8th International Conference on Higher Education Advances (HEAd'22)
Universitat Politècnica de València, València, 2022
DOI: http://dx.doi.org/10.4995/HEAd22.2022.14638

Design-Based Learning and Student Entrepreneurship: How Learning Design Supports Non-Design Students' Aspirations

Layal Shuman, PhD
Graphic Communications Management, Ryerson University, Canada.

Abstract

How does learning design support non-design students' career aspirations? The paper presents a qualitative interview study with undergraduate students from different disciplines in Canada, who shared their design-based learning (DBL) experiences. DBL is students across programs learning design for various educational goals and not to become professional designers. The paper describes a study that shows how learning design benefits students across programs to obtain, pursue and imagine desirable career paths. The paper also discusses how DBL supports students who aspire for technology-related jobs, students who want careers centered around creativity, and students who value work that has a social impact.

Keywords: *Design-Based Learning; Student Entrepreneurship; Education for Employability.*

1. Introduction

Over the past 25 years, the demand for and the number of entrepreneurship education programs has increased (Katz, 2003). Many courses are interdisciplinary and bring science and engineering students together with business and design students to prepare new products and processes for marketization. As a result, entrepreneurship initiatives are in programs close to the market, leading to commercialization. Many entrepreneurship initiatives also incorporate design processes and methods. Design-based learning (DBL) refers to non-design students learning design in formal settings such as said courses, or in other initiatives across campus. For example, management students who learn about product innovation by applying design thinking is an example of cultivating student entrepreneurship through design. DBL, thus, is an educational approach that "borrows the methods of design practice and the pedagogy of design education in teaching a variety of subjects and thinking skills in both K-12 schools and higher education" (Davis, 2017, p. 145).

Studies of DBL at all educational levels argue that it prepares students for the workforce because of the nature of design practice and education (Vande Zande 2010b, 2011). However, what is often absent from these studies is a discussion of students' aspirations for the future. In other words, how can "preparedness for work" be a specific outcome of DBL if research often lacks what students consider being prepared for work and to which types of work students aspire. Without understanding students' experiences of learning design, acquiring skills such as creative problem-solving and entrepreneurial thinking attributed to DBL may seem detached from students' realities and present unattainable goals for university educators across disciplines interested in it as an educational approach. In this paper, the author shares research findings from a qualitative interview study that uncover the links between DBL and preparation for employability. The study presents insights into the value of design to non-design students across disciplines as it connects to their future career aspirations, which in turn, sheds light on the nature of student entrepreneurship in DBL experiences.

2. Background

The paper uses student entrepreneurship as a term to describe when students become both learners and entrepreneurial agents pursuing opportunities to engage with commercial activities. HE institutions cultivate student entrepreneurs through entrepreneurship education programs or entrepreneurial education initiatives at the graduate and undergraduate levels. Entrepreneurial education extends beyond the classroom and includes entrepreneurial incubators established to support students' ideas and prepare them for marketization (Mars, Slaughter and Rhoades, 2008; Mars, 2009).

The term entrepreneurship in studies on the corporatization of HE often describes commercial activities that start in colleges and universities and then move to the private marketplace.

Studies on entrepreneurship in HE also focus on "market-oriented phenomena" with little attention to non-market activities such as student and faculty activism. Academic entrepreneurs can, thus, be redefined as "actors who innovatively leverage internal and external opportunities to not only generate economic resources for their own profit or in support of their academic units and institutions, but also to create with the academy social and political change platforms" (Mars, 2009, p. 444). Meaning faculty and students may also engage in entrepreneurship with social goals, and cross-disciplinary student collaborations that focus on social transformations (Cuyrer, 2005; Winfield, 2005). Student eco-entrepreneurship is an example of a market-oriented activity with ecological conservation and preservation goals (Mars & Loursbury, 2009).

Over the past two decades, universities have also shown an increasing interest in using design in non-design programs. This interest manifests in adopting Design Thinking (DT), a design-led innovation methodology, across HE curricula (Davis, 2017). To understand the rise of interest in design, we can learn from what happened in K-12 in the 1990s, when teachers in the United States adopted DBL in response to calls from the government to cultivate competencies that would prepare students for work in the 21st century (Davis et al., 1997; Davis, 2017). Similarly, the interest in DT in HE rose in the 2000s alongside calls for economic-driven educational goals (Harris & Carter, 2021; Irani, 2018).

Educators in HE started looking for ways to foster students' innovative, creative and entrepreneurial thinking abilities, competencies which governments in the US and Canada have been asking of educational institutions to increase their economic competitiveness (Slaughter & Rhoades, 2014; Wiebe et al., 2018). We can also understand, through this lens, why DT is the form of DBL that educators in HE use most often, and that is because it relates to technology and product innovation (Brown, 2009; Martin, 2009). Since the 2000s, technology firms have also contributed to popularizing DT by associating it with their innovation stories.

3. Methodology

This paper is based on qualitative research that the author conducted from 2018 to 2021. The study included three methods: semi-structured interviews for data collection, constant comparison for data analysis, and visual mapping. The interviews included 15 research participants from six programs at a university in Canada, with one student on exchange from a university in Europe. Participants were mainly enrolled in undergraduate programs with one graduate student. One participant pursued an additional college certification, while some aimed to add minor concentrations and double majors to their degrees. Constant comparison analysis was used to generate categories from the interview texts. It was conducted in three

stages of analysis to arrive at data categories and then at the study's findings. Finally, visual mapping acted as a mode of inquiry throughout the research journey.

4. Results

The study showed that DBL creates opportunities for HE students to advance their career goals by positioning them as experts in design to be more competitive in the job market or by inspiring new business ideas that incorporate design. Research findings reveal three ways in which learning design supports students towards achieving their future aspirations.

The first way includes students' aspirations for employment in the technology innovation sector. Most students connected design with technological advancement. They believed that the nature of work is changing and that some careers will disappear. However, most students saw that design is what one of the research participants described as "here to stay." Students also believed that the world will be highly technological by the time they graduate and that design and technology innovation are connected. Therefore, learning design was a step toward achieving their goals for students interested in careers that intersect with technology and innovation. Students with aspirations for tech-related industries believe design knowledge is advantageous because design skills are valuable for employment in a highly technological future.

The second way DBL supports students is to enable opportunities for creative projects and initiatives. Many students associated design with creativity. After experiencing DBL, their perception of themselves as creative shifted because they completed assignments described as creative. Students explained that by doing creative projects, they became confident creatively. DBL ignited students' interests in careers that involve creative explorations. Thus, students interested in creativity-related careers continued to pursue DBL experiences because they wanted to acquire more abilities to be involved in jobs that center around it. Some of the students also sought DBL experiences to complete projects that showcased their creative potential in ways that might make them attractive candidates for various jobs because they were unsure what they aspired to in the future.

The third way DBL supports students' aspirations is connected to career aspirations where social change is central. Students found in DBL inspirations for careers with a social impact because design lessons encouraged them to pay attention to how their work influences people's lives. For some students, it meant altering previous career plans by focusing on social responsibility inspired by principles they learned in design. For others, it meant shifting career goals toward new horizons or pursuing further studies to explore the intersections of their programs with design, where the social dimensions of these connections are central.

5. Conclusions

The paper described research findings from a qualitative interview study with HE students across programs. It explained how DBL creates opportunities for HE students to advance their career aspirations by positioning them as experts in design to be more competitive in the job market or by inspiring new ambitions. In addition, the paper discussed how DBL supports students who aspire for technology-related jobs, students who want careers centered around creativity, and students who value work that has a social impact. Finally, the results draw our attention to how HE students believe it vital to build meaningful careers and that what constitutes a prosperous career is different for each student. Therefore, while the study reiterates that DBL prepares students for the workforce, findings show that students' perceptions of preparing for work vary.

References

Brown, T., (2009). *Change by design: How design thinking transforms organizations and inspires innovation*. Harper Business.

Cutrer, E. F. (2005). Student social entrepreneurs: A classroom call to action. *Peer Review*, 7(3), 27.

Davis, M., Spilka, G., Mcmullan, B., & Hawley, P. (1997). *Design as a catalyst for learning*. Association for Supervision and Curriculum Development.

Davis, M. (2017). *Teaching design: A guide to curriculum and pedagogy for college design faculty and teachers who use design in their classrooms*. Allworth Press.

Harris, A., & Carter, M. R. (2021). Applied creativity and the arts. *Curriculum Perspectives*, 41(1), 107-112. https://doi.org/10.1007/s41297-020-00127-z

Irani, L. (2018). "Design thinking": Defending Silicon Valley at the apex of global labor hierarchies. *Catalyst: Feminism, Theory, Technoscience*, 4(1), 1-19.

Katz, J. A. (2003). The chronology and intellectual trajectory of American entrepreneurship education. *Journal of Business Venturing*, 18(2), 283-300. doi:10.1016/s0883-9026(02)00098-8

Mars, M. M., Slaughter, S., & Rhoades, G. (2008). The state-sponsored student entrepreneur. *The Journal of Higher Education*, 79(6), 638-670. doi:10.1353/jhe.0.0024

Mars, M. (2009). Student entrepreneurs as agents of organizational change and social transformation: a grassroots leadership perspective. *Journal of Change Management*, 9(3), 339–357.

Mars, M. M., & Lounsbury, M. (2009). Raging against or with the private marketplace? Logic hybridity and eco-entrepreneurship. *Journal of Management Inquiry*, 18(1), 4–13. https://doi.org/10.1177/1056492608328234

Martin, R. (2009). *The design of business: Why design thinking is the next competitive advantage*. Harvard Business Press.

Slaughter, S., & Rhoades, G. (2014). The academic capitalist knowledge/learning regime. *The exchange university: Corporatization of academic culture*, 19-48.

Vande Zande, R. (2010b). Teaching design education for cultural, pedagogical, and economic aims. *Studies in Art Education*, 51(3), 248-261. doi:10.1080/00393541.2010.11518806

Vande Zande, R. (2011). Design education supports social responsibility and the economy. *Arts Education Policy Review*, 112(1), 26-34. doi: 10.1080/10632913.2011.518123

Wiebe, S., Gouzouasis, P., McLarnon, M., Ricketts, K., & Shuman, L. (2018). Introduction: A creativity without gold stars. *Canadian Journal of Education*, 41(1), 1A-7A.

Winfield, I. (2005). Fostering social entrepreneurship through liberal learning in the social sciences. *Peer Review*, 7(3), 15.