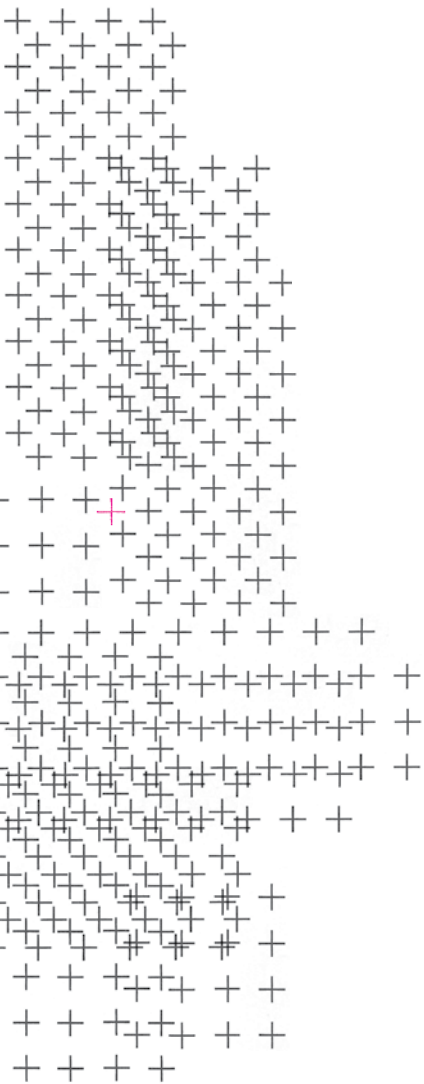
We believe that in order for transformative learning to occur many first-year students must come to the realization that they have biases, assumptions, and personal frames of references. In our classes we help our students recognize this through specific exercises and assignments that foster and challenge habits of mind and points of view. An example of

this can be found in our in-class exercise called "drink it up." Over the course of three weeks, students work through their own preconceived notions, gather information, and question their sources (see Figure 4).

Drink it up: theoretical research

Stage 1	Stage 2	Stage 3
Notions of opinion, pre-conceived knowledge, naive research practices.	Presentation of findings and sources, augmented searches are assigned per person and based off what and how certain information was gathered.	Re-presentation and reflection on existing processes and how/what students have learned over the last few weeks will inform how they gather information moving forward in both their thinking and making practices.
Students worked in groups to document their preconceived knowledge or assumptions on one of five packaged beverages. At home they searched for information to present to the class that either supported and/or disproved their belief.	Students presented their findings in class. This was followed by a lecture on best practices in relationship to the web and challenges found in certain best-practice approaches.	Students' gave follow-up presentations where they dug deeper into their topics or challenged their sources.

Figure 4.
Instructions for the three stages of the "drink it up" theoretical research exercise.



This exercise begins to reveal to students the importance of information gathering beyond consumption of "facts." This begins the journey towards the realization that the world is comprised of complex systems beyond their personal experiences. When we have frank discussions over the course of an exercise such as this, we as faculty can uncover where our students are in their understanding of how to access information—we need to think through the assumptions (e.g. research skills) we have about our learners so that we can tailor our support materials and resources in the moment.

Below is an example of a student, Lucia Kim, coming to the realization that typing a question into Google will not automatically result in the specific answer she is looking for. The student is searching for proof of her belief. When Google does not give her the answer she thought would exist, she has to reconsider her perception of the situation in a variety of ways. She comes to understand that what she initially set out to find isn't exactly where she ended up:

> What I took away from this exercise is that you may go into research with assumptions but that can change when you begin to research. It is important to understand that the specific question that you are researching won't always be answered. You need to look for new ways and perspectives to tackle your questions (Kim, 2015).

The student goes on to say:

> I believe that the reason why we had this exercise in a studio course is because art and design also works the same as researching information: approaching design in different directions, trying many things and going through many iterations and failures. With

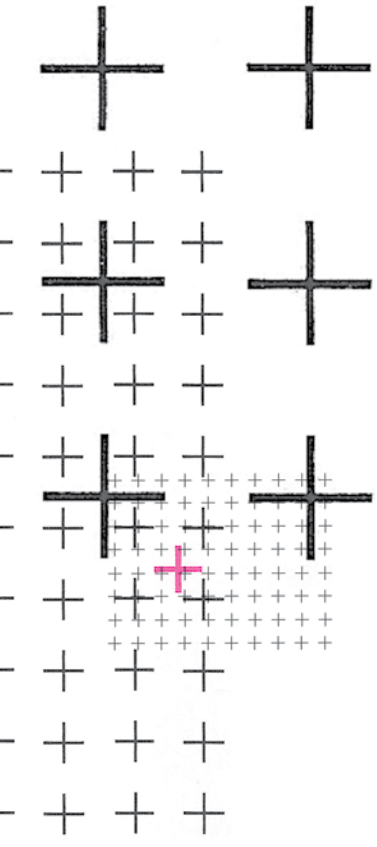
> all the experiences you have gained through the process, you will be able to put them together and come up with a final design, just like the gathered evidence makes up the answer to a question (Kim, 2015).

Here we can see the student is making connections between her research and making processes. Thus, she is connecting this learning beyond the exercise into other aspects of the studio classroom—her making.

This exercise runs in tandem to an empirical research project, "information need," in order to have first-year students see that critical thinking can be done both verbally (theoretically) and visually. Over the course of the project, students must answer self-reflective questions to encourage them to consider their personal making processes and progress. For example, we asked, "Describe your experience with this project. What we are looking for with this response is your perspective on the uncertainty of the project's outcome."

One student responded that her process was very slow and that she would constantly feel like she was doing the "wrong" thing. This comes after being told that when conducting empirical research there really is no wrong—a common belief system of the beginning design student is this binary of right and wrong. Even though she is aware that there is no "correct" answer, it is challenging to shift out of such ingrained habits of mind.

…a common belief system of the beginning design student is this binary of right and wrong.



Another example of first-year student reflection is Lucia's written response in which she touches upon both experiential and transformative learning:

> I was getting confused by the word "sketch," because in my perspective, sketch was a visual representation of an object or an idea in a way that I see it in my head. But for this project, it triggered a question of what really is a sketch? With the scanner [moving images while scanning], the outcome was unexpected just by the method itself, so it did not confuse me during the process, but I did wonder what this is leading to, and what I am trying to depict through this process. I knew that there is no right or wrong at this stage, but I kept looking for an answer, a specific destination (Kim, 2015).

Lucia begins to relearn what it means to generate process work through her questioning of the term "sketch." She has a specific belief that a sketch is pencil on paper, but this project begins to challenge this belief, which is a moment of transformational learning through experiential learning.

As demonstrated in the examples, these beginning design students are not comfortable with self-directed explorations and risk-taking. The binary of right and wrong dominates many of the reflections we received at this stage. If our goal in first year is to start students on a path to autonomy, we need to begin to help students break down these barriers to learning.

Using the theories of transformative and experiential learning we can create exercises and assignments that challenge students' beliefs and support their ability to recognize and

…by challenging and reflecting on our teaching methods we as faculty are also using [experiential and transformative learning theories] in order to develop curriculum that moves beyond the belief that the gathering of information, thinking, and making is defined by a narrow or limited set of methods or purposes.

develop their own working processes. ELT and TLT place a great deal of the educational responsibility on the students—students must engage if they want to progress. These methods of teaching help eliminate complacency and encourage students to move beyond relying on their habits of mind as they begin to see that innovative results come from the processes of exploration and experimentation, not only on what worked in the past. Furthermore, by challenging and reflecting on our teaching methods we as faculty are also using ELT and TLT in order to develop curriculum that moves beyond the belief that the gathering of information, thinking, and making is defined by a narrow or limited s et of methods or purposes.

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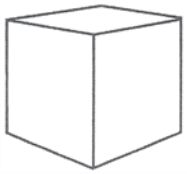


perception versus reality:

qualitative research exploring the intersections between design education and an evolving industry

Ann Urban has worked at the highest levels of Canadian marketing and advertising, where she has built profitable brands for over a hundred blue-chip companies and has been recognized with over 120 major awards for marketing, advertising, design and creative achievement—including every top award in Canada and multiple awards in the U.S. and internationally. Ann holds both graduate and undergraduate advertising degrees and has been an associate professor at OCAD U for over 25 years. She is one of its most respected professors, recently receiving the university's highest teaching honor, the Non-Tenured Faculty Award for Innovation and Excellence in Teaching.

Sandy Kedey is the Advertising Chair at OCAD U, and a senior creative marketing executive with over 25 years experience in communication, advertising and design. Before forming her own company, Sandy spent many years with top international agencies, creating award winning integrated media campaigns for such Fortune 500 clients as Bell Canada, Campbell's Soup, Nabob Coffee, Kellogg's, Kraft, and the Red Cross of Canada. Further achievements in professional practice resulted in dynamic relationships with such clients as Gatorade, Eaton's, Birk's, Levi Strauss of Canada, LCBO, Eaton's, Holt Renfrew, Neilsen Cadbury, Ritz-Carlton Hotels and Corus Entertainment. She received the coveted Cannes Lion award, twice, in her career.

Abstract. As design educators and professional practitioners ourselves, we understand the challenges surrounding the subjects of currency, relevancy and authenticity in design education today. Technology and workforce demands have impacted not just the classroom but the boardroom, and both sides are scrambling to understand and address the ever-changing implications.

We surveyed 100 students, graduates, and the CDs, CEOs and clients who employ them, to gain a better understanding of the expectations and needs of all stakeholders in this shifting landscape. Comparing and contrasting the conflicting voices of the stakeholders has proven to be a study in opposites: opposite needs, opposite expectations. This includes:

- Entitlement vs. reward for accomplishment
- Creative indulgence vs. professional discipline
- The need for on-going input vs. the need to work independently
- Confidence/ego vs. collaboration
- Portfolio vs. personality
- Internships vs. job security
- Realistic vs. idealistic expectations around salaries, work-life balance, starter jobs and how the industry works.

Applying this research to the new advertising stream at OCAD University has resulted in a more collaborative teaching model bringing clients and "real world" perspectives, projects, and feedback right into the classroom.

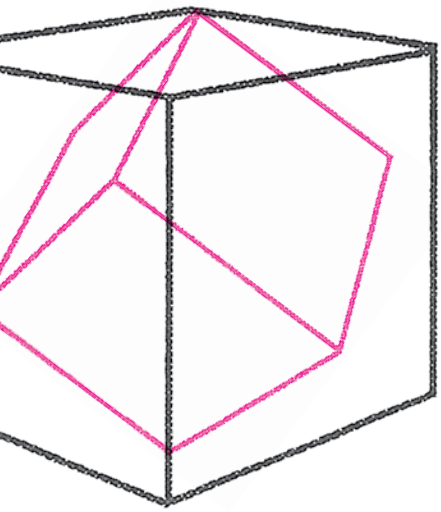
Were we successful? Student participants anonymously graded the course value and learning as 100% across all key measures.

Industry and academia are simultaneously working along parallel paths to address change. What better time to gain a deeper understanding of the changing landscape and use this as a catalyst to re-evaluate how we teach and inspire new techniques?

Keywords. Advertising, education, educational survey, employer expectations, grads, marketing, trends in education, trends in marketing

How do you pin down a design curriculum when the design industry itself is in transition? Is there a sweet spot where both academic learning outcomes and industry wish lists for graduates can both be fulfilled? How do you teach today's tech savvy students who may well know more than you? How do you satisfy multiple stakeholders' high expectations as resources and classes keep getting cut?

We are living in an age where data and technology supersede the idea and the abstract, where the speed of digital innovation, tools and solutions is occurring faster than curriculum is evolving.



Welcome to 2016. As design educators, as well as professional practitioners ourselves, we know only too well these challenges in design education today.

Today's students have vastly different goals and values than we did, shaped in part by a shifting sociopolitical environment, evolving cultural patterns and the lasting effects of a recession. Technology has impacted not only the classroom but also the boardroom and both sides are scrambling to understand and react to the ever-changing implications. Today, it seems instant answers and outcomes are expected by students to substantiate direction both in study and career path. There is less time to create ideas yet more time to appropriate. Students place more value on individuality, negating success as a motivator. Technology is integral and balance in life is not only between work and life, but also work, life and community involvement and self-development.

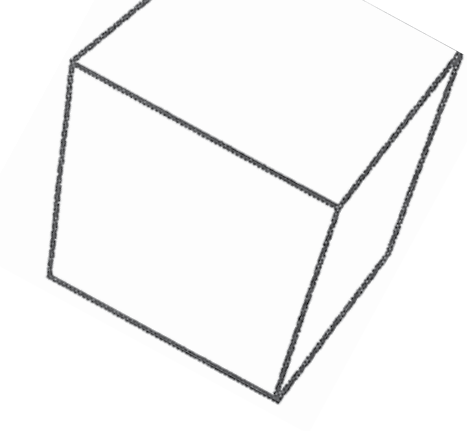
In 2012, we were tasked with addressing these changes in academia and creating a new pathway to graduation for advertising and marketing students at OCAD University.

How do we even begin to get a handle on an industry that currently is in a state of flux itself, let alone design a program today that will provide value for graduates who will enter the workforce in 2020? We are living in an age where data and technology supersede the idea and the abstract, where the speed of digital innovation, tools and solutions is occurring faster than curriculum is evolving.

Where to begin? A primary obstacle was the shortage of practical research. We took it upon ourselves to embark upon a grassroots research project. We interviewed almost 100 current students, recent graduates, and the creative directors and clients who employ them, to gain a better understanding of the expectations and needs of all stakeholders in this shifting landscape.

Comparing and contrasting the diverse voices of the stakeholders has been a real eye-opener. We have been humbled by educational shortcomings, impressed by unexpected successes and been given an education in educating.

Here are some studies in contrast between employers and those hoping to be employed:



A study in opposites: opposite needs, opposite expectations. There would seem to be a large disconnect between graduate and industry expectations. In part, this can be attributed to generational differences. However, industry also often sees in graduates what is perceived to be a lack of motivation, an inflated sense of self-worth, unrealistic compensation expectations and a challenge with authority. In contrast, millennial graduates value collaboration, individuality, on-going self-development and are motivated by technological innovation and finding meaningful work.

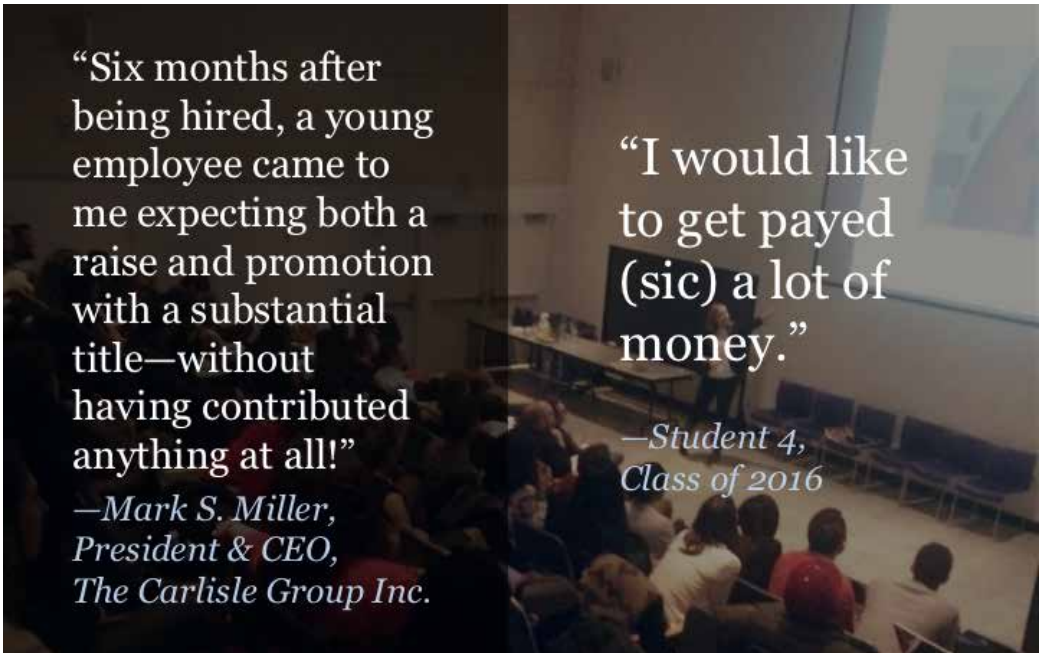
Entitlement vs. reward for accomplishment. Employers tended to expect young creatives to demonstrate more commitment to their work and a stronger work ethic to warrant their high expectations for compensation and promotion. One Creative Director summed it by saying that come 5 o'clock, only the "old guys" are still working while the young creatives had all gone home.

> I hired a young employee who then came to me six months later expecting both a raise and promotion with a substantial title—without having contributed anything at all (Mark S. Miller, President & CEO, The Carlisle Group Inc.).

> The new junior creatives just don't seem to have the burning fire or passion to work the long hours, develop the ideas and create great work. They come with one idea that has three executions rather than three distinct ideas. When asked to polish some work for a client they think it's good enough or it's 'just a mock-up.'

> They expect the 'junior' title to be removed after a year or two even if they haven't done anything worthy (Dale Koe, Retail Interactive Marketing Specialist at Mercedes-Benz Canada).

> I find students pretty passive. They just seem to want to know what the answers are so they can get good grades and get out of school (William (Bill) Ratcliffe, Director of Communications and Research at BRIGHTHOUSE Brand Group).



Hopefully, without being too curmudgeonly, it's just too easy to say new hires are lacking work ethic, but to be frank it is my biggest complaint. They just don't work very hard (Brad Riddoch, ex- EVP Creative Director at Cossette).

If I can make over 60 grand that'd be delightful but my goal is to make the higher bracket of pay (Student 1, Class of 2016).

A few things that are important to me are success at the beginning of my career. Being one of the "30 under 30" for Marketing Magazines… travel with my career… (Student 2, Class of 2015).

There is talk about me heading off to Silicon Valley after I graduate and creating more awareness in the States. I'm aiming at starting off at 50K to 60K (Student 3, Class of 2015).

I would like to get payed (sic) a lot of money (Student 4, Class of 2016).

Creative indulgence vs. professional discipline. The millenials' focus on personal and creative growth often contrasted with the generation before who tended to put more emphasis on work ethic over personal values. The expectations for professionalism, hard work and long hours many employers expected were instead sometimes met with a lack of maturity, unrealistic deliverables and mistaking the business of creativity for personal creative indulgence.

I gave a young marketing employee a bad review and her MOTHER called me back to discuss it! (Barb Budarick, ex-VP, Brand and Strategy and Marketing, BMO).

Students are lacking discipline or boundaries. While I'm a fan of freethinking, I quite often feel the work I see is unrealistic and it often feels like a free for all (lacking strategy, budgets, targets). I would love to see more disciplined problem solving (Christina Yu, Executive Creative Director, Red Urban).

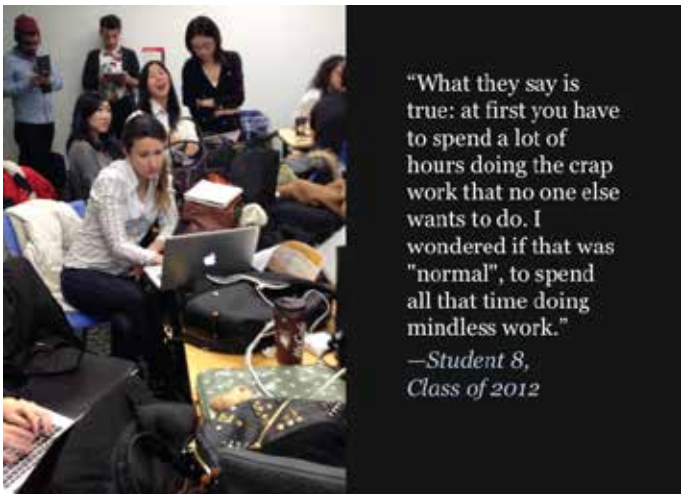
It is important to me to have fun or playful accounts. I'm silly (Student 5, Class of 2015).

I was into advertising and comic books. In the last year, I still had no idea where I wanted to be. Maybe this was my fault (Student 6, Class of 2000).

The most important criteria for me is probably the personal development. It will be great to have a job that I can be passionate about and learn from it. Life has no meaning if people stop learning. My goal is to try and make a living while making a life (Student 10, Class of 2015).

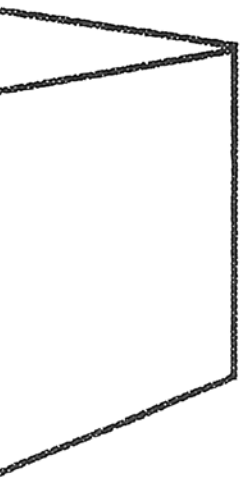
Realistic vs. idealistic job expectations. The accelerated rate of change in the industry creates more pressure than ever to graduate industry-ready creatives. Realistically and perhaps predictably, many employers feel graduates lack not only personal maturity but also an understanding of the industry and its challenges. In this respect, the start of their working career could be viewed as an extension of their 'real world' education, supplying the on-the-job-training that begins where formal education ends.

Students coming out of advertising programs are unaware of the incredible amount of competition they are facing… never before in the history of this industry have so many schools produced so many potential advertising people into an industry that is too small to absorb them all. As such, standing out is imperative. A career in this industry is not a given, despite the diploma in your hand. Talent is an advantage as always… but tenacity and passion will make the difference (Ian MacKellar, Chief Creative Officer at Ogilvy Toronto).



A lot of recent graduates are lacking practical knowledge of the ad industry. I think they have a general grasp, but it all seems very theoretical and idealistic and that's something that's reflected in their books. I've seen a few examples of books that don't acknowledge the actual media landscape of today and focus on pieces that would never be realistic in a real life/practical sense (Nellie Kim, Partner, CD Lg2).

What grads lack the most, in my mind is both a problem and an opportunity. Innocence and lack of understanding of real world issues in regard to clients and how they operate. What you see so often in young recruits is a purity of ideas that in many cases doesn't



connect with the real world that the clients live in (Alan Gee, Partner, Chairman, Juno Award Winner, Blammo Worldwide).

I wish I would have been told the truth regarding how competitive the industry is (Student 7, Class of 2011).

What they say is true: at first you have to spend a lot of hours doing the crap work that no one else wants to do. I wondered if that was "normal," to spend all that time doing mindless work (Student 8, Class of 2012).

Work-life balance is most important as well as a comfortable income for sure (Student 9, Class of 2015).

Today at work a few seniors got terminated due to the CEO finally getting "fed up with their shit." I curled up in fetal position while artillery flew by overhead. I'm still buzzing from adrenaline…and worrying about… whether I'm also going to get cut. This isn't something school can ever prepare me for, but the real world is very much real and brutal. Today I learned termination of employment is called "you're fired" because it burns, it's explosive and it's brutal (Student 11, Class of 2012).

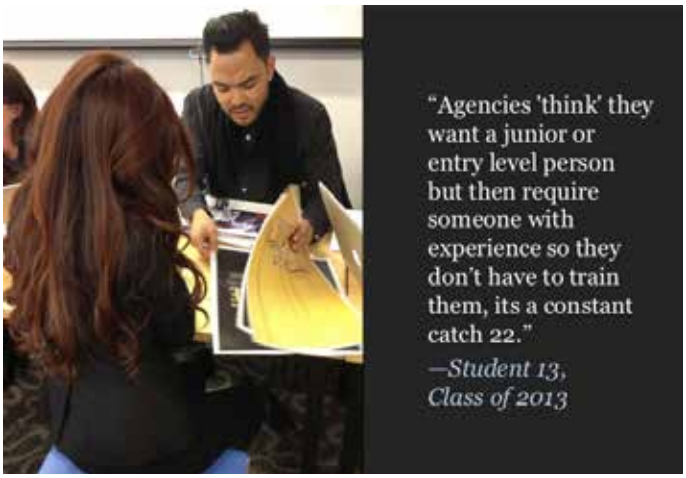
it's important to me is that i get a fun, positive, ever-changing workplace… relating to the fashion or lifestyle industry (sic) (Student 12, Class of 2015).

The traditional 'learning on the job' or formal internship of the past no longer exists as most agencies simply don't have the time or resources they once did to mentor young talent.

No learning curve vs. learning on the job. The traditional 'learning on the job' or formal internship of the past no longer exists as most agencies simply don't have the time or resources they once did to mentor young talent. Further, 'internships' today have fallen under heavy scrutiny with detractors accusing some opportunistic agencies of abusing a free labour force, cycling through fresh, new interns every three months who create high profit margins for the agency while, at times, providing minimal training or benefit to the intern.

The "apprentice" mentality doesn't seem to exist anymore. (Perhaps because we've lost the "mentor" capacity) (Doug Lowe, SVP, GM Production Services at Cossette Communication).

The brutal difference for students today compared to back in the day, is that no one teaches them on the job anymore. We had the chance to learn from the seniors and the bar was lower for kids out of school. It was expected they would grow into the job. Now companies want to see what you can do NOW (Nancy Vonk, Co-Founder Swim, ex- Co-Chief Creative Officer Ogilvy Toronto).



> Agencies 'think' they want a junior or entry level person but then require someone with experience so they don't have to train them, its a constant catch 22. I have spent over a year now actively searching for an entry level [job]… without any sign of finding myself in a steady job despite two internships under my belt and a degree ().

> I struggled a lot to make it into an advertising agency considering most of them asked for a minimum of 5 years experience for an entry level position, not to mention that most of them expected a Junior Designer/Art Director to know HTML, CSS, which… I never learned at school (*Student 14, Class of 2011)*.

Portfolio vs. people skills. At a time when employers' wish lists of hard skills keep expanding, surprisingly, soft skills were cited as growing in importance by both employers and graduates alike. Personality could provide the meaningful difference for one portfolio winning over another.

> [Grads] also have to be fundamentally nice and be able to play well in the sandbox. You could say it's become a dog *help* dog world out there.

> Graduating students need to not only have a killer portfolio demonstrating their "hard" technical and creative skills, but they also need to somehow leave school having developed their "soft" skills (collaboration, interpersonal, negotiating, leadership, relationship dynamics, social graces, etiquette, professionalism, emotional quotient.)

> This will always be a people-based business—so they are casted and selected into the Agency, not just hired (Israel Diaz, Executive VP, Chief Creative Officer at Young & Rubicam Canada).

> Of course, the fortunate reality is that for many, life's true lessons that give us a deep understanding of things like grace, humility, sacrifice and even love are not realized until real life is experienced. And many are not awake enough to learn (Ted Jarvis, previously Rogers Communications, Director of Marketing).

> Personality is really, really important!!!!! It is even more important than skills. In an agency that has a great culture where everyone is like friends or family, it is really important to fit in (Student 15, Class of 2011).

I think we could also benefit from a class dedicated to interpersonal skills such as team building/how to work within a team setting to obtain mutual goals rather than leave school with the feeling of trying to be the best of the best on your own (Student 16, Class of 2011).

I felt unprepared for how to navigate the 'politics' of any company—whether internal or your clients (Student 17, Class of 2011).

One job vs. many hats. Fewer resources and shorter timelines in the industry create delivery pressures for agencies. Graduates are often expected to work collaboratively, broaden their skill sets and work outside the scope of their specified roles in response.

I'm looking for creatives that aren't afraid to breach the scope of their titles. I am asked daily to make things work with what I have, and I need employees that are willing to put on another proverbial hat if it is required for the project (Dayna Barron, Creative Director, Blo Blow Dry Bar Corporate).

We are heading into a world with fewer full-time jobs and more free-lancing. Self-reliance, and small business management skills become more critical (William (Bill) Ratcliffe, Director of Communications and Research at BRIGHTHOUSE Brand Group).

One thing I didn't expect was the many, many, roles in an ad agency. I recall being told about it but it's a whole different experience when you actually get to work on projects (Student 18, Class of 2013).

In my last job—because the agency was so small and understaffed—I had to wear too many hats, was busy all of the time and didn't have enough people to delegate work to. It was very high-stress with low pay… mostly because I was an illegal immigrant… (Student 19, Class of 2015).

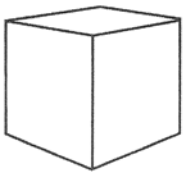
A growing number of students are rejecting internships upon graduation and instead using their newly honed marketing skills to start their own businesses.

Internships vs. entrepreneurships. A growing number of students are rejecting internships upon graduation and instead using their newly honed marketing skills to start their own businesses. This trend is on the increase in the OCAD University advertising program and supported statistically as a macro trend.

> I came to the realization that the agency life just wasn't for me. So, I ended up starting my own business! And I must say, I applied a vast amount of what I learned at OCAD to help me both launch and grow my business (Student 20, Class of 2011).

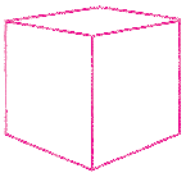
> I wanted to graduate and run my own business… based on what I learned and a mix of my own knowledge, I was able to successfully brand my business. I currently run a small business/blog while working full time as a communication assistant director (Student 21, Class of 2014).

> I really enjoy entrepreneurship and hope to be involved in it in some way (Student 22, Class of 2015).

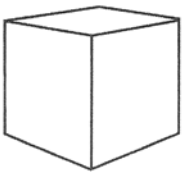


Getting hired vs. higher education. Job scarcity for new graduates, coupled with a millennial desire for on-going self-development propels a record number of graduates to reject the work force in favour of higher education.

> Since working I have learned that I actually love the more strategic development side of business planning, which is why I am now living in Australia getting my Masters of Marketing! (Student 23, Class of 2011).



> I LOVE advertising, I really do, but there is a part of me that is worried about a future in it and very interested in law and… I am going to be applying to law school in November. There is definitely a need for creative problem solving in law…which is where my background in advertising ties in (Student 24, Class of 2011).



Discussion. Many of the common topics that became evident in our research, populated our report with distinct polarity. The differences more often were of extreme divergence versus common ground. Several of these contrasting themes echoed macro trends in the Millennial demographic and were corroborated by other existing research that helped put these findings in context.For instance, Millennials' monetary focus dovetails with their distinction of having higher levels of student loan debt, poverty, unemployment and lower levels of wealth and income than their two immediate predecessor generations (Pews Research Center, 2014), all on the heels of the Great Recession of 2007–2009.

Many media reports about Millennials' economic prospects have focused exclusively on how the Great Recession is likely to reduce their average earnings for many years to come, no matter how much the economy improves (Howe, 2014). And even worse for art graduates

…the economic prospects of arts graduates have never provoked as much anxiety.

specifically, the economic prospects of arts graduates have never provoked as much anxiety. Those with a bachelor's degree in fine arts or design make the lowest salaries of all university graduates; over 20 years, they earn $300,000 less than someone with a philosophy degree (Chiose, 2015). Unable to get jobs, graduates are turning instead, in record numbers, to work on getting higher degrees. Today, the share of 25- to 29-year-olds with 4-year college degrees (at 33%) and high-school diplomas (at 90%) are both at record highs (Croke, 2014).

Coupling their ambition with their "native digital abilities" leads to what Greenbiz has called "Natural Hackers." A natural outlet for this ability, combined with a degree in advertising, has produced many a successful entrepreneurial startup. This orientation is supported by a *Reason* magazine survey where 55% of Millennials say they'd like to start their own business one day (Ekins, 2014) and another survey found that about 70% of Millennials see themselves as working independently rather than for a traditional company (Ekins, 2015).

Finally, one could argue that the "trophy kid" approach to child rearing for the Millennials, has built a sense of entitlement and a "good is good enough" attitude (Mayhew, 2014) that is at odds with the expectations of the generation of employers who came before.

Such a backdrop helps provide context to some of the values and aspirations of the Millennials, but after all these divergent views, do they ever meet in the middle? Absolutely. It's encouraging to find that stakeholders, from students through to graduates and employers, largely still agree on both the substance and value of certain key advertising fundamentals:

Common points of agreement:

The Big Idea. Modern advertising has historically been founded upon building a campaign around a "Big Idea." Despite the allure of new technology and media channels, Creative Directors and graduates alike still agree that the traditional core of a "Big Idea" is essential.

> The size, strength and flexibility of creative ideas must be better than ever before. Learn to think, before learning to do. Idea generation in a non-platform but strategically focused way. Learn to be a thought leader. As a junior in my agency, if a recent graduate did nothing more than generate pages of fresh, brave ideas, I'd be a happy man (Graham Lee, Chief Creative Officer, TrojanOne).
>
> Younger creatives seem to lack an understanding of big ideas. The young teams coming out of school don't seem to have a firm hold on their ideas, often hinting at something but not thought through (Benjamin Vendramin, SVP Creative Director at McCann Erickson, NYC).
>
> What I think students need to focus on now is a big idea. And then see what medium is right for that idea to come to life (Raul Garcia, Creative Director at kbs+ Toronto).

> I think one of the things that's not new but a timeless thing that young people entering the industry… is understanding the difference between an IDEA and an EXECUTION (Dom Caruso, President & COO, Leo Burnett Canada).

> We need creative thinkers. I would like to think that one day a creative director will ask to see a student's 'thinking'—a separate book that may be filled with doodles and fragments of thoughts, but shows the way a candidate thinks. *—Ian Mirlin, Ex-President Harrod & Mirlin*

> In the end I am looking for a creative problem solver, someone who can connect our brands with the hearts and minds of people in an ever-growing media world. I still look for people with great ideas, all the rest of the job can be taught (Lance Martin, ECD/ Partner at UNION).

> Seeing a concept develop is what really inspires me. I look at any creative brief as a problem and get excited to find the human truths and most ideal executions (Student 24, Class of 2016).

Craft not crap. Easy access to technology and the democratization of quality graphics and creative executions has raised the bar on craft. Both Creative Directors and recent graduates agree that impeccable craft is crucial and gaining in importance.

> I would've liked to see more attention to craft. Art direction and design. Obsessive attention to detail and design. I couldn't believe some of the layouts I was seeing, especially with today's easy access to inspiration online (Daniel Vendramin, ex-SVP Creative Director, Cossette).

> Big ideas need to have great executions. I see books that show big thinking but the executions lack deep thought and creativity. Everything in a big idea needs to be great. Print, TV, PR, Digital, Everything (Christina Yu, Executive CD, Red Urban).

> I see a lot of books that don't make the cut simply because they are poorly executed. [I hear] I'm not teaching Art Directors or Copywriters. I just want big thinkers. Well… if you want to be an Art Director, you have to prove you can Art Direct (Student 25, Class of 2012).
>
> I'm tattooing spellcheck on my forehead (Student 26, Class of 2016).

The mythical, oft-discussed and sometimes elusive "Big Idea" emerged as *the* most important skill. The holy grail everyone seeks. Despite talk of Big Ideas being replaced with "Long Ideas" (small pieces of content that sustain the 'always-on' strategy) (Moore, 2013) or "Multiple Little Ideas" (threading together trans media narratives), the reports of the death of the Big Idea have been grossly exaggerated, to misquote Mark Twain.

Our second point of universal agreement is the need for excellence in crafting and execution. In fact, in the *Advertising Age* article, "Execution Has Become as Important as the Big Idea," Alan Wolk makes the case for execution gaining in importance to potentially overtake Big Ideas in a world where execution is tied to the success or failure of the user's brand experience and an intrinsic part of the expected brand experience today (Wolk, 2010).

Simply put, thanks Apple, for raising the bar for all of us.

Conclusion. So, in summary, how does one harness all this information to carve out a path to academic success for students?

Our focus in creating the new advertising stream at OCAD University has been to close the gap with a new integrated teaching model that brings clients and "real world" perspectives, projects and feedback, right into the classroom. Rather than profs assigning fictitious projects to the class, "real world" clients brief students right in the classroom on challenges and opportunities for their brands and students work on the same kind of assignments as agencies. In the past, our students have been challenged by creative briefs given by Scotiabank, Canadian Tire Jumpstart, Budweiser, McCain Foods and Playstation to name a

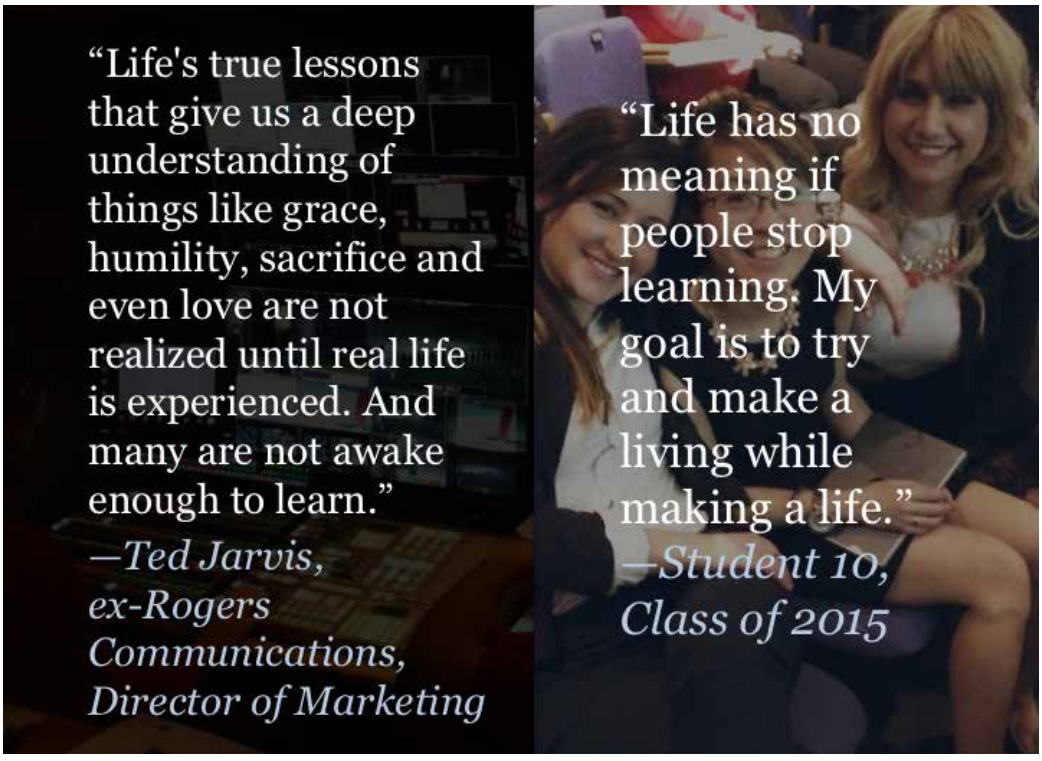
few. The Globe and Mail profiled the revamped advertising program referring to it as the first time they were aware of a client, McCain Foods, actually buying and running advertising created in a classroom (Chiose, 2015).

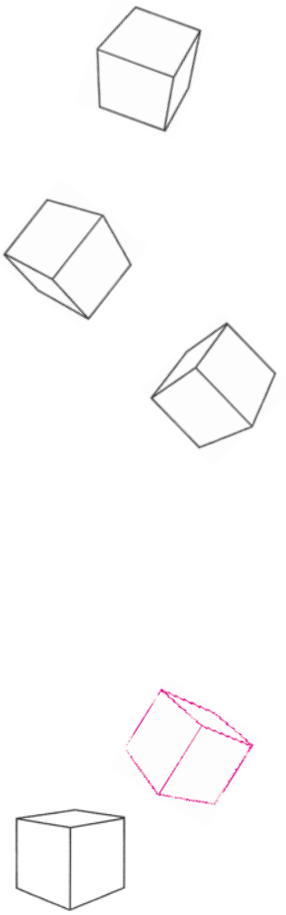
This effort has resulted in a more collaborative teaching model that creates a hub of learning where the teaching role is shared between these "real world" clients, other visiting professionals/practitioners, peer-to-peer feedback, student research, graduates and mentors who all collaborate in the educational experience. There is no filter in bringing the boardroom into the classroom and the transmission of the information is direct, resulting in a greater degree of information exchange and understanding.

Students work in productive, collaborative teams, to better simulate "real world" expectations, rather than in closed partnerships. Team members self-select their roles within the groups, to foster skill development across a range of different job categories and roles found in the industry. Graduates commented that they felt better prepared for the transition into the "real world."

Were we successful in our new teaching model? Student participants anonymously graded the course value and learning as 100% across all key measures for the past two years. Informal tracking dating back to 2011 graduates shows positive uptrends.

Ultimately, we believe the key to the future of building a better bridge between academia and industry has to begin with more informed research and assessment of all sides of the equation. To do otherwise, we lean instead, on our own personal biases, based on very different values and thus tend to perpetuate old methodologies for teaching. The first point of evaluation has to be inspection, combined with an understanding of the diverse needs of the various stakeholders, to point the way to a new interface.





We are at an intersection where both industry and academia are simultaneously working along parallel paths to address change. What better time to gain a deeper understanding of the changing landscape and use this as a catalyst to re-evaluate how we teach and inspire new techniques?

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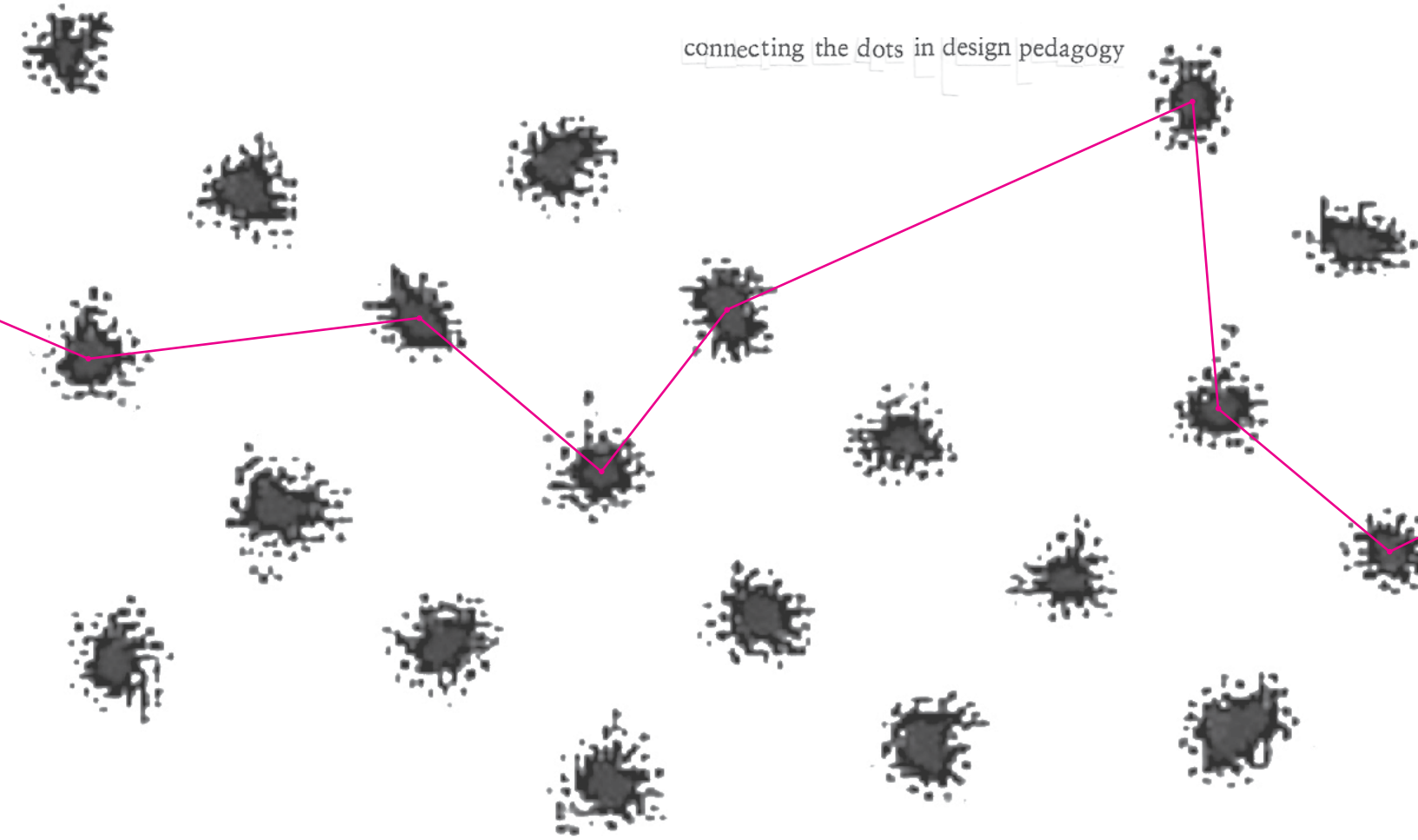
connecting the dots in design pedagogy



Sheeraz Y. Wania is a Graphic Designer and a design educator, with a Master's degree in Educational Leadership & Management, focusing on Art & Design schools, from the University of London, UK. Having lived and taught internationally, for many years, she now resides in Toronto and teaches courses related to Design and Culture, here at various colleges/universities. Her research interests lie in the arena of design pedagogy in reference to culture and context, with its implications to social change.

Abstract. Context and cultural frame-of-reference are important considerations in design decisions and designers are aware of their significance for effective design. There is a realization that the concept can be at times elusive as some aspects are tangible and easy to comprehend as compared to others that might be deeper and hence not as straightforward and easy to interpret. Educators instil in students the need for technical and professional skills, the value of clever ideas and out of the box concepts, the advantage of having a grasp of history and the importance of research and exploration. Projects typically ask 'what' to design, and 'how' the students aim to accomplish the same. Via this paper the importance of the 'why' question is deliberated on with reference to culture and context of the designer and also the end-user. By employing theoretical comparison and case study approach, the aim is to elucidate how cultural context should be recognised in design by dissecting what culture can actually mean and how it can be construed to lead to effective design solutions and a pedagogical setting that actively pursues this facet. As an academic mode of inquiry, this paper hopes to open up some avenues for further discussion and idea generation among peers and how design educators and thinkers can create a deeper sense of belonging and interest in the students, empowering them to create meaningful design solutions.

Keywords. Context, culture, design, design pedagogy

Introduction. Having taught in diverse cultural settings and to some extent having experienced what design means to the young minds in these settings, it is interesting to note that globally, and generally, what most students want as an end result to their education is not much different. They, for the most part, want to acquire the needed skills and expertise that can be employed to various projects and alongside want to understand the basic principles that lead to design that looks aesthetically pleasing, design that sells and design that has a 'wow' factor, with the hope that this knowledge and skill set will land them with a good job.

We live in a very interesting—albeit—a somewhat distressing world today. Our actions, big or small, have an influence on our social fabric, immediate and on a larger scale and we all reside within a certain culture and a context that shapes our perception of reality. The interconnection between culture and design practice e is of key value, when it comes to design that impacts society and its people. When my students design something, the question I usually probe them to ask themselves is not only 'what' they are designing, and 'how' they intend to take that further, but also 'why'. The 'why' question usually suggests many interesting answers especially when teaching a 101 (design foundation) class, where this question is not always directly relevant, since at that point a lot of projects are designed to teach students basic skills and principles. However, when encouraged to search deeper and question, interesting dialogue can unfold.

Our actions, big or small, have an influence on our social fabric, immediate and on a larger scale and we all reside within a certain culture and a context that shapes our perception of reality.

This paper is based on my personal experience as an educator and graphic designer. By sharing case-in-points, drawing connections from some key theoretical knowledge and constructing a map, my key aim is to improve pedagogical practice. This paper is by no means an absolute and I consider it to be work in progress, with the hope to draw more connections and associations, thus opening avenues for discussion and discourse.

Head, hand and heart. Stemming from the three questions, the 'what', 'how' and 'why' and to construct my point of view, the 'hand, head and heart' (Figure 1) metaphor is being used here, as a starting point. A similar analogy is also used by Ranjan in a different frame of reference, more geared towards the ethics in design, progressing from skills–*hand*, to knowledge–*brain* and finally to higher values and raising a deeper awareness and empathy–*heart* (2009).

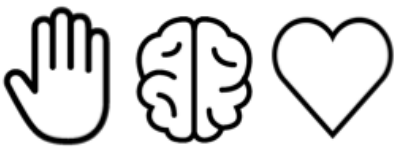


Figure 1.
Hand, Head, Heart. The keynote paper and visual presentation titled "Hand-Head-Heart: Ethics in Design", delivered by Ranjan, M.P., at the ITU Auditorium in Istanbul on 8th October 2009. The theme of the conference was "Design or Crisis". (Source: Wania, 2015

Our understanding of the world we live in, how we interact, what we hold close, our assumptions and values, are some aspects beyond the pragmatic considerations that give meaning to our actions and play a vital role in how we think and act as designers (Figure 2). The answers

to the 'what' and 'how' 'questions are generally supported by practicality, but it is the answers to the 'why' question, that makes the student think and enter the arena of the impact of their design decisions. This is rooted in culture and context, and its dynamics cannot be ignored. Just as design shapes us, we shape design as well. As Nelson and Stolterman state, "becoming a designer is a process of integrating the development of the whole person—mind, body and spirit…." (2014, p. 214).

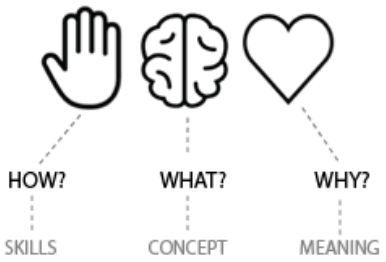


Figure 2.
Connection of above metaphors to the three questions: What, How, Why (Source: Wania, 2015).

Definitions. For the purpose of this paper and follow up research, some definitions of culture and design, have been used here, as a construct:

G. Hofstede, a Dutch social psychologist, in his very popular book, Cultural Consequences defines culture simply and insightfully as the "collective programming of the mind" (2003).

J. Maeda claims, "design is diverse and connects deeply to the greater context of life" (2006).

V. Papanek in his book, Design for the Real world, maintains, "design is the conscious and intuitive effort to impose meaningful order" (2000).

J. Cezzar on the American Institute of Graphic Arts (AIGA) website, defines design as "the art and practice of planning and projecting ideas and experiences with visual and textual content" (2015).

From the above mentioned definitions the words that stand out are 'mind, meaning, context, ideas and experiences' and what follows is an attempt to build further on these terms and concepts (Figure 3).

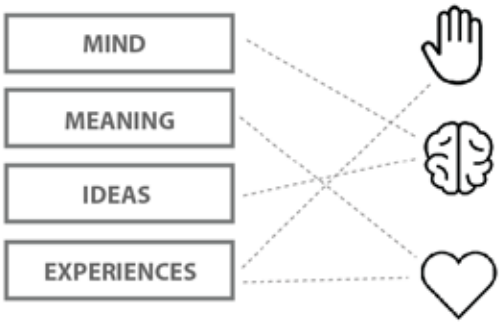


Figure 3.
Mind, Meaning, Ideas, Experiences (Source: Wania, 2015).

To better understand culture and its various implications and how design impacts the same and vice versa, the best way to do so is by means of Hofstede's 'culture onion' (Figure 4).

The end user and context. At the core of any culture are the values that are held close and dear. From that core emanates what is visible, acknowledged and felt, i.e. language, rituals, customs and practices etc., terms that we generally consider interchangeable in common use. Design,

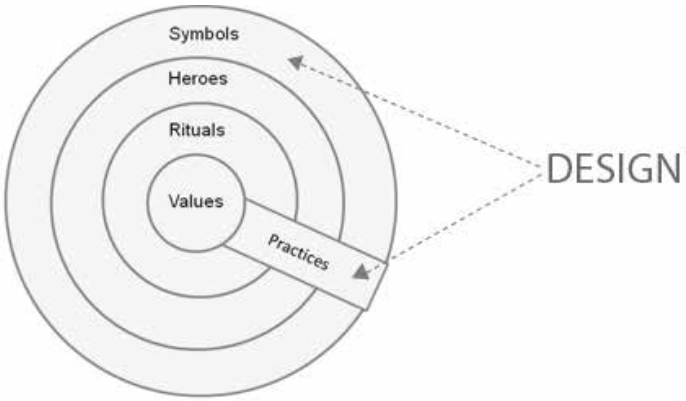


Figure 4.
The 'onion Diagram': Manifestations of Culture at Different Levels of Depth. (Hofstede, 2007, p. 11)

as practice, is most evident in the outer most layer of the onion that is in semiology, symbology and some practices, and conversely when a design practice is out of sync with the core of the society or culture it operates in, the needed impact may not be achieved or may even have a negative consequence. The culture of a particular race or people is not what is just visible on the outside, for example the way a person dresses, or how they deal with certain aspects in the workplace, which might just be an external representation of who they are. To be able to design for positive impact, investigation and scratching below the surface is fundamental and not taking things for granted or at face value is critical. When we encourage our students to ask the 'why' question, we are prompting them to think beyond the obvious and accordingly take action with 'care and inquiry' (Nelson & Stolterman, 2014).

A case in point to elucidate this stance is that of a project that was carried out in a certain setting of a developing country, where the task was to design a signage system for a public facility. The facility was based in the city, but catered primarily to the rural population. One of the signs to be designed as a part of the system was that of the washrooms. It was realized that the generic male, female symbol that is generally associated with washrooms (Figure 5a) was not within the perceptual arena of the end-user, which could be due to multiple factors including lack of exposure through media or otherwise. When on-site research was conducted with the target group, where numerous images were shown and response documented, the only element or object that was associated with a toilet/washroom was the image of a 'lota', a typical plastic jug used for washing purposes (Figure 5b).

To be able to design for positive impact, investigation and scratching below the surface is fundamental and not taking things for granted or at face value is critical.

The 3 questions asked in the above context would be:

What is the project? Designing of a washroom/toilet sign.

How will you go about with it? By researching what generally happens, drawing inspiration and doing some preliminary sketches before finalizing.

Why are you designing this particular sign for this venue? So that the end user uses the facility and not use the roadside 'wicked problem'[1] as was the experience at the time.

This simple instance lucidly highlighted how important it was to construe context and understand the previous knowledge base of the end-users and their exposure to what may be considered the norm otherwise. This project overall was not at all as light hearted, as the example shared. The notion in the minds of the establishment, the client in this case, that design had to look 'good', following the western norms, irrespective of its comprehension by the end user, had some serious implications.

Figure 5a (left)**.**
Bathroom Signs. Adapted from *Home Décor Idea*, Copyright 2016 Kristandesign.com.
Figure 5b (right)**.**
Lota (By Anushay Furqan)

The design student. Just like consumers of the design solution come from varied contexts and cultures, even design students in a multicultural setting come with varied background, points of reference and experiences. Does that make the task of educators any different, less or more challenging and exciting? Many factors would influence how each student reacts to the cues that fill their lives as design students and professionals, and it is also interesting to see how each one brings in the individualistic flavour of their patterns, thoughts and behaviours.

According to Sparke, design and culture are both 'complex phenomena' and one thing that lies at the heart of these two concepts is the underlying need for identity and how in our world today we are dependent on mass media to define who we are (2013). A fascinating instance in this case is the identity/logo design project that my students undertake as a part of their foundation studies program. It is rather interesting how some of them inject their ideas with objects and images that they believe belong to their indigenous culture. From Persian scripts to pomegranates, masks to henna patterns, students feel the need to portray the same. Despite the fact that we are more global today than ever before, in terms of our context, with the absolute lines vanishing and an overlap being seen everywhere, while amalgamation is making us adapt in most cases, this is the same global impact that makes us more aware of who we are, hence we try to enforce our identity, at times in more cosmetic and surfaced ways. For this reason, the importance of some deep research and real thinking cannot be ignored in a way that including the same in the curriculum from onset would prove beneficial.

According to Frayling, there are three categories or types of research in the arena of design; research into design, research through design, research for design (1993). Based on this knowledge, research into design would essentially involve research into the history and hence drawing knowledge and connections from the same. Research through design is about reflective practice and 'doing', but Frayling claims that it is research for design that requires the most in-depth thinking and is not very common in most cases (1993).

This leads to further expansion of my map, as to how designers, design students and educators can start to connect the dots.

In the opinion of Frayling, 'research into design' would principally be connected to knowledge, looking into history and creating new avenues in some cases, and hence a connection

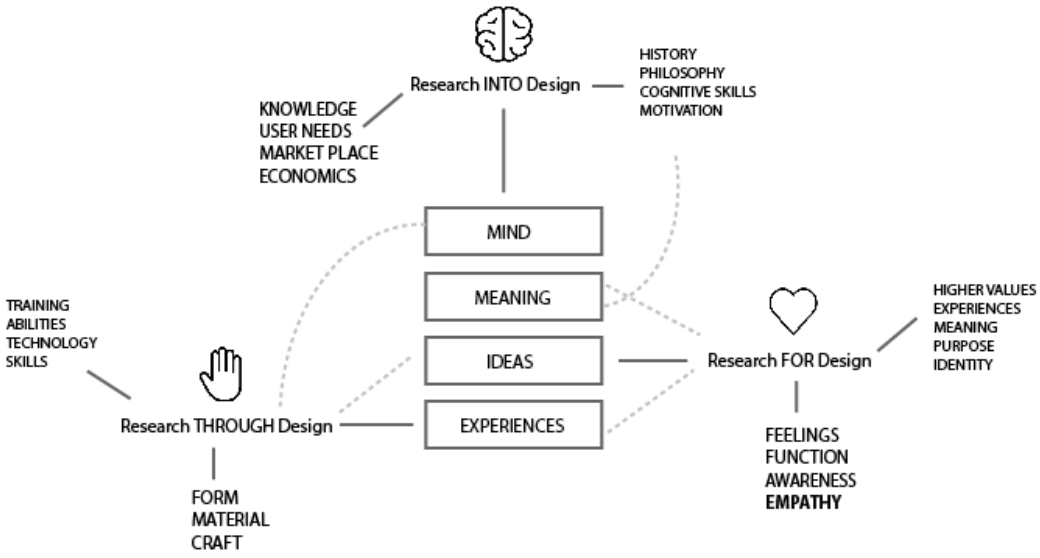
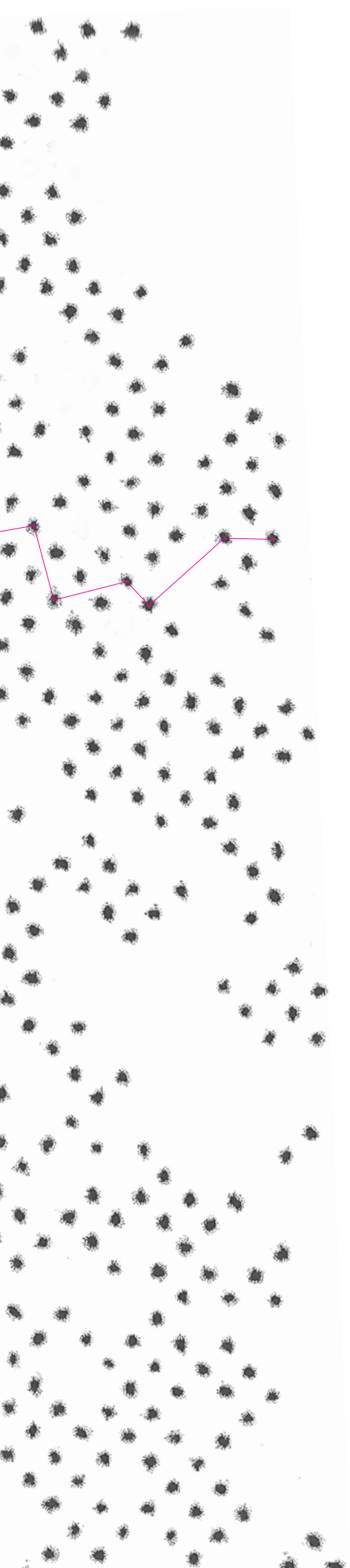


Figure 5a.
Connections drawn with Fraylings' three types of research with mind, meaning, ideas, experiences and the hand, head, heart metaphor (Source: Wania, 2015).

can be drawn to the mind and the involvement of cognitive skills (1993). As for 'research through design', it is all about skills, technology, material and one's training and this would be considered associated to experiences gained through training and working. It is 'research for design' that deals with higher values and purpose, and thus would be correlated with ideas, life experiences, cultural context and thinking that arises from deeper dwelling.

In his research on ethics in design, M.P. Ranjan talks about the three orders of design, what he calls the 'design vortex' (2013). His paper (ibid) considers form and structure the first order of design and the most acknowledged one. This is followed by 'impact and effect' and 'meaning and purpose', in that sequence. He maintains that form or structure, attributed to ability, craftsmanship and skills, is after all important as it leads to the second order which deals with aesthetics and in turn, impact and thus it cannot be disregarded. But he also establishes mere form and aesthetics as something that is meaningless and surfaced if not connected to the third order that suggests higher values. To take the mapping forward, a connection can be drawn between Fraylings' 'types of research' (Frayling, 1993) and Ranjans' 'orders of design' (Ranjan, 2013) to draw parallels for further inquiry.

We as educators generally ensure that the students acquire the needed skills and an appropriate grasp of the required software, giving them the knowledge of history, business skills, principles and all that it takes to make them 'good' designers. We generally deal very well with the 'head', connected to concept development, and the 'what' question, as well as the 'hand', associated with skills and technical know-how; the 'how' aspect. The importance and need for both cannot be undermined for employment potential. However, what is also required more of is the ability to design with their 'hearts', with empathy and an ability to connect. That can be accomplished by providing the students with the opportunity and the aptness to question their design decisions, based on not just art and design knowledge, but in terms of the impact of their design solutions.



Our design heritage spans over 30,000 years and we designers have since navigated the maze which Barnwell says comprises of our chosen 'paths' or philosophies and 'walls' which could be the prevailing social & cultural constraints (2011). In this context, designers/ design students carve out their individual paths, and along the way they encounter the walls that should not necessarily be taken as hindrances but a tool that could help them navigate better. So metaphorically one could consider these 'constraints' of culture and social attributes as building blocks that could help us to be better designers and enable us to better serve the society we function in. Students should be equipped with the tools, the required research skills, and to be able to navigate these 'constraints'. To research—not only into the knowledge and skill aspect of design—but 'research for design' (Frayling, 1993) which has the end-user at its core, with a focus on feeling and awareness, making them realize that empathy along with a broadening of perspectives is key and is empowering them with the ability to see beyond a pretty picture. The 'why' question can help the student and the future designer navigate this terrain to carve out a better route and end-result that has meaning and significance.

Conclusion. We reside in a country that is considered to be one of the most multicultural countries of all industrial nations of the world. One out of every five Canadian currently living in Canada was not born in the country (Statistics Canada Website, 2016). Canada considers itself not to be the proverbial 'melting pot' and it prides itself on the fact that it allows and expects all persons to hold on to their individual identity, belief and cultural knowledge. Multiculturalism is defined as a social policy designed to encourage ethnic or cultural heterogeneous [versus homogeneous] and was officially adopted by the Canadian government during the 1970s and 1980s leading to the Canadian Multiculturalism Act, a law, passed in 1988 (Government of Canada, 2016). This raises some important questions for us as design educators working towards the future of the profession in this all-inclusive environment we live and function in. It is exciting and sombre at the same time when we talk about creating a future of design education that positively impacts the society and is in tune with the needs of the time, with the hope to make our students appreciate the power that design has to impact and change society, and in turn the world we live in. We as educators need to inculcate early on that experience, skills and knowledge are far-reaching, but designers need reflection and deliberation and always inquire 'why'. It is important for future designers to be conscious that what they produce and put out into the world has an impact on human life and that the profession they are about to enter carries with it a responsibility. As Dewey believes, 'A design must be valued and judged by the experience it evokes, how it "moves" people and also by the aesthetic nature of design as a whole' (1934).

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Footnotes. Horst Rittel formulated the wicked problems approach in the 1960s, when design methodology was a subject of intense interest. Rittel argued that most of the problems addressed by designers are wicked problems. As described in the first published report of Rittel's idea, wicked problems are a "class of social system problems which are ill-formulated, where the information is confusing, where there are many clients and decision makers with conflicting values, and where the ramifications in the whole system are thoroughly confusing" (Buchanan, 1992, p. 15).

transformation