Integrating DT and Entrepreneurship: Case Study Universidad Mayor (Chile)

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Abstract A Design Thinking (DT) approach has the potential to empower young entrepreneurs whose focus is social innovation. DT may serve to help youth move toward efficient and effective action in their environment. Within the scope of the United Nations' (UN) commitment to global youth empowerment, this study is anchored in the Sustainable Development Goals for inclusive growth. We link theory with practice by examining two case studies related to DT as a tool of empowerment. While one case study was conducted in the USA, face-to-face before the COVID-19 pandemic, the other case study took place online, focusing on a young start-up in Kenya. A comparison of these two case studies offers an overview of existing DT principles that are context neutral. In addition, we examine specific characteristics that stem from context (COVID-19) and constellation (online). Taken together, theory and practice lead to a set of recommendations that, if implemented, are conducive to an optimistic outlook for Design Thinking in the UN in general and for youth empowerment in particular.

1 The Latin American Context

The world is in constant change and evolution, and our countries and communities must adapt to these volatile, uncertain, complex, and ambiguous scenarios. The terminology of our times, which seems to resound in every conference, seminar, and conversation, is the reflection of a wave that has been in constant motion over decades and pushed through the force of innovation and technology. This claustrophobic feeling and need for constant reinvention is found everywhere; however, if you add in a little more instability and an additional bit of social inequality, the need

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and desire to gain traction is stronger. Developing countries suffer most of these symptoms all at once, including many other local conditions.

Let us now focus on Latin America to put things into context. Latin America is an area of the world that is highly rich in natural resources, which at the same time has an ongoing impact on social democracies and definitions of how these countries identify themselves. Latin America shares Spanish as the predominant language, with Portuguese as an obvious and relevant exception in Brazil. Even if these countries share the same language, the difference intonation, slang, and pronunciation reflect the fragmented societies inside and among each country. Each country has a unique history, and to put it in a social constructivist way: our past experiences define our personalities.

Now the story will move into a specific country in this Latin American wilderness. Chile is a long country with the cold Pacific Ocean on the west and the imposing Andes mountains on the east; the driest desert of the world on the north, and Antarctica's ice on the south. These are environmental conditions where the need and desire for progress intersects their local reality. This country, which had almost two decades of economic prosperity and international exposure in the "*Chilean model*" has been in the news and media lately because of the social distress resulting from a push for change. From the outside, this could appear a contradiction. However, if we look closer at the issue, it becomes apparent that two decades of strong expansion have impacted the natural resources, income disparity, the rising cost of living, and much more and led to the current social uprising. These constraints and complexities provide relevant insights and a background context to understand the importance of this chapter's outcome and the impact of Design Thinking on an entrepreneurial mindset.

2 The Entrepreneurial Spirit

During the '80s, Chile was subject to several constitutional modifications to promote the country's development, many of these were a reaction to the first sign of disruption in the technological acceleration. This realization was the source of a generalized urgency to develop new workforce skills and expand the number of productive professionals to confront the new era. This push came from new private actors willing to participate in the higher education sector, and after several rounds of discussion and proposals, new universities came into being. Each institution was founded by people who believed in the value of education as an agent of social movement and transformation; however, the institutional missions, vision, and values were very different. This historical moment was when Universidad Mayor (UMayor) was born in 1988. As a private, non-profit university, it came to the industry to confront the need for qualified professionals in the technological fields. The initial degree programs UMayor were in engineering, architecture, and agronomy, with a declared and unusual focus at that time on science and technology. Over 32 years, the institution has evolved into becoming one of the country's largest higher education institutions, with over 43

undergraduate degrees in almost every field, in four colleges, Arts, Science, Humanities, and Interdisciplinary Studies. The institution has also become strong in research focusing on Life Science, Genomics, Aging, and Social Studies. The institution has accomplished international achievements, including fulfilling the requirements for institutional accreditation in 2010 by the U.S. Regional Accreditation Agency, Middle States Commission on Higher Education.

The previous examples show how for over three decades Universidad Mayor has been a pioneer in developing new initiatives and ideas to promote education and improve the institution's quality. Now, if you ask around about the term *Espíritu Emprendedor* (Entrepreneurial Spirit), no one knows exactly when or how it came to be. Several members and ex-members of the institution declare themselves the owner and originator of the term. Each one declares his own history and reason behind this idea. The most "reliable" history is related to a discussion, which included the founding members and the board, in around 1992 about Chile's complex scenario and how the industry could not hire, retain, and offer good jobs for everyone, including Universidad Mayor graduates. There was a lack of opportunities, which was also heightened by strong fluctuations in the market. It was at this time that the institution realized the need to develop certain characteristics, skills, and competencies to engage the world with a different approach. It was a moment that could be defined as when the Entrepreneurial Spirit was born at Universidad Mayor, and it became part of the logo, slogan, and educational model. These were the early days of entrepreneurship as a word and a concept, which was closely related to the capacity to establish a business. The entrepreneur was not such a well-defined individual. It was more about a way of living and resembling a person who can take risks and pursue dreams. While the institution's objective was to develop certain characteristics in the students' profile and engage in the entrepreneurial initiative; the focus was mostly fixed on generating the "businessperson." This was defined as someone who could successfully set a business initiative and generate opportunity in the challenges of the world. As will be shown, things have changed dramatically since the introduction of Design Thinking into the UMayor educational model.

3 A New Perspective

Before 2020, most traditional institutions of higher education were hesitant about how much technology and online education they could include in their core academic operation—before hitting a wall with academics and students. Today, we know this much better. Universidad Mayor was once again a pioneer, specifically in technology, in having its core operation supported by the world class solution SAP.

It was April 2017, the institution was invited to participate in the SAP world summit for higher education, which was held in Amsterdam. During the meetings, several participants approached the representatives of Universidad Mayor, but one conversation among them was the beginning of a unique journey. A gentleman from a highly prestigious university in Latin America explained how he had participated

in an experience that completely changed his perspective and how this was an institutional initiative where all top management was involved. He mentioned the words "transformational" and "mind-blowing." The first impression was between awkward and unusual, but his enthusiasm and the nature of his talk were striking. In particular, he mentioned the need to experience the process to understand its full value and potential and reflect on how you must confront a world full of complex issues to be tackled. To make it clear, one of the Universidad Mayor representatives is one of the authors of this chapter, serving as vice-president for development and management. The idea from this conversation stuck with the VP, which gave way to even more surprise when he learned that the experience was provided by a "cousin" of SAP, the Hasso Plattner Institute (HPI) in Postdam, Germany.

After long conversations with top management, by the end of 2017, the VP joined a cohort at the HPI D-School following the recommendation from a fellow academician at the summit. The second phase of the program at HPI described the interaction with the until then unknown (for him) concept of Design Thinking. The methodology involved several challenges that had to be confronted through Design Thinking as well as finding alternative solutions to solve these issues. The model included the possibility to establish a creative open collaboration, through a highly diverse team to confront issues, where no one person holds the truth. The solution should come from a dialog with the user, and the final product could go back to any previous stage of development without any shame or regret. This was the *AHA* moment for the VP, who saw the potential of this methodology as an opportunity to strengthen the skills of the students at Universidad Mayor and serve the full array of challenges that the country offers to develop new initiatives, services, products, processes, and more. He felt the urge to share this idea with the institution and bring the model to the university and the country.

The institution supported the idea and open to learning more about Design Thinking and if it could be a good fit for the university and the students. From the side of HPI, the idea to establish the first formal D-School in Latin America was also well received; however, many issues remained to be solved before any formal cooperation could be attempted.

4 From the Idea to the Plan

When you think about a trip, you know that it involves much more than just the flight and the hotel: It is about the experience. This was exactly what the HPI team were seeking in the Chilean and Universidad Mayor experience. A small team from HPI visited Chile in January 2018 to get a feeling about the country and the soundness behind the institution's idea of establishing a D-School. The visit was planned; meanwhile, the institution was learning more about what was meant by a "School of Design Thinking," and how such a school (place) could contribute to the university's educational model. During this time, the institutions' evaluation team expanded, and more and more people joined this process of deep reflection. This resulted in a shared

opinion of how Design Thinking as a methodology could enable not just the students but the whole community to engage in a collaborative process to confront problems openly and creatively—a great opportunity in a country with many needs.

The HPI team was able to check the country's potential and the desire of the institution to integrate Design Thinking as more than just a methodology. This meant that it should be embedded into the core values of the organization. This effort will require introducing many artifacts, spreading beliefs, and then being fully included in the culture through institutional values. Not an easy task to achieve, including the operational issues about language and cultural localization of the methodology. Chile is clearly not Germany in language and culture.

When the cooperation was fully established, the three-year plan included several stages and milestones before it reached the point where Universidad Mayor was entitled to open the first operational Latin American D-School. The project's first step was the critical mission of defining how we would achieve this objective, the scope, constraints, needs, desires, inspirations, and purpose of this unique initiative. A team selected by Universidad Mayor was sent to Potsdam where the first formal interaction between our organizations took place. The team included the VP of Development and Management, the Director of Entrepreneurship, and a group of academics and researchers who later became the first coaches at UMayor D-School. The team spent a whole week developing the concepts and ideas needed to attach the D-School to the university's core values, which involved a review of the context, profile of the community, and alignment with the institutions' mission and vision. The purpose statement produced for UMayor D-School was the following:

> We believe that design thinking fosters the required character, skills, and motivation to develop an **entrepreneurial spirit** to enable people/students to add value to society by tackling complex problems.
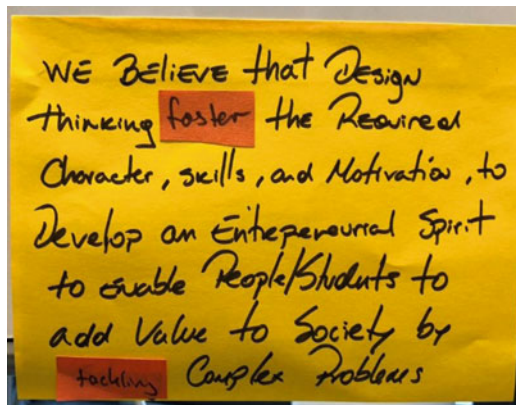
This declaration is the fundamental definition of how Design Thinking would be introduced at Universidad Mayor. The next paragraphs will dig deeper into the who, when, and how the model was integrated with the concept of "entrepreneurial spirit."

5   Our Mindset, the First Design Thinking Coaches and Workshops

As mentioned before, entrepreneurial spirit is part of Universidad Mayor's slogan and therefore its core, so to implement a D-School inside the institution, we had to begin with the alignment of the slogan and the results of a design thinking process.

Historically, education has been approached in a way that knowledge is the focus. The educational system seeks to imbue students with knowledge, but these times, we are living in now need students/professionals who are also confident, creative, and able to work and create with others. Here is when Design Thinking helps us to bring back the focus to the learning individual because by going through a design thinking process, a set of character, knowledge, and capability to learning to learn is developed, consistent with our definition of entrepreneurial spirit which is the expression of a set of skills and attitudes that converge in a professional who is capable of detecting needs and creating innovative solutions that add value to themselves and the environment.

By entrepreneurial spirit, Universidad Mayor understands that beyond offering an education that allows the individual to create a business, the focus must be on developing people to have an entrepreneurial attitude toward the world, who are then able to work with others on a team to be resilient, empathic, and willing to understand failure as a way of learning from mistakes and improving and detecting problems as opportunities and solving them. The implementation of a D-School inside Universidad Mayor allowed the institution to use Design Thinking to generate spaces for the community to experience the mindset and understand how entrepreneurial spirit is developed.

The beginning of the implementation of our D-School started with the first "ambassadors," Design Thinking Coaches who were professors from the Faculties of Science, Humanities, Arts, and Interdisciplinary Studies. An institutional committee was created made of the Dean of Interdisciplinary Studies, the Director of Entrepreneurship, the Director of Educational Innovation, and representatives of the Vice-Presidency of Academic Affairs.

The first cohort was 14 coaches that were trained by the HPI for 3 weeks on a process made of theoretical and practical experiences. Coaching and shadow coaching training was crucial for our coaches and every day ended with reflections and analysis of every participant to assure that they develop the knowledge for the design thinking process and also the mindset of a D-School.

The coaching training process also was used to iterate and define our first workshops; a half-day day workshop and a two-day workshop.

First, the HPI representatives worked with UMayor coaches to create and test a half-day Design Thinking workshop. This workshop aims at providing a short but meaningful exposure for students to the methods and mindsets of design thinking. This exercise was designed to target all incoming freshmen students as part of the existing orientation week at the Universidad Mayor. After completing the workshop, students will be able to say: "I have experienced design thinking and the entrepreneurial spirit."

Second, the work was focused on putting together and test a two-day Design Thinking experience. The objective of this educational offering will be to provide a basic but nonetheless comprehensive introduction to the methods and mindsets of design thinking. The two-day design thinking experience wanted to enable students to experience and explore design thinking by embarking on and reflecting on a design thinking project. After the experience, students should be able to say: "I have understood what design thinking can do for us and how to tap into a business opportunity."

Here was the first link to our Entrepreneurship Programs by applying a design thinking workshop at the beginning of an entrepreneurship process to define a business opportunity based on customers' needs.

6 An Important Step, Institutionalizing D-School Universidad Mayor

After the training of the first cohort of coaches and the definition of the workshops, an important decision was needed: Where was the D-School U Mayor going to be formalized? The answer was under the Faculty of Interdisciplinary Studies due to his mission to train people who integrate creative, scientific, and critical thinking for the generation of interdisciplinary proposals, initiatives, solutions and products in undergraduate and postgraduate degrees at the Universidad Mayor. This, through the creation of academic programs that promote and strengthen entrepreneurship, innovation, and research in conjunction with the Faculties of Arts, Sciences, and Humanities. Within the faculty, the D-School was structured under the Entrepreneurship Department who is responsible for designing and implementing programs that develop creativity, entrepreneurship, and innovation in the Universidad Mayor's community, strengthening its entrepreneurial spirit by positioning a culture of entrepreneurship and innovation.

The D-School's kickoff was in March 2019, where the first workshops were held in a half-day and two-day format for students of different undergraduate levels. On this occasion, HPI Coaches accompanied the D-School which resulted in a resounding success, both from the perspective of the students and from the recently certified D-School Scholars.

Then, in July 2019, HPI Coaches visited the D-School again to train the second generation of D-School Academics and D-School Administrative, who became part

of the great D-School family, whose role is to permeate the Design Thinking Mindset into the community of the Universidad Mayor.

Nowadays, D-School of the Universidad Mayor is the first Design Thinking School created in Latin America who seeks to enhance skills such as creativity, leadership, proactivity, resilience, and teamwork.

The user is the main axis of the work, and the results are focused on solving complex problems, creating high-impact solutions.

- Encourages a proactive attitude to solve problems from a creative and sustainable perspective.
- Allows the creation of new products, services, and business models through an innovative mindset.
- Accelerates processes in project development by making progress at work tangible.

The D-School UM functions as a unit with its main headquarters in Santiago, and a headquarters in Temuco. Both venues are governed by the same guidelines and level of certification of their academics. Through its actions, D-School contributes directly to the mission and vision declared by the Entrepreneurship Department.

The main functions of the D-School are:

- Collaborate with the fulfillment of the Universidad Mayor seal by offering its community of students, teachers, and collaborators, through activities based on the Design Thinking methodology, in line with the General Education Model, as well as the Teacher Strengthening Plan declared by Universidad Mayor.
- Promote the development of the D-School Academic Unit through the training of its current academics as well as the certification of future D-School academics.

7   Connection with Universidad Mayor's Academic Model

When D-School UMayor was created, the main purpose was to allow the development of the Entrepreneurial Spirit and therefore becoming part of the Universidad Mayor's DNA. To do so, a university's DNA is their academic curriculum, in this case, called "Curriculum Mayor" an academic structure dictated by the Vice-presidency of Academic Affairs that provides guidelines and conditions for the generation of any study plan and curriculum by a General Education Policy.

UNESCO in 1998 mentions in the World Declaration on Higher Education that if adequate higher education and research institutions are lacking that form a critical mass of qualified people, no country will be able to guarantee an authentic endogenous and sustainable development, and developing countries and poor countries will not be able to bridge the gap between them and industrialized developed countries. As a result of the foregoing, it is understood that the knowledge society is necessarily a teaching-learning society, of the universalization of access opportunities to higher education and of the validation of knowledge through research functions, discovery and innovation, for which the role of universities is very important in

the social, political, and economic development of nations, they must demonstrate that it is not only the continuation of basic and secondary education but that their objectives are oriented to full and active participation in development, promoting a social projection. This new scenario generates more competitive work contexts, so twenty-first century professionals must possess a set of characteristics such as leadership, entrepreneurship and management skills, use of ICTs, communication, and collaborative work, among others.

The general education policy of Universidad Mayor expresses as part of the purpose of its mission as the training of people through educational experiences, which highlights among its main among its main areas of importance: ethics, entrepreneurship, innovation, leadership, and respect for cultural and social diversity. In this sense, the educational model of the Universidad Mayor presents guidelines and institutional values that illuminate the task of training students and assume commitments toward the contribution of graduates that allow them to be a contribution to society.

From its foundation until today, the Universidad Mayor has been developing and enriching its educational model, thus, continuously, and consistently seeking fulfillment of its mission. To this end, the "Curriculum Mayor" arises as an educational philosophy, which adjusts the training of professionals to the requirements of an updated and balanced education, while enriching the student's university experience, which coincides with a particularly important stage of its development. The university is convinced that each graduate student is a broadly trained individual, in terms of knowledge and skills, understanding of cultural diversity and attitudes to address problems in the ethical field and at the same time prepared to practice a profession successfully in a global and competitive world.

D-School U Mayor is linked to the "Curriculum Mayor" through two main actions:

- Collaborate with the fulfillment of the competencies declared by the general education policy
- The promotion and development of educational innovation through the continuous improvement of subjects or units.

The general education policy at Universidad Mayor considers that students upon graduation have developed a series of competencies that contribute to their personal development and that of the community in which they are inserted. This is how the five domains have been established that seek to comply with these competencies:

1. Effective communication
2. Self-learning, personal development, and critical thinking
3. Entrepreneurship and management with social responsibility
4. Ethics
5. Scientific Reasoning.

Each domain establishes and defines an associated generic competence, which will be developed by the students through the different study plans. Additionally, the General Education Model establishes the academic units responsible for the fulfillment of each competence at its different levels. For the development of the 3rd

Domain, Entrepreneurship and Management with Social Responsibility, an important academic unit was formed, the "Academic Department for Entrepreneurship and Management," led by one of our coaches and with the purpose of ensuring the correct development of the domain and the curricular incorporation of the programs of the Entrepreneurship Department.

The work of the D-School includes supporting those units responsible for the fulfillment of the declared competencies, at their different levels of escalation. This is how the D-School makes available the activities that have been designed and implemented to collaborate and jointly develop a plan that best suits a specific unit/career it. The offer of Design Thinking workshops and their learning results have been validated by the Vice President of Academic Affairs.

8 D-School Results on Workshops and Curricular Incorporation

Since the kickoff in 2019, D-School UMayor has achieved important milestones and results that position it as an institutional reference in the implementation of methodologies, mindset, and formalization in study plans and academic links:

- Incorporation in the course University Academic Competences in 2019, a course that is on every academic plan, which means that these courses are taken by every freshman student. During 2019, the first project was implemented to incorporate creativity into the DNA of the Universidad Mayor through the Design Thinking methodology. For this, 59 workshops were held in a half-day format, between March and October, gaining the attendance of 1,891 first-year students.
- Incorporation in the course University Academic Competences in 2020: During the first semester of 2020, six modules were introduced, specially designed for students to get to know and experience the design thinking process. The students were guided by professors of the subject, who had previously been trained with fundamental tools, in the Design Thinking in the Classroom course, within the framework of the Teaching Strengthening Program.
- Incorporation into the course University Academic Competences in an online format. During December 2019, an online activity was implemented so that students who could not participate in the face-to-face experience, could experience some of the concepts and fundamentals of Design Thinking in an online format. For this, a virtual classroom was set up with a reading different documents and videos that compiles the main concepts and elements of the Design Thinking mentality and process, and an applied case: a quiz with simple application questions following the dynamic philosophy of the D-School; and finally, an optional activity for those who would like to exercise what they have learned. This is something they (can/) do it in an entertaining and practical way. Under this modality, coverage of 216 students was achieved.

- Redesign of the Business School's course: The D-School and the Business School worked together on the redesign of the subject "Business Games II," based on the Design Thinking methodology, implemented during the first semester of 2020 for the commercial engineering and administration engineering careers.
- Professor Strengthening Program: Design Thinking Course in the Classroom: This course is framed within the guidelines published by the university in The Framework document for Quality Teaching and seeks to contribute directly to some of the criteria that are indicated as priorities. It combines theory with practical spaces, allowing participants (/students) to know and put into practice the six phases of Design Thinking.
- Design Thinking in the "CAU Classroom for Professors": In the context of the redesign of the subject University Academic Competencies (CAU), from March 2020, teachers who complete the course will be able to understand the basis of the methodology and will have the necessary tools to integrate Design Thinking into their subject in an autonomous manner. The course includes the use of the Virtual Classroom for all registered participants. Here, they will be able to access the course material, complementary material, and the format to be used for the final report, which will be evaluated to obtain the approval of the course. In the first version of this course, 14 teachers participated in Santiago and 9 in Temuco.

Design Thinking in the Classroom for Professors (general information): Professors who complete the workshop will be able to count on a battery of tools of this methodology, among which they will be able to select the most pertinent to plan a class or a unit of their subjects. The first version of this course was held on two dates, with the participation of 80 teachers in Santiago and 35 in Temuco. In the period March 2019 to January 2020, a total of 2,728 participants have lived the D-School experience through the different types of workshops:

D-School participants					
First-year students	Undergraduate and graduate students	Students in total	Professors	Administrative staff	Alumni
1.891	369	**2.260**	**175**	**149**	**144**

9   Our Next Steps

After the implementation of our D-School, the next steps were to use the design thinking method, its mindset, and our coaches to explore other areas to improve our Entrepreneurship Programs. For this reason, the Entrepreneurship Department has set up two other programs:

La Fábrica: Entrepreneurship program of the Universidad Mayor since 2017 was responsible for developing solutions to real problems, through its support in the development of projects and access to national and international collaboration networks. La Fábrica has Incubation Processes, Mentor Networks, Coworking Spaces, and different contents for Universidad Mayor's community. After the implementation of our D-School, one of the coaches took charge of these programs to improve most of the activities with the D-School's mindset and workshops.

Protolab: Laboratory of design, experimentation, and materialization of ideas with social impact, which by stimulating creativity and innovation, based on science and technology, allows the generation of functional prototypes. This program was also led by a coach and now links prototyping with design thinking and disciplines like computer programming.

Dr. Mario Herane Vice President of Management and Development at Universidad Mayor.

Mario Herane holds two main responsibilities at the institution. From the management side he is responsible for the overall operation of the institution including the areas of human resources, finances, administration, and infrastructure, and from the development area he is in charge to project the organization into the future through marketing strategies, communications, local and international partnerships, new projects and initiatives, and technological innovation. For over 15 years he has been leading educational institutions in Chile and abroad, with a strong focus on student success and their preparation for the needs of this new era of knowledge. Mario Herane had a firsthand encounter with DT at the HPI in Potsdam, and from then on, he felt in love with this collaborative methodology and its mindset. The greatest challenge of DT is that it can't just be described, you must experience it to understand its potential. A helpful insight is the value of personal relationships and trust to enable organizations and change paradigms, by sharing and inspire others you can distribute leadership and gain traction for change.

Ismael Espinoza Director of Entrepreneurship at the Universidad Mayor.

Ismael Espinoza is responsible for designing and implementing programs that develop creativity, entrepreneurship, and innovation in the Universidad Mayor´s community, strengthening its entrepreneurial spirit by positioning a culture of entrepreneurship and innovation. For over 10 years he has gained experience in entrepreneurship by developing different programs that aim to promote the generation of Business. After becoming a design thinking coach at HPI he started to work in education by co-designing with Schools the different approaches to link design thinking with the academic plans. The greatest challenge to using Design Thinking in education has been to translate the methodology in ways a professor could

understand and appreciate their impact and results. A value insight through this journey has been that human-centeredness approaches should first be lived and then learned/applied because the Mindset needs to be appreciated and understood before the theory.