

A Team-based Project Using Design Thinking to Creatively Problem-Solve

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Abstract

A large majority of employers indicate that competencies such as teamwork and collaboration, critical thinking and problem solving, oral and written communication, and professionalism are essential; however, a significantly lower number of employers consider new graduates proficient in these areas (National Association of Colleges and Employers, 2017). In this session, I present a class project that addresses many of these aforementioned competency gaps. Taking on the role of a consulting team, students learn how to use the Design Thinking process to develop an Economic Experience for a struggling company that is facing commoditization pressure in a challenging marketplace.

Keywords: Design Thinking, Creativity, Collaboration

Introduction

As an undergraduate college instructor, I view one of my most important objectives is to prepare students the appropriate knowledge and skills needed to succeed in their next stage in life. Often times, however, courses rely heavily upon technical competencies, but often lack more of the “soft” skills that organizations are seeking in new graduates. This has led to a significant skill gap within the workforce.

In the Job Outlook 2018 survey conducted by National Association of Colleges and Employers (2017), employers indicated there is a skill gap with new graduates. Specifically, employers cite the biggest discrepancies between what is considered “essential” and the proficiency of recent graduates within the following competencies: teamwork/collaboration, critical thinking/problem solving, professionalism, and oral/written communication (Table 1).

Table 1: Career Readiness Competencies

COMPETENCIES	CONSIDERED ESSENTIAL*	RATED PROFICIENT**
Teamwork/Collaboration	97.5%	77.0%
Digital Technology	64.2%	65.8%
Critical Thinking/Problem Solving	99.2%	55.8%
Professionalism/Work Ethic	100%	42.5%
Oral/Written Communication	95.9%	41.6%
Leadership	68.6%	33.0%
Global/Multi-Cultural Fluency	31.1%	20.7%
Career Management	47.1%	17.3%

Source: National Association of Colleges and Employers (2017)

*The percentages corresponding to “considered essential” represent, among all responding employers, the percentage who, on a five-point scale, indicated that the respective competency was either “essential” (4) or “absolutely essential” (5) for college graduates to enter their work force.

** The percentages corresponding to “rated proficient” represent, among all responding employers, the percentage who, on a five-point scale, rated recent graduates either “very” (4) or “extremely” (5) proficient in the respective competency.

Instructors must face the challenge of filling in these gaps. As such, I present a class project that addresses many of these aforementioned competency gaps, specifically teamwork, collaboration, critical thinking, problem solving, professionalism, and both oral and written communication. For this project, students learn how to use a Design Thinking process to develop an economic experience for a struggling company in a challenging marketplace.

Theoretical Foundation/Teaching Implications

What is the Design Thinking Process?

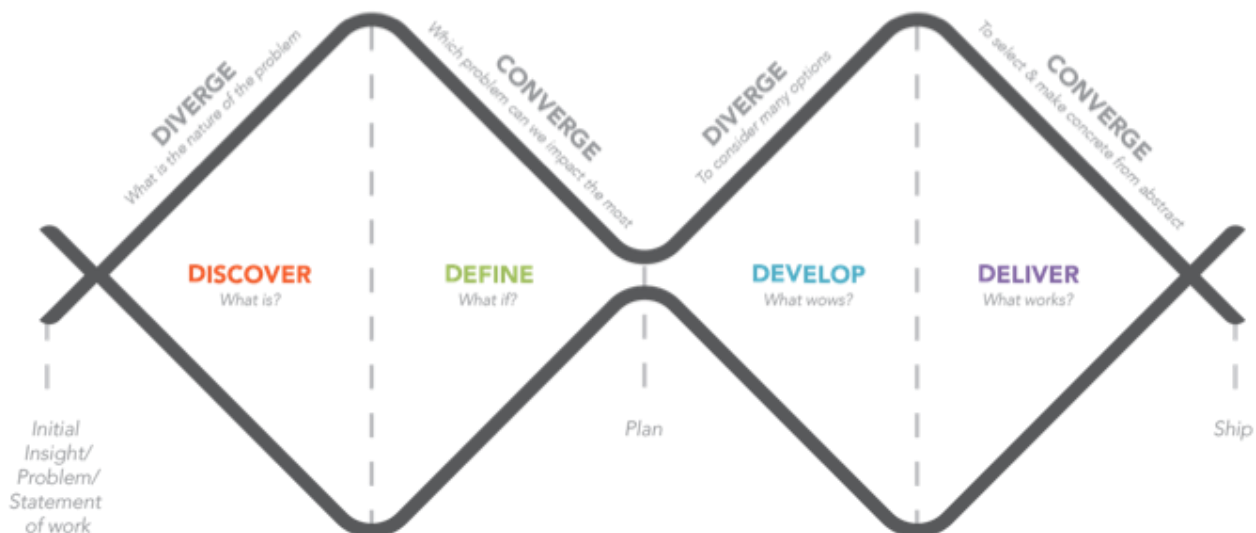
At its core, Design Thinking involves the process of creative problem-solving. It's the idea that we should approach all business problems with a design perspective. In fact, Tim Brown, Executive Chair of the design consulting firm IDEO, defines Design Thinking as, “a *human-centered approach to innovation* that draws from the designer's toolkit to integrate the needs of people, the possibilities of technology, and the requirements for business success” (IDEO, 2020a)

Although there isn't an agreed-upon structure to the Design Thinking process, there are some overlapping consistencies among different approaches to implementing Design Thinking in organizations. Brown (2008; 2009) explains that IDEO's approach to Design Thinking is that design projects must pass through spaces – 1) Inspiration, 2) Ideation, and 3) Implementation. *Inspiration* involves the motivation for developing the solutions. It often starts with exploring a problem, gathering data, and identifying a need for further consideration. A portmanteau of the terms idea and generation, *ideation* involves the process for developing and testing of potential solutions. *Implementation* involves developing a plan to bring the solution or idea to the marketplace. Brown is quick to note that these spaces are not specifically linear and the project may move from space to space as the project develops and is refined.

An important component of Design Thinking involves the use of brainstorming as a method of idea generation. IDEO prescribes to a specific way in which brainstorming should be conducted (IDEO, 2020b). Their rules include: defer judgment; encourage wild ideas; build on the ideas of others; stay focused on the topic; one conversation at a time; be visual; and go for quantity.

Brainstorming is often used in problem identification and solution discovery. As shown in the Double Diamond Model of Design (Figure 1; British Design Council 2005), the design process is divided into two components – Finding the Right Problem and Finding the Right Solution. Each diamond consists of diverging and converging phases where designers diverge into many ideas followed by converging onto one main idea. These alternating diverging/converging phases are at the heart of brainstorming and allow a team, if performed correctly, to focus on the right problem and deliver the right solution.

Figure 1: Double Diamond Model of Design. (British Design Council, 2005)



The first diamond involves teams taking the initial insight or problem statement and expanding its scope to discover all its fundamental issues. As Don Norman (2013, p. 218) states, “Good designers never start by trying to solve the problem given to them: they start by trying to

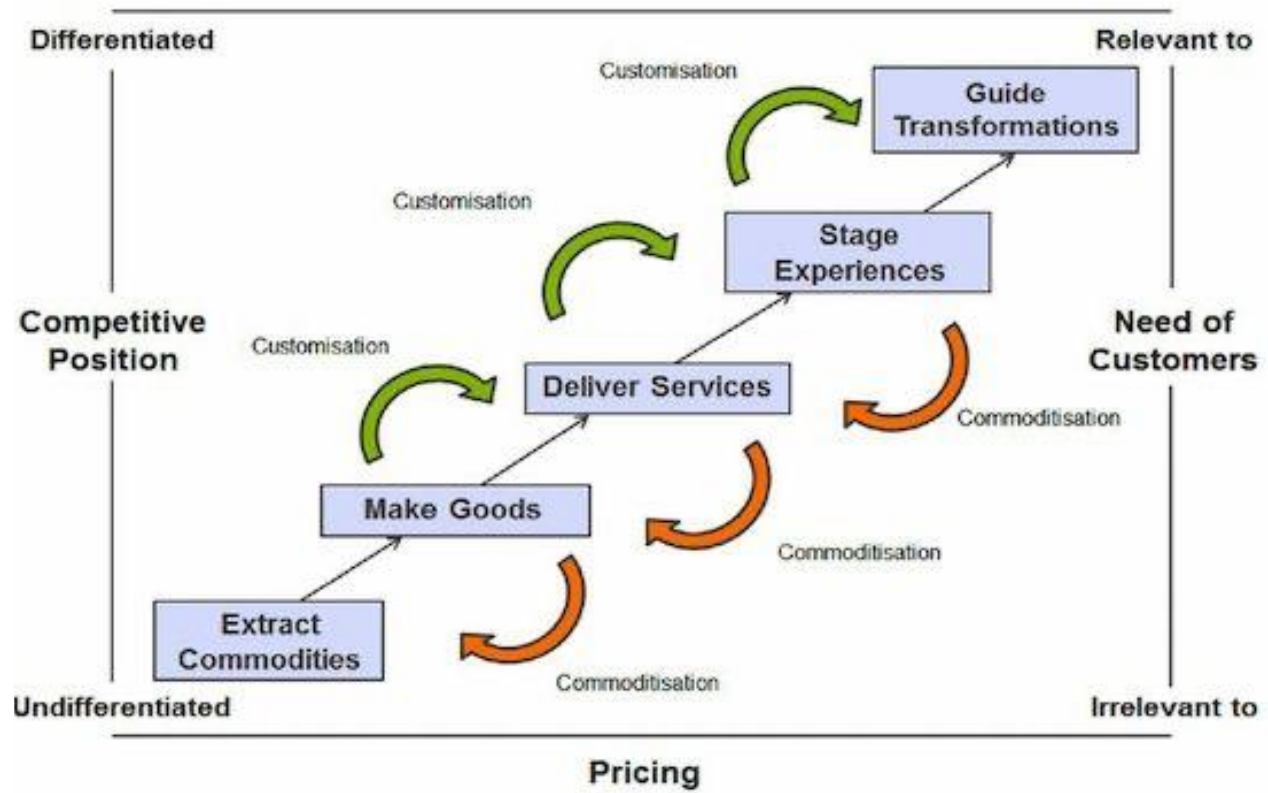
understand what the real issues are.” The first diamond also involves taking all the information collected through the problem discovery and converging upon an overarching, defined problem.

Once the true problem statement has been defined, the team moves on to the second diamond which consists of diverging to develop number of ideas and possible solutions. This phase is generally characterized by a large quantity of ideas that requires teams to converge upon one proposed solution to deliver.

What is an Economic Experience?

In the article *Welcome to the Experience Economy*, Pine and Gilmore (1998) discuss how goods and services can become commoditized. This commoditization of goods and services prevent companies from differentiating themselves from their competitors (Figure 2). The premise is that companies must look for ways to customize their goods and services to create these experiences in order to counter the commoditization of their goods and services by their competitors.

Figure 2: The Progression of Economic Value (Pine and Gilmore, 2011)



Pine and Gilmore propose a framework for companies to follow to stage their products and services as an economic experience that provides differentiation from their competitors thus allowing them to charge a premium. This framework involves five key experience-design principles for companies to follow in order to elevate their current goods and service to an economic experience (1998).

- Theme the experience: Through the use of a theme, companies provide a thesis upon which customers can organize their impressions.
- Harmonize impressions with positive cues: The theme provides the foundation, but companies must also bring together the lasting impressions in a cohesive manner. These impressions are what the customer will remember long after the experience has ceased.

- Eliminate negative cues: A good theme designer must identify and look for ways to eliminate any factors that contradict or detract from the theme.
- Mix in memorabilia: Providing memorabilia or souvenirs for their customers to take home with them invokes nostalgia upon which customers can be reminded of the positive experience they had.
- Engage the five senses: By introducing stimuli within the experience that engage the five senses, companies can enhance the overall theme that they have established, making the experience more engaging and immersive to the customer.

Learning Objectives

This project is part of a course entitled “Psychology in the Business Environment”. The course focuses on the application of psychological science to solve business and organizational issues. The topics covered in this course include Decision-Making, Team Dynamics, Creativity, and Design Thinking, to name a few. The project was designed to be an opportunity for students to draw upon what they learn in these topics to solve a problem in a team environment. Although the “problem” that students must solve involves developing an economic experience, this scenario is merely a conduit for students to apply what they have learned to develop a solution to a business problem. In reality, other scenarios could serve the same purpose as the economic experience scenario. Students will:

- Apply the design thinking process to identify problems in the current organization or industry and to brainstorm for creative solutions.
- Gain an understanding of what an Economic Experience is and an appreciation for the value of businesses customizing a service into an experience to overcome the commoditization of goods and service.

- Research industry and market data and interpret findings in the design process.
- Collaborate effectively with teammates in the problem-solving process by respecting all perspectives and encouraging contributions of other teammates.
- Critically evaluate proposed solutions and provide implications for improvements in future iterations.
- Communicate effectively through written reports and oral presentations.

Exercise Overview

In this project, students apply what they have learned about the Experience Economy to develop an existing service into an economic experience. Students are divided into groups and take on the role of consulting team that has been hired to develop an economic experience for a service or industry that is facing commoditization pressure. Teams are randomly assigned one of the following services:

DMV	Hospital	Health/Fitness Club
Library	Transportation	Movie Rental
Auto Mechanic	Museum/Zoo	Bowling Alley
Education	Bank	Daycare
Medical Office	Post Office	Music Store
	Hair Salon	

This project is completed in stages over several weeks of the semester but can be compressed into a shorter time frame if needed. Project teams must complete a team contract, a proposal, a final written report, and a final in-class presentation. Individual team members also must complete a peer evaluation of their teammates which is incorporated into the students'

individual grades. These deliverables are completed in the order noted above with approximately two weeks between each deliverable to allow for teams to receive instructor feedback and incorporate this into their design.

In order for students to follow the Design Thinking process, I dedicate several class meetings for work sessions. I generally provide approximately 4-6 work sessions depending upon the class meeting schedule. Although I encourage students to meet outside of work session, these provide an opportunity to guide these students through this process. My experience has been that students often struggle with a project such as this and need significant guidance in the initial stages.

In the first work session, I introduce the project scenario, guidelines, and expectations to the teams. I then allow them to work on their group contract. This group contract serves as an agreement among team members and provides accountability. When I began this project several semesters ago, I did not require a group contract. After instituting this, I found that teams generally have better coordination and less freeloading, which is a common problem with group projects.

In the second work session, I walk teams through brainstorming exercises to help them expand on the initial scope of the problem. This involves having students initially write down ideas onto post it notes individually followed by a time of sharing ideas with their teammates. This technique particularly helps less-vocal students in sharing their ideas. After going through the brainstorming exercises to identify the problem, I provide decreasing levels of intervention as teams brainstorm solutions in subsequent work sessions.

After the first few work sessions dedicated to brainstorming, I then require students to submit a two-page proposal of their idea. This is important because it allows me to review the

direction in which they are headed and to provide feedback in case teams develop scope creep. After their proposal has been approved, the remaining work sessions allow students to fully develop a few of their ideas into a deliverable report and presentation.

Session Description

I will conduct the session according to the following schedule:

- 5 minutes – I will begin the session by providing a rationale of why I have included the topic of Design Thinking in my course with a focus on how the learning objectives of this project fill several of the competency gaps that many employers face.
- 10 minutes – I will provide an introduction into the concept of Design Thinking including the stages of the Double Diamond Model of Design.
- 5 minutes – I will introduce the topic of the Experience Economy and discuss the five key experience-design principles proposed by Gilmore and Pine (1998).
- 5 minutes – I will provide specifics of the project including the guidelines provided to students in my course. I will discuss in detail how this project has changed from the first time that I implemented it until this semester. I will also present changes that were made in the Spring 2020 semester when the course moved to an online format due to COVID-19 measures.
- 20 minutes - Participants will take part in a in a quick brainstorming exercise that will require them to generate ideas for a project. This exercise provides participants with an idea of how the brainstorming sessions are conducted with student teams in my course.

- 5 minutes – I will provide examples from student projects to illustrate how my students have used the design thinking process to develop a creative solution to the problem given.
- 5 minutes – I will also provide participants with a list of resources (i.e., articles for reading assignments, videos, assignment guidelines, etc.) that I use for this project.
- 5 minutes – Wrap-up and Questions

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