

Design Thinking in the Executive MBA

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Abstract

This article describes the redesign of a Strategic Vision course in an Executive Master of Business Administration (EMBA) program in the United States, and the subsequent use of design thinking as a critical problem-solving tool in the program itself. Using Design Thinking as the curricular framework, this experiential course aims to introduce business executives to solving business challenges through design thinking methodologies. Over eight weeks, student teams work with external project partners to produce creative business solutions to current and complex organizational challenges. Teams are introduced to Design Thinking and practice steps in the Design Thinking process by applying them to a real-life business challenge. Here, we describe the genesis of the course redesign, iterations on its content, and the feedback it has received from students, faculty, and project partners, in the hope that it will contribute to the curation of new design frameworks in higher education.

Keywords: Design Thinking, MBA, Experiential Learning, Iterative Feedback, Curriculum Design, Project Stakeholders

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1. Introduction

The Eli Broad College of Business (Broad) at Michigan State University (MSU) first engaged in design thinking exercises through the university's Hub for Innovation in Learning and Technology in 2018. The partnership focused on improving course design and outcomes in the Master of Business Administration (EMBA). The EMBA program was ready to reimagine its overall program curriculum and to build new problem-solving toolsets that would add value for business students. The EMBA team had identified a particular experiential course that would benefit from a fresh approach, with the intent to prototype, evaluate, redesign, and then extend this pilot to other master's programs if successful. The process began with a "what if?" and the joint team explored the idea of bringing design thinking and business together for a unique experiential learning experience (Grabill, Gretter, and Skogsberg, 2022). This article describes the genesis of this course redesign, iterations on its content, and the feedback it has received from students, faculty, and project partners, in the hope to contribute to the curation of new design frameworks in higher education.

2. The EMBA program

The Executive MBA (EMBA) program at Michigan State University was originally launched in 1964 as one of the oldest Executive MBA programs in the world. Since its inception, it has been tailored for experienced working professionals who maintain their careers while earning their degree. It features a predictable schedule, high levels of administrative support, team-based learning, and the impetus for students to immediately apply what they learn in their organization. The curriculum is intentionally broad, and the selection and sequence of courses is designed to produce graduates who have a clear understand of the complex and integrative nature of business so that graduates can make appropriate, cross-functional decisions as leaders in their organizations. In addition to core business courses, the program includes four applied experiential courses.

The program has had remarkable success over the years, graduating thousands of students who indicate a high level of satisfaction with program outcomes. In part, we attribute the longevity and success of the program to an ongoing improvement approach designed to ensure learning objectives are relevant and achieved, and the format is attractive to the market and related industry sectors. The program's culture embraces innovation in the spirit of ensuring students' and organizations' needs are met.

The EMBA program curriculum includes twenty-nine courses, four of which are expressly positioned as experiential learning courses. One of these is our Strategic Vision course, and it is this course that was identified as an ideal opportunity for us to utilize design teaching techniques to redesign the course, and then to use this course to teach the design thinking framework to our students. The course objectives now merge strategic vision and design thinking to guide students through creative techniques to address business challenges. After completing this course, students can apply design thinking to address a business challenge; gather evidence, design conversations, ideate, and test prototypes; and develop and deliver a pitch for a business solution to project

partners. Assignments in the course consist of the submission of a series of team-based and individual reports along the different phases of the design thinking process.

2.1. The Strategic Vision Course

The focus of this paper is our Strategic Vision experiential course that merges consulting practices with design thinking to prototype innovative solutions to business challenges. This course is action-oriented and calls on a broad range of concepts including marketing research, conversation design, ideation, prototyping, and pitch formulation.

2.2. Course-level objectives

Upon successful completion of the Strategic Vision course, students are able to:

- i. apply the design thinking process to solve a business challenge,
- ii. gather evidence to design conversations with partners,
- iii. ideate, design, and test prototypes with users,
- iv. develop a pitch for a business solution, and v. deliver a pitch and presentation for a business solution.

2.3. Session-level objectives

Each course session in the EMBA Strategic Vision course has a set of learning objectives that correspond to the course objectives above. The objectives are outlined in the following table:

Table 1: Learning objectives

<i>Introduction</i>	Practice design thinking Build relationship with teammates Acquaint themselves with their team challenge and project partner
<i>Inquiry</i>	Explain the design thinking mindset Research evidence from multiple sources to broaden their understanding of the challenge Organize evidence to design conversations with partners Explore the role of HMW questions in design processes
<i>Discovery</i>	Gather evidence to describe a challenge space Use collected data to identify areas of interest/need Practice refining HMW questions
<i>Ideation</i>	Observe analogous examples for inspiration Interview experts Organize collected data into insights and subsequent recommendations Share current work status with other teams for suggestions
<i>Pitching</i>	Communicate results to partners Write reports (team and individual) to summarize findings and processes Reflect on learning experience
<i>Reflection</i>	Share results and processes with classmates outside the group Provide constructive feedback to classmates

2.4. Course materials

At the inception of the Strategic Vision course in 2015, we used Friga's *The McKinsey Engagement: A Powerful Toolkit For More Efficient and Effective Team Problem Solving*. When we decided to center the course around Design Thinking, we then moved to *Change by Design* Tim Brown in 2020, and we are currently using Kelley and Kelly's *The Design Thinking Playbook* and Lewrick, Link, and Leifer's *Creative Confidence*.

We also provide students with a list of shorter reads (i.e., blog posts) that we update as needed. Short reads include: "The design economy" (Design Council, 2018), "Why design thinking works" (Liedtka, 2018), "Human-Centered Design methods" (IDEO, 2020), "Elevating the human experience in a time of crisis: Using human-centered design to meet this moment" (Freckman et al., 2020), "Telling more compelling stories through design thinking" (Tran, 2018).

In addition, we give students the opportunity to learn about real-world applications of design thinking in industries they are familiar with. We use these case studies as complimentary examples to the books to emphasize the pragmatic applicability of design thinking to their work. Examples include: "How we design on the UberEATS team" (Smith, 2017); "Bank of America + IDEO: Designing an empathetic solution to saving" (Garza, 2017); "Economic impact of IBM Design Thinking practice" (Brown, 2018), or "How can Design Thinking Re-invent a Brand?" (Shah, 2017).

2.5. Course assignments

The Strategic Vision course asks students to contribute to a set of team-based reports, a final team presentation, and an individual reflective memo. The team reports correspond to the phases of the design process we follow for the course, and as such, we ask teams to turn in a research report, a data report, an observation report, and a prototype report. The final team presentation consists of a slide deck and narrative for the project partner, where students describe their process and prototype ideas; and the individual reflective memo is a one-page essay where we ask each student to think about what they would consider taking back about design thinking to their own companies.

2.6. Course organization

We modeled the course organization after a visual roadmap showing students steps in the process. The course is divided into main sections: Inquiry, Discovery, Ideation, and Reflection. Throughout the roadmap we have embedded key notions of empathy and human-centered approaches to addressing business challenges. Below is an example from Fall 2021 describing the course sequence, session objectives, and associated learning activities.

Figure 1: Course organization



2.6. Partner Projects

At the beginning of the 8-week course, students are introduced to their project partners and the project’s challenge statement. Challenge statements from project partners range from the need to understand the value of data for people in the electric vehicle experience context or how to create brand loyalty for grudge purchases like car tires, to getting more customers in an already-saturated hydroponics market.

In parallel, we introduce students to design thinking principles and history. We highlight that design thinking “relies on the natural—and coachable—human ability to be intuitive, to recognize patterns, and to construct ideas that are emotionally meaningful as well as functional” (Kelley and Kelley, 2015, p. 25). *The Design Thinking Playbook* (Kelley and Kelley, 2015) describes the importance of process awareness and introduces students to the various divergent and convergent design thinking models present in the literature.

3. Key concepts

3.1. Empathy

At each step of the 8-week course, we emphasize that the approach to this class is human-centered design, which implies starting with empathy and users in mind. Kelley and Kelley, 2015) describe the “sweet spot” of feasibility, viability, and desirability in the creative mindset. They discuss the technical factors (feasibility), business factors (economic viability), and human factors (people) that impact innovation, and make it a point to explain that empathy is key to the process, as “it’s the ability to see an experience through another person’s eyes, to recognize why people do what they do. It’s when you go to the field and what people interact with products and services in real time” (p. 85).

Accordingly, we introduce students to practical tips for practicing empathy in their projects. We cover items from the design thinking playbook such as understanding the language of the customer, experiencing the world of the customer, having an open mind, and mindfulness. We discuss the difficulties of empathy in our social media and achievement-oriented society, and what it takes to shift our perspective, deconstruct our opinions, and reflect on our own behaviors (Lewrick, Link, and Leifer, 2018). This focus on gaining empathy resonated particularly with a team of students that was working with a nonprofit vocational rehabilitation organization charged with creating a job training program for youth in the judicial system. The team had preconceived notions of the youth the program would serve, but interacting directly with them as the first phase of the project made a lasting impact on how the student team conducted the rest of their research to cater to the youth's needs and wants.

3.2. Inquiry

The inquiry phase is extremely important in the course because students are professional experts with years of experience with business challenges. This can actually be problematic as we note from our own experience that they tend to jump to “solutionism” right away and produce straightforward answers to the business challenge without learning more about its context and people. Instead, we ask them to slow down and determine what point of view or focus they will take to address the challenge (Lewrick, Link, and Leifer, 2018, p. 80). We ask them to analyze information about the given challenge, infer insights, formulate questions, and discuss them in their group.

Kelley and Kelley (2015) argue that one of the best ways to accelerate learning is to ask questions. We offer students practical solutions to do so by asking them to step back from obvious solutions, alter their point of view, look at all stakeholders, and uncover the real issue behind the challenge question. This is often accomplished once students start engaging with the project partners, customers, staff, etc.—in other words, once they look at the challenge from a human-centered design perspective. In one instance, one student group was looking at helping a yoga and stretching studio to gain new customers after the pandemic. Rather than assuming potential solutions, we encouraged the team to experience the studio as customers, go through a stretching session, and better understand both offerings and atmosphere as they talked with other clients and the staff. Not only did the experience ensure cohesiveness amongst the student team who shared the experience, it built trust with the project partner and allowed students to discover new perspectives as first-hand qualitative researchers.

3.3. Discovery

In the discovery phase, we rely heavily on observations in the field as a way to engage with the challenge space. We stress that empathy through observation challenges preconceived ideas. We push students to set aside what they think is true, so they can learn what is actually true. For Kelley and Kelley (2015), field research means more than simply asking people what they want, like, or dislike—which is why we encourage students to do observations rather than rush to create anonymous surveys to distribute to users (Lewrick, Link, and Leifer, 2018, p. 80).

The design thinking playbook puts forth the misconception that we all believe we are familiar with the lifestyle and experiences of all people for whom we develop innovations. Instead, it asks students to reflect on themselves and realize that we individually do not represent the people for whom we develop that innovation and should not transfer our needs onto others. As such, when students go on to do field observations, we guide them to free themselves of assumptions in need finding. One student team worked with a tire company that was looking to build customer loyalty for “grudge purchases” (i.e., something we must buy—like tires—but is the last thing on which we want to spend our time or money). They spent many hours conducting observations in the lobby of the tire shop to better understand what customers’ experiences were and produce innovative ideas for the business challenge the tire shop owners were facing.

3.4. Ideation

Ideation is when we shift students from research to creation. To build a creative space in the classroom, we utilize flexible seating when available, whiteboards, paper, markers, sticky notes, etc. We have also utilized online whiteboarding tools (i.e., Jamboard) to enable students to collectively benefit from a holistic way of thinking about their business challenge and potential solutions (Lewrick, Link, and Leifer, 2018).

Exploring new possibilities and generating countless ideas through divergent options is a practice that students are not always comfortable with, so we guide them to be quick and to prototype rapidly with early representations of ideas that are concrete enough for the teams. The key for students is to not be invested in only one idea (Kelley and Kelley, 2015). In order to do that, we guide students through analogous research to help unlock their thinking or inspire new directions of exploration. For instance, one team working with a brewery as project partner on staying competitive despite a strict tier system beer distribution law, ended up getting inspiration from a “free the grapes” campaign aiming at ending wine shipping regulations. Looking at other examples for inspiration helped them think outside their current business challenge to produce prototype ideas.

3.5. Prototyping

Finally, in the final phase of the eight-week course, students build on their rapid prototypes to produce three viable prototypes to propose as next steps to their project partner. We use the design thinking playbook to provide students with different prototype options and broaden their horizons on how to build different prototypes, while reminding them that this is still an iterative process (Lewrick, Link, and Leifer, 2018). It is important to note that in the case of this course, students do not have the opportunity to test their prototypes due to time constraints, so the course ends with students presenting prototypes to the project partner for them to take on and test in their company.

Often, we remind students that a prototype does not exist in isolation, but rather is part of the design of a human-centered experience. For that reason, we ask them to think of

the story surrounding their prototypes and to focus their attention on picking specific scenarios to map out (Kelley and Kelley, 2015, p. 138). Similarly, we structure the prototype phase for students to receive lots of feedback from fellow students in the class and reinforce the continuous, iterative process involved in design thinking. One student team assigned to electric vehicle working with a car company on highlighting the value of data for people in the Electric Vehicle experience context utilized one of the team member son's game Minecraft to design a whole city with EV interactions to showcase the value of data utilization for the imagined customer. The team's prototype helped show the project partner in concrete ways how they could move through their business challenge, all while displaying the benefits of the design thinking process that led them there.

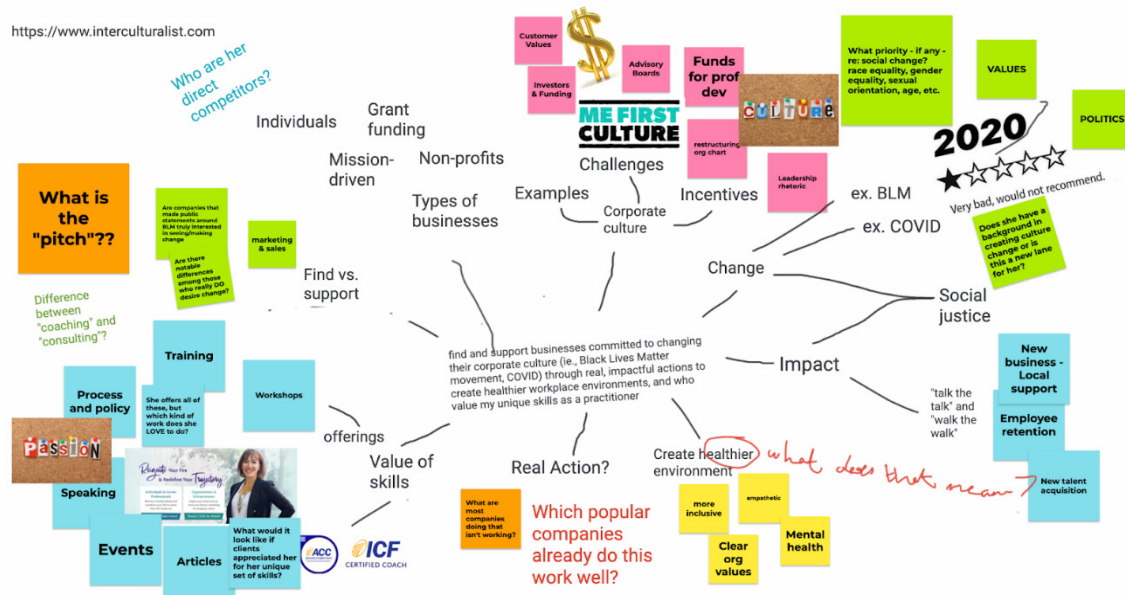
4. Design thinking activities

While we acknowledge that one course cannot do the design process justice and that we only superficially adapt the outline of the design thinking steps on a short timeline, we have found that a few activities resonate with students and get them interested in learning more about design thinking strategies or activities, which they can then in turn use in their own organizations. Three activities are highlighted below as ones that tend to resonate with students across semesters.

4.1. Mapping

Mapping is a visual problem framing and refining tool to generate alternative tactics for tackling a problem. Challenge mapping breaks down the challenge statement in a way that allows students to think about each of its components separately. The visualization captures how breaking down the challenge statement can lead teams to conduct research in very different areas of work. Color coding, connecting lines, and asking clarifying questions helps the students see the complexity of a challenge, slow down their problem decomposition process, and analyze what they want to tackle first. In the mapping example below, the challenge statement is placed at the center of the whiteboard for deconstruction. In this case, the project partner was a personal consultant who was looking to “find and support businesses committed to changing their corporate culture through real, impactful actions to create healthier workplace environments, and who value my unique skills as a practitioner.” Students started decomposing the challenge into different chunks of questions: “what is the difference between find vs. support?” “what types of businesses?” “what is corporate culture?” “what do they mean by change and impact?” “what do healthier environments look like?” “what does real action look like?” and “what are the proposed values and skills in question?” After decomposing the first layer of the challenge statement, students proceed to expanding the map by branching out further into each of the areas of interest. The mapping process helps students visualize the problem space prior to the inquiry and discovery phase, and to highlight areas in the map that are truly human centered in nature.

Figure 2: Mapping



4.2. “How Might We” questions

By framing challenges as “How Might We” (HMW) questions, we prepare students to explore innovative solutions by asking questions in a way that is creative (“how”), open-ended (“might”) and collaborative (“we”). Formulating questions through HMW statements has allowed students to move away from prescriptive and linear problem-solving to more human-centered ways of exploring challenges.

In the project example above, students went through a series of interviews with the consultant to better understand her work and reframed her challenge statement into a series of HMW questions. The team produced fifteen potential HMW questions, picked their top three, and in collaboration with the project partner, decided to focus on one final HMW question to guide the rest of the project. The process went as illustrated below:

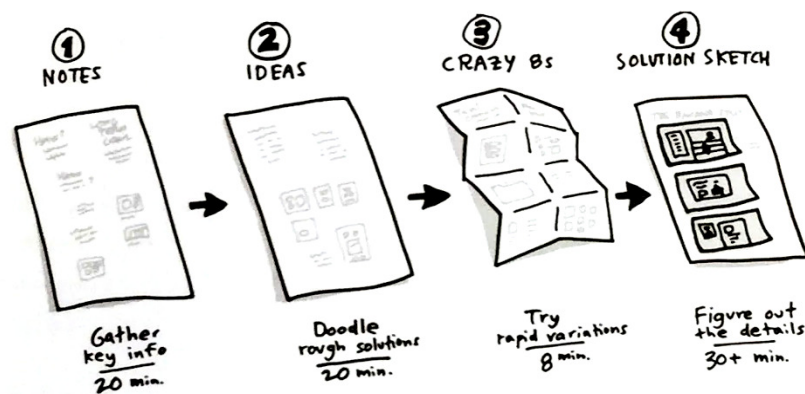
Table 2: Process of “How Might We”

Selected HMW questions (whole team ideation)	Top three HMW questions (team votes)	Final HMW question (project partner selection)
<ul style="list-style-type: none"> ▫ HMW help her define frameworks that fit the work she wants to do? ▫ HMW connect and translate her passion to corporate values to clearly communicate value? ▫ HMW identify the "right" audience for this business? ▫ HMW create a product offering that is marketable to an audience beyond the individual. ▫ HMW craft a value proposition that resonates with executive audiences 	<ul style="list-style-type: none"> ▫ HMW identify the "right" audience for this business? ▫ HMW create a unique value proposition? ▫ HMW develop a portfolio strategy that demonstrates the value proposition? 	<ul style="list-style-type: none"> ▫ HMW define your unique value proposition?

4.3. Visualization

One type of exercise that is quite impactful with students is our visualization activities. We often encourage students to sketch their work out to make their thinking visible. We remind them that the goal is not to “draw,” but to communicate ideas visually and to share mental processes with each other in a streamlined way. One of the activities we follow is the “Four Step Sketch,” an activity that is part of the design sprint methodology as illustrated below (Knapp, Zeratsky and Kowitz, 2016, p. 16). In this process, we ask students to spend about 20 minutes individually gathering the key information they have discovered about the challenge space. We then give them another 20 minutes to produce ideas and generate rough solutions. After that, we walk them through a “crazy 8” exercise, where they have eight minutes to create rapid variations of their ideas, and we end with a solution sketch for 30 minutes where they can figure out the details of their idea. We use that as a way to launch individual creativity before sharing their sketches with the rest of the team and combining interesting features.

Figure 3: Four Step Sketch



The same way we teach students that design thinking encourages experimentation, small prototypes, informal feedback, and early failures, so was the process of creative the Strategic Vision course itself. In this next section, we describe the culture of trial and error in the EMBA course design process and highlight the genesis of these trials.

5. Course iterations

Getting to the above version of the course required multiple revisions. Since its inception in 2013 to the current version of the course, we modeled our curricular redesign after the design thinking process, focusing particularly on rapid prototyping, testing, and generative feedback.

5.1. Iteration One (2013-2015)

In 2013, we were contacted by a local non-profit in need of MBA-type consulting to provide guidance on a strategic challenge they were facing. Serendipitously, it seemed

an optimal scenario of applying the skills of talented and knowledgeable students to make a positive impact in our region, at no cost to the organization. We agreed to offer this as a voluntary option for students and brought the company's executive director to pitch the opportunity to students. Thirteen mid-level career professionals enthusiastically agreed to take on the challenge, willing to carve out the time and eager to make an impact. And yet there was no follow up, no progress and no results. The concept, while interesting, lacked the infrastructure to support both the students and the client. Barriers to our success for this first volunteer experience included vague expectations and a lack of infrastructure, support, or accountability. We failed.

We felt strongly that there was value in exposing our EMBA students to ways that they can use their knowledge and talent to solve real world problems and grow their creative problem-solving skills while solving them, so we moved to a second iteration. We wanted to be able to make a positive impact through our program and our students.

5.2. Iteration Two (2015-2019)

Without knowing of the “how might we” approach that is so prevalent in Design Thinking, we utilized that formula to imagine a better solution. We asked: “How might we provide more structure to enable our mini-consulting initiative to succeed?” And “How might we be a force for good in our state, by leveraging our Executive MBAs knowledge and experience to make a difference in organizations who didn't have the means to hire consultants?”

Through a series of internal brainstorming sessions, we settled on a plan to pilot our next iteration by modifying two credits of existing experiential courses as an alternative to the required courses. We engaged two faculty members to co-design the experience with us. Staff built the infrastructure and secured projects around, with the vision that we would have all projects themed around the same wicked problem: addressing homelessness in Michigan. We recruited non-profit organizations across the state that were focused on this goal. Faculty initially were positioned as project advisors and did not receive compensation in the initial year. Our college dean introduced the initiative to students to position it as a significant new experience:

I want to share a significant new experiential learning opportunity that we are launching... The opportunity is for a small select number of you to participate in a Social Impact Project that has the potential to transform lives with your participation. I have long believed that being able to acquire a meaningful graduate-level education in business is truly a privilege. It seems only appropriate that we consider how we can also apply our business knowledge to tackle social problems and thereby give back to society and community (College of Business Dean, 2015).

Social Action Projects were pitched as an impactful, albeit “messy” way for students to apply their knowledge to wicked problems. We indicated that it was a pilot, and would involve ambiguity, loose scaffolding, unclear solutions, and more work than the core course options it replaced. Forty-eight (36%) of the students opted to participate and we worked quickly to identify additional projects to meet the level of interest.

Students who opted to participate shared generally positive feedback after the course, such as “Thank you for offering the vision and taking the time to spearhead this project. I have learned and grown in so many ways as a result of the project. This type of project embodies the intrinsic value and impact that is expected from an Executive MBA program” (EMBA student, 2015).

Clients also had a positive first round experience in part due to the significant involvement in the framing and the high-level of engagement along the way. Each of them chose to re-engage the following year.

As we debriefed the pilot, we recognized the need to refine and improve the projects and the process based on feedback received by this faculty member:

First, as you probably already know, the participants are generally very positive about the whole thing and very understanding of the fact that they were the trial batch. They don't seem to mind too much if they get a little burned. The main issue that emerged repeatedly was the large time commitment, but also various issues around ambiguous goals, ketchy client relations and unproductive team dynamics. And they offered many sensible suggestions (e.g., more realistic expectations overall, smaller groups, more attention to group process, etc.) (Faculty member, 2015).

As a result, we continued to work with faculty to balance an appropriate level of structure and with clients in the interest of an appropriate level of project scope. Both required a significant investment of staff/faculty time and energy. We continued iterating on this over the next several years with inconsistency in the teams, the faculty approach, and the outcomes.

We began compensating the faculty based on the number of project teams they were managing. We added a limited amount of class time to provide more infrastructure. One faculty chose to meet weekly with the student teams. The other opted to be available if needed, but not to require regular check-in meetings. This model worked for a few years.

5.3. Iteration Three (2019-2020)

In 2019, a strategic review of the EMBA program determined that the experiential learning courses were fundamental to the EMBA program's value proposition, yet some lacked robust learning objectives and consistently strong outcomes. After gathering more insights from the student experience, we were determined to develop a revised course that taught a creative problem-solving framework to all students and appealed to their desire to produce real-world value. It was at this time that we engaged with the Hub for Innovation in Learning and Technology at MSU—a center focused on learning experience design and educational reform through (re)design.

In 2020, we began a new learning experience design process in collaboration with the Hub, having coalesced around a team that would collaboratively create the next iteration of the course to be offered in Spring 2021. We converged on the existing

Strategic Vision course as an opportunity to deliberately apply design thinking to our own course design and review process, and for teaching design thinking as a critical problem-solving tool to all EMBA students. We reframed the Strategic Vision class as a design thinking course, using design thinking both as the methodology to build the course, and as a methodology to teach students and the organizations we partnered with to leverage this human-centered approach. The new course would be a requirement for all students. It needed academic scaffolding, clearer objectives, more aligned processes, and structure, and many more projects each year. Clients needed more guidance as to what constituted an appropriately scoped problem, a consistent process for submitting challenges, and clearer expectations. This third prototype was created as a collaboration with three new faculty members, leveraging what we had learned from the first two iterations.

We began ideation prior to the COVID-19 pandemic and decided that we would continue despite the uncertainty of the course delivery conditions. The next iteration of the course was delivered as a hybrid model in January 2021 during COVID-19, and Michigan State University protocol required that students be given the option to attend either onsite or virtually, with variability each course session. An additional complexity was that the program began a third hybrid format option that year, so course design needed to account not only for individual student choices, but also for a subset of the students whose intended format was 50% on site half-day sessions, and 50% asynchronous between sessions.

Given the goal of expanding on earlier iterations to impact all students, we designed a more structured pitch to a broader set of potential clients. We intentionally sought out a combination of non-profit organizations, small start-ups, and large corporations. In total, we needed twenty-four projects and brought on an additional team member to be the point of contact with clients – both in terms of securing projects and managing these relationships.

While the first iteration received positive feedback from students and from clients, we learned that students needed more context, more time to coordinate with the many individuals involved, and more clarity as they worked to manage this along with the other program and personal demands. We realized that the timing within the program was not ideal for working executives and moved the course to students' second fall rather than their last semester.

5.4. Iteration Four and Five (2020-2022)

Given the feedback from the previous iteration, we moved the course to the fall semester of the students' second year for Iteration Four. This also allowed us to provide their book *Change by Design* (Brown, 2010) as a summer read and we added a preview of the content and a corresponding design thinking activity before the class began to seed the design-thinking approach to problem solving. We wanted to ensure we could replicate the excitement and feedback we received in the first run of the course and improve the experience based on feedback. The uncertainty of COVID-19 lessened, and what emerged was the need to deliver the course in both the traditional

every other weekend format and the new Flex format where students met only twice onsite, completing the balance of each course asynchronously.

Iteration Five (Fall 2022) stabilized the previous processes. Based on client and student feedback, we revised how we introduced the project opportunities to give more clarity around what deliverables should be expected and what types of challenges were most appropriate. We provided examples of successful projects to better set expectations for students and clients. We repeated the summer book distribution and pre-event design thinking activity, and yet after reviewing this with faculty, we determined that there was no evidence that these efforts were making a positive impact.

5.5. Iteration Six (2022-2023)

This is our most current version of the experience (Fall 2023). This year, we have transitioned to new course books (Kelley and Kelley's *Creative confidence* and Lewrick, Link, and Leifer's *The Design Thinking Playbook*) and have stepped back from providing the book before the summer break. We have also narrowed the number of projects for each cohort so that each client will receive multiple pitches and faculty will have fewer challenges to navigate. Through each iteration, we have embraced fundamental concepts of collaboration, embracing uncertainty and our full experience reflects the trial-and-error prototyping spirit of the design thinking process.

6. Course Assessment

To assess the different iterations of the course, we utilized a triangulation assessment to review sets of data collected through different methods to achieve an accurate estimate of qualitative results for the outcomes of the course (Oliver-Hoyo and Allen, 2006). To do so, we looked at: i) project partner feedback, ii) student course evaluations, and iii) faculty reflection.

6.1. Project partner feedback

In our early iterations, the feedback loop with project partners was conducted through informal conversations. The program lead met with each project partner to receive their feedback around three elements: completion of project, creativity of proposed solution to their business challenge, and explanation of design thinking process. We then incorporated that feedback into the next iteration of the course. As the program evolved, the feedback process transitioned into a personal email with each client. We were interested in qualitative, open-ended responses rather than surveys because of our small sample size and the personal relationship we had established with partners. Feedback is generally constructive and positive, though we ask project partners for improvement and critical feedback from them. Examples of statements from project partners in the Fall 2022 iteration included:

They brought a fresh yet informed perspective to the wonderful but sometimes confusing space of non-profit (Project partner A, Fall 2022).

I enjoyed the process, though I found the end result to be less impactful than the previous iteration of this project our organization did. That could be attributed to a number of reasons, whether it was the group's composition, the degree of difficulty of our problem statement this time or working with the remote cohort vs the in-person one. Overall, I consider participating again (Project partner B, Fall 2022).

Overall, we are impressed with the quality of work the student team put together. They were professional in their communication, and their recommendations affirmed some needs we have come to mention internally surrounding the problem statement we provided. I think in some ways we were a bit disappointed when the project ended- it has been a pleasure working with the EMBA students, and we would have loved the opportunity to move through prototype testing with the team (Project partner C, Fall 2022).

We would love to be considered again should you have the need for another design thinking class project. By this time next year, we hope to be in a different phase of development with totally new challenge statements (Project partner D, Fall 2022).

As we transition to a larger set of projects and partners, we are working on adding a simple survey to standardize some of the project partners' feedback, soliciting ideas on what worked best and what could be improved, as well as their likelihood of recommending the experience to other companies. Our intent is to settle on an instrument that can be used consistently for comparison.

6.2. Student evaluations

Each year, university-wide course evaluation captures scores and open-ended comments about students' experience of a course. The table below describes scores for the Strategic Vision course in the EMBA program, as indicated by students in the course. The numbers below represent average scores on a 1 to 5 scale, 1 indicating a low rating and 5 indicating a high rating.

Table 3: Student evaluation

	The course increased my understanding of the subject matter.	I gained useful knowledge and skills from this course.	The subject matter of this course challenged me to learn.	The overall quality of this course was excellent.
Fall 2015	3.83	3.72	3.83	3.77
Fall 2016	4.34	4.28	4.21	3.96
Fall 2017	3.63	3.93	3.76	3.67
Fall 2018	3.94	4	3.9	3.82
Spring 2018	4.16	4.16	4.13	4.13
Spring 2019	4.45	4.45	4.63	4.5
Spring 2021	4.11	4.07	3.87	3.98
Fall 2021	4.32	4.36	4.16	4.31
Fall 2022	4.01	3.93	3.64	3.91

Student open-ended feedback typically ranges from course format to specific activities. For instance, one student observed that “the course project seemed a bit short for enabling us to accomplish something substantial for the client” (2021) and another that “I leave this class with a lot of great problem solving and brainstorming tools to bring back to my job including crazy 8’s” (2022). In this past iteration, a common comment was that our book selection was not optimal, as expressed by this student who said they “don’t feel like it was helpful in driving the approach and protocols that help students to learn a new methodology. I’m more of a ‘just get it done’ type of person, with a creative flare. Maybe this book could be supplemental materials, alongside a more structured design thinking text” (2022). As a result, we transitioned to new reading materials for the Fall 2023 course, which now include a book on creativity accompanied with a design thinking playbook.

In many cases, students appreciate the design thinking approach to their project. One student appreciated its real-world applicability, saying that “it was great getting to work with a real organization to try and help them solve a problem versus using case studies” (2022). Another took away the practicality of active class work: “I loved the use of online whiteboards throughout the course- this was a new tool to me and very easy to see how effective it can be for recording and synthesizing a complex and varied process. I appreciated how much time in class was dedicated to active working time,” and yet another embraced the experimental aspect of design thinking:

This was my favorite class this semester. I loved being able to make an impact outside of the classroom. The instructor structured the class in a way that really allowed us to learn and experiment without fear of failure. This is essential for design thinking; I appreciate that the class structure mirrors the real-life application of the methodology (2022).

A variety of comments also addressed the need for guidance, such as “the only thing I would add is slightly more structure and guidance, because the process is new for most people, I don’t know what I don’t know, so the more information the better” (2022). Altogether, we utilize students’ course evaluations as a steppingstone for the next iteration of the course, making it essential for the team to reflect on each semester together and address the received feedback.

6.3. Team Reflection

Each year the three faculty members and program team have a course debrief to review feedback from both partners and students. While this meeting relies primarily on anecdotal feedback received by faculty or staff to determine if adjustments are needed, it also provides a human-centered approach to analyzing and triangulating data in a way that incorporates a variety of perspectives. Often, higher education course planning occurs in silos, with little communication amongst instructors, academic and support staff, and administrators. This team reflection is essential in promoting participatory processes that exemplify the design thinking approach the course embraces. Our conversations are then documented through team chats or planning documents for records. As a result of these team reflection meetings, coordination for the following semester becomes more seamless, communication is clearer, and both

faculty and administrators have a better understanding of student and project partner needs to plan accordingly.

7. Next steps

We have been successful at both retaining project partners and in attracting new partners. As we move into the next iteration, we are testing a new version of this which has two – three teams working on the same challenge project. This is intended to allow clients to have multiple solutions to consider, to allow faculty to have a deeper understanding and relationship with the clients, and to minimize the number and variability of the projects. Each faculty member this year will manage two-four clients, where they previously had up to eight.

As our instructional team became more familiar with the value of asking “How might we” questions, we began to use this probing framework routinely. How might we navigate COVID-19 and launch a new program format that positions us for future success? How might we adapt the course to industry needs? How might we do justice to the design thinking process in only eight weeks? We embraced a collaborative, open-minded mindset to embrace new ideas in higher education. We proactively sought diverse perspectives and multiple ideas, and we invited feedback from students and clients as we iterated on models. We also took quick action, knowing that we would review and improve, rather than waiting for perfection.

Given the effectiveness and impact of this approach to reframing and solving problems in higher education, we now use this approach regularly. Our next HMW question is How might we reimagine the EMBA experience to maximize the existing positive outcomes and give students more value? The collaborative and creative approach around this course has produced a climate that welcomes diverse ideas and perspectives. With each iteration we get better at developing a cohort of students who can leverage design-thinking as a creative problem-solving process in their organizations to better define real problems, brainstorm a divergent set of potential solutions, and then converge on actions.

Additionally, we have begun to leverage this iterative approach and the lessons learned in other programs and units. The new Center for Ethical and Socially Responsible Leadership in the College of Business is considering how to leverage our artifacts and process to iterate and pilot these for their work to further develop socially responsible and ethical leaders. We hope that this design thinking experience with the EMBA Strategic Vision course will support higher education initiatives that embrace uncertainty and error, play with initiatives that may not work, and invest in short-term pilots. In times of uncertainty, globalized markets, and rapidly evolving technologies, higher education will need to embrace rapid prototyping of courses that can have a real-time impact for students who are solving business challenges in complex times.

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