117

Inquiry-Based Learning: Fostering Entrepreneurial Mindsets in Adults through Design-Thinking Guided Online Programs

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Research Domains

International contexts and perspectives (ICP)

Abstract

This study explores how an educational intervention incorporating inquiry-based learning and design thinking can cultivate entrepreneurial mindsets and encourage action-taking propensities among adult learners. Specifically, we focus on an online program designed for MBA students in Japan, a country with low risk-tolerance and high pressure to conform. In 2023, Japan ranked as the second lowest among the Global Entrepreneurship Monitor participants in an index measuring social and cultural norms toward entrepreneurship. Through a mixed-methods sequential explanatory design, we demonstrate that when adult learners work together in a setting where there are no right or wrong answers and are prompted to deeply reflect on their experiences, they develop key entrepreneurial traits. Our findings reveal a boost in their openness toward diversity, willingness to embrace ambiguity, readiness to risk-taking, and a greater sense of agency for action. The results suggest that higher education can drive significant societal change in traditionally resistant contexts.

Full paper

Introduction

Entrepreneurship has drawn attention from policymakers and researchers worldwide as a catalyst for innovation. Scholars have identified skills and traits associated with the "entrepreneurial mindset," suggesting that they can be cultivated through education and training (McGrath & MacMillan 2000; Dyer, et. al. 2009). Despite ample literature, there remains significant room for improvement in entrepreneurship research, particularly regarding teaching practices (Turner & Gianiodis 2018; Ratten & Usmanij 2021). To address this gap and encourage more exploration in entrepreneurship education, this study focuses on how curriculum design fosters essential traits in adult learners.

Course Design

The course design was guided by three main factors. First, it was tailored for a MBA program at a prefectural university in Japan. Japan, with minimal social and cultural norms toward entrepreneurship

(Global Entrepreneurship Monitor 2023), holds significant policy implications. Second, the course utilized a web-based virtual learning environment. It explored whether computer-mediated environments can achieve satisfaction by facilitating connections between students in Japan and entrepreneurs in Silicon Valley, a region known for entrepreneurial propensity (Saxenian 1996; Youtie & Shapira 2008). Third, the course aimed to equip participants with essential skills that align with the exploratory, iterative, and adaptive nature of entrepreneurship by adopting pedagogical approaches rooted in inquiry-based learning and design thinking.

Conceptual Framework

Entrepreneurship education has increasingly adopted a design thinking pedagogy, evident in the rising number of curricula that integrate design-based methodologies (Sarooghi, et. al. 2019). Grounded in the constructivist approach, design thinking comprises a set of principles that encourage learners to collaborate, embrace ambiguity, and engage in reflective processes (Leifer & Steinert, 2011). This methodology involves interviewing, brainstorming, and data-synthesis, which foster continuous peer engagement. These activities, growing in relevance in classroom settings (Goldman & Kabayadondo, 2016), provide learners with opportunities to listen, navigate through environments with no definitive right or wrong answers, and collectively construct knowledge by "making connections between their lives inside and outside of school" (Plattner, et. al 2012, p. 18-19). Inquiry-based pedagogy encourages participants to feel more at ease with uncertainty, ask questions even in the absence of clear solutions, be open to diversity and inclusion, and take risks with new ideas. Design thinking fosters these traits through interactive, student-centered learning modules (Wrigley & Straker, 2017) and enables learners to become agents of change (Carroll et al., 2010).

Methods

Employing an explanatory sequential mixed-methods design, the study combines quantitative data from pre- and post-program questionnaires, comprising 37 items covering growth mindsets, openness to ambiguity, empathy, and agency, with qualitative insights from focus group interviews involving 14 participants. Each interview, lasting approximately 90 minutes, facilitated in-depth exploration of participants' experiences and perceptions. Thematic analysis of the transcribed data revealed significant improvements across all measured dimensions. The research is approved by the IRB of the universities that the authors are affiliated with.

Results

We conducted a paired t-test using the survey data (n = 62), which revealed statistically significant increases in 16 items across four key domains, namely willingness to embrace ambiguity, openness toward diversity, readiness to risk-taking, and sense of agency. This suggests the effectiveness of the course design. Furthermore, we conducted a detailed analysis of participants' changes using qualitative data. First, participants demonstrated a notable increase in their tolerance for ambiguity and comfort

with uncertainty. Second, participants exhibited a strong acknowledgement of the importance of cultivating a culture that embraces risk-taking. Several interviewees mentioned adopting a mindset of 'just giving it a try.' Third, participants showed greater empathy towards diversity, indicating a deeper understanding and appreciation of differing perspectives. Lastly, participants displayed an increased sense of agency, suggesting a greater confidence and motivation to take proactive steps towards new actions. In addition to these shifts in mindsets, this study identified several channels through which these changes occurred. One notable factor was the influence of invited entrepreneurs serving as role models. While prior studies (e.g., GEM, 2023) have highlighted the importance of mentors, this study suggests that discovering shared characteristics with guests serves as a motivating factor for the students.

Conclusion

This study offers empirical support that a short-termed online intervention can effectively cultivate action-oriented attitudes and entrepreneurial mindset, even within a culturally risk-averse context. In a society that often leans towards conformity, an inquiry-based and design thinking-guided curriculum has the potential to empower adult learners to become more entrepreneurial – by embracing ambiguity, learning from failure, appreciating diversity, and taking initiative to change the status quo.

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