

Enhancing creative self-efficacy in entrepreneurship education

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Abstract

The increasing importance of creativity has called for more pedagogical designs and programs to foster students' creativity in higher education institutions. The purpose of this session is to have a dialogue about the use of design thinking, value proposition and business model canvases, and business plan in entrepreneurship education. Survey results showed that students had more confidence in their abilities to have a good imagination and to further develop the ideas of others upon completion of the group project. Conference attendees could leverage our reported findings and reflect on their pedagogical design and delivery in entrepreneurship education.

Keywords: Creativity, self-efficacy, entrepreneurship

Introduction

Driven by globalization and the digital revolution, there has been a shift from a knowledge-based economy to an increasingly digital world. Accessing knowledge has become much easier, thus necessitating employers and employees to be more creative and innovative than ever before. As one of the principal goals of universities is to prepare students for the real-world challenges, the increasing importance of creativity has called for more pedagogical designs and programs related to fostering students' creativity in higher education institutions. Hong Kong is no exception. An entrepreneurship subject is offered at undergraduate level in a university. After learning design thinking, value proposition canvas, business model canvas, and business plan in lectures, students are required to work as part of a team to develop a business plan for a creative, potentially profitable and viable business opportunity in Hong Kong.

To equip students with necessary knowledge to prepare the business plan, we adopted DCP (design thinking, value proposition and business model canvases, and business plan) approach using a mix of lectures, activities, and assessments to ensure students have deeper understanding of the importance of creativity. After lectures on DCP, we assigned students to do activities in two consecutive weeks on applying value proposition and business model canvases into real-life cases – Boxful and honestbee (Ko, 2019a, 2019b). The objectives of these activities are threefold: (1) to help students understand value proposition canvas and business model canvas; (2) to enable them to apply the canvases in the context of fast-growth ventures in Hong Kong; and (3) to provide opportunities for subject lecturer to give feedback to students before they proceed to kick start their business plan preparation.

Over a period of thirteen teaching weeks, students have to demonstrate creative efforts in different phases when submitting group assignments (value proposition canvas, business model

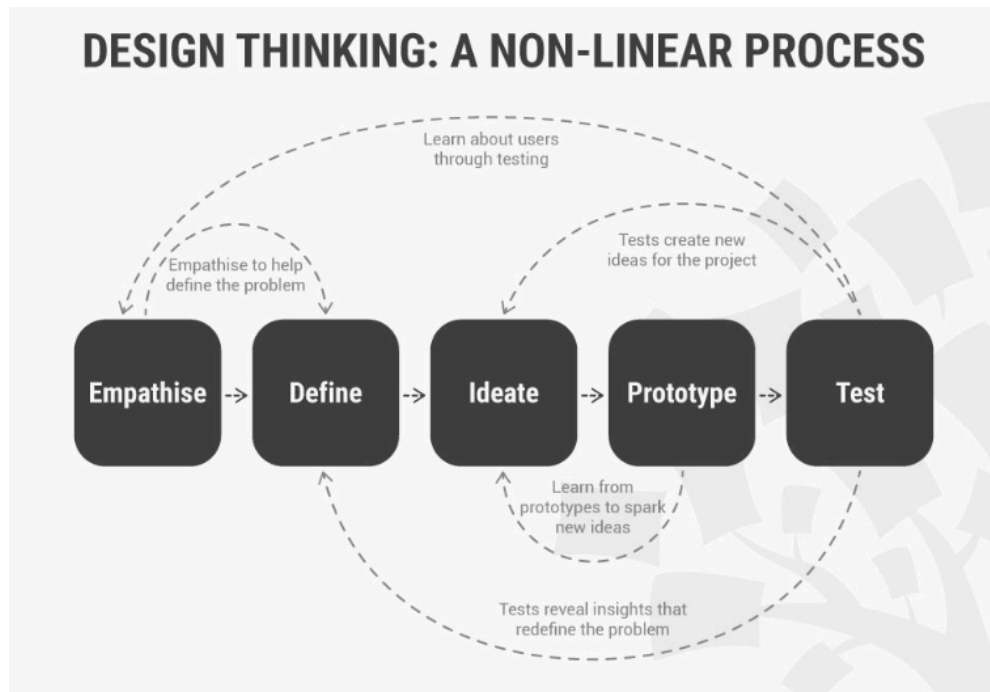
canvas, and business plan), through which on-going discussion and feedback between students and instructor serves to facilitate the creative processes. Upon completion of the subject, a quantitative study was conducted to evaluate students' creative self-efficacy. This line of inquiry places a central role of instructor(s) in the creative process through pedagogical design and delivery; and more importantly driving students to think of creative solutions throughout the iterative processes.

Theoretical Foundation / Teaching Implications

Our DCP approach involves design thinking, value proposition and business model canvases, and business plan. Design thinking is a thorough understanding of what people want and need in their lives, and what people like or dislike about the way particular products are made, packaged, marketed, sold, and supported through direct observation (Brown, 2009) (see Figure 1). It is a human-centered approach that involves empathizing, defining, ideating, prototyping and testing. Empathizing requires one to understand customers or users through observing and engaging. Defining is to frame the right problem resulting in a guiding statement that focuses on insights and needs of a particular user, or composite character through a process of synthesizing information to discover connections and patterns. Then one needs to ideate in order to generate the broadest range of possibilities. Prototyping is to build and visualize ideas and solutions. And testing is to review and refine so as to solicit feedback about the prototypes from users.

Figure 1.

Design Thinking

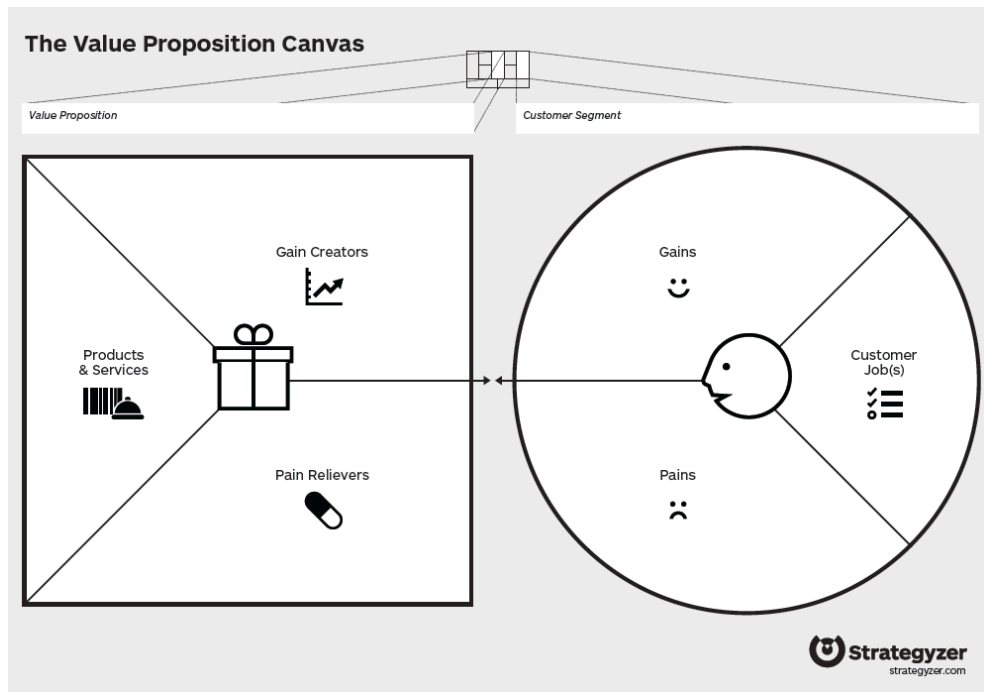


Adapted from <https://www.interaction-design.org/literature/article/5-stages-in-the-design-thinking-process>

The value proposition canvas is divided into customer profile and value map (Osterwalder, Pigneur, Bernarda, & Smith, 2014) (see Figure 2). The customer profile clarifies customer understanding, whereas the value map describes how a company intends to create value for that finite set of customers. The customer profile looks into the customer jobs, pains, and gains. The value map describes the features of a specific value proposition composed of products and services, pain relievers, and gain creators. Ultimately a company achieves fit when value map meets customer profile, that is, when products and services produce pain relievers and gain creators that match one or more of the customer jobs, pains, and gains that matter to customers.

Figure 2.

Value Proposition Canvas

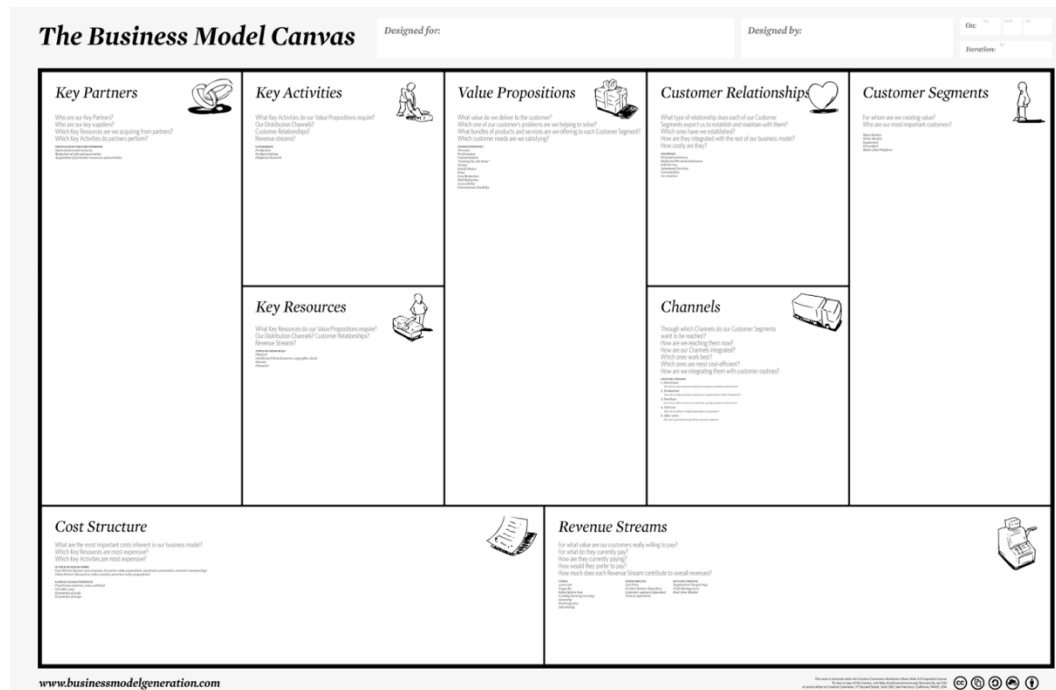


Adapted from <https://strategyzer.com/canvas/value-proposition-canvas>

A business model describes the rationale of how an organization creates, delivers, and captures value, with nine basic building blocks fit into a canvas (Osterwalder & Pigneur, 2010). It shows the logic of how a company intends to make money and covers four areas of a business including customers, offer, infrastructure, and financial viability (see Figure 3).

Figure 3.

Business Model Canvas



Adapted from <https://www.businessmodelgeneration.com>

In light of a changing environment, assumptions and insights about how market forces, industry forces, key trends, and macro-economic forces unfold provide “design space” for developing potential business model options or prototypes (Osterwalder & Pigneur, 2010). Because business models are designed and executed in specific environments, students worked as part of a team to apply design thinking and produce value proposition and business model canvases for continuous assessments centered around a creative, potentially profitable and viable business opportunity in Hong Kong before they proceed to develop a business plan for that opportunity (Hisrich, Peters, & Shepherd, 2010).

Learning Objectives

Using the DCP approach, we have developed activities and assessments designed to help students build skills needed to apply entrepreneurship skills in a real-world context. Specifically, the learning objectives are to

1. Develop a clear understanding of design thinking, value proposition canvas, business model canvas, and business plan; and when to use each
2. Develop one's perceived ability to engage in entrepreneurial behavior by developing capabilities related to opportunity identification, evaluation, and resource generation

Activity Overview

To ensure effective learning and teaching, as already mentioned, we divided our class into 6 small groups with around 6-8 students each, and assigned them to do two group activities on the application of value proposition and business model canvases respectively (around 1.5 hours each including 15-minute reading time of a business case). For the first case, students discussed with their team members how to apply the value proposition canvas so as to understand customer needs in order to create value for them, with reference to the case entitled, "Boxful: Revolutionizing storage space in cramped cities" (Ko, 2019a). Upon finishing their discussion, they wrote their answers on white board and presented their ideas to class while subject lecturer could make any comments where necessary. For example, some students mistakenly thought that the opposite of pains were equivalent to gains in customer profile. In the week that followed, students further illustrated how co-founders of honestbee could make sense of their business model by using business model canvas, based on the second case entitled, "To Bee or not to Bee: How honestbee creates, delivers, and captures value" (Ko, 2019b). After these two activities, students kickstarted their own projects by preparing value proposition canvas, business model canvas and business plan accordingly. On-going discussions between students and subject

lecturer continued during the processes, and feedback was given to students upon completion of each group work.

Furthermore, we conducted a student survey on the effectiveness of adopting the DCP approach in pedagogical design as to whether their creative self-efficacy would increase. Creative self-efficacy, defined as “the self-view that one has the ability to produce creative outcomes” (Tierney & Farmer, 2002, p. 1138), was considered an antecedent of creative behavior and performance (Bandura, 1997; Bandura & Locke, 2003). The concept of self-efficacy holds much promise for understanding creative action in entrepreneurship. Research suggests that creative self-efficacy serves as an important mediator between individual and situational factors and creative performance (Liu et al., 2017; Puente-Diaz & Cavazos-Arroyo, 2018; Wang, Liu, & Shalley 2018). In other words, efforts to enhance one’s belief in creative ability should be a central component of creative journey.

Session Description

This session will run as a facilitated discussion. We will begin the session by introducing to attendees about (1) the use of DCP approach (design thinking – value proposition and business model canvases – business plan) in entrepreneurship education, and (2) how they evaluate the effectiveness of this DCP approach in addressing teaching objectives. This initial audience participation will serve as an ice breaker for the roundtable discussion, and attendee comments will also be documented and referenced throughout the session to facilitate participant involvement. Following the session introduction, we will briefly highlight quantitative findings from our research on creative self-efficacy in an entrepreneurship course. According to Table 1, having a good imagination and further developing the ideas of others are at the top (mean=4). Students also reported to have more confidence in their abilities to engage in identifying the need

for a new product or service (mean=3.75), designing a product or service that will satisfy customer needs and wants (mean=3.5), brainstorming (coming up with) a new idea for a product or service (mean=3.5), solving problems creatively (mean=3.5), and generating novel ideas (mean=3.25).

Table 1.

Entrepreneurial Self-efficacy among University Students in an Entrepreneurship Class

Upon completion of the group project, how much confidence do you have in your ability to engage in the followings	Mean *
Having a good imagination	4
Further developing the ideas of others	4
Estimating the amount of start-up funds and working capital necessary to start my business	4
Reading and interpreting financial statements	3.75
Clearly and concisely explaining verbally/in writing my business idea in everyday terms	3.75
Estimating customer demand for a new product or service	3.75
Identifying the need for a new product or service	3.75
Managing the financial assets of my business	3.5
Organising and maintaining the financial records of my business	3.5
Delegating tasks and responsibilities to employees in my business	3.5
Designing an effective marketing/advertising campaign for a new product or service	3.5
Determining a competitive price for a new product or service	3.5
Designing a product or service that will satisfy customer needs and wants	3.5
Brainstorming (coming up with) a new idea for a product or service	3.5
Solving problems creatively	3.5
Starting my own business	3.25
Inspiring, encouraging, and motivating my employees	3.25
Dealing effectively with day-to-day problems and crises	3.25
Recruiting and hiring employees	3.25
Supervising employees	3.25
Networking (making contact with and exchanging information with others)	3.25
Getting others to identify with and believe in my vision and plans for a new business	3.25
Generating novel ideas	3.25
Training employees	3
<i>*Measured on a five-point scale ranging from very little (1) to very much (5)</i>	

Sources: McGee, Peterson, Mueller, & Sequeira (2009); Tierney & Farmer (2002)

After highlighting these findings, we will quickly return to the audience input from the beginning of the session to explore how our findings relate to participant’ anecdotes of positive and negative experiences when engaging students in entrepreneurship and/or creativity

education. While the remaining discussions will be largely dictated by the attendees' experiences and interests, we provide some topics below that we are both prepared to discuss and address pertinent issues related to teaching entrepreneurship and/or creativity in higher education:

1. Timing of activities and assessments. When should be the best timing to administer the activities and assessments respectively? Right after the lecture, one week after the lecture, or other possible arrangements?
2. Relevance and usefulness of cases (or other instruments). What cases or other instruments (e.g., contents, length, startups versus well-established enterprises, publication date, familiarity, interest, cost, etc.) are best suited for applying value proposition and business model canvases?
3. Type of students. How does teaching undergraduate versus postgraduate courses, and local versus exchange students, relate to the selection of cases / instruments and assessment methods instructors could implement to reach the learning outcomes?
4. Role of instructors. What is the role of instructors throughout the ideation processes?

Taken together— we aim to provide empirical evidence from the students we have sampled, in combination with instructor experiences, to develop fresh perspectives on how to use the DCP approach effectively in the classroom. As a tangible take-away, we will also provide attendees with template of value proposition and business model canvases that can be used to improve the creative self-efficacy among university students. With this template, attendees can better plan their pedagogical design and delivery for upcoming semesters by considering the use of DCP approach, our empirical data, and the insights gained during this roundtable discussion. In doing so, we aim to fulfill the underlying goal of this session: for attendees to reflect on their goals, pedagogical design and delivery when using the DCP approach, and to leverage our findings to

design assessment tools that help them achieve their goals. This session will contribute to effective teaching and learning in the field of management by promoting reflection and reassessment of the approaches we use to provoke learning. This line of inquiry places a central role of instructor(s) in the creative process, driving students to think of creative solutions throughout the iterative processes.

Session Timeline

Phase	Summary	Purpose	Duration
Opening	Session introduction and solicitation of attendee feedback	Introduce the use of DCP approach (design thinking – value proposition and business model canvases – business plan) in entrepreneurship education	10 minutes
Survey results of creative self-efficacy	Summary of empirical findings	Share major findings in a roundtable discussion	15 minutes
Closing	Sharing of teaching materials	Assist attendees in planning the use of DCP approach for upcoming semesters	5 minutes

References

- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.
- Bandura, A., & Locke, E. A. (2003). Negative self-efficacy and goal effects revisited. *Journal of Applied Psychology, 88*, 87–99.
- Brown, T. (2009). *Change by design: How design thinking transforms organizations and inspires innovation*. NY: HarperCollins.
- Hisrich, R. D., Peters, M. P., & Shepherd, D. A. (2010). *Entrepreneurship*. NY: McGraw-Hill/Irwin.
- Ko, S. (2019a). Boxful: Revolutionizing storage space in cramped cities. *SAGE Business Cases*.
- Ko, S. (2019b). To Bee or not to Bee: How honestbee creates, delivers, and captures value. *SAGE Business Cases*.

- Liu, W. L., Pan, Y. G., Luo, X. M., Wang, L. X., & Pang, W. G. (2017). Active procrastination and creative ideation: The mediating role of creative self-efficacy. *Personality and Individual Differences, 119*, 227-229.
- McGee, J., Peterson, M., Mueller, S., & Sequeira, J. (2009). Entrepreneurial self-efficacy: Refining the measure. *Entrepreneurship Theory & Practice, July*, 965-988.
- Osterwalder, A., & Pigneur, Y. (2010). *Business model generation: A handbook for visionaries, game changers, and challengers*. Hoboken, NJ: John Wiley & Sons.
- Osterwalder, A., Pigneur, Y., Bernarda, G., & Smith, A. (2014). *Value proposition design: How to create products and services customers want*. Hoboken, NJ: John Wiley & Sons.
- Puente-Diaz, R., & Cavazos-Arroyo, J. (2018). An exploration of some antecedents and consequences of creative self-efficacy among college students. *Journal of Creative Behavior, 52*, 3, 256-266.
- Tierney, P., & Farmer, S. M. (2002). Creative self-efficacy: Potential antecedents and relationship to creative performance. *Academy of Management Journal, 45*, 1137-1148.
- Wang, S. H., Liu, Y., & Shalley, C. E. (2018). Idiosyncratic deals and employee creativity: The mediating role of creative self-efficacy. *Human Resource Management, 57*, 6, 1443-1453.