



Delft University of Technology

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Publication date
2023

Document Version
Final published version

Published in
Proceedings of the 25th International Conference on Engineering and Product Design Education

Citation (APA)

Price, R., & van der Bijl-Brouwer, M. (2023). Educating resilient and well designers. In I. Ordonez Pizarro, P. Sustersic, L. Buck, H. Grierson, & E. Bohemia (Eds.), *Proceedings of the 25th International Conference on Engineering and Product Design Education: Responsible Innovation for Global Co-Habitation, E and PDE 2023* (pp. 523-528). (Proceedings of the 25th International Conference on Engineering and Product Design Education: Responsible Innovation for Global Co-Habitation, E and PDE 2023). The Design Society.

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EDUCATING RESILIENT AND WELL DESIGNERS

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ABSTRACT

In this paper, we explore how resilience and wellbeing can integrate into, and improve design pedagogy. We establish 10 principles for designer resilience from workshops with students, educators and design practitioners. Each principle offers a platform to develop subsequent learning activities that remedy hollow didactic statements observed in education and research discourse (embrace complexity, navigate uncertainty and ambiguity). Future research will report on the results of integrating these principles and subsequent learning activities into a revised Master of Science design curriculum.

Keywords: Design, education, resilience, wellbeing, pedagogy, didactics

1 INTRODUCTION

Our Faculty of Industrial Design Engineering, like so many globally, celebrates outstanding alumni and their achievements as evidence of impact. Stories of *pioneering* change through new products, services, and systems are championed to past, current and future students, as well as to academic staff and industry professionals. On the first day of their studies, new design students also receive textbooks on methods, skills and core knowledge. With this subtle combination of championing pioneers and providing foundational textbooks, we convey that these students can one-day pioneer too. However, pioneering change is fraught with setbacks, uncertainties and resistance to change that drives even experienced designers into vulnerability and doubt [1]. Comparatively, in our education studios and research discourse, we observe the prevalence of hollow didactic statements. We ask our students to, ‘embrace uncertainty, ambiguity and fail fast.’ From a didactic point of view, these statements hold no value (akin to asking somebody to eat healthier or fly less). It is a worthy endeavour to improve design pedagogy beyond hollow didactics in order to deliver our most courageous and adaptive graduates yet - ready to pioneer much needed change in the world and resilient enough to enact it.

1.1 Resilience and Wellbeing in Higher Education

Higher education (HE) students experience rates of depression substantially higher than found in the general population [2]. One avenue for supporting student wellbeing and academic performance in HE is the positive psychology construct of resilience. Resilience is the ability to bounce back from adversity and cope with stress [3]. Psychological resilience is formed through life experiences and acquirable through cognitive and behavioural training [3]. While many universities tend to enable student wellbeing through ‘separate services’ such as student psychologists and health programmes, we argue that the way we shape education is a key factor to promote the flourishing of students, and teachers too [4]. We can learn a lot from fields such as nursing, medicine and environmental science who have already integrated resilience activities into higher education curriculum to prepare graduates for practice [5].

1.2 Designer Resilience and Wellbeing

We propose the need for *designer resilience* as a discipline specific blend of general and specific types of resilience that apply to and synergize with design practice and theory [5]. A working definition of designer resilience entails: (1) ‘bouncing back’ to perform in spite of adversities faced in design projects; (2) undergoing adaption without significant loss of function during setbacks faced in design projects; (3) growing overtime as a tolerance or ‘a thicker skin’ to adversities/uncertainties faced, and; (4) deliberately building peer networks across the design discipline and beyond for collective support.

General design resilience includes dealing with critique and negotiating the balancing act of performance and learning-driven outputs. Specific contextual resilience includes dealing with systemic

ambiguity when working in complex societal contexts; emotional resilience when working with vulnerable target groups; and the resilience required to deal with negative outcomes when working as a design entrepreneur. As an important distinction, we define wellbeing as a broad and continuing state of health, while resilience is a specific capacity drawn upon when dealing with setbacks and negative events to protect wellbeing [5].

2 METHOD: CO-CREATION WITH THE DESIGN EDUCATION COMMUNITY

2.1 Research and design objective

In this paper, we report on research-in-progress to develop and integrate designer resilience in a Dutch University context. The designer resilience project is part of a broader programme of initiatives that we have undertaken over the past seven years to improve student wellbeing [6, 7]. Research questions structuring our inquiry are: (1) what do students experience when becoming a designer? (2) what behavioural principles support students in becoming resilient designers?

2.2 Research method

Central to our funding body, the Netherlands Initiative for Education Research, is the need to conduct educational research that is *student centric*. Therefore, over the last twenty-four (24) months, we have undertaken a collaborative research-through-design approach with iterative workshops with Master of Science students at the Faculty of Industrial Design Engineering, at Delft University of Technology. As authors, we are design researchers and educators who place a strong emphasis on teaching quality in our academic careers. Throughout this project, we have stayed true to our designerly mindset and background, in order to learn our way forward through workshops, interactions, activities and interventions [4]. To date, we have engaged over 300 design students in our resilience and wellbeing workshops. We have also engaged fifty (50) global design teachers and thirty-six (36) senior design practitioners to ensure that our project receives broader perspectives of practice and research. In total, we have conducted eleven (11) workshops. These workshops range in duration from 90 minutes to full day sessions.

While each workshop shares a general introduction to resilience and wellbeing, we zoom in on specific topics within each workshop, including but not limited to; coping with the pressure to perform; querying how physiological stress limits creativity, and forging your own career path. In this conference paper, we firstly zoom in on data from a recent workshop where we asked students to reflect on their experiences of becoming a designer and required resilience. Secondly, we share behavioural (resilience) principles that we developed and tested iteratively across the most recent eight (8) workshops. Our analyses and reflection approach consists of a thematic analysis of notes of students written on sticky notes within workshops, reviewing our own workshop notes, reflecting on our experiences as educators and recalling participant anecdotes that left a major impression on us within workshops. As with previous research, we accept the limitations of our approach in order to prioritise student engagement [6].

Sessions are not recorded due to the sensitive nature of discussing wellbeing, setbacks and resilience. In the planning and execution of the workshops, we received instruction from Faculty Academic Counsellors' who are trained clinical psychologists. Their instructions ranged from how to construct a safe workshop environment, how to discuss sensitive life events and how to encourage engagement without overstepping our role as educators. Future research must conduct the same liaison with psychologists prior to workshops with students.

3 EXPERIENCES OF BECOMING A DESIGNER

In this section, we present findings with regard to the different types of challenges that design students report and the different forms of designer resilience we can identify accordingly.

3.1 Design process and collaboration resilience

Students report many insecurities that are inherent to the design process and learning to become a designer. Issues that students report difficulty regarding include, but are not limited to:

- Knowing what to do: “not knowing what to do next” or not having “grip on the process”?
- Knowing when to stop: “the process is never finished. When am I done?”

- Social aspects of a design process, including how to collaborate and work with clients, such as dealing with: “creative differences in a team” or “navigating different personalities” and “knowing when to listen to the client and when to trust your own expertise”?
- Knowing how to deal with critique: “presenting your personal design can be very scary” because you invested your “heart and soul into the design.”

3.2 Responsibility and concerns about impact

Students’ feel responsible for the impact that their designs (should) make on people, society and the planet more broadly. For example, “the feeling of ‘you need to solve this, otherwise nothing will change.’” They indicate feeling insecure and powerless about the impact they feel they should make, versus what they are realistically able to do. As one student states, “they are [sic] feeling like humanity is ruining the planet and our future is doomed.” Another reports, “feeling like the problem you are designing for is so difficult to solve that you will not be able to make a meaningful contribution within the time frame of the project.”

Students report that they are aware of the risks of working with vulnerable people. One student states they are, “worried to ask the wrong thing or trigger negative emotions, experiences” while also feeling responsible to design something that will help people. Students collectively describe a feeling of, “having to create the perfect design to make your users happy.” Finally, in terms of impact they worry about financial trade-offs that they will have to make regarding societal impact, for example should you work with a client who does not hold the same values? And, when to say ‘no’? For example, a student reported being afraid of, “being forced to continue with ethically questionable decisions” in their career.

3.3 Perfectionism, confidence and pressure to perform

Many students indicate traits of perfectionism, as one remarks directly, “I want to do everything perfectly [sic].” Perfectionism manifests in showing fear of making the wrong choices, “second guessing choices” and “being indecisive.” For example, having low confidence in the quality of their designs, “being overly critical of their [sic] own ideas” and “not feeling good enough.” Students also engage in benchmarking. As one student remarks, “working harder, doing more, having a bigger MIRO board means your design project will be better.” This encourages speed and volume rather than reflection and synthesis. Another student reflects more broadly, “I didn’t look at myself. I only looked at others and thought I needed to go fast. I made rash decisions that didn’t work. When I slowed down and reflected [sic], things changed for the better.”

To avoid benchmarking and the punitive side-effects of ‘falling behind’ or underperforming in relativistic terms to peers, students withdraw from one another. As one student states, “in the graduation (thesis/capstone), the collaborative atmosphere just disappears. Everyone just stays in their ‘own lane’ on their own project.” Perfectionism can also lead to students being conservative in their engagement with their own projects. Students keep “something in reserve in projects to protect themselves if they don’t get a high grade.” Students described using this approach to insulate themselves from critique knowing that, “I didn’t give everything, so I also didn’t get hurt.” Interestingly this perfectionism also plays out in how they think about their careers, reporting “not knowing what to invest time in, to lead a desired life path” and being afraid of, “not having the job you would like to get and therefore [sic] ‘settling for less.’”

3.4 Design identity

In addition to a lack of confidence about their design quality and design process, students report a more general ‘disciplinary insecurity’ about what value they will be able to offer as a designer in their own career path. Insecurity about the value of design includes being concerned about, “people not understanding the value of design.” Students particularly indicated insecurity relating to other disciplines. One student describes, “finding [sic] a balance between designers and engineers.” Another describes, “being familiar with a lot of fields, but still an outsider and not an expert.” In addition, students mention insecurities about their own career path and design identity, collectively asking, “what is my expertise?” Finally, a student reports a feeling of, “uncertainty about job prospects and value I have as a new designer.”

3.5 Consequences for designer-life balance and engagement

The experiences of responsibility, perfectionism and not being an expert designer (yet), result in various mental health issues and impact on students' lives. Many students report issues in terms of feeling time pressure: "during the night I want to still finish things, I cannot go to sleep before it is done," and, "overworking yourself because you feel responsible." This time pressure results in stress when a student "becomes [sic] stuck during a project but still having to finish it for a grade." Multiple students also report not being able to shut off mentally. One mentioning it is, "hard to stop thinking about your work." Another reports, "sleeplessness when you can't find a proper concept or vision for the project." At the same time, students are aware of this impact on their lives and report that they want to learn how to not get too "personally attached" to their work. Conversely, another reported consequence is a lack of motivation, missing, "inspiration, passion and enthusiasm." Negative consequences for 'designer-life balance' are further exacerbated by pressures that result from being a student and having to meet course requirements. As one student remarks, "a lot of scheduled hours to work on projects, long days." Another, "the working days at Uni [sic] are very long, you often go there in the dark during the morning and also leave when it is dark. This often feels depressing."

4 FORGING DESIGNER RESILIENCE

4.1 A framework for designer resilience

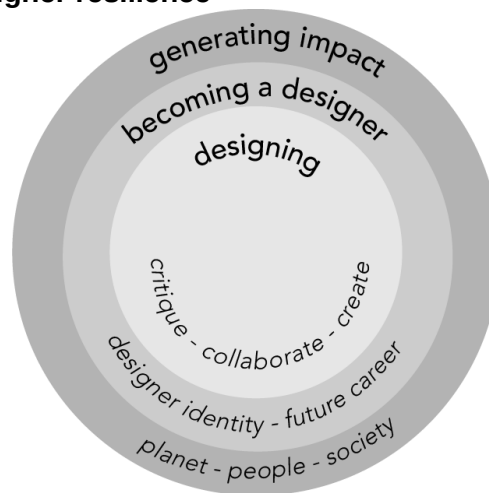


Figure 1. Layers of designer resilience

Based on our findings we identify different layers of designer resilience for students as indicated in Figure 1. On the most foundational level, each design students requires resilience to deal with the inherent challenges of the design process and of design collaborations. A next layer of resilience is aimed at shaping an uncertain future design career and accompanying design identity. Finally, we identify a contextual layer of resilience towards a feeling of responsibility towards people, society and the planet. In design education, we may address each of these layers by different means. For example, resilience towards designing might be best integrated in coaching within specific design projects, while resilience towards design identity and generating impact can be addressed in reflexive sessions that go beyond design projects.

4.2 Our vision on forging designer resilience

We believe that improving student wellbeing requires educational systems change, as we have argued in previous publications [1,5,6]. For example, we have tried to reduce the pressure to perform by advocating for the removal of unnecessary competitive elements in design education, and by introducing a community programme to improve students' confidence and generate peer support. However, we cannot nor should entirely protect students from the challenges and difficulties inherent to designing. We therefore aim to grow *designer resilience* in our lecture halls, classrooms, supervision and studios. We also aim to generate learning activities that inspire self-guided learning amongst students. An

important way in which we try to achieve this is by introducing 10 principles for designer resilience that offer pathways to embed new learning activities into design education and therefore reshape curricula.

4.3 Ten (10) principles for designer resilience

These principles merge psychological resilience, systems and design thinking to scaffold meta-cognitive inquiry and reflection. At the core of these principles is the capacity for meta-cognitive flexibility, to be adaptive to changing and sometimes harsh environments. In future research, we will share the accompanying learning activities associated with each principle. The ten principles are:

- 1. The resilient designer might be lost now, but knows every day and project is a step closer to finding their purpose.** Many of our students cannot articulate their direction and destination. Rather, they are on a journey of self-discovery, and we must coach/teach/supervise accordingly;
- 2. The resilient designer takes decisive action to follow their purpose.** If a purpose is known, the resilient design is decisive to go beyond their comfort zone, even if that means creating chaos;
- 3. The resilient designer is authentic to their identity and purpose.** Embedded in this principle is a strong sense of ethics. This principle calls the designer to stand boldly for their identity, even if that means being unpopular or contrarian;
- 4. The resilient designer fuels their appetite to change the world with both hope and despair.** With a strong sense of empathy, it is acceptable that designers can feel despair at the injustices they see and wish to address. Hope provides the spark that converts us to action. There can be a better way, always;
- 5. The resilient designer shares unfinished and unpolished work.** It is remarkable how young designers will hide their work for fear of rejection and criticism. This is counterproductive to the co-creative spirit of design and truly detrimental to deeper-level learning in HE.
- 6. The resilient designer is reflexive to performance culture.** A performance culture can help us grow, but we must be reflexive to disconnect in order to prioritize our own authenticity and purpose;
- 7. The resilient designer actively forms the environment in which they receive feedback.** When trying to pioneer systemic reform or drive radical innovation, one can expect a degree of resistance to change as people hold onto the status quo. The resilient designer takes care to construct the environment in which they will share work and thus receive feedback;
- 8. The resilient designer trusts and drives their process.** We observe and find throughout our research that students often aim for ‘perfection.’ However, we know in design that perfection is an illusion. Rather designers work to satisfy a combination of constraints toward outcomes that are valuable, desirable, just, feasible, sustainable and viable. This synthesis is already difficult enough!
- 9. The resilient designer views that ‘stakeholder alignment’ is temporary and that true pluralism and democratic dialogue means allowing diversity and therefore inclusion to drive value creation.** The more we open up our design process to new stakeholders and perspectives, the more difficult it becomes to reconcile these differences into a ‘solution’ that creates value for the many, not the few. Inclusive design takes time and can feel especially messy.
- 10. The resilient designer actively shapes communities around them for collective support.** The resilient designer is actively developing a community of like-minded peers who are seeking to design for impact. Driving this community means contributing generously to the success of others. When the time comes to call for help from peers, the resilient designer is open to showing their vulnerability and seeking help from peers.

5 CONCLUSIONS

This funded education research explores how resilience and wellbeing as a way to unlock meta-cognitive flexibility and reflection can improve how we teach and learn design. We establish 10 principles for designer resilience. Each principle offers a platform to develop subsequent learning activities that remedy the hollow didactic statements we have observed in education and research discourse (embrace complexity, navigate uncertainty and ambiguity). Future research will prototype and report on the results from these new learning activities. Further, in subsequent dissemination, we will demonstrate how designer resilience is integrated into a revised Master of Science of Design curriculum at TU Delft for long-lasting impact.

ACKNOWLEDGEMENT

This conference paper is funded by the Netherlands Initiative for Education Research, through the Senior Comenius Fellowship Programme, grant number: 405.21865.414.

REFERENCES

- [1] Price R. A. Forging Resilient Designers: An Educator's Perspective. *Design Management Review*, 2021, 32(2), 50-54.
- [2] Ibrahim A., Kelly S., Adams C. and Glazebrook C. A Systematic Review of Studies of Depression Prevalence in University Students. *Journal of Psychiatric Research* 2013, 47 (3), 391–400.
- [3] Southwick S. M. and Charney D. S. *Resilience. The Science of Mastering Life's Greatest Challenges*. 2018. Cambridge, UK, 2018. Cambridge University Press.
- [4] Bijl-Brouwer M. and Price R. An adaptive and strategic human-centred design approach to shaping pandemic design education that promotes wellbeing. *Strategic Design Research Journal*, 2020, 14(1), 102-113.
- [5] Price R. A. A review of resilience in higher education: toward the emerging concept of designer resilience. *Studies in Higher Education*, 2022, 48(1), 83–99.
- [6] Price R. A. and van der Bijl-Brouwer M. What motivates our design students during COVID-19? *In Journal of Design, Business & Society*, 2021, 7(2), 233–249.
- [7] van der Bijl-Brouwer M., Kligyte G. and Key T. A Co-evolutionary, Transdisciplinary Approach to Innovation in Complex Contexts: Improving University Well-Being, a Case Study. *She Ji: The Journal of Design, Economics, and Innovation*, 2021, 7(4), 565–588.