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The becoming of a designer: An affective pedagogical approach to modelling and scaffolding risk-taking

ABSTRACT

Current design practice is as much about understanding behaviour and culture as it is about material intelligence. Relevant, effective design is about working with *people rather than* for *people. As we acknowledge this paradigm, we also recognize the need to better understand our individual selves to better understand others. This article details the affective pedagogy behind the Transforming Mindsets studio, which directly addresses explicit teaching of intrapersonal skills in learning to design with others in authentic inquiry-based assessment. This empirical educational study utilized observational data, self-reporting tools, interviews and a six-month follow-up interview with students to observe how risk plays a role in shifting learning mindsets. Students reported that the experimental studio changed their relationship*

KEYWORDS

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with learning, strengthened their willingness to take risks and improved the quality of their collaborations. However, post-studio interviews revealed the challenge of integrating intrapersonal skills and practices into future learning contexts. This article proposes the importance of design education considering not just how the designer creates but also how the designer acts and becomes in the world.

I. PROBLEMATIC

Design education, arguably, builds a tolerance for risk-taking through the vulnerability required to create something never-before-seen (Brown 2012). There is inherent risk when one dares to share not-yet-developed ideas in a brainstorming session, create sacrificial prototypes designed to fail or stand in front of peers and professors for critique. Studio learning environments are authentically designed to help one become comfortable with the process of creating artefacts and putting them out into the world (Zehmer and Forsyth 2015). However successful this model has been, design education needs to reckon with the evolving profile of design and studio pedagogies within an epistemic culture (Knorr Cetina 2007).

Whether making interfaces, objects, systems, services or experiences design today is as much about understanding intangible factors such as behaviours, cultures, value systems and relationships as it is about material intelligence (Manzini and Coad 2015). The contemporary practice of design calls for a generation of design graduates able to more deeply understand the human experience (Light and Akama 2012) and the post-human (Forlano 2017). Where we previously thought of design education as about making *things*, we are now asked how we prepare design graduates for making *sense*, making *possible*, making *right* and making *happen* (Grocott and Sosa 2018). This expanded notion of 'making' through practice requires us to explore how we might continue to explicitly teach design students the ability to become comfortable with uncertainty and embrace risk-taking in ways that align with contemporary design practice. This expanded notion builds off of studio teaching and learning through action definitions, including how we scaffold, mentor and support becoming with 'materials, technology and processes of design, making and construction balanced with communication, conceptual and problem-solving skills development' (Zehmer and Forsyth 2015: n.pag.).

The emergent emphasis on a designer's need to be expert in participatory, relational and sense-making practice signals the shift in what we expect from graduates and practitioners (Agid 2011; Madsbjerg 2017; Smith et al. 2017). These evolving capabilities build on established attitudes identified as common to successful designers – navigating uncertainty, being comfortable with ambiguity, practicing empathy, experiencing through multiple senses and constantly learning from your work (Michlewski 2015). An underlying assumption in design education is that this intangible expertise is implicitly acquired through project-based assignments that hone students' capacity to navigate the affective side of designing. As design celebrates its capacity to foster creative risk-taking, an example of one challenge is that the project-based assignment continues to privilege and assess the formal, conceptual and functional aspects of a tangible outcome. This study is interested in the idea that if current practice of design is about working *with* people, rather than *for* people (Sanders and Stappers 2008) how might the need to better understand ourselves to better understand others be addressed in a design studio

environment (Goleman 1995). How might we explicitly value and make visible the acquisition of these mindsets, and to what end might this pedagogical approach serve, or distract from, the education of the becoming designer. This provided a question for the empirical study to observe and witness throughout the programme.

II. RESEARCH FRAMEWORK

For design to meaningfully claim the personal qualities of a designer to take risks, be vulnerable and embrace uncertainty, we need models for how such attributes might be accounted for in an education historically drawn to assessing learning through artefacts and folios. This study offers ways by which design educators can explicitly deepen students' understanding of less tangible design attributes and potentially accelerate the acquisition of these increasingly highly valued expertise. The Transforming Mindsets studio curriculum explores the potential of explicitly scaffolding these design mindsets and dispositions. The latest iteration of this experimental learning design and study was taught in an elective studio of the Transdisciplinary Design MFA programme at Parsons School of Design, New York.

In this research-informed, practice-based curriculum the project-based learning component was similar to contemporary design briefs. In partnership with Riverdale Country School, a K-12 private school in the Bronx, New York student teams developed, prototyped and piloted two design interventions. One project team set out to design an intervention for transforming the learning mindsets of middle school students; the second team designed an intervention for the mindsets of K-12 teachers. To deepen understanding of the specific contexts, the students collaborated with learning scientists from Riverdale Country School, Columbia University and the University of Melbourne's Graduate School of Education.

Central to the premise of the study was that alongside the cognitive and technical project-based learning, there was a parallel affective learning experience, focused on the students' mindset towards learning. While being challenged to identify factors and mindsets that held students and teachers back from reaching their potential, the design students were required to examine their own belief systems in the studio. The process of having students interrogate their own mindset while working on projects designed to shift others' mindsets sought to be a powerful empathy exercise.

The Transforming Mindsets studio acknowledged the affective domain by surfacing the students' own self-understanding of the psychological and emotional selves that they brought to the studio. Beyond notions of self-esteem or pastoral care the learning experiences drew on two core mindsets, identified by the Mindset Scholars Network and informed by research, as playing a role in student achievement: growth mindset and belonging (Aronson et al. 2002; Dweck 2006; Yeager and Walton 2011).

Dweck's research (2006) critically presents *growth mindset* as the belief that basic abilities can be developed through practice and perseverance. In contrast, *fixed mindset* is when people believe that qualities, such as intelligence or talent, are innate. If a student has a fixed mindset and sees themselves as inherently risk-averse, then they will believe that they cannot be taught how to assess risk appropriately. A student with a growth mindset could alternately be curious about how to become more comfortable with embracing risk. Yeager and Walton's *belonging* research makes evident the

connection between a student's self-perception of whether they belong in an academic environment and the potential to persevere and succeed. The role of design thinking in their development of interventions to increase a sense of belonging (Yeager et al. 2016) further contributed towards the notion that design education could be advancing this area of research.

Belonging and growth mindsets are specifically relevant to a student's self-perception as becoming designer. Becoming in this instance does not mean becoming *a* designer, static and unchanging. Rather becoming emphasizes the skill of being able to develop and grow in design practice, not reach a final end goal (McEntee 2017). Across their design studies and into their future careers the designer will be negotiating the always-in-flux, mutable state central to a practice grounded in emergence. This underpins the interest in this empirical pedagogical study to question whether studio interventions can deepen self-understanding and make visible the interior shifts of transforming one's mindset for becoming.

This article invites readers to consider the connection between *modelling* risk and *performing* risk with becoming designers. The affective domain highlighted in the study works with play and performativity to draw out the psychological and social risk of being vulnerable, with the goal that learners might deepen their self-awareness and subsequently their capacity to challenge constraining mental models. This article presents the impact and limited transferability that aspects of the course had for participating design students and concludes with considerations for teaching designers not just how to think and make, but also how to act, respond and practice in the world.

III. METHODOLOGY

Research design

Transformational learning is based on surfacing, and potentially contesting, a student's existing mental model (Bain 2011). This is an inherently vulnerable act. Research demonstrates that we would rather maintain what we believe to be true, even in the face of conflicting evidence (Brown 2017). Yet to approach transforming our mental models, we must first be aware of how these beliefs are shaping our practice as designers. In the Transforming Mindsets studio, we believed that for an act of learning to be considered transformational it must lead to future shifts in how we think and act (Freire 1970).

This research introduced interventions into a studio-based learning environment to observe, discuss and reflect upon if and how the activities might support transformative learning. Implemented in conjunction with an elective graduate design studio, the study sought to investigate the students' experience and effectiveness of this experimental curriculum *as and in* practice. To scaffold opportunities for transformative learning the studio introduced twelve different interventions that would make visible and potentially contest a learner's mental models. Introduced over the period of a semester (twelve weeks) the interventions ranged from short reflective exercises, such as 'Give yourself an A' (Zander 2006; Grocott and McEntee 2019), to mindset-oriented peer assessment, to a semester-long activity, the 'Performance Gym' (described in detail below).

The study is a (post)qualitative inquiry (Le Grange 2018) with data collected through multiple methods. The researchers/educators engaged in iterative observations throughout the semester, including engaging students in dialogue as to what was observed and self-reporting tools designed to

mindfully engage the students at intervals throughout the semester. The reflections specifically asked the students to consider how experiential engagements with risk, uncertainty and vulnerability might be translated to studio experiences. The final studio session invited learning scientists to a workshop. Here students narrated their experience of the studio and participants collectively surfaced insights from the experience. One-to-one interviews were undertaken by a researcher outside the teaching team at the conclusion of the studio and again six months later. There were two teachers and eight students in the Transforming Mindsets studio (the interview subjects in the study).

Learning design

The studio drew on affective pedagogies (Patience 2008) that navigated risk-taking through playful performance and candid reflections. Visual, written and discursive exercises highlighted how our past experiences and beliefs influence our current practice. Of the multiple exercises that addressed these concepts in the studio, students reported that the two exercises that had the greatest impact were also the two exercises that involved the greatest amount of risk-taking and vulnerability. Below we introduce the 'Learning Mindset Case Clinic' and 'Performance Gym' to share how these experiences sought to model and perform risk.

Modelling risk: Surfacing limiting beliefs

> I don't believe we can take on a topic like transforming mindsets without examining our own. And I don't believe I can ask you to interrogate your own if I am not prepared to stand before you and question my own deeply held beliefs. So […] today I need to ask for your help to address a challenge I have with my own teaching. There is something faulty about my mental model of teaching – a model I developed decades ago in response to my own education. I need new ways of looking at the learning process to get me out of a false dichotomy I have held on to. I don't want to stand before you this semester dictating the content and pre-determining the desired outcomes. But I also don't want to say it's all up to you when that leaves some students disoriented and unmotivated. The disconnect between the style of education I am railing against from my own experience and the failures of my own teaching have troubled me for a while. To help break this impasse I am going to try to do the opposite of what I would usually do. I am going to take the risk of exploring a process deeply unfamiliar and outrageously uncomfortable to me.
>
> (L. Grocott, Design Studio Professor)

One of the exercises that the students kept returning to was an activity adapted from the leadership Case Clinic method in Otto Scharmer's University Lab course (2016). The Learning Mindset Clinic worked with the premise that one must let go of old ways of thinking to let come new ways of being (Scharmer 2009). This introduction is a paraphrased account of the Design Studio Professor's fifteen-minute introduction to her own Learning Mindset Clinic in which she asked the students to help her interrogate some of her own failings around teaching. This was an intentional pedagogical move modelling how to be vulnerable on the first day of class.

Over the coming weeks the students came together in small groups for the Learning Mindset Clinics to work through a mindset or belief that constrained one of their peer's full participation in or dedication to learning. The 'Learning Mindset Case Clinic' offers a structure for reflecting on personal challenges and learning new ways of acting, responding and practicing. For the studio we asked students to focus the personal challenge around learning. Following the original case clinic model small groups of four to five people work on one participant's case for an hour. In each session a participant would present the mindset they believed was most holding back their learning. The case-giver (the person presenting their challenge to the group) was asked to trace his or her current belief back to past experiences. The groups then collectively share defining moments that have influenced current habits that they believe hold them back from leaning into new challenges.

Performing risk: Tuning behaviour patterns

> I don't think it's possible to teach empathy in 90 minutes a week. But I do think it is possible is to create an environment for you to question your relationships to one another, yourself and your work. To shine a light on your personal narratives and create an arena for deep self-reflection and transformation. Through play-based learning, we can challenge our beliefs about both how we learn and how we collaborate. When we are in a play state, our natural tendencies rise to the surface. Engaging ourselves in an on-going embodied practice highlights the holistic relationship between play and learning. We can explore the unknown collectively, playfully, and develop an affinity for uncertainty.
>
> (R. Manix, Theater Studio Professor)

A significant structural change for the course was dedicating the first ninety minutes of the weekly six-hour studio to *serious play*. By serious play we mean intrinsically motivating, play-based activities designed to intentionally develop and enhance skills such as collaboration, creativity, reflection and self-aware-ness (Statler et al. 2011). This aspect of the class was called the 'Performance Gym'. Play was infused into the course with the premise that the way one does anything reflects the way one does everything (Brown 2009). Thus, through non-competitive play students could gain insight into how their instinctive behaviours and thought patterns emerge in project work. Using reflective, embodied, play-based activities helped students break out of established ways of thinking about their design practice, and explore new ways of being and becoming with their colleagues.

The 'Performance Gym' was led by a professor with a background in acting and play. He began each class by clearing everything out of the classroom and asking the students to stand in a circle, physically creating an open space for students to play. Changing the physical space indicates a different mode of classroom learning and references what play scholars refer to as a 'magic circle' (Huizinga 1971). This setting was important to create the opportunity to interact and relate to each other differently from a traditional university studio setting. A game would be introduced and students would immediately jump into the play without premeditation.

Working from a library of over twenty original and adapted games, the different embodied activities created a forum for observing and reflecting

how students instinctively react in new and collaborative situations. The play created recurring experiences of being placed under pressure, being given ambiguous instructions and being required to operate in a world of uncertainty. The immediacy of the moment limited everyone's ability to reflect upon a situation before reacting. Activities provided real-time feedback, highlighting natural inclinations towards taking the lead or shying away, being adaptive or needing to follow others, wanting to control a situation or seeking to abdicate responsibility. The Gym was sequenced such that, as the semester progressed, the activities increasingly required students to take more risks, be bolder in their actions and be more trusting of others around them (Grocott and McEntee 2019).

IV. RESULTS

Learning mindsets case clinic

The studio professor sharing her personal 'Learning Mindset Clinic' on day one disarmingly set up the semester. In self-reporting tools and interviews students repeatedly referenced the significance of watching a professor modelling taking risk on the first day. It initiated the semester by creating a space that encouraged risk-taking and vulnerability. One student reflected that watching the professor struggle and admit failings to students had 'forever shifted social contract of learning' (Student interview 2015: n.pag.).[1]

One motivation for risking sharing an authentic challenge was the Clinic's invitation to receive strategies and support mechanisms to change future practice. Yet it became evident that through storying practice, the solutions offered were of less significance than the vulnerable experience of publicly identifying and acknowledging one's own fixed mindsets, e.g. procrastinating, fears of not belonging or imposter syndrome. The reciprocity experienced through engaging in this risk-taking activity came from normalizing the shared hidden struggles. Consistent with research about generating inter- and intra-personal closeness, the solidarity that came with vulnerability increased a student's likelihood to seek out similar opportunities to be open in the future (Aron et al. 1997).

Follow-up data collection with students suggests that an additional transformative outcome, aside from an informed self-awareness, was the deep sense of social belonging that came from explicitly being vulnerable together. This allowed each learner to deepen each other's learning experiences. The Clinic's structure, requiring individuals to practice relationality through active listening so explicitly in the classroom, increased the likelihood of students embodying these skills in their collaborations and with the studio partners. The Clinic created an experiential, informed platform for intangible concepts such as listening, empathy and vulnerability that are so often associated with the field of design (Michlewski 2015).

In post-studio data collection, every student noted how the 'Learning Mindset Case Clinic' activity transformed the way they approached their projects and learning environment in this studio. The students described the ways in which the experience was affective, contributing towards a deeper, more collaborative and effective working environment. The Clinics created an environment that rewarded learning from failure, as opposed to being fearful of failure. Encouraging students to publicly embrace personal struggles, and be aware and supportive of their colleagues, opens the space for collaboration and creativity to flourish. The work in class became centred on how the class

was growing collectively within the assemblage, rather than simply focusing on an individual's *worth* through end project outcomes, 'The environment … was like magic, amazing, transformative' (Student interview 2015: n.pag.).

Students described the stress, tension and judgement that emerge when there is a competitive pressure to 'perform'. This environment stifles creativity and stands in the way of being able to effectively collaborate with others. In some of the students' (2015 and 2016) own words:

> We are able to truly be ourselves with our group and spend our energy focused on how we can work together and support one another on our project.

> All the class is working together. People aren't stuck on the project as much. It's not *their* project and they don't feel like it has to be polished and amazing. It is just an exploration. And that makes the whole difference.

The performance gym

The 'Performance Gym' created an ongoing forum for facilitated group reflections after each activity. These were key to recognizing and valuing what just transpired. These 'share-with-me-what-just-happened' debriefs ran as long as the exercise and encouraged reflection on actions like jumping in to save someone else or waiting too long to act. Attention was called to listening to the environment or developing enough confidence to act on one's instincts. The non-competitive, performative exercises surfaced student's dis/comfort levels around risk-taking, not knowing and uncertainty, and yet it was the group debrief that drove the reflection. Students were also given visual and written prompts to come up with written and diagramed reflections based on their own experiences. The teachers were co-participants in the risk-taking activities, taking the risk of explicitly reflecting on their own anxieties, challenges and insights. Students (2015–16) reported:

> I think it [the Performance Gym] makes us free ourselves up so we're not being so self-conscious of everything we do. And that makes us be more open and spontaneous, which I have a hard time doing in real life otherwise […] The number one [advantage] for me would be confidence-building and also learning to interact with people. It's okay. You don't have to be right all the time. Just letting it go.

> The Gym has helped me understand my relationship with other people, how I see myself, what I take from others and in turn what do I really give back to them.

Using play to tease out these patterns directly translated into enhanced self-awareness, and indirectly enhanced the overall quality of the classroom as a learning ecology and collaboration on and in project teams. Students felt safe to recognize and discuss what they were comfortable doing and not doing in front of the class because it was, 'just play, not the real world' (Student interview 2015: n.pag.). The Gym provided a space to explore and improve on essential, non-cognitive skill sets through an activity completely outside the project work that encouraged a safe environment to take risks. Students were less afraid to look silly, to admit that they did something wrong or to call attention to something that their classmate might have done.

Post-studio data collection

Student statements demonstrated that dedicating studio project time to working on non-cognitive competencies directly contributed towards enhancing their ability to empathize with external clients, collaborate with peers and design exceptional solutions. During the final collective workshop, one group expressed frustration about losing class time to work on their studio project to work on seemingly unrelated mindset skills; however, the most surprising thing was that despite having less time, they produced the strongest studio work that they had ever done.

Students reported that the studio lacked the opportunity for students to lead play exercises, develop embodied curriculum activities or design a case clinic of their own. Although they applied the principles into their design outcomes, they wished to be more skillful at the activities that were facilitated in the classroom.

The six-month follow-up interviews revealed that successfully transferring these skills into future academic and professional projects yielded mixed results. Students reported struggling with translating empathy, reflection and collaboration skills into more conventional project-driven design studio environments. Some students lamented their personal inability to advance a collective-growth mindset, or to be as secure and open with peers who had not had the shared experience of the Transforming Mindsets studio. The students' perception of the learning experience being transformative is undermined by the concession that they did not change how they practiced in future studios or with colleagues outside the experience.

The limitations of transferability underscore the value of taking time to foster an inclusive and collaborative ecology of learning as a foundation, not an exception to studio learning. This means as educators recognizing that teams, not individuals, are the fundamental learning unit in contemporary practice (Senge 2010). The study critically highlights how shifting an individual's mindset and building a collaborative environment cannot be considered in isolation from the challenge of transforming a collective learning culture.

V. DISCUSSION

The 'Learning Mindsets Clinics' and the 'Performance Gym' embodied, playful, metaphoric and explicit strategies complement the implicit ways in which design educators cultivate risk through the vulnerable act of making projects. In return these exercises gave students the emotional granularity (Feldman Barrett 2016) to recognize why designing is an inherently risky enterprise, personally and communally.

The authors believe that with a focus on intrapersonal development, designers greatly improve their capacities to design *with* people, within ecologies. Teaching students to become self-aware of behaviour patterns and biases is essential to their capacity to partner with collaborators and clients. Learning from and with play provides an embodied experience to more deeply understand the individual in relation to others within an ecology, highlighting comfort zones, leadership aptitude and group dynamics.

Design education needs to consider not just how the designer creates, but also how the designers *acts and becomes* in the world. To foster productive, cross-disciplinary collaboration, design education must teach students how to learn from others, trust their instincts, take risks, exhibit social resilience and reflect on actions. In developing language, practice/s and explicit values

around the student's capacity for future learning, the Transforming Mindsets curriculum seeks to foster relentless curiosity, show humility, take ownership, be self-aware and take initiative. These intrapersonal attributes prepare a designer to be relational and open to learning from new situations, whether that be in conversation with the materials, process or partners with which they are (co)creating. The curriculum sets out to prepare a designer for becoming that endures and transcends a higher education qualification.

As design educators, we often emphasize certain skills that are important for a designer to embrace – being collaborative, practicing empathy, creativity – without ever explicitly teaching *how* to practice these skills that are developed and built through experience and practice (the same as any of the specific skills that we address in material practices). Using the studio to track the intrapersonal and interpersonal aspect of designing with ourselves and others helped to illuminate the value of building the learning mindsets that promote agile, resilient, reflective learners in the process of a design education.

VI. CONCLUSION

A guiding question for the study was the value of surfacing learning mindsets and willingness to take personal risk to serve educational outcomes in the becoming of designers. The results of this study remind us that we are always in a state of becoming and the becoming designer does not happen in one studio or one degree.

The reported failure of students to transfer the experience to future studios raises the question of whether learning mindsets were transformed or not. From one perspective the students' recognition that the knowing was not transferable is evidence of how their mental model had changed. The students now had a language and understanding of ways to operate differently. From another perspective this represents the failure of the studio. Our definition of transformational learning called for shifts in future action (Freire 1970). It is possible to accept that faced with the cultural and systemic challenge of intervening in another professor's studio or professional environment, it was easier for students to revert to old mental models and practices. This unfolding of the study has highlighted how we need to think differently about data in (post) qualitative educational research and how to resist binaries. However, we can still learn from how we might have given the students more experiences and tools for leading out this work. A space for students to facilitate sessions of the 'Performance Gym' or design their own 'Learning Mindsets Case Clinic' might serve to make it easier to lead this type of learning in the future.

Still, the details of this specific curriculum are not necessarily what are relevant in this article. The thinking, attitudes and values behind these affective pedagogical moves are more important than the activities, exercises or tools. What is transferable is the notion that a commitment to taking risks as an educator translates to fostering a learning culture where teachers and students alike can be open to vulnerability and interrogating existing mental models. The risk here is as real for the teachers as it is for the students. We are all learners of these evolving skills. Skills we cannot gamify, strategize or quickly master. The challenge is feeling our way through the process and taking risks in piloting new ways of teaching, practicing and being with our students. In recognizing that the knowing we are creating is other to what we have taught (or learned) before, we will develop a language that normalizes

the discomfort that comes with continuously charting new territory for the field of design and our personal practices.

It is the authors' conviction that the results confirm that we can learn to explicitly teach attributes, which support psychological strategies for negotiating risk and vulnerability, shifting mindsets for becoming. If we believe that transformative learning relies on us closing the gap between who we are as learner-designers and simply who we are in life as practitioners then we need to become comfortable with the challenging work of (re)thinking the focus of our pedagogy and assignments within the assemblage of learning, teaching, assessment practice and the nature of our in-class discussions as practice-based ecologies.

This study was founded on the back of years of smaller studio-based interventions and research collaborations with learning scientists. Looking to future research this study is just the beginning of looking at affective studio-based pedagogical experiences to investigate how explicit scaffolds can bring an awareness towards troubling risk, reflecting on vulnerability and discussing learning mindsets becoming normalized practices within design education.

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SUGGESTED CITATION

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