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Design Driven Management Education

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*Learning is like breathing;
it involves a taking in and processing of experience
and a putting out or expression of what is learned.*

(Kolb and Kolb, 2005, p. 208)

Abstract

Design Driven Management Education is the title of a project which aims at analysing how design, and in particular Design Thinking mind-set, had introduced new paradigms of learning in a class of management students. Students were just enrolled at the first year of a Master programme in Innovation and Marketing at Ca' Foscari University, Venice.

The dissertation starts with a focus on the need of business schools' *creative destruction* (Eyring and Christensen 2011) to develop more valuable and emphatic leaders able to be competitive and impactful in current complex ecosystem. To gain these abilities leaders have to become reality's smart interpreters. The experiential learning would serve the purpose, but business schools are lacking in this area of competence.

To meaningful redesign management education, the Design and Innovation Management (D&IM) module stands as an attempt to give marketing management students the possibility to become familiar with the design attitude and tools to understand consumers' needs and to foster innovation.

The investigation commits to a qualitative inductive research the role to outline the entire process. Precisely, the thesis explores the story of learners' reactions to each Design Thinking space mixing theoretical references to workshop activities, diverse qualitative data to ethnographic research. The narrative is intertwined with many vignettes to depict the story as realistic as possible.

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Introduction

Who am I?

I am not a teacher neither a researcher. I am a master student struggling with the final dissertation of her studies. I am not only a marketing student struggling with the dissertation of her Master programme on Innovation and Marketing, but I am a learner, who lifelong wants to keep this feature deeply.

What is the role of education in my mind?

Education has always been a keyword in my life. Why? Because I strongly believe that it helps shaping people's minds to become better persons and design new ways to make the difference for themselves as well as for the planet.

“Education is 1. The system of teaching people, usually at a school or college; 2. The gradual process by which a person gains knowledge and understanding through learning; 3. The knowledge or training that you have gained through formal and systematic study; 4. The field of study concerned with theories and methods of teaching; 5. The general area of work that is concerned with teaching people, especially in school or college.”

(Sinclair, 1992, p. 450)

I embrace all the definitions proposed above and I would try to combine them highlighting different aspects. Being education the field of study related to theories and methods of teaching, it is consequently connected to school's purpose. School or college are not the only environments that fit the world of education. Actually, education is involved in every day experience and it can be associated with an endless process of learning that moulds human characters.

My scholastic educational choices

During High School my choices drove me through humanistic studies. Moving on, I had never thought to attend any statistic class during my Bachelor degree, but that actually happened. I discovered new ways of thinking! The most recent choice was

about the Master programme in which I saw a sort of direction for my future and in which I still see my way.

Again, here I am. I wanted to decide the topic of my final dissertation, but I did not. It was not a decision, it was an inner perception growing through my thoughts and actions, exploding in the possibility to shed light on what I desire to become in the next years. If you ask me about my personal vision within ten years I am able to daydream a lot, saying I would like to be on my way to become a designer of innovative teaching methods to coach learners to face work world's complexity and disorientation. Dreaming, I bumped into the first course of my Master programme: Design and Innovation Management. It was the first time I had to do with the extended world of *design*. I was excited and thankful to be part of an experiment dealing with the introduction of new paradigms of learning in Management education to cope with the uncertainty of today's business world.

In the last years, in the field of business schools and universities, some crucial questions raised:

- Are business schools legitimate? (Pettigrew and Starkey, 2016)
- What is the real impact of business schools? (Pettigrew and Starkey, 2016)
- What are universities for and what will they look like in the future? (Collini, 2012; Barber, Rizvi and Donnelly, 2013)

In the 21st century, universities assumed a paradoxical characteristic: from one side, they have never been that considerable, various, with such a lot of students enrolled, but from the other side they have lost their identity and in some way their educational purpose. What is the benefit of a university education? (Collini, 2012). The scepticism surrounding this query is unprecedented.

Both academics and management experts doubt business schools' programs and their importance to practitioners (Bennis and O'Toole, 2005; Ghoshal, 2005; Mintzberg, H., 2004; Pfeffer and Fong, 2004). Stressing the focus on business schools, Eyring and Christensen (2011) single out a "creative destruction", especially needed to be competitive and impactful in current complex ecosystem. The creative destruction should be matched with leaders who "bring the best of

themselves to support and enable others, ensure the organizations they work with achieve at the highest level, and in doing so, contribute to society.” (Crossan *et al.*, 2013, p. 291). Higher education is “not simply a set of private benefits for those who happen to participate in it” (Collini, 2012, p. X, introduction) and for this very reason it has to develop students’ characters qualified to make positive changes in tomorrow’s business world. As a consequence individualism would be contained (Krishnan, 2008) and morals, values and universal virtues would triumph influencing business’ choices (Crossan *et al.*, 2013).

Although many schools have admitted that *how* to teach could be even more relevant than *what* to teach to enrich leaders’ soft skills, criticism around the actual function of business schools is still high. Are they moving towards other oriented-value systems or are they merely supporting self-oriented values and competition? Taking into consideration the process of learning there are lots of chances to develop fair characters across accounting, finance or marketing courses. The real hurdles concern (i) the faculty members’ willingness to introduce more demanding, but valuable courses and (ii) the *how* question, *how* to coordinate the course (Crossan *et al.*, 2013). Additionally to this lasting hurdle, Kolb and Kolb (2005) address the issue of business schools’ ineptitude to strengthen experiential learning¹. The lack of experiential learning adversely affects students’ self - critical abilities. To meaningfully redesign higher education courses, enhancing experiential learning, there is the necessity to shape learning spaces “that promote growth producing experiences for learners.” (Kolb and Kolb, 2005, p. 205). The creation of learning spaces aims at giving birth to different outputs significantly important in the process of experiential learning: (i) conversational learning²; (ii) development of

¹ “Yet experiential learning is above all a philosophy of education based on what Dewey (1938) called a “theory of experience”. He argued that while traditional education had little need for theory since practice was determined by tradition, the new experiential approach to education needed a sound theory of experience to guide its conduct.” (Kolb and Kolb, 2005, p. 193).

² Making space for good conversations during the lessons, gives the chance to share observations and interpretations to be better involved in the experiential learning (Keeton, Sheckley, & Griggs 2002; Bunker 1999).

expertise³; (iii) acting and feeling⁴; (iv) feeling and thinking⁵; (v) inside-out learning⁶; (vi) taking charge of one's learning⁷.

To face business schools' problems and an increasingly complex and turbulent business environment, one of the latest and most interesting methods comes from the world of *design* and gives management students the possibility "to think broadly about challenges and specific problems, recognizing the vital importance of developing a deep understanding of users in addressing management challenges, and recognizing the potential contribution of the ideas and the knowledge of others" (Pettigrew and Starkey, 2016, p.658). Also, Boland and Collopy (2004) stress the importance of managers' familiarity with the design attitude. The design attitude towards problem-solving does not consist in finding a solution among alternatives already available, but in designing the best solution ever to that problem, contributing to human betterment. This active problem-solving attitude converts each project in an opportunity for satisfying the entire community which it is addressed.

³ During the experiential learning cycle is quite crucial to be thrown in the so-called *spiral of knowledge* where what is learned is subsequently applied to different and more practical context to test students' abilities (Bransford, Brown, & Cocking, 2002).

⁴ "Nothing takes root in mind when there is no balance between doing and receiving. Some decisive action is needed in order to establish contact with the realities of the world and in order that impressions may be so related to facts that their value is tested and organised." (Dewey, 1934, p. 45). Supporting Dewey's quote comes the biology and biochemistry Professor Zull (2002), who assess action as the last, but most important element of the learning chain because it helps connecting the inner sphere of impressions and thoughts with the external sphere of experience.

⁵ The essential role of feelings and emotions in the process of learning is claimed by many authors: Damasio (1994, 2003), LeDoux (1997) and Zull (2002) are only few of them. Emotions affect memory. Positive emotions spur learning, while negative feelings freeze the process (Kolb and Kolb, 2005).

⁶ Connecting educational process with learners' experiences and interests improves learning efficiency (Hunt, 1987, 1991).

⁷ Self-authorship (Kegan, 1994; King, 2003; Baxter-Magolda, 1999) and self-direction (Boyatzis, 1994; Robertson, 1988) are two expressions highlighting the power of one's own knowledge and experience to continuously foster interesting learning process. Learners feel more involved and responsible of their learning choices to consciously succeed in their ambitions.

In *The Science of the Artificial* (1996), Herbert Simon introduces for the first time the word *design* in management literature. He describes design as artefacts for identifying problems, looking at possible solutions, grasping goals and therefore transforming existing environments into preferred ones. Henceforth, he discusses the central role of design in professional schools, including engineering, architecture, business, education, law and medicine⁸. The decades after World War II are strongly defined by a departure of design key role from professional schools' curricula, that instead approach toward natural science. Despite this separation, all is not lost because professional schools' nature origins from two sources: the world of practice and the world of science. "The professional schools can reassume their professional responsibilities just to the degree that they discover and teach a science of design, a body of intellectually tough, analytic, partly formalizable, partly empirical, teachable doctrine about the design process" (Simon, 1996, p. 113). Simon (1969) calls for an opportunity in management education. He asks for a balance in business curriculum combining the scientific analysis, involved in analysing phenomena into their elements, with design, entailed in intuition, synthesis and judgment. The magic formula needs a mixture of discipline and practice to serve specific purposes, but what is especially missing is a deeply understanding of the design process itself.

Management education have to provide for this lack. Also, Lester *et al.* (1998) require a management curriculum where problem solving skills are matched with humanistic skills because "management would need to be viewed as much as a liberal art as a science." (Lester *et al.*, 1998, p. 182). Mintzberg (2004) proposes a framework in which art, craft and science are blended together in the practice of management. Then, the systematic analysis is integrated with creative synthesis and practical experience.

⁸ "Engineers are not the only professional designers. Everyone designs who devises courses of action aimed at changing existing situations into preferred ones. [...] Design, so construed, is the core of all professional training; it is the principal mark that distinguishes the professions from the sciences." (Simon, 1996, p. 111).

“We are on the cusp of a design revolution in business. Competing is no longer about creating dominance in scale-intense industries, it’s about producing elegant, refined products and services in imagination intensive industries. As a result, business people don’t just need to understand designers better – they need to become designers.”

(Martin, 2004, Rotman Magazine in Martin, 2013, p. 9)

Martin (2004) highlights the role of design in business’ reality and he states that, in order to be internalized and effective, design has to invade everything business students do (Dunne and Martin, 2006). In this way, the tendency toward innovation in management education would be massive.

After this short overview about management education’s needs for practice fields and active learning, I come back to my first Master class on Design and Innovation Management at Ca’ Foscari University in Venice. I am excited I took this Master programme! It tries to face the complexity of business world in a very functional and innovative way, and aims to give to management students some useful tools to collect and interpret interesting insights about what they study. It started in September 2015 introducing the role of design in everyday experiences and describing how can it be a driver to foster innovation (Verganti, 2003; Von Stamm, 2004; Brown 2009; Martin, 2009; Lockwood, 2010). From a controversial point of view, from one side Italian firms are afraid of innovation because it is necessary linked with an uncomfortable change in their business models, but from the other side they are desirous of innovation perceiving its key value to survive in the increasingly competitive and knowledge-created environment in which they are set.

“What we need is an approach to innovation that is powerful, effective, and broadly accessible, that can be integrated into all aspects of business and society, and that individuals and teams can use to generate breakthrough ideas that are implemented and that therefore have an impact. Design Thinking, the subject of this book, offers just such an approach.”

(Brown, 2009, p. 3)

We, me and my colleagues, were surprised by the approach, by the unclear boundaries of design, a heterogeneous discipline whose aims seem to be steadily multiplying to various contexts. I still do not know if the right word to express our feelings and destabilization was *surprised* or even *scared* by the provocative approach, by the learning by doing.

“Big cultural shock as previous academic experiences seldom encourage you to take action. Maybe a small step for others but a big leap for me”.

(PB: S24, M, November 2015) (Coco, Calcagno and Lusiani, 2016, p.12)

We were listening to the concept of *Design Thinking*⁹ and we did not entirely understand it, neither its power nor its relevance for our lives and our field of study. During the teaching weeks, we were called to test the Design Thinking process and to give voice to our creativity. I remember I felt the time pressure and the initial difficulty to become totally familiar with design, both intellectual and practical tool to inquire into contemporary complexity; but exactly the unfamiliarity with Design Thinking stimulated my curiosity to go at the process fiercely. I trust learning as a way to grow up and a reason to give rise to new ideas and projects. It was a new world to explore, a chance to see things from a radical unconventional perspective without taking anything for granted.

“Design Thinking is 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.”

(Brown, president and CEO, IDEO, <https://www.ideo.com/pages/design-thinking>, Accessed on 28.06.17)

⁹ The term Design Thinking was born of a talk between Tim Brown, who was trained as an industrial designer in IDEO and David Kelley, Stanford professor and founder of IDEO. The professor was explaining that every time someone asks him about design and what a designer does he replies including the word *thinking*. Ergo the term Design Thinking sprouted (Brown, 2009).

Design Thinking starts with skills that designers internalize during their studies. These skills are supposed to help designers to answer to real human needs and create reactions both desirable, from a human point of view, and economically sustainable and feasible from an organizational perspective. Then Design Thinking moves ahead. Its second step turns around the potentiality to give its set of principles to diverse people, who have probably never thought before to perform the role of a designer. This is the power of Design Thinking: it can be applied to an immeasurable range of problems and organizations and it is not confined to the launch of new products, but it embraces “new sorts of processes, services, interactions, entertainment forms, and ways of communicating and collaborating.” (Brown, 2009, pp. 7-8). The continuum of innovation is conceived as “a system of overlapping spaces rather than a sequence of orderly steps.” (Brown, 2009, pp. 16). These spaces are identified as:

- inspiration, the problem or chance that incites the search for solutions;
- ideation, the process of generating, developing and testing ideas;
- implementation, the path that brings the project to the market.

Given the exploratory nature of Design Thinking, projects may loop back through the spaces more times until ideas get better and better (Brown, 2008).

Step by step my way of thinking changed and now, thanks to design dialectical nature I feel to have an advantage facing new challenges. I consider learning as the acquisition of essential instruments to be deftly managed to detect and frame new equilibriums in given circumstances. These circumstances expand in different directions, they are not circumscribed to a limited area. Both design theory and design practice help me to deal with reality and intricacies therein, but moreover they improve me to urge a new awareness of myself as well as uncommon ways of being. I discovered my changes during the experiences I lived after the Design Thinking workshop. For example, during the internship I did at the Ministry of Foreign Affairs and International Cooperation in Rome I had never thought to use some tools from the Design Thinking toolbox. Such a different setting from the previous one in which I tested at most Design Thinking framework, the university, project works, H-Farm challenges and then a diplomatic environment. I felt directly involved in a change inspiring not only my mind with original and creative

mechanisms, but also other people working with me. I proposed to face some problems using the tools I internalized and the results were unexpectedly good and rapid, involving more people in the decisional process. Facing the challenges, we started to think about what we knew about the problem, what was really real about what we thought to know and only after the observation phase we started brainstorming and developing new proposals. I found very exciting and inspiring to cooperate with people I did not know before and to do thing I did not really know how to do with reference to a design mind-set. Exactly for this reason I would stress the point that pedagogical value of design needs to be fully explored and to be adapted to many academic curricula in order to create a knowledge-basis shared among different scenarios. Additionally, I believe both teachers and students should constantly investigate what we are learning design for and thanks to continuously updated answers we would be motivated to carry on our researches and to improve cooperation among fields of study.

But I am not here to speak only about my changes.

During the second year of my Master studies I had the chance to be the tutor of the second edition of Design and Innovation Management class, launched in September 2016, and to cooperate with a Design Thinking consultant. I no longer had to decide the topic of my dissertation because it came out spontaneously. I had all the elements in front of me and my only tasks were to interpret them and to arrange all components in a cohesive discourse.

This thesis will focus on telling the story of the introduction of a Design Thinking methodology in the second edition of Design and Innovation Management class.

The launch of this mind-set in a management class reacts:

- ✓ to business schools' difficulty to bring good and positive leaders to the society;
- ✓ to companies' necessity to hire more designers of solutions than just managers of processes.

Given that the starting point to design solutions is to understand the users, the market strongly asks for more emphatic leaders and precisely the empathy is a soft skill deeply related to the design attitude.

The experiment takes on management education approaches, which although incongruent with the nature of a design attitude (Boland and Collopy, 2004), have proved, thanks to the right perseverance, to have the chance to become more flexible to market's constraints.

As Design Thinking stands out for its empirical nature, the dissertation will follow this main feature. There would not be presented some chapters about Design Thinking literature and some other about the experiment, but there will be depicted the story of the experiment interconnected with theoretical references. Workshops' chronology, in opposition with Design Thinking back and forth property, will be the main driver to outline events' scrolling. Thanks to the use of *vignettes*¹⁰ in the narrative process, I will depict the story as more realistic as possible making use of diverse qualitative data.

The aim of the experiment is to analyse students' reactions to Design Thinking spaces, which stand as new ways to interpret the reality and making sense of it.

Next to this aim some questions continue to emerge:

- Is design a driver of change in management education?
- What is the relationships between design and management?

The experiment's aim and the above questions have been deeply examined thanks to students' process books and interviews, that took place five months after the end of the experiment. These outcomes will be gradually displayed and discussed throughout the storytelling.

The story will start after some clarification about the research method, the description of the setting and the data collection.

¹⁰ Vignettes are "short segments of story – that represent "good" examples of common situations that occur in stories." (Riedl and León, 2008, p.24)

Context

As I stated before the experiment deals with the introduction of a noteworthy novelty in an Italian management curriculum. The aims are already clear:

- to investigate the relationship between design and management and hence the reasons why management education needs a redesign of his curricula;
- to use design as a means to grow future managers' awareness toward the necessity to become dynamic skippers in the nowadays business' impetuous seas acquiring empathic and interpreting skills.

The purpose of my dissertation is to understand and analyse the experiment's impact on marketing management students. In order to achieve this goal, it is necessary to investigate learners' reactions to each phase of Design Thinking. The investigation commits to a qualitative inductive research the role to outline the entire process in the best possible way. The inductive research approach has been chosen because it gets underway with detailed observations (Goddard and Melville, 2004) and theories are consequentially inferred in a gradual and systematic way. Hence, the inductive research moves from specific to general (Zalaghi and Khazaei, 2016). The abilities of sense making and interpretation are quite fundamental to detect particular insights and relationships and to deduce a pattern from the data set collected to design a more generic theory (Sauders, Lewis and Thornhill 2012). In this process, the researcher has to perform the role of an honest observer who learns from the experience. Of course, the main advantage of this method is the absence of a priori theory that can influence and distract the observer's point of view, but the other side of the coin depicts the principal disadvantage. The disadvantage concerns the researcher's inexperience or limited knowledge to brings out significant relationships and interpretation from the observations (Saghafi, 2014).

The setting is the second edition of Design and Innovation Management (D&IM) module within the Master Program in Innovation and Marketing at Ca' Foscari University, which was launched in September 2016 for the second time. For that

reason, I am dealing with an innovative training process within a new Master programme, which has the purpose to train marketing managers able to face business difficulties with a proactive design attitude. During the first edition of D&IM module a similar test concerning Design Thinking was already proposed. In contrast with the first experiment launched in September 2015, some critical variables changed:

- *duration of Design Thinking workshops*: in 2015, during the first edition, 5 workshops in 5 weeks were arranged and I can assure that me and my colleagues were struggling with time pressure - the filling of weekly assignments run contrary to the desire to better understand and explore what we were doing. In 2016, during the second edition, the workshops were rearranged. This time students attended 7 workshops in 10 weeks divided into two sections with 2-weeks break between them. Overall, students had 12 weeks to develop their projects;
- *instructions supplied to students*: in 2015, we always had issues in understanding the assignments. The assignments were regularly introduced at the end of the workshops, exactly when the time was up. We used to run surrounding the teaching assistant in charge of the workshops, struggling with our doubts and questions. Frequently happened that we followed her also outside the classroom trying to better understand what we had to do for the following week. Henceforth in 2016 more instructions were submitted to students. While students became more confident with Design Thinking process, the instructions started to reduce little by little;
- *introduction of weekly meetings to clarify doubts*: in 2016 teams could meet the teaching assistant and me to have more explanations about the assignments. Meetings lasted about 20 minutes each. During those meetings teams often asked for feedbacks about their previous assignments. Feedbacks were not given: students did not receive weekly feedbacks on the assignments they delivered for not being misdirected along their way. This choice was based on the fact that during the Design Thinking process there are not any right or wrong answers and decisions, but what matters is the coherence among the three spaces; feedbacks (i) could have caused problems for students instead of

supports to improve their projects (ii) could have changed students' orientation with a totally external point of view;

- *collaboration with the FabLab*: in 2016, each team had the possibility to have two meetings with the recently inaugurated FabLab in the Management department of Ca' Foscari University. Meetings lasted about 30 minutes each and had the goal to support the ideation phase turning the idea into a prototype. A prototype is "anything tangible that lets us explore an idea, evaluate it". (Brown, 2009, p. 92).

These four variables were detected as critical by the subjects involved in the coordination of the first edition of D&IM module:

- the teaching assistant in charge of the practical Design Thinking labs;
- the Professor of D&IM, instructor of the first section of the module expressly concerning design management;
- the Professor of Cultural Process and Creative Processes (CPCP), the following module in the Master curriculum, asked to bring her ethnographic skills in the module becoming the management researcher in charge of data collection and analysis.

Additionally, I would like to stress another critical variable that surely affected the experiments' impact on students. In 2015 the teaching assistant in charge of the labs was a doctoral candidate in Management with a background in design studies, while in 2016 the teaching assistant was a Design Thinking consultant with a background in Management. The differences in their personal curricula influenced the way they run the workshops and their affinity with management attitudes and feelings. Although the activities proposed during the labs were quite the same, during the first edition of Design Thinking labs me and my colleagues had some troubles in understanding the design vocabulary widespread in the class. Everything was completely new. Most of us had just earned Bachelor's degrees in Management or Economics and we felt as if we have been catapulted into an island where islanders neither speak your language, nor behave as you do, sleep when you are awaking and eat what you do not. I hope the simile clarifies our initial foreign condition to design. During the weeks, we gained more knowledge thanks to theoretical lessons too and it was as we gradually started to build our simultaneous

translation from management language to design one and vice versa. The goal was to find a way to be able to dialogue. On the contrary in 2016, even if students have been catapulted into the same unknown island, they went there with a guide. The guide, namely the teaching assistant, helped them in the process of translation because she exactly knew how they felt and which were their deficits towards the islanders' habits. Her background in Management and her empathy skills gave her the chance to put herself in students' shoes and to understand their disorientation. Since design language includes specific expressions and terms, it calls for special knowledge to approach a design project and to make the right interpretations. Boland and Collopy (2004) suggest an initial design vocabulary for management. "Language matters" (Boland and Collopy, 2004, p. 265) for the development of a reciprocal understanding in design projects. During the second edition of D&IM labs, the teaching assistant was suited to transfer management students a basic, but selected design vocabulary that allowed them to start the Design Thinking discovery with some fundamental knowledge.

To sustain the critical variable just depicted and the differences between managers and designers I would like to mention Walker (1990), who blames on the *educational gap* and Von Stamm (2004), who, starting from Walker's conclusion that "the divergence between managers and designers can be detected in personality traits, in habits of thought and work, as well as in educational background" (Von Stamm, 2004, p.12) states that:

"The differences in education are reflected in different values, behaviors, and attitudes. Where managers tend to focus on profits and returns, designers focus on product and service quality; while managers are in for survival, designers prefer reform; where managers think linear, designers think lateral; managers are serialists, problem-oriented and cautious, designers are holistic, solutions-led, and experimental. In short, while managers are adaptive, designers are innovative." (Von Stamm, 2004, p.12)

Because of today's continuously expanding design application, a fluent design-management dialogue is extremely required. In the recent years Simon, who in 1969

already claimed the role of design process to approach managerial problems, became always more a fashionable author. Design started to be related to every concept of knowledge (Lawson, 2006) and turned central in the process of innovation. The success of design projects largely depends on an interlinked interaction between the two dimensions: design and management. Hence D&IM module stands as an attempt to start filling the educational gap and to enhance management students not only with a wider design vocabulary, but also with some design abilities. The challenge is to put in contact management education, largely “verbal and numerical, concerned with topics such as accountancy and numerical” (Von Stamm, 2004, P.12) with design education predominantly “visual, geometrical, and concerned with craft and art” (Von Stamm, 2004, p.12). Therefore, the purpose is to become at ease with Design Thinking methodology, that tries to select the best possible solution to any problem transforming ideas into feasible prototypes to be tested. Design Thinking could actually be the answer to balance management analytical skills to get business students ready for their careers (Glen, Suciú and Baughn, 2014).

Description of the setting

In 2016, D&IM module was scheduled throughout 10 weeks. The course consisted of 45-hours divided into two sections of 5 weeks each spaced out by 2-weeks break. The week was structured like this:

- two lectures, 1,5 hour each, managed by the Professor of D&IM, who principally sharpened the theory of design and innovation management going through different principles developed during the last decades;
- 1,5-hour laboratory, managed by the teaching assistant for a total of 7 laboratories over 10 weeks. They were usually on Friday and therefore the nickname ActionFridays was invented to highlight the experimental nature of Design Thinking process and of the own workshops.

Then 3 seminars were organized around some examples of design involvement in everyday life, both working and private speaking. Guest speakers had completely various backgrounds. The three examples focused on the following themes:

- vertical dance;
- community design;
- social role of museums.

All these activities were mainly attended in a classroom of the Management Department in San Giobbe – Venice.

To better investigate the meaning and the role of insights and interpretation in the Design Thinking process, two visits to the 15th International Architectural Exhibitions were arranged, while the collaboration with the FabLab was meaningful for the prototyping phase.

At the beginning the class was composed of 60 students from 22 to 25 years old. Most of them were just graduated in Management or Economics in Italian universities, but there were also exchange students attending the course.

During the first workshops a challenge was launched and students were asked to work on it divided in teams. Challenge's focus was on two creative and two cultural organizations settled in the Venice territory. The goal was clear. Teams had to accurately understand:

- who are the users of these organizations;
- who are the future users of these organizations;
- what users' needs are;
- what gaps need to be filled in order to improve users' experience;
- how to extend users' experience.

Each team studied one organization and the final objective was the development of a prototype to represent an issue. The prototype had to improve the experience of the users. Design Thinking was practiced as a framework to help teams understanding users' latent needs "they may not even know they have" (Brown, 2009, p. 40) and developing a prototype to reply to recognized needs. As a direct consequence the final objective was to "translate observations into insights and insights into products and services" (Brown, 2009, p. 49), to improve and extend users' experience as much as possible following the three overlapping spaces of Design Thinking: inspiration, ideation and action (Brown, 2008).

The teaching assistant created eleven teams of five to six people each. Teams were created thanks to the results of a creativity test undergone to students during the

first Action Friday. According to Brown (2009) one of the main ingredient for the success of a design project is the multidisciplinary team.

“In a multidisciplinary team, each individual becomes an advocate for his or her own technical specialty and the project becomes a protracted negotiation among them, likely resulting in a gray compromise.”

(Brown, 2009, p. 28)

The creativity test had exactly the aim to guarantee diversity within teams. As I already said, students had more or less the same backgrounds, but they were different “in terms of gender, nationality, talents and empathy level.” (Calcagno and Pavan, 2017, p. 4). These differences emerged in the creativity test and were essential to push collaboration among teams’ members.

Within 12-weeks, teams worked on the challenge drafting four assignments that travelled through Design Thinking guidelines. Additionally, once a week, beyond the 45-hours module, the teaching assistant and me, met the groups who needed to discuss about the process they were following. Teams’ path gave rise to prototypes’ final presentation at Querini Stampalia, one of the four organizations analysed.

Data Collection and analysis

The qualitative inductive research is based on a deep observation of the entire Design Thinking process. Daily engagements and interactions with students were necessary to collect qualitative data from the inside-out and to establish an informal and authentic relationship with them. This guaranteed to obtain straightforward feedbacks from their experience and to come full circle some months after the end of D&IM module. Data were therefore weekly gathered from September to December 2016 and in May 2017 some students’ interviews were organized. Data could be categorized as follows:

- instructors’ personal field-notes from direct observations: The Professor, the teaching assistant and I collected personal observations that we shared and analysed during multiple sessions. Additionally, there are also some

ethnographic notes reported by the CPCP Professor and I. Everything is applicable for keeping memories about students' interplays and reactions during Design Thinking labs;

- students' individual process books: during the course students were required to keep updated a personal process book. Making the process book they had to feel completely free to express themselves. No details about process books' format, length, font, style or content were provided. Everything was accepted as a valid "mate" of their learning process. There are various motivations that pushed the request to keep these process books. For students, process books had to be a means to lay bare their feelings and feedbacks and to learn how to take notes and to prioritize ideas; while for the research itself, they were the closer qualitative data to students' real thoughts and a way to detect process' perceptions, otherwise hidden, to assess what was happening. On 21st December 2017, I gathered 56 heterogeneous personal process books. The teaching assistant and I read all of them collecting 56 pages of quotes;
- groups' deliveries and prototypes: each group had to fulfil 4 assignments before the final presentation. Those assignments represented students' guide through the stages. 44 groups deliveries were collected and they were fundamental for the evaluation of each project, because they travelled through the process being the proofs of their labour run out with heterogeneous prototypes;
- weekly meetings recordings: each group had the possibility to meet the teaching assistant and me once a week for speaking about the assignments and their doubts towards weekly challenges. We did 28 meetings recording all of them for a total of 536 minutes. These meetings were necessary both for students, who did not feel to be alone during their steps, and for us because we had the chance to understand which were students' hurdles before checking the assignments and as a consequence to calibrate following labs;
- posts on the Facebook group: in 2015, the Professor created a Facebook group called "Design management Ca' Foscari". The Professor, the teaching assistant, me and students contributed to the Fb page totalling 150 posts. These posts concerned:

- ✓ information about the course, slides, assignments and doodles for managing weekly meetings and other activities;
- ✓ teams' pictures and time-lapses while they approached their assignments;
- ✓ pictures and videos reporting labs' challenges, guest speakers, workshops in Biennale and the final presentation;
- ✓ various design ideas, inspiring articles and videos coming from different sources.

In a period in which the digital world is more and more expanding, D&IM module tries to bring innovative teaching paradigms in a university classroom using a social media tool too and trying to get students involved in the sharing of ideas, projects and knowledge;

- formal interviews with students after the module (May 2017): five months after the end of the module, the teaching assistant and I tried to meet as many students as possible to investigate some pinpoints. Three main questions were asked:

- ✓ If it changed, how is your world's view changed after D&IM module?
- ✓ Considering Design Thinking as a toolbox containing many tools singularly usable, can you detect three practical examples in which you used any tool you learned from the methodology? Examples could come both from professional and private life.
- ✓ What did you appreciate more and what did you like less from the process? What was more useful for you?

To the interviews' sessions came 8 teams out of 11, totalling 14 spokespeople -1, 2 and sometimes 3 persons per team - 328 minutes recorded and 52 pages transcribed. These interviews were really valuable to complete process books' reading in order to interpret learners' feelings and participation and to understand their changes towards problem-solving and other circumstances. Additionally, during the interviews students were asked to force themselves to do an interpretative leap or to share with us the interpretation shifts they already did. In some specific episodes, the interpretative approach became difficult and misleading and we adopt interviews' sessions to clarify to students some choices made by the Professor during the entire module about guest speakers and external visits to Biennale.

23rd September 2016

1. Creativity test

We are not as creative as we could be.

(BP: S. 26, F – Team 6, 23rd September 2016)

1.1. When, What, Why did it happen?

The 23rd September 2016 Design Thinking workshops started. The teaching assistant Daniela Pavan prepared some slides to focus students' attention on specific pinpoints. The first slide shows a metaphoric image of a man rolling up his sleeves. This image stands as an emblem for the entire educational journey; it spreads the practical nature of the Action Fridays and the necessity to put oneself on the line to achieve the objectives. After this preliminary warning, the teaching assistant spent some time introducing the concept of the personal process book as a support to develop a critical mindset about the learning process.

Daniela, with her pervasive and dynamic temperament, launches the personal process books' free format, while students start silently to ask more information about this novelty looking at her displaying uncertain gazes. She explains that the free format reflects the free content too, highlighting the importance that guys update it on a weekly basis, with all their feedbacks and thoughts. Daniela stresses to approach the process book as a diary asking students to write the date before writing notes. AND PLEASE BE HONEST! – she explosively says.

Reading students' process books, 2 out of 57 mention some proper considerations about the role of the tool itself. The first quote expresses a specific state of mind – Student 3, F – Team 1 feels panic towards the need to take a process book because she describes it as a strange thing to do. Moreover, she emphasizes her disorientation; she does not know neither what she has to write, nor what she is really going to write. In this ambiguous situation, what I find curious and at the same time stimulating is that she writes about her worries. Without being aware of it, she takes advantage of the instrument in the requested way revealing her inner feelings.

“We have to create a process book. Strange thing!! What we have to write? What am I going to write? PANIC!!!!”

(PB: S.3, F – Team 1, 23rd September 2016)

The second quote steps forward because it finds out design thinking's pertinence to real life and career. Since the process book is used to take notes on specific insights and meaningful words, these notes can be helpful for diverse situations in different contexts. At least the student will be more confident with this practice in the future as he already experimented it in the university shielded environment.

“Process book is a relevant object during our process of design thinking because we can write insight and some words that can be used during our entire life and career.”

(PB: S.14, M – Team 3, date is omitted)

During the interviews Daniela Pavan and I did on the 30th of May, we asked students what they liked more during the entire module. I report here the answer of a student who mentions the process book as a vital device to vent her frustrations.

“The thing I liked the most is the process book, especially during the presentation day at Querini Stampalia. I used it as a device to vent my disappointments and it really helped me a lot for behavioural divergences.”

(Interview: S.54, F – Team 11, 30th May 2017. Author's translation)

Moving on, the teaching assistant presented the real central topic of the first lab: the creativity.

Daniela, maintaining her positive and engaging attitude, begins speaking about creativity asking students a simple question to break the ice: “When you hear the word creativity, what do you think next?” Students seem bashful to answer. Daniela solicits their participation underlying their opinions' importance to establish a dual-flow dialogue. Only students' involvement would permit to develop an informal atmosphere where to feel free to be and to express yourself. At this point, someone takes courage and starts to answer. Bit by bit many hands rise and Daniela writes the answers on the blackboard. I think projects next! I think art! Innovation! Ideas...

Moreover, another question is launched. “Do you consider yourself creative?” – Daniela asks. The classroom becomes quiet and the only rumours are represented by students’ thoughts that resound in the hallway. Nevertheless, answers arrive only gradually. The first one that wean management learners off their silence but audible brainwork, is Student 24, M - Team 5. He states that everyone can and actually is creative, but in different ways compared to the others.

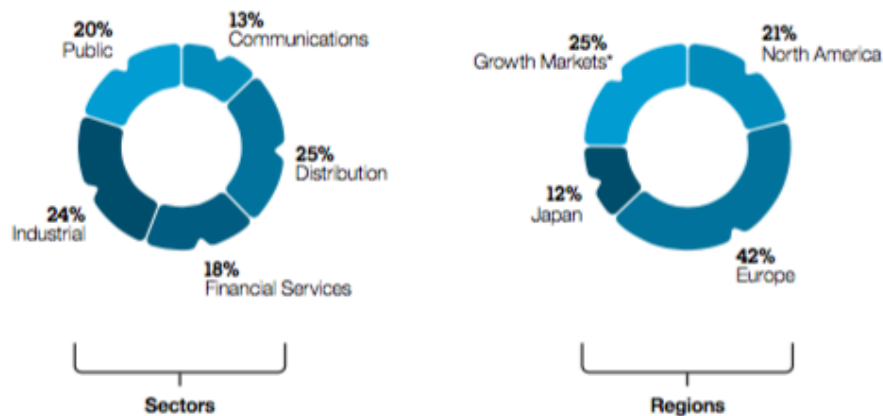
Albert Einstein approached the creativity saying that it is “intelligence having fun”. Creativity contributes to intelligence and imagination to create something new and appropriate for different beneficiaries – it actually contributes to introduce an innovation. Hence there is a strong overlapping between the territory of creativity with the one of innovation, which task is to turn a creative idea into something useful for the market. Albeit, creativity has always been relevant for business world, its unmanageability, caused by its elusive and intangible features, is the reason of the scarce consideration many managers gave to creativity until the first decade of the current century. “It’s true that you can’t manage creativity, but you can manage for creativity.” (Amabile and Khaire, 2008, p.1). Additionally, also the fact that creativity produces less immediate profits than execution has always slowed down managers’ attention to this specific ability.

In 2011 the International Business Machine Corporation (IBM) published the results of a new study about the most relevant important leadership quality for CEOs to manage their companies over the next five years. While the teaching assistant showed the results, students started taking notes. Why? Until that moment no one seemed interested in fixing some info on a white page. The differences to previous inputs were:

- slide’s numerical content - management students saw numbers on it and automatically associated the quantitative data to something relevant to write down to remember;
- the source authority – management students, keenly aware of the difficulties they will face in their careers, perceived IBM’s research as something tightly

close to their interests and therefore they opened eyes and ears to catch up on their upcoming opportunities in the business market.

The study based his outcome on the largest known sample of one-on-one CEO conversations. The survey was submitted to 1541 both corporate and public-sector leaders of 33 industries over 60 nations. It means that chief executive officers worldwide gave their contribution to surprising insights.



**Growth markets include Latin America, Asia Pacific (excluding Japan), Middle East and Africa.*

Figure 1: About the research – More than 1500 CEO's spread worldwide participated in the study (IBM 2010, p. 6)

CEOs singled out complexity as their greatest challenge. Given the premise that *“eight in ten CEOs expect their environment to grow significantly more complex and fewer than half believe they know how to deal with it successfully”* (IBM, 2010, p.19), 60% of respondents stated creativity as the most decisive leadership quality of today's business world. Creativity unexpectedly exceeded both integrity and global thinking to face complexity taking balanced risks, to cope with a new generation of employees and partners and to satisfy different customers' needs being original. The reason is that creativity is one of the main ingredients of innovation process; to be innovative means to be agile and competitive in the current fast moving competitive environment. For many centuries creativity was associated to the world of arts and artists who go against the society with their weird ideas, too different and too complex for being shared by non-artists. Their activities always concerned beauty either in their purpose or at least in their means. De facto this skill is heavily

required in various context, included in management because it improves performances and permits firms to manage their potentialities. The shift from the industrial economy, crucially based on productivity, to the knowledge economy, crucially based on ideas, products' and services' symbolical meanings and customers' experience, is another main reason for the rising attention to creative reign. Managers are called to practice their creativity, imagination and inventiveness to produce new ideas and to generate economic value after the strong economic downturn that every industry lived. Incremental innovations are not sufficient anymore, disruptive innovations are needed to thrive.

In *The Creative Economy: How People Make Money from Ideas* (2001), John Howkins is one of the first scholars who tries to clarify the relation between creativity and economy using the concept of *creative economy*¹¹.

“People with ideas – people who own ideas – have become more powerful than people who work machines and, in many cases, more powerful than the people who own machines – yet the relationship between creativity and economics remains almost invisible. I decided to see if I could bring together all these elements – creativity, intellectual property, management, capital, wealth – into a single comprehensive framework.”

(Howkins, 2001, p.)

Howkins states creativity's pervasive role in everyday activities, not only related to arts. Linking creativity to economics, this skill helps shaping the creation process of new and practical ideas and to make them commercialized causing positive effects in terms of value and competitiveness. Arthur Schawlow, the winner of the Nobel Prize in physics in 1981, was asked to sketch the difference between high and less creative scientists. His answer concentrated around a specific reasoning. He emphasized the concept of *intrinsic motivation* that spurs curiosity to work on something to achieve a sense of deep satisfaction doing things well (Ruscio and

¹¹ The concept points those economic activities, which are strictly based on knowledge of diverse sources (Howkins, 2001).

Amabile, 1999). Intrinsic motivation commits to do something for its own sake without external pressures that often bother the creative process. High creative scientists are nothing more than passionate scientists impelled by a personal exciting attitude towards the research. Creative scientists have inwardly fixed the love and the curiosity for the science that leads them to pure success, even more than mere talented scientists (Amabile, 1997). Hence this declaration is a good example to sustain the thesis regarding the importance of being self-motivated and intrinsically involved in a challenge to be creative and to reach success with a project. Of course, the example is applicable to a wider range of disciplines over the science.

“When Steve Wozniak invented the micro-computer, he demonstrated creativity in new product development; for all intents and purposes, such a thing had not existed before. When Walt Disney created Disneyland, he demonstrated creativity in new service development; he essentially invented a new form of entertainment. Although most people think of creativity in business as limited to the creation of something new to sell, there are other forms as well. When Fred Smith developed the concept for Federal Express, he certainly was not inventing a new service or a new product; humans had been delivering messages and packages to each other for thousands of years. In this instance, the creativity resided in the system for delivery: a hub system, where all packages were flown to Memphis on the same day, sorted, and distributed for air delivery the next day. Creativity exists in less famous, more humble, examples as well: the ad campaign that revitalizes a dying brand, or the product line extension that captures additional market share.”
(Amabile, 1997, p.40)

Amabile (1997) presents creativity's exploitation in different context for different aims. Product and service developments are not the only purposes of a creative process. Creativity is needed and exists in humbler examples too; it links human dedication to a gratifying performance that has not only to be original, but that has to reply to problems and actual opportunities. In the business realm creativity is also a marketing essential requisite to satisfy human needs with always updated design.

Creativity and innovation are therefore the only imperative constants in today's society where entrepreneurs have to be ceaselessly active and to interact with other actors (Suciu, 2000).

The teaching assistant kept the lab on showing another research. Management students seemed interested to know what would come next and stayed rather focused.

This time the study was designed in 2012 by Adobe to understand "attitudes and beliefs about creativity and provides insights into the role of creativity in business education and society" (Adobe, 2012, p. 2). The research based his results on 5000 surveys submitted to adults in five of the world's largest economies: USA, UK, Germany, France and Japan (1000 surveys per country).

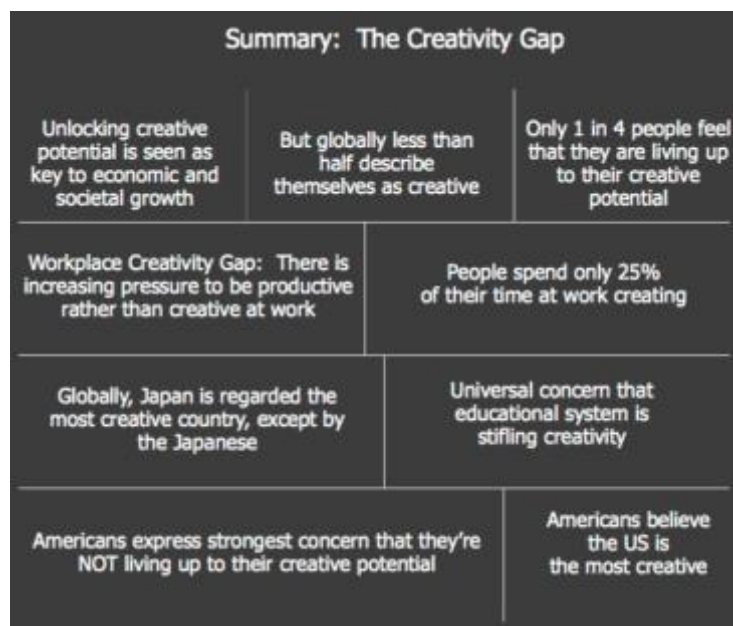


Figure 2: The creativity gap (Adobe, 2012, p. 4)

Figure 2 depicts the main outcomes. 80% of interviewed believe that unlocking creative potential is the key to economic and societal growth, but only 25% of them affirm that they are living up to their creative potential. 3 out of 5 adults feel the importance to be creative for themselves, but only 6 out of 10 affirm to be someone who actually creates, because they spend only 25% of their working time creating.

They allude that at work it is more valuable to be productive than to be creative; actually, 75% of respondents feel the pressure from their superiors to be producer rather than to be creator. Surely there is a workplace creativity gap! More than half agree their jobs require creativity in some way, but they conclude that this creative thinking is not rewarded. The creativity gap is not attributable to age or gender, but to environmental factors. Location, work and basically education perform the guilty parties. More than half of the people interviewed blame their education system to stifle, rather than nurture creativity. In a statement around the survey Sir Ken Robinson, Ph.D., education and creativity specialist speaks about one of the myths of creativity that asserts that only few people are actually creative. Is this right? He continues saying “the truth is that everyone has great capacities but not everyone develops them.” The majority of the interviewed confirm everyone’s inner potential to create. Pablo Picasso was of the same mind. The artist once hinted that “every child is an artist. The problem is how to remain an artist once he grows up.” (Quoted in Peter, 1977, p. 25). The professional clarifies his statement inferring that “one of the problems is that too often our educational systems don’t enable students to develop their natural creative powers. Instead, they promote uniformity and standardization. The result is that we’re draining people of their creative possibilities and, as this study reveals, producing a workforce that’s conditioned to prioritize conformity over creativity.” Student 21, F – Team 5 has the same opinion as the interviewed people, the professional and Pablo Picasso. During the interviews Daniela Pavan and I did at the end of the semester, we asked students what they appreciated more and less taking into consideration the entire module. A student replied as follows:

“I really liked the presence of diverse activities that pushed me out my comfort zone. I increasingly noticed that most of the time the scholastic approach made me stiff. On the other hand, the activities we did together pushed me towards a more open-minded attitude. I learned things that I never would have learned on books and I rediscovered things I had lost. When I was a child I was used to take things, to create things...slowly, I lost this inclination because I started to focus on studying in a traditional way.”

(Interview: S.21, F – Team 5, 30th May 2017. Author’s translation)

Hence it comes out from different sources the dissatisfaction with the scholastic methodology, which is able to chase standardized and not creative learners.

Adobe’s survey ceases asking questions about creativity drivers and barriers.

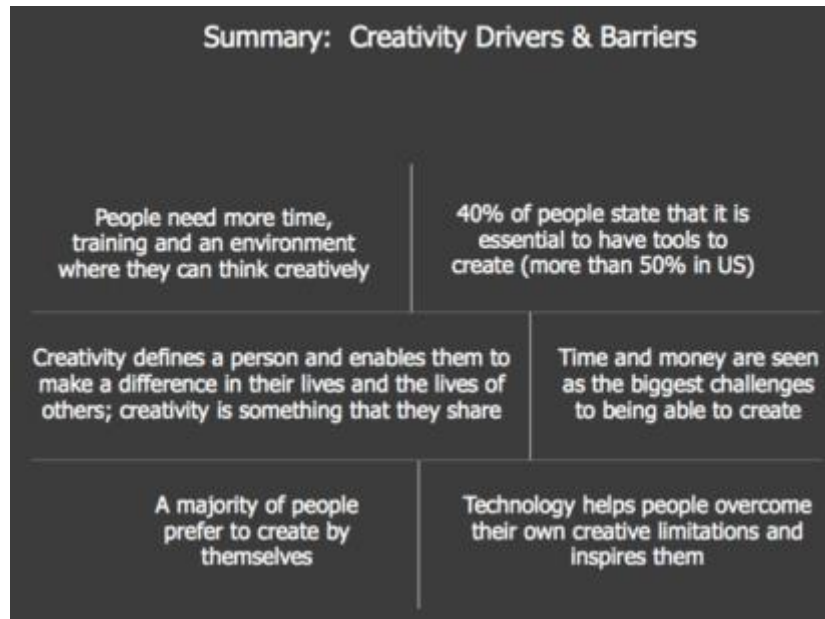


Figure 3: Creativity Drivers & Barriers (Adobe, 2012, p. 22)

The majority is in favour of imagination as the ground from which creativity springs. They remark that creativity is everywhere in our lives, but that many people do not see it. Actually, the potential to create is limitless, it has no boundaries and it is in everyone’s hands. Albeit 80% of interviewed feel the need to create new things and bring innovations to life, the 50% admit they do not have enough time and money to be creative. Additionally, 40% of people state they do not have the right tools to create. 70% prefer to work by themselves when being creative, and to later share the outcome with the community.

The survey paved the way for a further step. People complained about the possibility to actually be creative and blamed the educational system to be unable to squeeze students’ talents. Design Thinking workshops at Ca’ Foscari University committed

to be one of the pioneers of new discoveries among students' awareness. It undertakes to get students' creativity free from any kind of stop.

It's time to become more provocative! "So much wasted talent...don't you think guys?" – asks Daniela commenting Adobe's survey. She introduces Albert Bandura, a Stanford professor and psychologist who demonstrated that people who strongly believe that they can bring a change are more likely to succeed what they set out to do. When people transcend the fears that block creativity, new possibilities emerge. "Every experience, including failure, is an experience you can learn from!"- declares Daniela with certainty, while students silently start to link what they heard till now. They still don't know what she has in store for them...

"Let's get creative guys. Now, it's your turn!" – she loudly announces!

Students look around. Their looks seem to inquire many questions and a tacit dialogue seem to emerge among them:

"What does the teaching assistant mean?"

"What do we have to do?"

"To do? Now?"

"We are not used to do something else than hear and take notes during usual lessons."

"This lesson, lab, workshop or any way you want to call it, is becoming more and more un - traditional."

"Please, stop complaining in vain! We still do not know what she really intends. Maybe we will just have fun!"

"Ah...you are pretty optimistic!"

I delivered 5 sheets of paper to each student, while the teaching assistant presented them. The creativity test¹² is an individual test where collaboration is belittled. Students were not allowed to turn the page and to peek the activities until precise recommendations were divulged. The first page is committed to be filled with full name and data only. From the second page starts the creativity test. It is composed

¹² For more consideration, a copy of the creativity test is attached in the appendix.

by 4 creativity challenges and a chronometer is strictly required because each activity has to be completed within some minutes:

1. Students face a page with ten sets of three words each. Given the three words they need to find the fourth word that connects all three. For instance, the word that is related to the following three words:
 - paint
 - doll
 - cat
 - is house...house paint, dollhouse and housecat – 5 minutes time;
2. Students face a page with thirty empty circles. They have to draw within each frame, so that each circle becomes a recognizable object. They cannot draw outside the frames or connect them – 5 minutes time;
3. In the third challenge, it is time for students to show who they are. Future managers have to write down their main ten talents. Everything they consider a talent will work from any field. For instance, to be a good chef or to be a good holiday planner could represent some talents. Then they have to write their most important accomplishment. Eventually, they have to write down the person they admire the most telling the reason of their choice – 7 minutes time;
4. Ultimately learners need to get creative for real and to represent themselves in a creative way. What matters is to create something on the last piece of paper, it does not matter what. They can draw their portrait or just the most important object in their life; they can write a quote, a piece of a song or invent a poem or a joke. Anything will be fine to achieve the goal of the challenge – 8 minutes time.

1.2. Students' personal thoughts

Following process books' extracts are mainly dated 23rd September 2016 or at least refer to creativity test activity and the first ActionFriday.

Students' reactions towards the creativity test were really heterogeneous as students are and as the creativity test steadfastly demonstrated.

Some students described the creativity test as a “free thinking experience” (PB: S. 1, F – Team 1), a “strange and particular test” (PB: S. 3, F – Team 1; S. 16, F – Team 4), “something very extraordinary” (PB: S. 10, F – Team 3), “funny” (PB: S. 22, F – Team 4), “weird, in a positive sense” (PB: S. 32, M – Team 7), something “to love” (PB: S. 35, F – Team 7), “uncommon and very useful” (PB: S.41, F – Team 9), “challenging” (PB: S. 52, F – Team 11) and “amazing” (PB: S. 57, F – Team 11).

Many students wrote that the workshop was “un-usual” (PB: S. 16, F – Team 16; S. 26, F – Team 6), “revealing, because it made me think about all the gaps that I feel” (PB: S. 51, F – Team 10), “interesting” (PB: S. 21, F – Team 5; S. 47, F – Team 10), “stimulating” (PB: S. 22, F – Team 5), “attitudinal” (PB: S. 32, M – Team 7) and approached with “different teaching’s methods” (PB: S. 23, M – Team 5).

A female student felt really well with herself during the creativity work and “involved in the activity proposed” (PB: S. 26, F – Team 6) exactly as a male one who stated, “to be in the right place” (PB: S. 40, M – Team 8) because he confessed that he always thought creativity as a part of his future personal and job life. These quotes go hand in hand with what Student 44, M – Team 9 pointed, that is his desire to get all the possible stimuli by D&IM module.

Other learners felt “surprised” (PB: S.23, M – Team 5), but also “curious” (PB: S. 1, F – Team 1; S. 53, M – Team 11) “excited and hopeful” (PB: S. 1, F – Team 1) to start building their self-confidence, although a girl wrote that she was more creative when she was a child (PB: S. 37, F – Team 8).

Another student explicated his appreciation towards teaching assistant’s decision to reserve attention to know better students’ background and their consideration of themselves; he underlined that he perceived to be handled as an individual and to have had the chance to reflect on himself (PB: S. 27, M – Team 6).

Some management students seemed more contemplative. For instance, Student 22, F – Team 5 asked to know more about the creativity test’s scope, but then she completed her request saying that it probably derives by her insecurity and need to know more about her results. Other classmates rhetorically asked what happened

to their traditional lesson and where they actually were (PB: S. 32, M – Team 7; S 3, F – Team 1), but they were not really worried about the answer because they felt “very inspired and curious” (PB: S. 3, F – Team 1) to continue the ActionFridays and to make new discoveries being “really motivated” (PB: S. 39, F – Team 7). Student 32, M – Team 7, described himself at the beginning of a travel, a journey which he did not know anything about. Then, as a companion of his journey he chose “to have a logbook instead of a process book” (PB: S. 32, M – Team 7). Truly, management learners turned out as travellers in unknown waters and Design Thinking is viewed more as an active learning process than as an aseptic methodology to be known.

Student 22, F – Team 5 admitted that “as a business student, I’ve never been told to think at creativity this way, as if we weren’t even allowed to!” (PB: S. 22, F – Team 5). This quote opens the way to some considerations about students’ difficulties to deal with the test. Some learners found the creativity test “hard” (PB: S. 21, F – Team 5; S. 29, F – Team 6; S. 48, F – Team 10) because they did not describe themselves as creative people (PB: S. 37, F and S. 39, F – team 7). Additionally, they are not used to depict themselves and they do not like to speak about their talents preferring to leave the judgment to others. Hence, they felt “quite inadequate” (PB: S. 22, F – Team 5), “confused” (PB: S. 3, F – Team 1; S. 52, F – Team 11) and “clumsy in the creative part” (PB: S. 21, F – Team 5) in which they realized they need to improve their creative abilities. Further, some other students felt absolutely stressed by time pressure (PB: S. 5, F – Team 1; S. 17, M – Team 5; S. 29 – Team 6; S. 32, M – Team 7; S. 48, F – Team 10) and suggested to give more time for further creativity test edition in order to focus more in detail on each challenge (PB: S. 50, F – Team 10).

A male exchange student coming from the north Europe stressed the fact that during the lab he learned again to have a relatively low level of creativity, but what amazes was his perseverance. He wrote “I will not give up and I feel like the right thing to do is to keep going and slowly try to advance in this aspect [creativity]” (PB: S. 17, M – Team 4).

Another male exchange student, but this time coming from Asia, paid close attention to the change he experienced during the lab. “At the beginning of the class, I didn’t rise my hand to the question “Do you think if you have creativity or not”. After the workshop, however, I felt I like to create something new and show my feelings with fun.” (PB: S. 15, M – Team 3). He proved lab’s effectiveness to be provocative and stimulating at the same time.

Moreover, the hope that the DIM module could be helpful for the entire life started to resound among students already from the first lab (PB: S. 48, F – Team 10). They hoped to keep being inspired and motivated to exploit their creative potential, “perhaps even applying it to marketing and economics” (PB: S. 52, F – Team 11).

Another emerging topic in students’ process books concerns talents. Students agree they do not have to waste talents (PB: S. 22, F – Team 5). Some difficulties came out when they had to recognize their own talents in the third challenge as Student 48, F – Team 10 confessed “I was really at a deadlock. Do I have it or not? Anyway, it’s really hard to find it and write about it”, or when they had to link talents to business needs as Student 55, F – Team 11 admitted “Though I’m really excited to see what we are going to accomplish, I’m pretty unsure since my “inner talents” don’t really match the business needs. I’m still determined to try and combine both to at least find a balanced way to improve my skills.”

Strong criticism towards talents’ meaning and the creativity test itself appeared in another process book.

“Today I discover that spending a lot of time on social network or social media is a talent. I’m sorry, but I completely disagree. Talent is something very special, it’s an ability of superior quality. Then I don’t think that a person can have 10 (!!!) talents. Maybe Leonardo da Vinci had 10 talents. And one last thing. I think that some questions in the last part of the challenge were too personal. In my opinion, the teacher-student relationship is a formal one. And those questions were appropriate in less formal context (friendship).”

(PB: S. 4, F – Team 1, 23rd September 2016).

During the interviews did at the end of the semester, Student 4, F – Team 1 had another opportunity to express her disagreement and to discuss it with the teaching assistant and me to discover some other perspectives and answers to her doubts. She asked for more explanations during the entire module saying that maybe she could have reacted differently if she received more indications during the path. She admitted that she is not creative at all and speaking about the creativity test she said she leaved it blank.

“In that moment I wondered, why should I do it? What is this place? What did I sign up for? Is there some other master program still open in which I can enroll? [...] The focus on creativity, creativity like leadership, these are skills a bit like that...I mean that they need to be supported by a story to actually be understood and internalized. I know that they are new abstract concepts. Then I finished the course and I thought I could bring home something, maybe not the first two weeks or the creativity test that I still live like a nightmare, but the Design Thinking process, that I studied by myself [...] I thought to do the exam as a not attending student. It was such an alien course; initially the impact was so bewildering that I thought to drop everything [...], but I didn't because I took a responsibility towards you and my teammates. Moreover, I wanted to prevent a domino effect; you know, someone could say that I dropped and maybe he would have done the same.”

(Interview: S. 4, F – Team 1 – 1st June 2017. Author's translation)

Daniela Pavan replied clarifying creativity test's objectives.

“The creativity test has been done to create groups that would work on the specific challenge. Each group should be composed by different elements that basically did not know each other. The aim was to create a push mechanism within each team to increase collaboration. The creativity test has been done to gradually drive you to know the creativity concept.”

(Interview: Daniela Pavan – 1st June 2017. Author's translation)

The first challenge was related to a logical aspect; given three words, students had to find one word that links them. Generally, tests like this one are proposed to people with management background during interviews too. For instance, Amazon usually does many tests quite similar to GMAT exam too; they have to be completed within specific timing too. Hence the time pressure students lived was something they will find again in their future experiences. Starting from a logical concept, the creativity test moved on with a medium creativity challenge: given thirty blank circles, let's transform them into real objects. Evidently, there are many circular objects, but under time pressure many students started complaining, but it is quite normal. Then the third challenge was related to understand who students really are. Daniela Pavan underlined that she spoke about talents, because psychologically speaking it is a word that should spur to describe own abilities.

She decided that each team should be made up of six heterogeneous characters to better deal with Design Thinking process:

- an analytic/precise person → to analyse the context;
- an artist → to bring a lateral thinking to problem solving;
- a person with many and different interests → to motivate transitions from a phase to the next one and work on them proactively;
- an emphatic person or a person that should improve her self-confidence → to establish empathy within team members and organizations' users;
- a creative/manual person → to work on concrete solutions;
- a persevering person → to untiring work on the challenge even if the team wants to drop.

Thanks to the analysis of students' replies and also non-replies to each challenge, the teaching assistant associated each person to a predominant personality and consequently eleven teams were fully formed. Each team had at least a male component and an exchange student within his staff. Team members' diversity enhances creativity because it put into play many point of views that contribute to new findings and complex problem solving. Surely diversity is difficult to be managed within a team or an organization and could cause many misunderstandings, but when an equilibrium is found, it leads to new perspectives and positive and extraordinary outputs. Diversity in expertise, background, gender

or social origin confers many benefits and encourages innovation (Amabile and Khaire, 2008). Then, it is fundamental to pay attention to team diversity's sources and values that dwell in the "increased range of knowledge, skill, and perspectives available within a team, which can be very valuable sources of workplace creativity" (Shin *et al.*, 2012, p. 198). Some students were enthusiastic to be integrated in heterogeneous team because this novelty allowed them to compare with different persons, mentalities and intellects (Interviews: S. 23, M – Team 5; S. 54, F – Team 11 - 30th May 2017), while some others were quite annoyed by that decision and the risk to have to collaborate with people with whom do not go along with, even if they admitted they know in future working environment they will always be flanked by diverse and unknown people (Interview: S. 2, M – Team 1 – 1st June 2017).

The first workshop ended with some information about ensuing ActionFridays. The teaching assistant announced that in class students will work on the phases of the Design Thinking process to become familiar with its tools to develop an innovative mind-set. Divided in eleven teams, students had to study a specific cultural or creative organization in the Venetian territory. Dedication and concentration should not be related only to class activities. Students were informed that each week, as a team, they should complete an assignment referring to the specific organization they are allocated to work on. Assignments were based on new tools and theoretical notions students acquired week by week. During the first Action Friday was spoilt the objective of team projects, that was to build a real prototype to solve the problem teams had to analysed for each organization and their users. Thanks to Design Thinking mind-set students were stimulated to translate ideas into real things.

30th September 2016

2. Design Thinking

We really needed this creativity push.

(PB: S. 13, F – Team 3, 30th September 2016)

2.1. When, What, Why did it happen?

The 30th September 2016 the second ActionFriday occurred. That time Daniela Pavan decided to talk properly about Design Thinking to give students bright knowledge about this way of thinking.

Design Thinking is a mind-set that does not sharpen the problem that it tries to solve, but that sharpens the solution it wants to propose. Really, it is usable for a wide range of challenges in uncertain contexts. Being solution focused, it is consequently action-oriented too and has a pure desire: to create a preferred future that would benefit real users. Design Thinking explorative DNA seeks to build ideas up being pervaded by an interactive disposition to define innovative design opportunities.

Design means doing things.

Design contributes to communicate ideas' lifeblood.

The teaching assistant knew she had to be as much explicative as possible during the second lab because management students needed to be accompanied during their new travel and to feel her support. During the theoretical part of the lab, she tried to be concise, but complete and she backed notions with funny slides to strengthen concepts and to stimulate audience's attention and curiosity.

“Good afternoon everybody! Do you have any questions about last ActionFriday?” – asks Daniela to break the ice and to allow students to start a conversation, but no one answers affirmatively and therefore she jumps into today's topic.

“Design Thinking is human-centered because it focuses on understanding needs and motivations of people. Design speaking there is not a target, but only users with whom interact carefully and by which being inspired. Observing people, you will gather insights and be acquainted with new viewpoints. Hence Design Thinking is collaborative because it greatly benefits from the view of multiple perspectives.

Design thinking is experimental because it gives you the permission to go outside the walls of your knowledge, maybe to fail, but to definitely learn from your mistakes, so that you come up with new ideas, get feedback on them, then iterate.¹³”
– announces Daniela smiling and showing her self-confidence towards the argument while the class listens and silently takes notes.

Then the teaching assistant appointed few critical points that students had to keep in mind. To develop a designer’s mind-set, it is fundamental to become confident with own creative abilities - here is the reason why the first lab focused on creativity - to be strategic about what needs first attention and therefore to be able to recognize priorities. Then, it is crucial to thoroughly listen to stakeholders to be inspired by them and to be ready to design for them. Problems are just opportunities and management students had to approach them with a beginner’s mind, although they could already know a lot about them. To perform the role of a design thinker they had to let themselves learn and to be willing to experiment leaving their own assumptions and previous experiments behind themselves. Optimism is a designer’s basic characteristic because it helps to comprehend that it does not matter how challenging could be the constraints of a given problem because there is always at least one potential solution that would exceed existing alternatives (Brown, 2008).

“Guys, you have to remember that when you explore a problem, it’s quite ok you wouldn’t have immediately the right answer, but you have to trust you’ll find one” – says Daniela reassuring students worries and trying to maintain their concentration at the desired level.

¹³ For instance, to reinforce the experimental nature of Design Thinking, this concept was accompanied by the picture of Emmett Lathrop “Doc” Brown, PhD, the student of all science in the Back to the future trilogy. He is the personification of a witty and ingenious inventor always positive and untiring, exactly as Design Thinking followers should be.

“How would you do it? First of all, you need to step out of your comfort zone – this is a must!!! Please, get out of the building, observe, use the world outside to gather feedbacks and inspiration. Go, go on the field! Then notice that also collaboration is needed to interpret world’s complexity in the best possible way” – continues Daniela spurring class’ involvement.

The class listens, but it seems that it doesn’t really internalize everything.

They properly need to experiment this new art and craft approach!

In *Designing for Growth: A Design Thinking Tool Kit for Managers* (2011), Jeanne Liedtka and Tom Ogilvie frame four easy to remember, but meaningful questions that summarize and drive Design Thinking process.

Figure 4 depicts design on the basis of the two authors’ research. The four questions are: *What is? What if? What wows? and What works?*

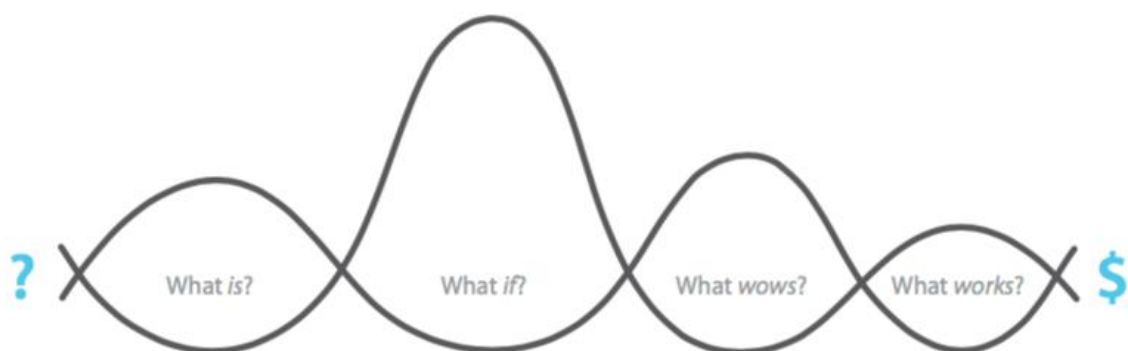


Figure 4: Design (Liedtka and Ogilvie, 2011, p. 21)

Around each question there are bands that widen and narrow. They represent the divergent and convergent thinking. Each question and therefore each step goes through a progressively expanding vision of concepts and ideas to move towards a more constraint set of options. During divergence choices are created, while during convergence choices are made. Design Thinking combines the generation of new and various ideas with their evaluation. The mind-set differs from a mere decision attitude because it approaches each problem and each constraint as a possibility to

create something able to improve the current situation (Boland and Collopy, 2004). IDEO as well stresses the unique features of Design Thinking and justifies the uninterrupted shift from abstract thinking to concrete observations to effectively create innovative designs.

“Human-centered design is a unique approach to problem solving, one that can occasionally feel more like madness than method—but you rarely get to new and innovative solutions if you always know precisely where you’re going.”

(IDEO, 2015, p. 13)

Indeed, the *What is* stage investigates current reality. Although Design Thinking aim is to better an improved future state, it does not start looking at the future, but exploring the present being firmly human-centered. An accurate assessment phase is therefore required on present basis to bring customers from their current state to a more favourite one. The *What is* stage starts identifying and defining the problem to inquire, the current state’s fallacy customers often do not even know to experience. Then it formulates a design brief to move into actions and ends with the reframe, that is the classification of design criteria to lighten new opportunities, that were already present, but hidden until this moment. Hence the insights generated in this first step are based on current reality and real stakeholders. The *What if* stage envisages a new future and moves from a data managed explorative stage to a more creative one. It is a creative and generative step to explore a wider range of possibilities, concepts, trends and uncertainties which start popping into designers’ mind, who do not have to disintegrate or criticize any of them. Remember: to defer judgments! The *What wows* is designated to make some choices. It is time to recognize the best concepts, actually those that create a wow effect, but it is still not the time to test ideas’ value. Those concepts will guide next step and will be submitted to further evaluations. A rapid prototype is here needed to make a visual representation and to allow following feedback sessions. The *What works* takes ideas into the marketplace. It is the time to improve the prototype and to bring it face to face with stakeholders to get some feedbacks. Those feedbacks are necessary to improve and refine the idea. The designer engages with customers to co-create

a solution with them. There is a real shift in the paradigm of problem solving; from designing for users to design with users the best solution ever (Liedtka and Ogilvie, 2011).

The theoretical part of the second lab ended with the introduction of Design Thinking three spaces (Brown, 2008):

- inspiration: the first space is appropriated to learn as many stories as possible by people observing their lives, talking to them, hearing their wishes and dreams, their ambitions and their constraints to get more familiar with the challenge;
- ideation: the second space focuses on making sense of the information gathered before in order to recognize design's chances, generate wide range of ideas and to test and improve the main solution;
- implementation: the third space is appointed to give life to the solution and to bring it to the market (IDEO, 2015).

"Guys, I know you're waiting for something different. I've already spoken too much, but those theoretical inputs were necessary to approach the practical part of this workshop. I hope you all listened to Design Thinking principles really well, because now it is time to put into practice the entire process in only 49 minutes!" – utters Daniela turning the point, while students open their eyes wide.

"The best way to learn more about Design Thinking is doing things. Then, don't waste other time! What does this slide represent?" – asks she bugging students' mind to give an obvious answer seeing that the slide simply represents many different man's and woman's wallets.

"Now, it's time for the wallet experiment! This experiment will allow you to explore Design Thinking steps. It is divided into 9 different activities. Each activity has to be strictly completed within fixed time. Before each activity starts I will clearly describe what you should have to do and how many minutes do you have to finish it. I know it is really challenging and that you are full of doubts before starting too, but please don't worry and enjoy it! You will surely succeed in the experiment moving

step by step and I'm pretty sure you will learn a lot! – suggests Daniela trying to look at everyone's eyes and to reassure students' uncertain faces.

“Do you have a pillow with you? We have to change the setting of the room while we are practicing Design Thinking. Please, go finding different seat from the constrained one in which you are seating now. Wherever you choose to sit, try to find a place where you can be comfortable. I'm aware we are closed in a management classroom and the fact that seats and desks are fixed on the floor don't allow you to modify a lot the disposition of the materials, but try to use the floor and the desks differently choosing new seats in the space. Please, for the next ActionFriday take with you some pillows or everything that could allow you to feel more relaxed!” – recommend Daniela while management students stand up and change their perspective seating on the tables or on the floor.

Students were surprised by teaching assistant's clues. They have never had the possibility to move around the classroom. On the contrary, they have always been compelled to take a seat and to do not move until the end of the lesson. For this reason, at the beginning, they felt quite embarrassed and freezing toward the new approach. By degrees they started to move waiting to start the wallet experiment. As I already stated in the introduction, spaces play a crucial role in the experiential learning: shaping adequate learning spaces means encourage the process of experiential learning (Kolb and Kolb, 2005). Business school classes are not ready to embrace design thinking process. This weakness emerged also in Nunzia Coco, Monica Calcagno and Maria Lusiani (2016) paper, where they ascribed to “fixed desks, chairs and not disposable wall” (Coco, Calcagno and Lusiani, 2016, p. 21) the guilt to increase competitiveness and decrease collaboration among management students because in that way they are organized to work only individually without being involved in the process of learning.

“[...] knowledge is created among subjects seeking meaning, participation and learning.”

(Nordtømme, 2012, p. 318)

Nordtømme (2012) states the crucial role of materiality to help meaning making. Truly, spaces and materiality¹⁴, which are strictly connected, condition participation and interaction with colleagues in the process of meaning making, which according to Dewey (1997) is basically a human performance to give sense to the world. “Spaces are not neutral” (Nordtømme, 2012, p. 319). On the contrary both physical spaces than social spaces¹⁵ create a net full of expectations (Clark, 2010). Hence spaces can empower or hinder different teaching methods as well as learning effects (Oblinger, 2005). Management classes are full of obstacles that prevent students to actively participate in the learning process, which has to engage students. For instance, the classroom’s furnitures should be mixed and matched to encourage diverse kind of activities. Chairs should be lightweight and wheeled to allow a quick reconfiguration of the classroom for each eventuality (Long, Brown and Long, 2014), for instance for the wallet experiment.

The wallet experiment is composed by 9 short challenges to do in a pair and a chronometer is strictly required because each challenge has to be completed within some minutes:

1. design your ideal wallet: students have to let out some ideas for the ideal wallet and sketch them – 3 minuses time;
2. your new mission, design something useful for your partners: students challenge is to design something meaningful for the partner. The priority of designing for someone else is to achieve empathy with that person. Empathy could be established having a good conversation. Therefore, students have to find a partner in the room and an interview should start between the two. Each one has 4 minutes time to interview the colleague taking notes of everything. As a starting point, it could be helpful to ask the co-worker about his ideal wallet interrupting his answer for asking many times the why question. Then students have to forget

¹⁴ Namely how artefacts get involved in human activities and contribute to chances or restrictions (Otto, 2005)

¹⁵ Physical spaces are created by the architecture, while social spaces are invisible and enclose shared meanings instilling a sense of belonging to a determined community (Bourdieu, 1998).

about the proper challenge and to find what is pretty important for the mate in a more general perspective – 8 minutes time;

3. reframe the problem, capture findings: again, students have to work individually because they have to reflect about partners' answers and to synthesize what they have learned into few needs. Pay attention that needs should be verbs. Students have to think about some insights that they gathered from previous step that could be useful to leverage when creating solutions – 3 minutes time;
4. reframe the problem, define the problem statement: still working individually, students have to select the most interesting need and gripping insights to specify a problem statement, that they later have to address with their design – 3 minutes time;

[Lots of questions emerged in this step. They mainly refer to students' difficulty to understand the word *insight* and they ask for more explanation showing what they did in the previous step to ask if they were right. They chased an immediate problem-solving approach.]

5. ideate, generate alternatives to test: students have to rewrite the problem statement at the top of the page and to create solutions to the designated challenge sketching a lot of different ideas without sketching the wallet itself, but many solutions for the problem statement. Being time for idea generation, every sketch and every idea works. Evaluation and judgement are banished in this step. Visualization is strongly important and words are allowed only to explain details – 5 minutes time;
6. ideation, share solutions and capture feedbacks: it is time for couples to share their sketches with the partner and to note likes and dislikes. This step is precious because new insights could be revealed. It is fundamental to listen to partners' reactions and questions and learning from him. Students do not have to forget to fight the urge to explain and defend their ideas – 10 minutes time;
7. iterate based on feedbacks: thanks to the new conversation, students have to elaborate what they have just learned and to sketch a new idea that can be only a variation of the previous one or something completely new. Students are still addressing the problem statement, but if it necessary, it could be revised with

new insights and discoveries, while the idea should be completed with many details as possible – 3 minutes time;

[There was an apparent resistance to encouragement to change their ideas.]

8. build your solution: adopting the sketched idea as a blueprint is time for students to make a tangible manifestation of the solution, to prototype a physical solution for the partner who will engage and interact with it. It is not necessary to test the overall solution, each one could singly decide to test just one aspect of it – 6 minutes time;

[Students muttered, grumbled. They looked confused.]

9. share your solution and get feedback: it is time for each student to share the solution with his partner to gain feedbacks and new insights. It is not allowed to defend own prototype, because what matters is to watch the partner interact with it writing down what he likes or dislikes, all the questions that emerge and new ideas – 8 minutes time.

The same evening the teaching assistant wrote a post on the Facebook closed group *Design Management Ca' Foscari*¹⁶ asking students how they felt after having experimented Design Thinking approach through the wallet experiment. The post was viewed by 90 people out of 149 members. In the group are still registered also students attending the second year of the Master Program in Innovation and Marketing, who were enrolled with me in the first edition of DIM module. 21 students reacted with a like, while 7 students wrote a proper comment.

Reading those comments students displayed that after an initial confusion overture they had fun (FB: S. 13, F – Team 3) thanks to the “great” (FB: S. 49, M – Team 10) and “challenging” (FB: S. 11, F – Team 3) activity. They properly learned to satisfy their mates’ needs and linked the wallet experiment to tomorrow world of work (FB: S. 26, F – Team 6) reflecting about the utility Design Thinking tools would have in

¹⁶ Students had to join the Facebook group to be always up to date about slides reviewed during ActionFridays, to download their assignments, to get the link to book weekly meeting slots with the teaching assistant and me and last, but not least, to engage with their colleagues and share news and thoughts about design and innovation.

their future careers (FB: S. 53, M – Team 11). Professor Monica Calcagno replied with a comment too, announcing that the learning process was just at the beginning.

The screenshot shows a Facebook post from Daniela Pavan, dated 30 settembre 2016. The post text reads: "Hi all! How do you feel after the workshop? You should be all proud of what you did!! It wasn't easy going through all those tasks but you did it! No worries, we will work on all of them in detail. Have a great weekend and see you next week 😊". Below the post, there are several comments from various users, including S. 49, M - Team 10; S. 47, F - Team 10; S. 11, F - Team 3; S. 13, F - Team 3; S. 26, F - Team 6; S. 7, F - Team 2; and S. 53, F - Team 11. The comments express positive feedback and reflections on the workshop experience.

Figure 5: Screenshot 1 (https://www.facebook.com/groups/1583351125231539/?ref=br_rs, Accessed on 02.08.2017)

The initial confusion Student 13, F – Team 3 expressed on Facebook, was shared by Student 54, F – Team 11 too during the final interviews. She mentioned the wallet experiment as the activity that at most throw her off centre because of its practical nature and her low familiarity with this approach.

2.2. Students' personal thoughts

Following process books' extracts are mainly dated 30th September 2016 or at least refer to the wallet experiment and the second ActionFriday.

Many students designed the second ActionFriday as a “challenging day” (PB: S. 1, F – Team 1; S. 41, F – Team 9), a “very interesting lesson” (PB: S.4, F – Team 1; S. 32, M – Team 7; S. 37, F – Team 8, S. 47, F – team 9; S. 52, F – Team 11), “really cool right from the beginning” (PB: S.13, F – Team 3), and “even more challenging and weird than the week before” (PB: S. 16, F – Team 4).

Students spread the word that the second ActionFriday was that exciting that Student 15, M – Team 3, who actually missed the lab, wrote on his process book that one of his friends who participated in the workshop said it was exciting and fun, so he committed to do his best to join the followings.

Student 3, F – Team 1 specified that the most important thing she appreciated by the second ActionFriday was that “it stimulated my creativity which in all other lessons is forced to bend to the routine.” This thought conveys the creativity and different nature of Design Thinking labs, which are inclined to give management learners the possibility to develop new perspectives.

The wallet experiment was “awesome” (PB: S. 5, F – Team 1; S.10, F – Team 2; S. 44, M – Team 9), “fun” (PB: S. 5, F – Team 1; S. 34, F – Team 7; S. 37, F – Team 8; S. 52, F – Team 11), a “great experience” (PB: S. 34, F – Team 7; S. 49, M – Team 10), “useful” (PB: S. 41, F – Team 9; S. 55, F – Team 11), “really illuminating” (PB: S. 44, M – Team 9), “a kind of game to introduce us in a new dimension” (PB:

S. 16, F – Team 4), but also “hard” (PB: S. 17, M – Team 4), which induced to “think out of the box” (PB: S.38, F – Team 8).

It emerged that trying to understand users’ needs “is not simple at all” (PB: S. 4, F – Team 1; S. 21, F – Team 5; S. 35, F – Team 7) because it requires to put in “someone else shoes” (PB: S. 8, F – Team 2) “to change our point of view” (PB: S. 53, M – Team 11) and ask the “right questions” (PB: S. 49, M – Team 10; S. 50, F – Team 10), but it “helped to focus on a real, physical goal” (PB: S. 20, F – Team 4). Student 39, F – team 8 really liked to figure out her partners’ needs because she felt she was doing exactly what a marketer does. Student 55, F – Team 11 was of the same mind: she found very useful to better understand the inner desires and priorities of the person she was talking to and she thought that “understanding users’ needs is very difficult although it is a key value in marketing”.

Student 44, M – Team 9 confessed his astonishment towards what he learned.

“The real thing was, as I said, the process. I never thought about how difficult it is to gather insights from users. I realized my ideas can’t be generalized to the whole population and listening to users is fundamental. I came up with some ideas that ended up being a product really different from the one I would have realized before. Awesome!”

(PB: S. 44, M – Team 10, 30th September 2016)

This quote is an invaluable example of management students’ necessity and curiosity to be more practical in their studies, to understand better and actually test what they previously learned only theoretically, because “it is easier to learn something by doing it rather than just reading on books” (PB: S. 37, F – Team 8). To support what I just stated there is another process book’s quote by Student 52, F – Team 11 who wrote: “I liked that once we have seen the theoretical side of the topic, we immediately put it into practice with the wallet challenge.”

Time pressure was again one of the main difficult elements to manage to accomplish the experiment (PB: S. 1, F – Team 1; S.10, F – Team 2; S. 20, F – Team 4). Student

38, F – Team 8 is an Asian exchange student and during the wallet experiment she realised she was not good enough at working in limited time with limited materials. She also referred to an article she read about the productivity benefit of working under time pressure and the ineptitude of Asian people to do it. Therefore, she identified her difficulty in her country's disposition, but she was enthusiastic about the opportunity to practice working under time pressure and she decided to start doing something in limited time in her daily life to improve her proficiency.

Many students complained about their bad drawing, prototyping and crafting abilities (PB: S. 3 and 4, F– Team 1; S. 17, M – Team 4, S. 39, F – Team 8; S. 49, M – Team 10) and they apologized for their ugly outputs, but mostly of them were really satisfied to have done something with their own hands (PB: S. 10, F – Team 2; S. 34, F – Team 7; S. 37, F – Team 8) having stepped out their comfort – zone (PB: S. 39, F – Team 8). Student 50, F – Team 10 got this concept stronger and concerning the prototyping step wrote: “I love to do these kinds of things because I believe they challenge you in such a way that in the end, no matter what, you feel proud.” She exactly guessed right the thought of numerous of her classmates.

Student 52, F – Team 11 stood out another considerable topic, that is the significant possibility students had to know each other working in pairs.

Furthermore, many students underlined the fact that they have never done any project like this before and that they have never had the possibility to test their creativity “so far and so hard” (PB: S. 49, M – Team 10).

Student 44, F – team 9, a Japanese exchange student, stressed that she had never taken a lesson on the floor when she was in Japan, but she really enjoyed it because she was able to become friendlier with her partner given the closer distance between them working in a free space. As the Japanese girl, also other colleagues appreciated to have worked sitting on the floor (PB: S. 13, F – Team 3; S.47, F – Team 10; S. 50, F – Team 10) and to have had the possibility to take some pillows to move around the classroom avoiding staying constrained by small and fixed seats and desks (PB: S. 7, M – Team 2). The choice to move around the classroom was done to allow students to feel freer and to spur their creativity.

“At the beginning I felt embarrassed, I couldn’t see any sense at what we were doing. When we changed our point of view, and we focused not on what we thought could be the solution for the problem (MY SOLUTION!), but on the insight given from the other person to solve the problem, I started to think as a designer. This process allows me to be free and to use tools and solutions even not related with the mere building of a wallet. I started to feel the design thinking, I created connections that I thought were impossible and I open my mind in a terrific way. WHAT AN EXPERIENCE!”

(PB: S. 53, M – Team 11, Week 2)

To sum up all previous observations I find really appropriate what Student 53, M - Team 11 came clean about the wallet experiment. Initially he felt disoriented, as mostly of his colleagues, but moving on he started to identify himself with the figure of a design thinker to solve his mate’s needs. He, as his classmates, had to challenge himself by listening to the needs of someone else, learning lessons from mistakes and building a real prototype. He spoke about connections, he wrote he created connections he never thought to be able to do before. It means that the activity gave him the possibility to become aware of his potentialities. He used the adjective *terrific* to describe how his mind opened living a completely new experience.

And it was just the beginning!

The second ActionFriday ended with some slides regarding the project group.

The teaching assistant revealed the 4 organizations on which teams had to focus:

- two creative organizations: Il Libro con gli Stivali; Altobello Lab.
- two cultural organizations: Fondazione Querini Stampalia; M9.

Each team was associated to study only one organization. The objective consisted in understanding who the users of the organizations were, what their needs were and what gaps needed to be filled to improve users’ experiences. To present their proposals each team had to design a prototype to solve the discovered gap.

In the end components of each team were announced based on the creativity challenge analysis that assessed students' creative confidence level.

Team 1 – M9: S. 1, F (her name reminds foreign origin hence we thought she was an exchange student, but she was not); S. 2, M; S. 3, F; S. 4, F (her name reminds foreign origin hence we thought she was an exchange student, but she was not); S. 5, F. Due to names' misunderstanding this team did not have any exchange student within his components.

Team 2 – Fondazione Querini Stampalia: S. 6, M; S. 7, M; S. 8, F; S. 9, F; S. 10, F – Exchange.

Team 3 – Il Libro con gli Stivali: S. 11, F; S. 12, F; S. 13 F (her name reminds Italian origin hence we thought she was an Italian student, but she was not); S. 14, M; S. 15, M – Exchange. Due to names' misunderstanding this team had two exchange students within his components.

Team 4 – Altobello Lab: S. 16, F; S. 17, M – Exchange; S. 18, F; S. 19, F; S. 20, F.

Team 5 – Fondazione Querini Stampalia: S. 21, F; S. 22, F; S. 23, M; S. 24, F. This team was composed by another female component; she was an exchange student, but she only attended half part of the module and she did not deliver her process book.

Team 6 – M9: S. 25, F; S. 26, F; S. 27, M; S. 28, F; S. 29, F; S. 30, F – Exchange (she did not deliver her process book)

Team 7 – Il Libro con gli Stivali: S. 31, F; S. 32, M; S. 33, F – Exchange; S. 34, F; S. 35, F.

Team 8 – Altobello Lab: S. 36 F; S. 37 F; S. 38 F – Exchange; S. 39 F; S. 40, M.

Team 9 – M9: S. 41, F; S. 42, M; S. 43 M; S. 44, F – Exchange; S. 45, F; S. 46, F.

Team 10 – Altobello Lab: S. 47 F – Exchange; S. 48 F – Exchange; S. 49, M; S. 50, F; S. 51, F.

Team 11– M9: S. 52, F; S. 53, M; S. 54, F; S. 55, F; S. 56, F; S. 57, F – Exchange.

7th October 2016

3. Define Context & Opportunity

Always use your brain.

(PB: S. 23, M – Team 5, 7th October 2016)

3.1. When, What, Why did it happen?

The third ActionFriday is dated back to the 7th October 2016, exactly one day after the uploading of the first assignment on the Facebook closed group *Design Management Ca' Foscari*.

The lab started with a review of process books' utility and other information about the schedule of the project group.

"During the previous labs, we started working on the development of a Design Thinking mind-set and we dealt with the creativity test and the wallet experiment. Are we all on the same page guys?" – asks Daniela at the beginning of the lab to attract everyone's attention. She feels students came to the lab with a lot of expectations and she has the crucial role to weekly raise expectations' level endlessly offering new stirrings. To maintain students' concentration, she discloses that it is time to work on Design Thinking with real projects!

"As we anticipated last Friday, Design Thinking is a collaborative approach. Let's see more in details what does it exactly mean. To approach your design challenge, you are divided in teams because Design Thinking promotes team work, or better it fosters the synergy of an interdisciplinary mix of thinkers, doers and creative people. Human-centered design works best with cross-disciplinary teams, because different ways to approach the same topic help finding innovative solutions. And within you there is a big plus because you are even cross-cultural teams! Once you will start working in teams on the assignments you will notice that within each team there are different personalities and that each one is more disposed to let his light shine in specific contexts. Considering that Design Thinking spaces are really different from one another, cross-disciplinary teams are also desired so that during each space the component who feels more confident with the tasks could drive his mates." – explains Daniela to elucidate teams' composition, while students go on thinking of previous Daniela statement: it is time to work on Design Thinking with real projects!

"Today's main topic is the context and it is what you have to investigate with your first assignment too" – says Daniela.

The classroom becomes quite because students perceive that they have to assimilate theoretical concepts as much as possible if they want to research their problem statement as best as they can.

Context analysis focuses on *What is* question, the first one out of the four questions designers have to investigate. Do not forget that “designing is a fundamentally human activity in everyday life” (Krippendorf, 2011, p. 413). Hence, the context depicts the environment that surrounds any problem to be solved in everyday life. To reply to the *What is* question, students had to analyse the context observing the reality. How could students organize their observation session? They could check all the information available both online and offline, look for documents and researches linked to their field of study, go out and personally visit the organization they were working on, directly immersing themselves in the real world, the experience offered by the organization pretending to be real users and talking to people who worked in the organization or in its neighbourhood or who just lived in the vicinity. Of course, they could also meet real users and talk to them, while users experience the product/service, without transforming the talk in an interview because this pinpoint is the focus of the following step.

To design a good user experience, designers have to answer the 6 Whys and 1 H questions. The observation of the context should include those people *who* the design is addressed for to deeper understand their characteristics. The aim is to observe *what* and *how* are currently interactions with the product or service, in the physical location or path of activities *where* users do it, at the time of the day *when* they use the product or service to understand *why* people act in that way and *which* meanings they associate to their experiences.

Why is the context so relevant? Only if the designer understands the context he can create a successful design that fits a particular environment.

To study a context is not banal at all. It can be really challenging for many reasons:

- a product/service can be used in different contexts;
- design can affect/be affected by the context;

- designers need to experience the context as real users to create successful design.

“Guys, are you ready for the marshmallow challenge? Please divided into teams, the same teams we announced last Friday and one component per team comes here by me. We will deliver an envelope to each of you. Do not open it until everyone receive it and do not play with it, it contains fragile things” – communicates Daniela while I start giving the envelopes pleasing students to be really careful with it. Teams clamour. They wonder what could be hidden in the envelopes and what has a marshmallow to do with the lesson. They joke, they are doubtful, but they seem enthusiastic to challenge themselves with another different activity.

Every group receives the envelope and Daniela reveals the content:

20 sticks of uncooked spaghetti;

one tape;

one yard string;

one marshmallow.

“You have 15 minutes time to build the tallest free-standing structure with the supplied material and nothing else to sustain the marshmallow who has to be on the top. Who builds the tallest free-standing structure wins. We will measure the structure from the desk to the top of the marshmallow. Pay attention that the marshmallow must not fall.

Ready?” – in a context of astonished, but amused looks Daniela and I start the countdown – “3, 2, 1 go!”

The Marshmallow challenge¹⁷ is an easy, fun and design challenge that helps team building, collaboration and not just that.

The Professor, the teaching assistant and I walked through the room while students progressed in their building. It was amazing to see teams’ reaction and organization to face the challenge. Groups behaved really differently. Someone sketched the structure before doing it, someone else started immediately to erect spaghetti.

¹⁷ It was designed by Peter Skillman when he was the vice President of Palm Inc.

Teams looked around, they felt the competition. Suddenly someone screamed because some spaghetti broke, but they continued unperturbed to try doing their best. The marshmallow was unexpectedly heavy for many structures. Collaboration emerged more in some teams, rather than in others. People within each team collaborated together for the first time. Some leader personalities came out more than others, but at least teammates started to know each other. Not all the groups spoke in English during the challenge, although exchange students were participating. The English language was a limit for some students and this limit came up a lot during stressful situations as the marshmallow challenge was for its limited time. When the countdown hit zero some teams had still to finish their prototypes, but they all had to stop and take a step back. We measured all the structure. Each team tried to say its structure was the tallest one, the one that should win, but the measuring was an impartial process. Team 1 won the first price, a full bag of marshmallows. As Student 3, F – Team 1 wrote in her process book “All structures were measured. Our tower was 95 cm high. Not very high compared with the others, BUT it was the only one that was freestanding! Finally, we won because our tower was the only one that was actually freestanding!” their structure won because was the only one that respected selection criteria. Student 5, F – Team 1 underlined that none of her team’s components was the leader and he stressed their ability to balance out: “We were to share our ideas and this was probably what allowed us to win. It was also really fun, we started feeling some pressure (especially myself and S. 3, F – Team 1) but other members were great at keeping it as a game and in the end, it all paid off.”

Team 5 got the 2nd place. Their structure was the tallest not freestanding one. They won a box of spaghetti to eat together to better know each other sharing a victory that reflected their team complicity. Student 22, F – Team 5 noted her team’s victory “We got 2nd place and WON spaghetti!!! —> we ate them together: it was great for team-spirit! :)”

After the winners’ announcement, the teaching assistant disclosed the marshmallow challenge’s relevance to the learning process. In addition to be a dynamic that urges participants to collaborate and to be innovative and creative making a rapid

prototype, the marshmallow is a metaphor for the unknown assumptions of every kind of project. In the Marshmallow Challenge the assumption is that marshmallows are really light and soft and therefore uncooked spaghetti sticks should be strong enough to support them. Actually, when students attempted to build the structure, they become aware that the marshmallows were not so light. So, the morale in the marshmallow challenge is that every project has its own marshmallow. Students had to identify the assumptions in their projects, check and test them in the beginning and often to bring some innovations.

In 2010, during a TED talk Tom Wujec, an Autodesk fellow, talked about the Marshmallow challenge and shared data of an interesting research. (https://www.ted.com/talks/tom_wujec_build_a_tower/transcript?language=en, Accessed on 07.08.2017)

ARE YOU MORE CREATIVE THAN A FIVE YEAR OLD?

How high can you build a tower out of spaghetti and scotch tape that can hold up a single marshmallow? You've got 18 minutes. Here's how well various teams of children and adults did.

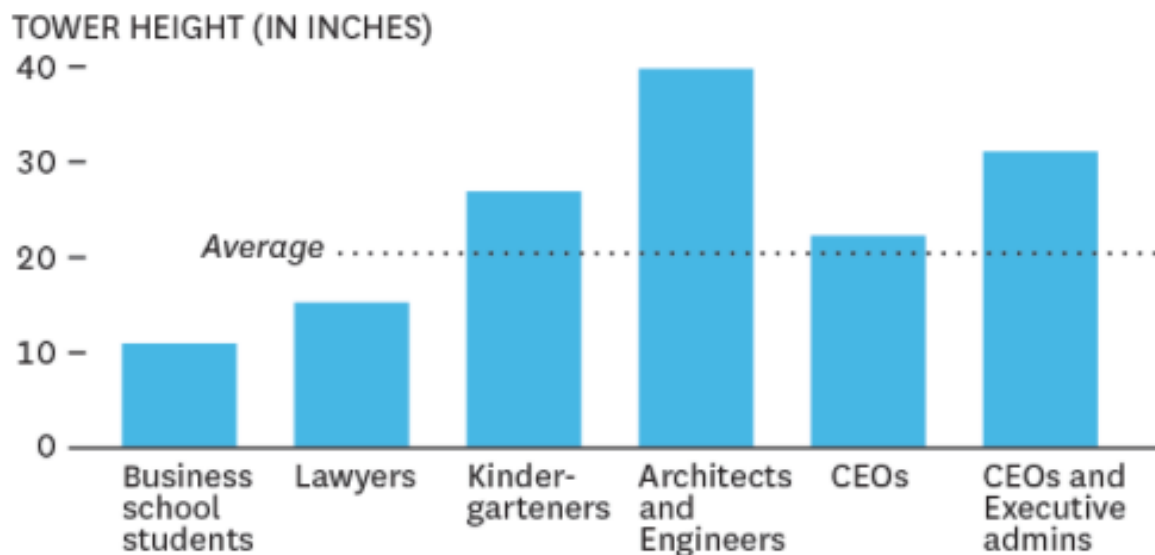


Figure 6: Marshmallow challenges' average structures

(https://www.ted.com/talks/tom_wujec_build_a_tower/transcript?language=en,

Accessed on 07.08.2017)

The research investigated six various groups of people:

- Business school students;
- Lawyers;
- Kindergarteners;
- Architects and Engineers;
- CEO's
- CEO's and Executive admin.

Figure 6 shows that on average teams built a structure of 20 inches. Architects and Engineers performed better. Collaboration between heterogeneous skills gave life to preferable results. Business school students were the worst followed by lawyers. They actually underperformed the average. Why? Business school students usually spent the first minutes to fight for the leadership, then they started talking, planning, sketching their ideal structure and when they finally decided to build the tower up half of the time was already run. Additionally, business school students thought that there was only one possible answer to win the challenge and truly for this reason they spent half of the time planning, instead of acting (Scott, 2014).

“And then finally, just as they're running out of time, someone takes out the marshmallow, and then they gingerly put it on top, and then they stand back, and -- ta-da! -- they admire their work. But what really happens, most of the time, is that the "ta-da" turns into an "uh-oh," because the weight of the marshmallow causes the entire structure to buckle and to collapse.”

(Wujec, T. (2010), Build a Tower, Build a team, TED talk, minute 01.01)

Hence, while business school students had a lot of “uh-oh” moments, kindergarteners lived more “ta-da” moments. They are 3rd best players behind architects and engineers and CEO's and executive admins; they really outperform the average. Beyond the fact that kindergarteners did not spend time to fight to become leaders, they started to experiment from the first second. They started building a structure around the marshmallow making several trials, several prototypes, but always putting the marshmallow on the top. Without knowing, they properly followed the Silicon Valley mantra *fail fast, fail often*, naturally learning from their mistakes. To understand what does not work, allows to find what will work.

Moreover, failure is intrinsic in human-centered design because it seldom happens that the first try is the right design to solve users' needs. "When human-centered designers get it right, it's because they got it wrong first" (IDEO, 2015, p. 21). Therefore, children had time to get feedbacks on their structures and to better them if they did not satisfy the challenge's criteria. On the contrary, business school students who firstly tried to find theoretically the best solution and then to accomplish it, had no more time to work out their structures when in the end they understood their project had not considered the huge marshmallow's weight for a tower made only by spaghetti.

Marshmallow challenge's fundamental lessons are truly more than one. I already expressed the metaphor standing back the test, that is to test repeatedly the assumptions of each project because step by step sprout problems which were not possible to predict in advance. Later, it emerges again that when we were children we were all innate more creative and innovative than as we grow up and take part of the current education system. The hope is that as we all lost our creative and innovative skills, we can also have the chance to work on ourselves trying to establish them again. The author and managing partner of the consulting firm Innosight Anthony Scott (2014) suggested to approach challenges and situations with a *beginner's mind*¹⁸ to get more stimuli and uncover oppressed ways of thinking. This strategy was recommended to management students by the teaching assistant too as a good way to accost the first assignment to gather as many information as possible from the context of the organization they had to analyse. Lastly, I report the last part of Wujec's talk when he described design as a *contact sport*.

"And the fundamental lesson, I believe, is that design truly is a contact sport. It demands that we bring all of our senses to the task, and that we apply the very best of our thinking, our feeling and our doing to the challenge that we have at hand. And sometimes, a little prototype of this experience is all that it takes to turn

¹⁸ This concept has Zen origins and refers to an opening and curious condition regarding a new event or situation. Preconceptions are banned, while passion and dedication are welcomed to face the new topic and learn as much as possible about it.

us from an "uh-oh" moment to a "ta-da" moment. And that can make a big difference."

(Wujec, T. (2010), Build a Tower, Build a team, TED talk, minute 06.11)

3.2. Students' personal thoughts

Following process books' extracts are mainly dated 7th October 2016 or at least refer to the marshmallow challenge and the third ActionFriday.

The third ActionFriday was a "crazy" (PB: S. 10, F - Team 2) and "surprising lesson" (PB: S. 1, F - Team 1). It was "really good" (PB: S. 13, F – Team 3) and "really exciting" (PB: S. 17, M – Team 4; S. 47, F – team 10). Student 31, F – Team 7 was the same mind, but she added some reflections. She depicted the marshmallow lesson as a "great lesson", but she asked for more time to discuss about it because otherwise "it might seem banal", while Student 35, F – Team 7 noted down that she could learn "much more from this kind of lessons" for her future and life "compared to traditional classes."

Students characterized the marshmallow exercise as a "funny" activity (PB: S. 5, F – Team 1; S. 12, F – Team 3; S. 13, F – Team 3; S. 17, M – team 4; S. 28, F – Team 6; S. 32, M – Team 7; S. 40, M – Team 8; S. 44, F – Team 9; S. 45, F – Team 9; S. 50, F – Team 10; S. 51, F – Team 10; S. 54, F – Team 11; S. 55, F – Team 11; S. 56, F – Team 11), "very challenging" (PB: S. 12, F – Team 3; S. 34, F – Team 7), as "an amazing experience" (PB: S. 25, F – Team 6; S. 34, F – Team 7; S. 47, F – Team 10; S. 49, M – Team 10; S. 57, F – Team 11), "useful to build team spirit" (PB: S. 12, F – Team 3; S. 41, F – Team 9; S. 56, F – Team 11) to "get to know each other" (PB: S. 13, F – Team 3; S. 26, F – Team 6; S. 28, F – Team 6; S. 32, M – Team 7; S. 44, F – Team 9; S. 53, M - Team 11) and "to understand the importance of working in a team" (PB: S. 25, F – Team 6).

Student 28, F – Team 6 emphasized the fact that the challenge helped students to better know each other. She made an effective deep thought writing that "during the construction of the tower, we were building our team too!" Student 7, M – Team 2

formulated that it was “cool to explore the various possibilities but at the same time going with the quickest (because of time limit)” and he connected the challenge to the project they had to investigate with the design thinking tools, saying that the practical lesson surely helped them to understand how they could work on their project.

Student 38, F – Team 8 contemplated what she learned from the marshmallow challenge and she realized that these following repeating actions are fundamental to achieve the key to succeed: “to think about an idea → to do it → to fail → to guess about causes and solutions → to think about an idea → to do it → to fail → to guess about causes and solutions → ...repeat it many times... → success!!!” Truthfully what she learned is exactly what kindergartners did facing the marshmallow challenge. Hence, what she wrote is another example in support of the fact that business students have to regain their children’s open-mindedness skills.

According to this topic Student 55, F – Team 11 expressed a controversial thought because even if she explicated her confusion about the module, it is not completely clear if she welcomed the possibility to have fun through *childish expedients* that helped to memorize concepts or if she preferred to practice with different expedients. Literally she wrote: “I am a bit confused about this course, since it brings me back to my childhood rather than making me grow up. I don’t think this to be a bad thing, but maybe we are old enough to be able to practice even without childish expedients. At the same time fun helps memory to memorize concepts, so it could be a very nice opportunity indeed.”

Students wondered about the envelopes’ hidden materials, but when they were allowed to open them, they become even more surprised (PB: S. 3, F – team 1; S. 28, F – Team 6; S. 40, M – Team 8). Many learners wrote that the challenge was “not easy” (PB: S. 1, F – Team 1; S. 41, F – Team 9; S. 51, F – Team 10) because it “turned out to be a lot harder than expected” (PB: S. 17, M – Team 4). Furthermore Student 28, F – Team 6 expressed her team difficulty to organize colleagues around the challenge: “It was really difficult to organize the team made of different person;

every has its own ideas! Then we started working together, correct each other, find best strategy and even if we hadn't win, it was really fun!"

Moreover Student 4, F – Team 1 found some difficulties in understanding the marshmallow challenge's aim and pushed by a learning desired she did some researches on Google. She saw the video by Tom Wujec on TED and she got her answers thinking at the activity as an interesting one.

Some other students reflected on the mistakes they did facing the test: they did not examined the assumptions they initially did on marshmallow's weight "we were fast, we were all collaborative, we communicated in an easy way, we worked for a very tall tower, but we didn't think about that height would have been the obstacle for our win" (PB: S. 20, F – Team 4) and they spent too much time making plans "it was absolutely hilarious, we tried to make plans at first but then we ended up changing all of them in the last 2-3 min. We were really working together and collaborate with each other" (PB: S. 36, F – Team 8).

Student 13, F – Team 3 experienced exactly what Tom Wujec said during his speech, that is that business school students put the marshmallow on the top of their structure when the time was almost over and most of the time the structure collapsed.

"We had a pretty stable "house" at the end - but the problem was, that we didn't thought about the high weight of the marshmallow compared to the other objects - and I think that nobody did, cause in the end when time down every group was just trying in a desperate way to fix this marshmallow somewhere → that was quite funny! And I think this was a good demonstration of some real-life problems: I think people often just think about the trivial things and forget about others, so the whole idea will crush down because they didn't take a deep look at the whole problem!"

(PB: S. 13, F – Team 3)

Student 54, F Team 11 was the only one that felt boring during the end of the ActionFridays. She showed her annoyance both in her process book than during

the final interviews saying that she did not know what to do during the end of the activities, which were usually employed to give teams' results and listen to groups' presentations. When she was asked to say what she would have proposed to do if she had been in teaching assistant's place, she answered she would have preferred to have something to do, a resume to listen or notes to take, instead of just waiting.

Many considerations dated 7th October refer also to the first assignment. Team 1, who had to focus on M9, wondered about the first assignment amount of work and information to gather (PB: S. 3, 4, 5, F – Team 1) and their initial difficulty to face with a reality that was still tangibly non-existent¹⁹. Team 2, who had to focus on Fondazione Querini Stampalia, was "scared" (PB: S. 8, F – Team 2) because it did not know where to start. To simplify components' coordination, they decided to meet at least once a week and to create both a Whatsapp than a Facebook group and a Google drive folder. Student 11, F – Team 3 loved the first assignment because she could use her imagination and creativity and because she could compare lots of ideas with her teammates. Team 10, who had to focus on Altobello Lab, found difficult to focus their attention on an organization where to improve new ideas without making some interviews (PB: S. 49, M – Team 10) – they still did not know interviews were the following step.

Management students' thoughts mainly reflected the research explained by Tom Wujec during the TED talk. This reinforces the validity of the qualitative data gathered thanks to process books, ethnographic observations and interviews.

¹⁹ M9 will be a museum to inaugurate in 2018. Nowadays it is still a working progress project.

14th October 2016

4. Build Empathy

***I've always thought that to do an interview is
simple, but it is not.***

(PB: S. 16, F – Team 4, 14th October 2016)

4.1. When, What, Why did it happen?

The fourth ActionFriday was planned for the 14th October 2016.

Students still had some extra time to work on the first assignment until the 17th October, but the teaching assistant started the ActionFriday launching the main topic of the second assignment.

“We will work on building empathy!” – discloses Daniela with her energetic and engaging way of doing. Students smile, they think that after the marshmallow challenge they could be ready for whatever engagements.

“Do you remember the pillars of Design Thinking?” – asks Daniela hoping for a positive answer. As a matter of fact, the answer comes from several voices and it actually is an affirmative answer.

“As we anticipated during the second ActionFriday Design Thinking is a collaborative and human-centered approach. Last Friday we spoke about collaboration, while today we will see more in details what does human-centered exactly mean. Actually, Design Thinking focuses on understanding needs and motivation of users from their perspectives, because users are the roadmaps for the origin of every solution. Users are at the heart of Design Thinking mind-set. You would ask how to get at this point, how to properly understand users. The answer is quite simple to say, but not that easy to internalize, because it depends by the inclination of each of you. You can get there by developing empathy. Some of you is naturally more inclined to this skill, while others should train it” – announces Daniela emphasizing the word empathy both in her speech than on the slides. The picture of a little girl putting on the big pair of shoes of her mother comes to light to stress the concept of developing empathy by putting yourself in somebody else’s shoes.

The design thinker is famous to solve problems that are not his problems, but users’ actual problems. Being human-centered designers allow to strongly believe that the team, who is working on a problem, is able to arrive to a solution that people need staying focused on what they learned from them (IDEO, 2015). The first stage to

create value for users is to engage with them to gain as many insights as possible about what they really need and want. Designers have to deeply understand how users behave, how they feel and what they intimately think. They have to read between the lines without asking users for solutions. They have to experience others' experiences. For this reason, empathy has a decisive role in the process.

“Empathy is the centrepiece of a human-centered design process. The Empathize mode is the work you do to understand people, within the context of your design challenge. It is your effort to understand the way they do things and why, their physical and emotional needs, how they think about world, and what is meaningful to them.”

(Hasso Platter Institute of Design at Stanford, 2013, p. 2)

The teaching assistant went on with the lecture and explained empathy should be built:

- observing users in their context, in the context where they live, work or just feel at ease to gather hints about what they want and how they feel; NB: to observe it is really relevant (i) to be prepared to catch information users would not say during the interviews because they think they are not useful, instead for the designer they might be essential to solve the problem (ii) and to notice disconnection between what people say and what they actually do, and how they do it;
- engaging with the right people, that is making interviews, or better conversations; NB: designers should prepare some questions they want to ask to users, but they have to be ready to let the conversation go where it has to even if it is an off-topic because sometimes tangents might be representative to get some different design opportunities; in these cases, asking “Why?” questions facilitates to get lots of stories from it;
- watching and listening attentively, that is asking users to show how they perform a task and to explain what they do step by step to deeply understand and learn what is going on in their mind while they do something. Watcher has to be ready to document item by item.

Management students take notes and increasingly interact with Daniela's questions.

"You have to remember that although Design Thinking is human-centered, to gather the information you need, you do not have to observe, talk, watch or listen to every kind of people, but actually you have to engage with the right people. How would you do it? First of all, building a strategy really counts a lot before jumping in the empathic action phase. It is decisive to frame a strategy around the people you would talk to define what you need to ask them. Of course, the strategy will be adjusted en route, but you have always to track who you talk to and to obtain information by a balanced portfolio of people between men and women, experts and users, people with different beliefs, perspectives, ethnicities and classes" – exclaims Daniela while the Professor Monica Calcagno jumps in and makes some examples of extreme users and non - users.

Once the strategy is built, it is important to define the audience, namely primary users, who are the people designers are looking to serve. Surely once in the field it becomes easier to understand who the primary users are, but be prepared helps to start the conversation with smart questions. Therefore, a question guide is requested to identify the main topics to investigate and to formulate questions related to explore the master challenge. Then researchers could go on the field to hear and gather stories from the people. It is surprisingly useful to interview people in their personal spaces, that are where they live or work because they feel at ease.

The teaching assistant rephrased IDEO's tips to manage a good interview.

"Given that it is fundamental to make the interviewee feel comfortable without overpower him or fill the entire location, each interview should be attended by maximum three research team members. Each one should be focused on his role. There should be an interviewer, a note-taker and a video maker, in charge to take pictures too, to document a more complete framework of what happens during the conversation, but without annoying the person or interrupting his natural behaviour"

– says Daniela while students listen and continue to take notes. They seem quite absorbed in the explanation.

“The second tip that IDEO highlights is to go interviewing with a set of questions already prepared because the context is dynamic and you could lose your kernel. First of all, you should welcome the interviewee and ask him some broad and generic questions about his life, work, values, hobbies or habits and only after he feels at ease you should start asking more specific questions linked to your problem statement.

While the person answers, make sure to write down precisely what he says and then don't limit the collection of information to the verbal conversation only. Pay attention to interviewee's body language and the context where you are to establish a stronger empathic experience! To take note of non-verbal details, ask the person's permission to take picture and to film the meeting. If he doesn't want to be photographed, ask him to take a picture of some of his personal details to get different insights” – concludes Daniela with a trustworthy tone of voice. She has a hard role: to try to keep students' attention high knowing that this ActionFriday is not really active as previous. Students wait to enter the scene but she planned a more traditional workshop spaced out by several videos in order to permit students to gain some knowledge to face this pivotal Design Thinking step.

“Makes sense?” – no one answers.

“Any question so far?” “No!” – answer the students.

Then Daniela presents the Gillette case study²⁰ and the importance to observe what people really do in order to design solutions. The case study is really funny and uncovers women's white lies, but students neither laugh nor comment it at all.

²⁰ Briefly, during a focus group women stated they regularly changed their razor blades. When researchers observed them in their houses, they apprehended women usually neglected to keep the resupplied blade in the shower. Given that no one wants to interrupt a shower to look for new razor blades, Gillette solved this problem designing a Venus razor with a blade dispenser to keep attached in the shower.

In *The Art of the Interview: Lessons from a Master of the Craft* (2010), Lawrence Grobel, the American freelance writer qualified in celebrities' interviews who gained the epithet of *the interviewer's interview* by Playboy, describes how an interviewer should act.

"[...] converse like a talk show host, think like a writer, understand subtext like a psychiatrist, have an ear like a musician, be able to select the best parts like a book editor and know how to piece it together dramatically like a playwright."

(Grobel, 2010, p. 18)

This quote is used by Tomer Sharon too, a Google Search User Experience researcher, in a youtube video (<https://www.youtube.com/watch?v=8tiuWYs5Z-A>, Accessed on 10.08.2017) in which he explains how to ask a question and in which he shares some techniques to help getting better answers during customer research. The video was shown in class during the fourth ActionFriday and gave lots of advices to management students to benefit their approach to the second assignment for which they had to interview people. Tomer Sharon begins the video defining what an interview is, that is "gathering information through direct dialogue" (Sharon, T. (2014), *How to ask a question: conducting research for your startup*, Youtube video, minute 00.37), then he goes through the concept of rationalization to arrive at a central point.

"When you interview people, when you ask people questions, look for the story! That is the most important thing in an interview. Ask about stories, about thing that happen. Ask about behavior. [...] Ask about perceptions [...] because they will help you again to pull out these stories. If possible ask to observe behavior."

(Sharon, T. (2014), *How to ask a question: conducting research for your startup*, Youtube video, minute 01.47).

Actually, stories are so important because they communicate feelings and emotions beyond facts and put the interviewer's mind in a receptive state in which he has to take notes about words, tone of voice and body language and make follow-up

questions to gather even more insights in what really happened. Hence ask many “why?” questions to go deeper and deeper encouraging the person to be more specific while telling the story. The video ends with some don'ts:

- don't ask people about the future²¹;
- don't lead the witness;
- don't bias;
- don't intimidate;
- don't explain the question, shut up and see what happens;
- don't ask for feedbacks.

When Daniela Pavan asked students what they thought about the video no one answered. The class became passive and the teaching assistant decided to show another video entitled *What People Are Really Doing* (<https://vimeo.com/7099570>, Accessed on 11.08.2017). This time it was a longer video (20.56 minutes vs 6.49 of the previous one) about what people really do and make a mistake when they make an interview. It happened again that at the end of the video, when the teaching assistant asked management students what they thought about it, the silence echoed in the classroom. Hence the Professor Monica Calcagno asked if they perceived the video as a comic situation and reported the decisional attitude of students from the last year, my year, when we tried to solve the problem rushing into things. Students preserved the silence until Maria Lusiani, CPCP's Professor, asked them if they had some interview experiences and to share them with the colleagues. 8 students, mainly exchange students, raised their hands, but only half of them openly shared their experiences. Thanks to students' involvement some discussions started. For instance, the class discussed the advantages and disadvantages of online and face to face interviews.

Then the teaching assistant explained the differences between:

- one2one interviews: are attended by a team of three people who interview one user to gain insights on specific tasks;

²¹ This don't was disconcerting for Student 2, F – Team 1. In her process book she complained about the difficulty to do interviews to gather insights to work on M9, which does not exist yet, without asking anything about the future.

- group interviews: are attended by a team of three people who interview a group to gain insights on specific group's lifestyle and dynamics and on what is valuable for them;
- expert interviews: are attended by a team of three people who interview an expert to gain key insights "into relevant history, context, and innovation" because they can actually "give you a systems-level view of your project area, tell you about recent innovations - successes and failures - and offer the perspectives of organizations like banks, governments, or NGOs. You might also look to experts for specific technical advice." (IDEO, 2015, p. 43).
- extreme user interviews: are attended by a team of three people who interview an extreme user to inspire designer's creativity to think about new opportunities never considered before. NB: Extreme users are not mainstream users; they are out of the average spectrum of users designers design for to solve a specific need. Exactly their non-involvement could be precious to sail completely different points of view and to improve the solution.

The ActionFriday continued with the viewing of the last short video entitled *Bad Interview – ABC 2012 Media Interview Class* about a bad interview example (<https://www.youtube.com/watch?v=9p9bAJmRff8>, Accessed on 11.08.2017). When the teaching assistant asked students, what did not work in the interview many students timidly commented the video. It emerged that an interview is bad when (i) the interviewer and the interviewee do not establish a rapport before starting the conversation, (ii) the interviewer is not in control of the interview and does not have neither a strategy nor a question guide, (iii) the questions are completely unconnected with the answers the interviewer received.

At the end of the lab, management students appear almost tired. It is quite evident that from one side they are still waiting for a challenge to test their empathy in a practical class activity, but from the other side they are aware that the time is running out and that they will go to the field with their teammates to approach interviews. Daniela has still something to say to guide students through the process: "Guys, eventually when you already did all the interviews you needed, it is time to leave the

field and start processing all the information you collected to put them on a blueprint, to analyse them all together and start to comprehend the big picture. Unpacking is a method to move from the empathy step and to start having to do with insights and interpretation reading between the lines. It consists of a process of sharing of information within the team. Usually it is assisted by a visual representation of all this information. A wall and a series of post-it should be your best friends when unpacking in order to visualize all the acquired facts and to begin making connections between them. You could hang up whatever you acquired without any filtration to make sense of them. For instance, pictures of your interviewees, post-it with quotes, maps, pictures of places, everything you gathered until that moment.”

The fourth ActionFriday ended with the teaching assistant launching the second assignment. When it came to timing and deadlines for the challenge, students started to feel stressed and to complain. It began a discussion about who are the experts to interview and rolling eyes they affirmed how difficult would have been to schedule an interview in a week because they thought experts as particularly busy people. Teaching assistant replied arrived on the Facebook closed group on Monday the 17th October 2016, first's assignment deadline.

Figure 7 shows teaching assistant's approval to management students' request. She gave them more time to schedule the interviews with experts. At the same time, she launched a provocation writing that in every event experts were not so far from them, hence to schedule an interview with them would have been easier than what they imagined.

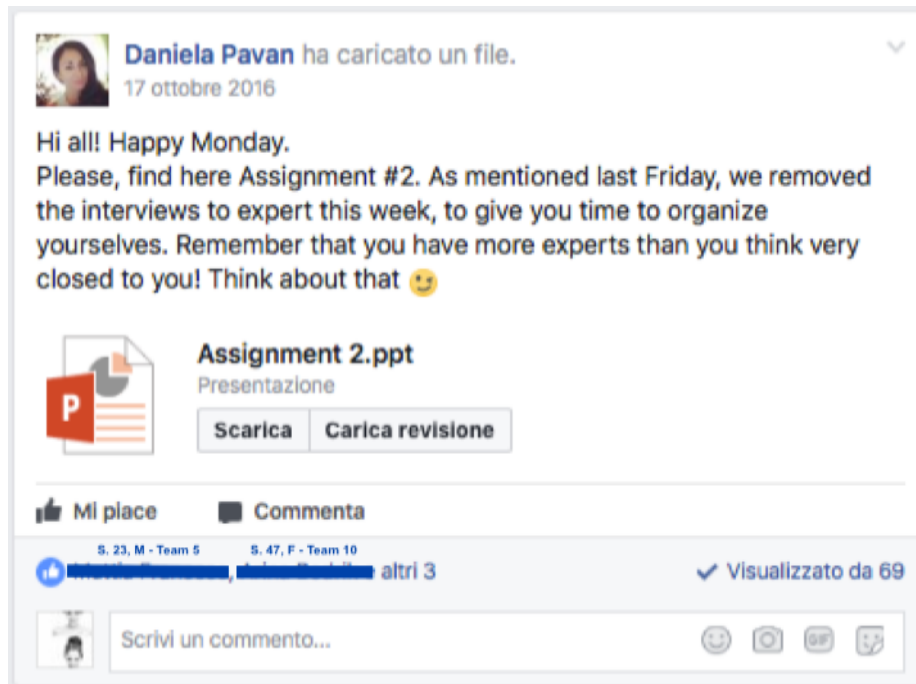


Figure 7: Screenshot 2 (https://www.facebook.com/groups/1583351125231539/?ref=br_rs, Accessed on 11.08.2017)

4.2. Students' personal thoughts

Following process books' extracts are mainly dated 14th October 2016 or at least refer to empathy and the fourth ActionFriday.

The majority of the students described the fourth ActionFriday as “boring” (PB: S. 3, F – Team 1; S. 19, F – Team 4; S. 24, F – Team 5; S. 37, F – Team 8; S. 39, F – Team 8), “less active and interactive than usual” (PB: S. 19, F – Team 4; S. 31, F – Team 7; S. 39, F – Team 8; S. 50, F – Team 10; S. 55, F – Team 11) and “not really entertaining” (PB: S. 32, M – Team 1).

They blamed the number of videos seen on having get the lab boring compared to previous ActionFridays (PB: S. 3, F – Team 1; S. 17, F – Team 4; S. 23, M – Team 5; S. 34, F – Team 7; S. 51, F – Team 10; S. 52, F – Team 11; S. 54, F – Team 11) and consequently they suggested the lab would have been more useful adding some practical activities, that is trying to do interviews in small groups (PB: S. 4, F – Team 1; S. 17, M – Team 4; S. 19, F – Team 4; S. 37, F – Team 8).

Even if, many were of the opinion that the topic of the lesson was “interesting” (PB: S. 4, F – Team 1; S. 12, F – Team 3; S. 50, F – Team 10; S. 52, F – Team 11; S. 55, F – Team 11), “to better understand team’s future approach” (PB: S. 25, F – Team 6), “for future experiences” (PB: S. 50, F – Team 10; S. 34, F – Team 7; S. 26, F – Team 6) and to “get the right tools to climb the mountain²²” (PB: S. 32, M – Team 7) Student 4, F – Team 1 wrote that according to her the “tips and the videos watched were a little bit obvious”, Student 13, F – Team 3 thought that some videos were “too unrealistic”, while Student 31, F – Team 7 described the videos as “too repetitive”. Only Student 35, F – Team 7 noted down that she really appreciated the selection of videos.

Despite previous observations, many classmates stated they have learned things that they never had the chance to learn before. For instance, Student 7, M – Team 2 and Student 26, F – Team 6 were really enthusiastic to have had the possibility to test their ability as interviewers and to be understood by the person interviewed, Student 1, F – Team 1 wrote down that he “would have never thought there would be so many steps, info, task and insight to build a perfect interview. I’ve learned so much not only by the lesson but being in the field practicing” and Student 27, M – Team 6 noted that until that lesson he did not realized the importance of personally interviewing people when trying to collect data and information and he added the following consideration: “I’d rather thought of always using online standard surveys, which yes, can be very fast and comfortable, but could not fit every research. So, from now EMPATHY, EMPATHY, EMPATHY!”

In addition, many colleagues perceived the interview session as “really difficult”, even more than what they thought (PB: S. 4, F – Team 1; S. 9, F – Team 2; S. 17, F – Team 4). More anxiety was related “especially to experts’ interviews” (PB: S. 4, F – Team 1).

²² Student 32, M – Team 7 invented a similarity between Design Thinking process of learning and climbing; so, his reference to the tools needed to climb the mountain.

Besides, many concerns were about the amount of work they had to do for the second assignment within a week (PB: S. 5, F – Team 1; S. 12, F – Team 3; S. 13, F – Team 3; S. 15, M – Team 3; S. 17, M – Team 4). According to this topic Student 15, M – Team 3, an Asian exchange student, was so sorry for his inability to speak Italian, seen that all the interviews would be attended in Italian because most of the people to interview would not speak English. He perceived his teammates had to do more work than what he had, although he was willing to support them recording and taking pictures.

Bizarre, but really meaningful is the following quote by Student 12, F – Team 3.

“Since the ActionFridays kicked off, I have felt like a guinea pig in a laboratory with people doing experiments on me without explaining in detail the process we are going through.”

(PB: S. 12, F – Team 3 – 14th October 2016)

She explored her inner state considering herself like a guinea pig because since the first ActionFriday occurred, she still did not understand the process she was experimenting by stages. Her remark is offset by the following quote by Student 26, F – Team 6.

“My curiosity will never stop and so my process about learning. It’s the prettiest and most precious thing we have!”

(PB: S. 26, F – Team 6 – 14th October 2016)

While Student 12, F – Team 3 was asking for more explanations because she felt trapped into a process she did not know the consequences, Student 26, F – Team 6, driven by her curiosity through the entire process of learning, did not ask for explanation, but only thanked the possibility she had to travel through a new process of learning. Additionally, she stressed that she would never want to stop feeling rocked by this vital instinct. Being curious makes empathy more accessible and

satisfying as it pushes to comprehend what inspires users. It allows researchers to sail into unknown waters to get unexpected insights from people's interviews.

Both quotes are necessary to highlight the diversity among management students. This diversity was really precious for teams' heterogeneity to spur creativity and different points of view along the entire journey.

21st October 2016

5. Define Insights

This was one of the most important insights I learned from this course: how much users are important for the design.

(PB: S. 34, F – Team 7, 21st October 2016)

5.1. When, What, Why did it happen?

Here I am talking about the fifth ActionFriday. Before we knew it, a month had passed from the first ActionFriday. The fifth one marked the end of the first module's section before the 2-weeks break. Going on with Design Thinking this workshop focused around the decisive role of the insights.

At the beginning of the lab the class appeared relaxed. It was noted that students were becoming friends and Italian and exchange students were seated in a mixed way. The teaching assistant began the lab launching insights' definition.

“Insights are conclusions that you can draw based on the interviews with your users, discoveries that you can leverage to tackle the design challenge” – states Daniela looking for students' reactions, but no one seems turning on to interact. Knowing that the concept is not easy to be totally comprehended on the first try she seeks to be more detailed describing the process students have to follow to formulate insights. “Basically” - she tells - “an insight is an interpretation of what you have done so far. You have collected data during your observation phase and during your interviews. Now, what you have to do is to meet all together with your team and start sharing all your opinions, all your learnings, cautiously listening to your teammates. To create insights, you need to start from learnings and then from learnings you have to move to themes and then eventually to insights. What happens here is that while working all together, you have to place the most important things that each of you has learned on a post-it and then place it on a wall, on a poster, everything will work. The visualization of your learnings will help you to organize them. That's why after that you have to group all these learnings in a way to cluster them around specific topics. Pay attention that each learning must be related to things that you listened to, hence notes on sounds, that you observed, for instance notes on colours, that you smelt and so on. Learnings are strictly related to the previous phases of the process, everything communicated by your interlocutors. Makes sense guys?” - The class carefully listens and takes notes, but it still appears passive.

“Once you have the clusters, called categories too, you have to name each one and work on them to infer insights. First of all, you need to take an overview at your themes and at the various stories that support them to find links, overlaps, patterns and ways that relate your clusters. Are there some categories you can say that group several themes? Are there some contradictions or does everything seem on a straight path? Is there something that surprise your team? Try to answer these questions all together and then make a step back. As your clusters and your categories have to be strong enough to be your bases to start inferring, try to repeat the process, to discuss about your discoveries and to add new versions of themes and titles until you become sure of your categories. Now it’s time to make a step forward and to leave behind you the stories that don’t seem relevant in order to keep only the information you are working on. The wall should be now covered by less post-its, right? What’s more inspirational for your idea? Are your findings related to your challenge? Start to narrow your findings again and deprive them of less important details. Well, what’s the interpretation of these guys? The insights. Craft your three to four to five key insights, no more! Ergo, insights are succinct and memorable descriptions that combine your learnings and findings with all the information collected so far, capturing the hearts and minds of people you met, to better frame the problem statement. As you can notice we started with a divergent approach, but now we’re converging on a more precise definition of the problem” – concludes Daniela taking a puff of breath while students run after her words and slides’ contents.

To better explain insights the teaching assistant proposed an example and then sharpened the role of interpretation, that is in charge of converting the stories caught during the interviews into significant insights. She knew insights would have been arduous to be comprehended by students without prove themselves. For that reason, she pulled out the Ideo cards, which catalysed class’ attention, and explained what Ideo is while students looked at her curiously and entertained. Ideo is a design company, or better “a community of designers, entrepreneurs, engineers, teachers, researchers and more” (<https://www.ideo.com/eu/about>,

Accessed on 14.08.2017), that you can find worldwide, having an aim: “to create positive impact through design” (<https://www.ideo.com/eu/>, Accessed on 14.08.2017). Ideo, pioneer of human-centered design, believes that: (i) everyone is creative; (ii) creative organizations are more agile; (iii) complex problems are best solved collaboratively; (iv) innovation starts with people; (v) technology moves fast, human needs change slowly; (vi) venturing is R&D (<https://www.ideo.com/eu/>, Accessed on 14.08.2017).

Later arrived the time to speak about the Ideo cards which everyone looked at.

“These cards were designed by Ideo not as a guide, but as a design tool to inspire and to practice useful design, always keeping people at the heart of the process” – commences Daniela showing the cards from her hands.

“These are 51 cards, or even 51 ways to explore new approaches and start finding your own that you can use in Design Thinking. The deck is divided into four categories: ask, look, learn and try. Going into details you have to go around the campus (i) to ask people what they think about your challenge to help you enlisting their aid to gather significant information, (ii) to look at what people do observing what they actually do instead of what they say they do, (iii) to learn from the information you gathered analysing the facts you collected to recognize patterns and infer insights and at last (iv) to try it yourself creating simulations to help empathize with people and to evaluate the proposed design” – explains Daniela satisfying student’s curiosity.

“Now, please start working with your team on the following challenge: Does Ca’ Foscari need a redesign of the classrooms in the San Giobbe campus? If yes, how? Each team has to pick a card from each category and to go around the campus with pen and paper. To use the method described in your ask card you have 10 minutes time, for the one in the look card you have 5 minutes time as well as to face the learn one, while for the try card you have again 10 minutes at your disposal. In the end, we will discuss your outcomes all together. Are you ready to come into play?” – asks Daniela inspiring students, who emerge from their passive attitude and start handle the cards as precious hints.

The same evening the teaching assistant posted on the closed Facebook group the request to share what each team did per card with a brief description of approximately ten words, mentioning the team number and including one picture. Here follow teams' posts on the social network and the personal thoughts they revealed in their process books to comprehend their feedbacks.

5.2. Students' personal thoughts

Following process books' extracts are mainly dated 21th October 2016 or at least refer to Ideo cards challenge and the fifth ActionFriday. The following screenshots are taken out of Facebook closed group: Design Management Ca' Foscari (https://www.facebook.com/groups/1583351125231539/?ref=br_rs, Accessed on 16.08.2017).

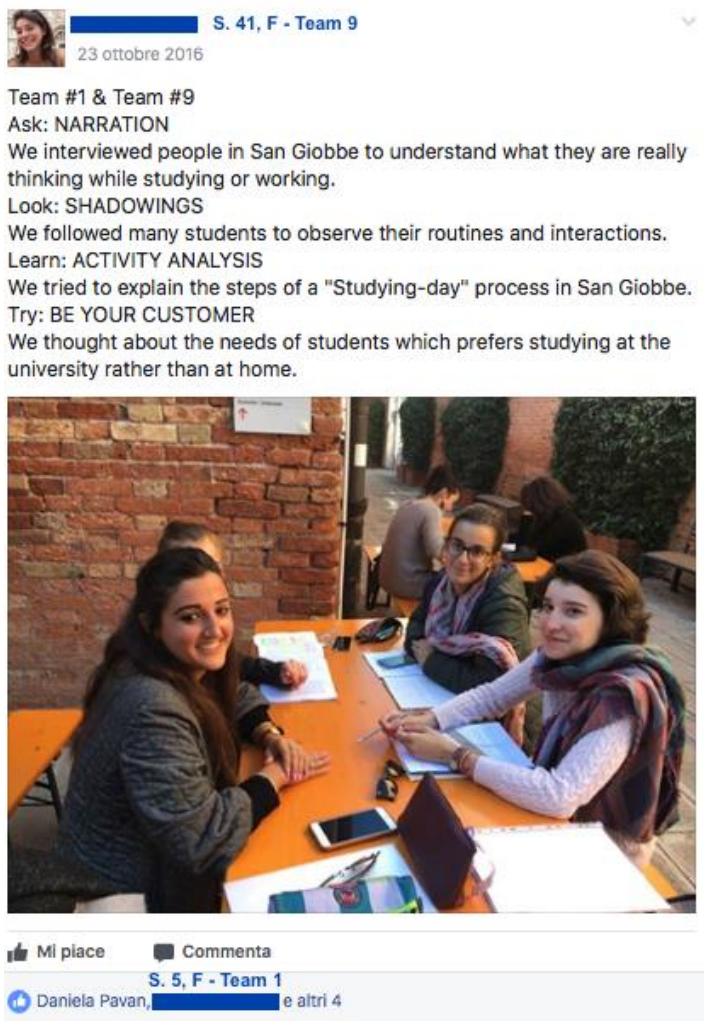


Figure 8: Team #1 and Team #9 (the two teams shared the challenge because only few teams' components were present)

Student 1, F – Team 1 saw Ideo cards “as unlocking creative potential human-centered toolkit” and she found the fifth ActionFriday “very helpful and very useful”, but the only weak point was the lack of time to figure out how Ideo cards actually work. This last point was shared by her teammate Student 5, F and by Student 41, F – Team 9 too. Student 5, F – Team 1 added she required more explanations to become

familiar with the cards and used the adjective “fun” to describe the workshop, while Student 41, F – Team 9 adopted the adjective “strange” and she excused it writing down that people around the campus thought teams were “completely crazy!!” for what they were doing out of their classroom. What she noted strengthens the two different educational approaches between management and design students I already introduced thanks to Von Stamm (2004) studies. Management students are not used to face challenges during their university lessons and to go out of their classroom even less. Hence, D&IM students felt to be judged as “completely crazy” (S. 41, F – Team 9) students by their management colleagues and someone even felt “embarrassed” (S. 44, F – Team 9) doing the activity. D&IM module tried to push management students to broaden their minds and as a matter of facts Ideo cards were proposed to acquire new tools for problem-solving.



Figure 9: Team #2

The lack of time was a concern discussed also by Student 8, F – Team 2. She felt “shocked by the lack of time” they had to carry out the task, but she declared that, although this serious difficulty, her team completed the tasks on time overcoming their failure’s fears. She and her teammate Student 10, F argued that inferring insights was the “most difficult part” of the third assignment because their main target were students and being themselves students as well, they dealt with many hardships to think about users’ needs without identifying them with

themselves. Because of this roles' overlapping, during the final interviews that the teaching assistant and I managed five months after the end of the module, Student 8, F said that "it was complicated to design a solution which was objective and not subjective." Definitely to be in the same category in which your users are, has its pro and his cons. It becomes easier to transfer the point of view, but you do not have to be mistaken asking users what your personal needs are without understanding their necessities.



Figure 10: Team #3

Student 15, M – Team 3 disclosed that at the beginning of the challenge his team did not caught the activity's sense and therefore they wasted limited precious time to discuss before acting. His teammate Student 13, F accused the instructions of not being clear enough to permit her team to hit the ground running. Additionally, the limited time was another concern and she asserted that if they had more time, they would have been more creative. She wrote down that "even if this approach leads to an efficiently doing, I don't

think that this goes always along with effectiveness." She continued affirming that she understood Design Thinking aim as finding the "perfect and simplest solution for an important problem", but that the time pressure leads her thinking of Design Thinking as a mind-set "to have a solution in the shortest time". To describe the entire challenge, she chose the adjective "interesting" stressing the inspiring role of the look card.

As Student 44, F – Team 9, Student 12, F – Team 3, felt the same embarrassment while approaching the challenge, although she perceived she was learning useful tools for Design Thinking. Beyond not being used to design methodologies students were quite stiff to cooperate with strangers asking them their opinions, although they already did some interviews for their project groups.

Figure 11: Team #5



Student 21, F, Student 22, F, Student 23, M, Student 24 F – Team 5, four out of 5 components of team 5 took notes that they felt under pressure caused by the few minutes they had per each Ideo card. Starting from this consideration, Student 21 and 22, F detected to be “frustrated” and “thrown into the dark” because beyond the little time they had, they did not immediately understand very well the task. They did not find

the cards very clear, while Student 23, M associated the fact of having work under pressure to a testing phase, a preview of what everyone will face in the future job environment, describing the challenge as “the weirdest, most important and useful lesson” until that moment. The adjective “interesting” emerged again in Student 21, F process book, associated to the possibility she had “to see how some phases can be done through different methods”.

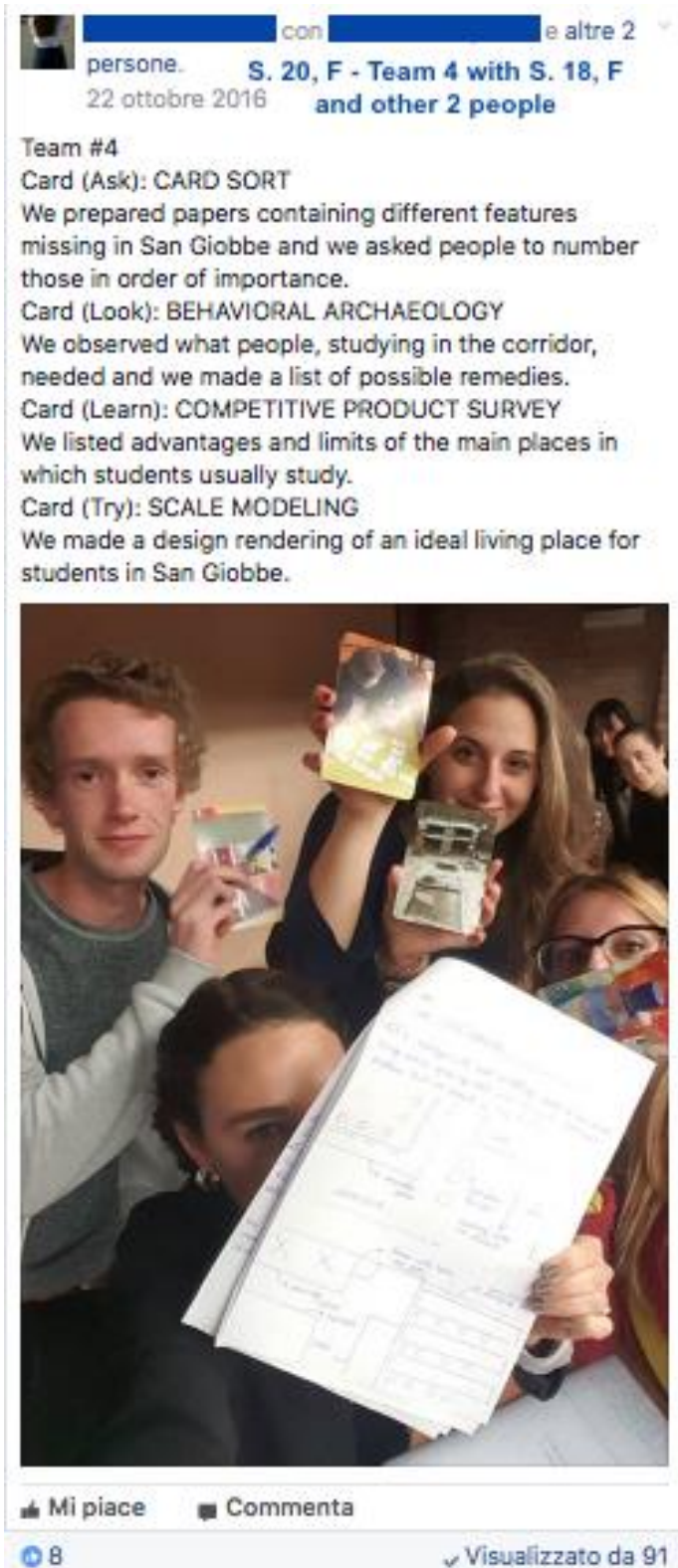


Figure 12: Team #4

Student 16, F – Team 4 was not happy with the challenge because due to the lack of time she perceived everyone was rushing into their cards, and the context became really confusing.

Student 17, M – Team 4, the team’s exchange member thanked the Ideo cards to allow him learning “how to go through design process very efficiently”, but again, he felt “sad” because his Italian was not good enough to participate in the entire process, to do interviews and completely understand what interviewees said, without bother his teammates for translations.



Figure 13: Team #6

In her process book, Student 25, F retraced the Ideo card challenge. Unlike previous teams, even if her team did not understand the activity very well it “chose the action and started to do some tries without speaking before because there was not enough time to think too much about clarifications.”

Student 27, M felt really stressed during the activity and he was not able relax and to have fun.

Student 25, F found “funny to interview people and observe their reactions.” Student 26, F found “amazing and curious watching people around and try

to figure out what was going on and why” and she experienced a “very exciting big challenge” because she conceived she was doing what managers and designers put into practice to catch what users need and want. Furthermore Student 28, F appreciated a lot the phase of “reading between lines” because she wrote down that the comprehension and practice of this concept helped her in her everyday life although she had never thought before that this ability was that worthy.

 con  e altre 3 persone.
23 ottobre 2016 S. 35, F - Team 7 with S. 32, M and other 3 people

Team #7

Card (ask): DRAW THE EXPERIENCE

We asked students to sketch their ideal perfect classroom according to their needs. Then we tried to summarize the most important concepts for each sketch writing some key words.

Card (look): RAPID ETHNOGRAPHY

We observed, from different perspectives, students in classrooms focusing on their behaviour in order to understand what is missing and what they need

Card (learn): FLOW ANALYSIS

We thought about students' experience in a classroom and we divided it in phases pointing out the issues they face

Card (try): BEHAVIOUR SAMPLING

We asked students how they would organize the space if one day they came in a classroom and they found the classroom empty, with various kinds of furniture from which to choose



Mi piace Commenta

S. 11, F - Team 3

 Daniela Pavan e altri 4

Visualizzato da 79

Figure 14: Team #7

“This was one of the most important insights I learned from this course: how much users are important for the design.”

(PB: S. 34, F – Team 7)

Thanks to Ideo card challenge Student 34, F acquired the basic Design Thinking feature, that is the crucial role of users around whose needs designers have to design their proposals.

“It’s so difficult to think so freely” annotated Student 35, F. She felt “uncomfortable” during the challenge because it was a totally different approach from the one she was used to. One

more time management students’ constraints came to light and made strenuous to approach problems with a beginner’s state of mind without putting boundaries to any available option.

Student 31, F said her team was “paralyzed having to carry out something of which they were not sure (difficulties in interpreting questions)” but once they broke the ice they completed the tasks despite the short time. Student 33, F, team’s exchange student, depicted the activity with the adjective “interesting”, already used by other colleagues, but what she really appreciated was the fact they were working on improving usual university experience and not abstract projects. Also for her was hard to understand everything because interviews were done in Italian.

con e altre 3 persone.
23 ottobre 2016 · Venezia S. 39, F - Team 8, S. 37, F and other 3 people

Team #8

Card ASK: "Conceptual landscape"

We asked to the users of San Giobbe what they would like to change in the classes according to their habits ad behaviors.

Card LOOK: "Social network mapping"

We tried to sketch the relationships which occur among different users pf San Giobbe.

Card LEARN: "Character Profiles"

We described the main habits and behaviors of different users categories and we outlined their profiles.

Card TRY: "Paper prototyping"

We tried to map on our paper how a better classroom in San Giobbe should look like, according to the needs of different users.



Mi piace

Commenta

S. 36, F - Team 8

Daniela Pavan, altri 5

Visualizzato da 82

Figure 15: Team #8

Team 8 felt really confused during the challenge because they did not understand well the cards and therefore they were not sure if they were on the right path or not. The team came to weekly meetings to ask some clarifications about the Ideo cards challenge and the meaning of the word insight in order to face the third assignment with more determination.

What several students, from different teams, affirmed concerning the few instructions they received and consequently the more instructions they thought they need, reflects the

strategy followed by the teaching assistant, that is to reduce instructions little by little as students became more confident with Design Thinking process. Management students started the process gone with many recommendations and information, but they had to get gradually used to be more autonomous and to interpret the few instructions they received with the right design attitude to start growing a critical mind-set.

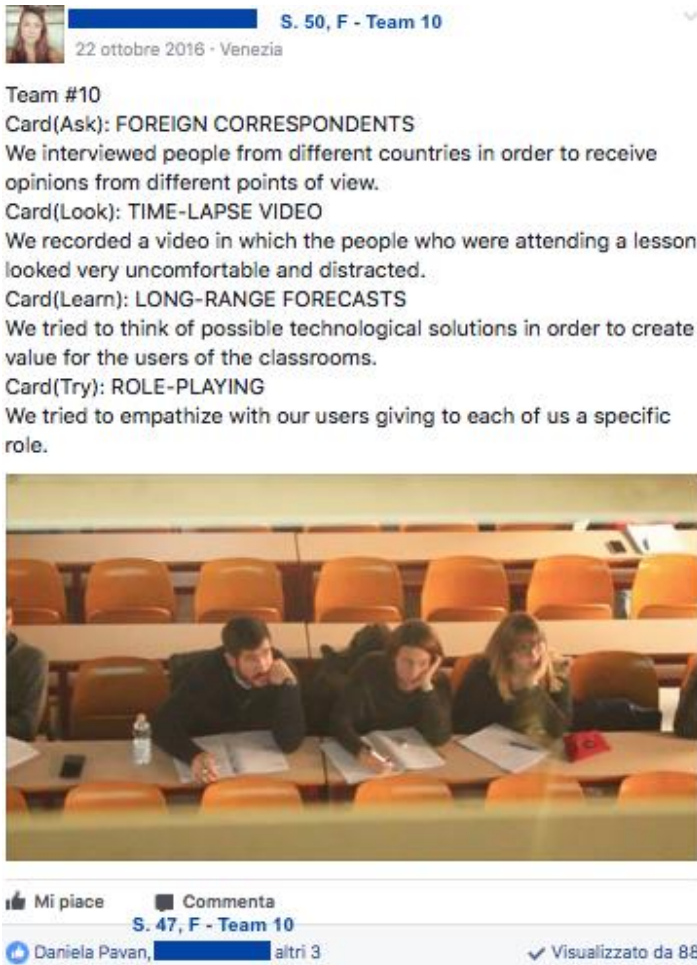


Figure 16: Team #10

The confusion continued in Student 47, F process books' notes and in Student 50, F impossibility to take a minute time to think about what the team had to do holding the Ideo cards. Team 10 grasped the energy to brave doubts and difficulties thanks to its members' cooperative manners. Student 48, F spoke about this powerful answer in her personal contemplations. Although at first, she felt "perplexed" because she could not understand what it should

be done with Ideo cards too, she claimed that "thankfully to my team we found the fast decision at the first step." The aspect she pointed out derives its justification from the Design Thinking collaborative feature. Effectively, the preciousness of different perspectives inside the team allowed to find a quick answer to many initial worries and to take matters into their own hands to accomplish the four Ideo cards' steps. Albeit Team 10 found the way to survive into the upsetting challenge, Student 49, M stated that according to him the fifth ActionFriday was "the most difficult" one.

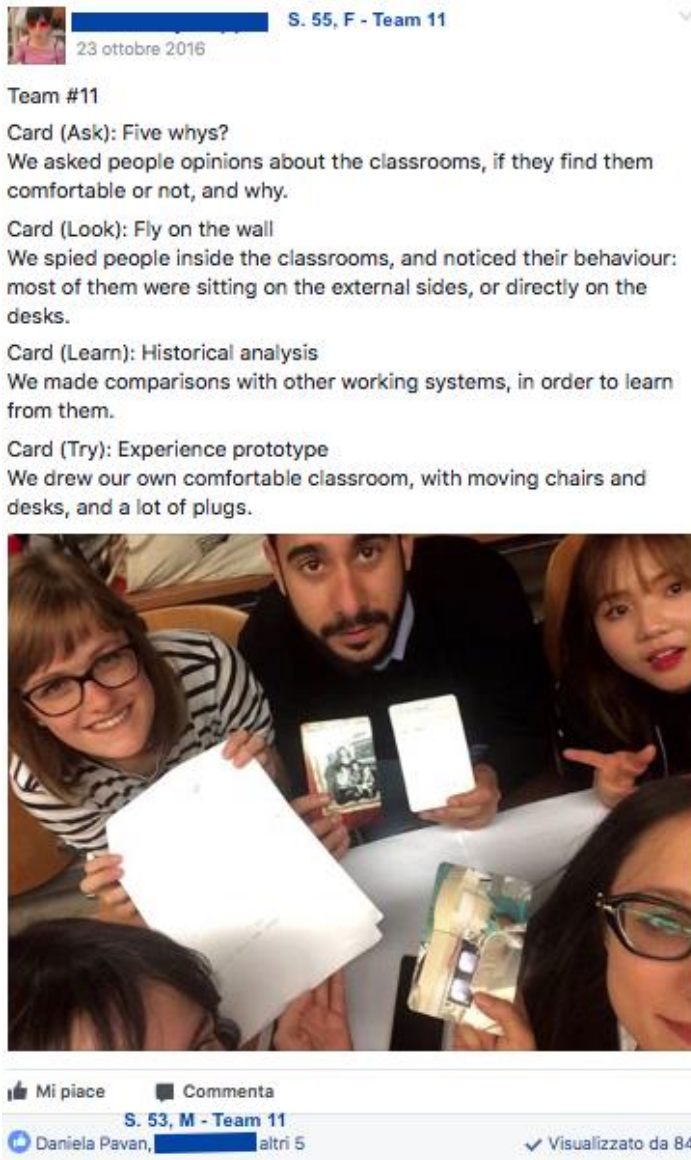


Figure 17: Team #11

Student 52, F described Ideo cards challenge “definitely tough” but she did not enjoy it that much because she found hard both to understand the task and to define the end goal, while her exchange teammate used the adjective “strange” to define the activity. Student 56, F thought the challenge could be better organized. She appreciated the possibility to go out to make interviews, but she was disappointed that interviewed people “were not really interested, they tried to complete the interview as soon as possible.”

Student 55, F discredited the utility to create insights and the

practical part of the fifth ActionFriday, without justify her thoughts. On the contrary, Student 53, M was really happy to have had the chance to know Ideo interesting reality.

The fifth ActionFriday ended with teams’ SCOT analysis. Unlike the well - known SWOT analysis which focuses on strengths, weaknesses, opportunities and threats, the SCOT analysis focuses on challenges instead of weaknesses. The teaching assistant proposed the analysis to be applied to each team to get friendlier team - members and to detect (i) what team’ strengths were; (ii) what challenges the team would have faced; (iii) what were the existing opportunities working in that specific

team and (iv) what threats there might be for them. First of all, students had 5 minutes to work individually to identify the SCOT elements of their own team. The aim of the exercise was to become as much effective as possible working together in a collaborative way. Later teammates had to work together for 8 minutes. Starting to share individual SCOTs they had to create only one SCOT containing feedbacks of each member. The last 3 minutes of the activity were addressed to turn the SCOT analysis and writing down (i) how easy/difficult was to fill in the blanks, (ii) what were the strengths of the team and (iii) how their challenge could be resolved.

This last exercise was also launched to provide for discordances there were emerging within some teams. The SCOT analysis should have arranged each team to confront with the possibilities to continuously collaborate to achieve better results.

The third assignment concerning the process to infer insights was uploaded to the Facebook closed group the 26th October 2016 with deadline on the 21st November 2016. For many reasons, it was decided to give students almost one month time to work on it. The first reason concerns the fact insights are one of the main Design Thinking critical points to meticulously develop, from which the team has to move on building the idea to solve the challenge. Then as I already illustrated, D&IM module was divided into two sections with two weeks break between them. In those two weeks students had also to learn for other modules and to take respecting exams. In addition to general studies, some student still had to take the admission test to the Master program and worries hit the roof. Hence there was not the desire to overload students, but to meet their tasks halfway.

Besides, before the sixth ActionFriday, two visits to the 15th International Architecture Exhibition were organized to study even more the concepts of insights and interpretation.

25th October and 11th November 2016

**6. 15th International Architecture
Exhibition**

***Flexibility and sustainability are helped by design
and creative ideas.***

(PB: S. 38, F – Team 8, 8th November 2016)

6.1. When, What, Why did it happen?

The second edition of D&IM module coincided with the possibility to visit the 15th International Architecture Exhibition in Venice, which was opened from the 28th of May until the 27th of November 2016. Students had the possibility to buy a 25 euros ticket that allowed them to visit three times the exhibition: two visits were organised to go there with colleagues and professors on the 25th October and on the 8th November, while one more time was thought to let students going there alone to independently decide on which pavilion to rest and which emotions to pursue.

On the Facebook closed group were shared three posts by the Professor Monica Calcagno and was asked students to share them on their personal profile in order to generate buzzes around the project. Actually, master's students of a management department who go more times visiting the International Architecture Exhibition as part of their curriculum sounds weird, but it is not because everything was thought to be linked with the process of learning they were experienced.



Figure 18: Manifest of the 15th International Architecture Exhibition
(<http://www.artribune.com/attualita/2016/02/biennale-architettura-venezia-alejandro-aravena/>,
Accessed on 17.08.2017)

Figure 18 is the symbol of the 15th International Architecture Exhibition entitled *Reporting from the front* by the curator Alejandro Aravena. The picture was taken by Bruce Chatwin in the Peruvian desert. The German archaeologist Maria Reiche was photographed in a precarious position on an aluminium stairway while she was studying the Nazca lines. The reason why the picture was selected to be printed on each ticket, on each manifest and on each brochure concerning the exhibition is quite linked to the steps management students learned during the first section of D&IM module and ActionFridays. They learned the importance to change and expand their points of view, to go out and observe the context, to interview users, experts and non-users and to infer insights they would have never thought about if they only laid suspended in their initial considerations. The archaeologist was doing exactly the same: she was changing her point of view. Using the tools she had at her disposal, in that case an unstable stairway, she conquered an higher perspective to catch the reality from a different viewpoint. Looking at the stones and lines on the desert from the elevation of a standing person, they do not represent anything, while standing on the staircase the same stones and lines assume the shape of a bird, a tree, a jaguar and a flower. Hence the message is clear: come on, climb the staircase! Or at least, if you do not want to climb it, try to come visiting the exhibition in order to get reports or better insights from the front, from the unknown, found and studied by people who are not afraid of heights. Those people named artists usually experience a long journey of divergence and then synthesis to create new meanings.

During the last conversations Daniela Pavan and I did with management students, Student 26, F – Team 6 affirmed that after the Design Thinking experience of learning, she felt as the archaeologist on the staircase; she learned how important is to examine things from a different perspective and how precious are the possibilities to exploit things and materials in a creative way to rely on them as supports for new discoveries.

Moreover, contemplating about the role of the architecture, it is not that distant from Design Thinking aim. Although the architecture focuses on the environment

changes, while Design Thinking has a wider look, both the architecture and Design Thinking want to better human and social conditions trying to satisfy different needs. The first visit to the exhibition was planned for the 25th October with the mentoring of Matteo Giannasi, a scholar, a lecturer and in the last ten years also an education and promotion consultant for the Biennale.



Figure 19: Making buzz around the Biennale project – 1st post (https://www.facebook.com/groups/1583351125231539/?ref=br_rs, Accessed on 17.08.2017)

With her first post Professor Monica Calcagno started two days before the visiting to make buzz around the “exciting news”. Figure 19 is exactly the screenshot of the post and shows Professor’s purpose to encourage students to join the activity with enthusiasm. Management students had not only to go out to fill their assignments,

but they had the possibility to be inspired by a new territory, to dialogue about design and innovation. As the post reports, design is a special human process that surrounds everyone and everything, even if we are not always considered it specifically. Design is human-centered exactly as the architecture is. We all are surrounded by the architecture even if we do not consider it explicitly.



Figure 20: Making buzz around the Biennale project – 2nd post (https://www.facebook.com/groups/1583351125231539/?ref=br_rs, Accessed on 17.08.2017)

The second post shared by the Professor, one day before the first visit, strengthened even more the link between design and architecture and the exciting possibility to

change the perspective and going learning in a different, but meaningful environment.

On the 25th October, the first visit took place and Matteo Giannasi illustrated some pavilions abstaining from others.



Figure 20: Collage 1 made by the author
(https://www.facebook.com/groups/1583351125231539/?ref=br_rs, Accessed on 17.08.2017)

The consultant guided the students through a critical journey around specific pavilions introducing many subjects. Thanks to his knowledge and expertise he proposed himself as an interpreter of what students saw in order to submit a different, but meaningful extended eye on the exhibition. He was able to link teaching to research.

If during the first visit students were mainly receptor of knowledge gaining many interpretative hints, during the second visit their role changed. After Matteo Giannasi ended with his tour, the pavilions from which he abstained any critical consideration, were assigned to teams. Teams walked around, took brochures and spoke to rooms' custodians. Each team had to present one pavilion in front of the class during the second visit to Biennale on the 8th November. Let's see what happened then.

6.2. Students' personal thoughts

Following process books' extracts are mainly dated 21th October 2016 or at least refer to the first Biennale session.

In their process books Student 1 and 2, F – Team 1 wrote down they did not like the guided tour. They found it “pretty boring and not very involving” and both concluded saying that “it was not useful” and that it was “a waste of time”. Their teammate Student 4, F did not agree with them: she expressed the desire “to receive more information about the pavilions”. Student 27, M – Team 6 noted down that “Mr Giannasi tour speech has been very broad and interesting, but also too long, reducing everyone attention and engagement in the tour and both, with the analysis of the designated exposition each team will have to talk about left us very little time to explore the whole Biennale”; consequently, he suggested to improve the schedule of the day.

Other colleagues illustrated the Biennale session as an “amazing” (PB: S. 15, M – Team 3; S. 52, F – Team 11), “top” (PB: S. 11, F – Team 3) and “great experience” (PB: S. 28, F – Team 6), as “a very interesting and funny trip” (PB: S. 49, M – Team 10) as “valuable part of the course” (PB: S. 17, M – Team 4), as “a really positive way to grow up” (PB: S. 54, F – Team 11) as “the greatest opportunity I had in all 2016” (PB: S. 20, F – Team 4), and as “a good occasion to explore another field, transversally linked to what we were talking during the course” (PB: S. 21, F – Team 5). Student 28, F – Team 6 added that going to Biennale all together helped her to “socialize better” with her teammates and that although she has never been to Biennale before, she considered the tour quite useful for all of them. Student 39, F – Team 8 liked the opportunity to go to Biennale having a guide; she admitted that not being that much into art she would not have gone there by herself. For this reason, she considered the initiative organized by the Professor as a good opportunity for students like her to discover and appreciate different kind of events.

Student 11, F – Team 3 described the Biennale as a “top” experience, but at the end of the first visit she felt completely disoriented and she asked herself “What does Calcagno want us to present?” Student 22, F – Team 5 was of the same mind

and commented her confusion; she also noticed that her colleagues “all look quite uncertain about the task for next visit to Biennale.”

Student 3, F – Team 1 and Student 53, M – Team 11 stressed the point that the class had really many tasks to do in the following weeks, included other exams, presentations and even the admission test for those who were still not enrolled in the Master programme. Hence, they covered themselves implying that they could not give their 100% to present the pavilions. Student 21, F – Team 5 reflected about the busy period as well, but she figured out that having a busy period helped to learn how to manage both time and resources more efficiently.



Figure 21: Making buzz around the Biennale project – 3rd post (https://www.facebook.com/groups/1583351125231539/?ref=br_rs, Accessed on 18.08.2017)

The second visit to Biennale was coming and the day before Professor Monica Calcagno posted another picture to remind the workshop and share the initiative to arouse Facebook community's curiosity.



Figure 22: Collage 2 made by the author
(https://www.facebook.com/groups/1583351125231539/?ref=br_rs, Accessed on 18.08.2017)

Collage 2 contains some pictures taken during the second workshop done in Biennale. Team presented their analysis in creative ways, they relied on Design Thinking tools, but something was still missing.

Following process books' extracts are mainly dated 8th November 2016 or at least refer to the second Biennale session.

Student 24, F – Team 5 depicted the second visit to Biennale as “very inspiring” because she found “interesting” to see how her classmates “worked together in a creative way to present and explain their project.” Student 27, M – Team 6 appreciated the opportunity had “to interact differently” with his colleagues during this day, due also “for the fact of the long mutual walking to move from one place to another together.” Student 54, F – Team 11 explained that even though “the opportunity teachers gave us to explain this project has been scaring for me

because oral exams aren't my favourite ones, it has been very useful to prove the group strengths."

Furthermore Student 52, F – Team 11 "really enjoyed the workshops", he had "a lot of fun" and thought each team "did a great job!" Student 53, M – Team 11 stated that "it was a great pleasure to have the opportunity to present our findings in Biennale", but then he proceeded saying that "all the class misunderstood what the focus was", maybe because "there was a communication problem between us and the Professor." Moreover, despite Student 39, F – Team 8 had a "general good impression" about Biennale sessions, she paved the way for a discussion about the lack of interpretation management students devoted to un-ordinary activities. They were struggling with abstraction showing a passive attitude towards the need and the will to exploit beyond things' superficiality.

"I missed the connections between what we're studying on the task we are asked to do there. I think we didn't get enough instructions regarding the task, furthermore it happened to be in a period in which we were particularly busy with other exams and the assignments for the group-work. I'd have preferred to do something more active there, with more detailed instructions and which gave us the opportunity to better understand more a single exhibition. And more than everything else, I would have appreciated to better dispose of the time inside the Biennale and save us much time at home to do all the other tasks and study."

(PB: S. 39, F – Team 8, date is omitted)

During the interviews managed on the 1st June 2017, the teaching assistant asked students why they think Biennale sessions and other extra activities²³ were organized and proposed to them within the module's schedule.

Many answers did not get the gist and supported what I just reported Student 39, F – Team 8 expressed in her process book. Students struggled with a loss of

²³ Extra activities are referring to the workshops on vertical dance, community design and the social role of museums which students attended. The goal was to permit students to know different kind of enterprises which performed their goal through the design of their experiences.

reference points and immediate and linear links to their Master programme. For instance, they referred to a need of frames and guidelines as Student 2, M – Team 1 punctiliously said. Additionally, he asked the Professor to help them creating a net between the workshops and the topics fully explored during the other lessons. It looks like he never tried to go one step further by himself, with his tools.

“According to me there was a strong urge to integrate more those activities in the syllabus to make us aware about their role and their meanings for us, to make us aware why were we doing those things. [...] This argument is the same for the Biennale. It was great, maybe I won’t have gone alone, but what was the link with the course? To link it with the programme probably meant going one step further, but we weren’t helped by the Professor to do it.”

(Interview: S. 2, M – Team 1. 1st June 2017. Author’s translation)

Student 4, F – Team 1 backed her teammate. She affirmed she knows that the step further was supposed to have been done by students, but she blamed their management and economics background to prevent them to do it. Hence, she required some more tools to have had the possibility to make more connections by herself.

During the conversations, Student 50, F – Team 10 was the only one who moved closer to the underlying reason that made clear the introduction of these extra activities in the program.

“I have always thought art could be personally interpreted.”

(Interview: S. 50, F – Team 10, 1st June 2017. Author’s translation)

Going deeper in the interview she affirmed that according to her, Biennale sessions were organized to give students the possibility to gain many insights looking at things from different perspectives without fossilize only on something in a particular way. Instead going visiting a more classical firm in which the output is objectively understandable, speaking about art there could not be find lots of objective

paradigms. Hence what an artist wishes to communicate passes always through audience's interpretation.

The majority of students were unable to observe the reality with a critical eye in order to abstract activities' inner meaning that could have helped them as an inner motivation to experience the process of learning at 100%. There surely was a lack of proactive attitude towards learning and still a strong presence of traditional business school paradigms, that are translated in an analytical and deductive approach instead of a more creative and inductive one.

Starting from the point that designers are usually associated with the role of interpreters to give voice to human needs (Brown, 2008, 2009; Carlgren, Rauth and Elmquist, 2016), management students should have investigated the reason behind extra-activities proposals to internalize diverse foods for thought.

The extra-activities were not separate laboratories, but they were designed for many reasons. For instance, the Biennale sessions were scheduled during the weeks in which students had to work on the third assignment, the one about insights, which are strictly related to the concept of interpretation during the Design Thinking mindset. The tour with Matteo Giannasi was full of interpretative hints, but despite it, during the presentation done in Arsenale what was missing was exactly students' interpretative efforts. Teams just described the assigned work making a kind of summary of the captions, but without making any other in-depth analysis, contextualization or connections with other works to expand their horizons.

Today's managers are called to be smart interpreters of the reality. They have to interpret the context both from a qualitative and a quantitative point of view. They have to interpret company's strategy and its balance sheet. The result of an annual balance sheet does not mean anything if it is not confronted with previous years, if it is not contextualized in the present year, if it is not matched with other numbers to make forecasts. The aim is exactly to find new interpretations to be competitive. Hence management students, who mostly aim at becoming managers, have to learn how relevant is to be proactive interpreter developing strong empathy skills too, which are deeply required in the job environment. Business schools do not always

enable their attendees to try to perform the role of managers within the university environment. A fortiori, when attendees have this possibility, as actually happened during the D&IM module, they should force themselves to exploit it.

Why did management students not do it?

Was it just due to a lack of time?

Or did they not want to?

Probably part of the reason is that they were not used to exploit this possibility because they were not used to this kind of teaching approach, but it was not only for this.

“We didn’t have any incentive to do a good presentation in Biennale if no one would consider it for the final mark and we didn’t put lots of effort in it.”

(Interview: S. 2, M – Team 1. 1st June 2017. Author’s translation)

Student 2, M – Team 1 introduced another aspect I have not considered until now: the mark. He stressed the reported statement saying that it was a common thought among his colleagues. Why did they have to rack their brains if this effort did not condition the final mark? Undoubtedly the final mark is an inescapable element of today’s universities and stands as an honour for the majority of students. The problem is that this quote testifies even more management students’ inability to proactively undertake a process of interpretation. If they did it, they would have realized that the presentation in Biennale had the goal to make students become familiar with the concept of insights, so to be facilitated during the third assignment, which represented a core issue for the ideation space and therefore for the success of their team project, which was truly evaluated as part of the final mark. To conclude, every proposed exercise had the inner goal to bring more knowledge to students, to spur their initiatives and creative thinking to analyse the reality. They wasted the opportunity to improve their abilities and consequently their mark as well, because they did not rely on their critical mind-set.

Moreover Student 4, F – Team 1 and Student 9, F – Team 2 complained about the fact that extra-activities were all concerning art, culture and creative enterprises

without any focus on more traditional and innovative firm²⁴. The reason of this choice resided in Professors' desire to show the various facets of design which can be linked to several kinds of enterprises and activities in everyday life.

The teaching assistant was pretty understandable on this point.

“My point is: Don't do any self-restrain! You are learning, you have several objectives, but you still do not know what you will exactly do in your future and how the world will change. I think advantageous to give you diverse hints and points of view, since that you already have many ways to interact with firms that you, management students, identify with the capital “F”.”

(Interview: Daniela Pavan - 1st June 2017. Author's translation)

Both vertical dancers and community designers are entrepreneurs who take risks running their organizations, who work with project managers, who have to plan their activities, who have time and budget constraints and who test their prototype directly with the final user. For all these reasons, extra activities were all provocations for students in order to give them the possibility to stretch their creative and lateral thinking. They did not actually catch all these provocations while they were attending the course, but after several conversations they probably understood what was missing in their attitudes during an unusual learning process. Students experimented new approaches and related criticalities. Now, they are surely more tempted to deeper interpret stimuli to which they are daily exposed to become meticulous professionals.

²⁴ The same critique emerges in the process books of the colleague S. 5, F – Team 1 too.

17th November 2016

7. Idea Generation

We felt a bit closer to each other, it was like removing one of the layers of formality, revealing an inner face of everyone.

(PB: S. 44, M – Team 9, date is omitted, but he referred to brainstorming)

7.1. When, What, Why did it happen?

The sixth ActionFriday actually happened on Thursday, the 17th of November 2016. Almost one month was passed from the previous ActionFriday.

Students looked quite disoriented. Some teams were split. The two weeks break between the modules' sections seemed not having assisted teams' collaboration. Everyone was stressed for personal duties and to find the right moment to meet to accomplish the third assignment was really hard. Unrest and divergences emerged both in personal process books and during weekly meetings. For instance, Student 3, F – Team 1 wrote down that due to some problems within the group, they were “not so excited to work together” and Student 11, F – Team 3 expressed her disappointment towards the difficulties she found working with her teammates; she had never had dilemmas like this before and she reflected on the fact that it was probably due to the fact that this time she had not chosen her teammates.

Anyway, the sixth ActionFriday had to start around the following theme: idea generation. The teaching assistant proposed again the graph reported in Figure 23 to make students visually aware of next step.

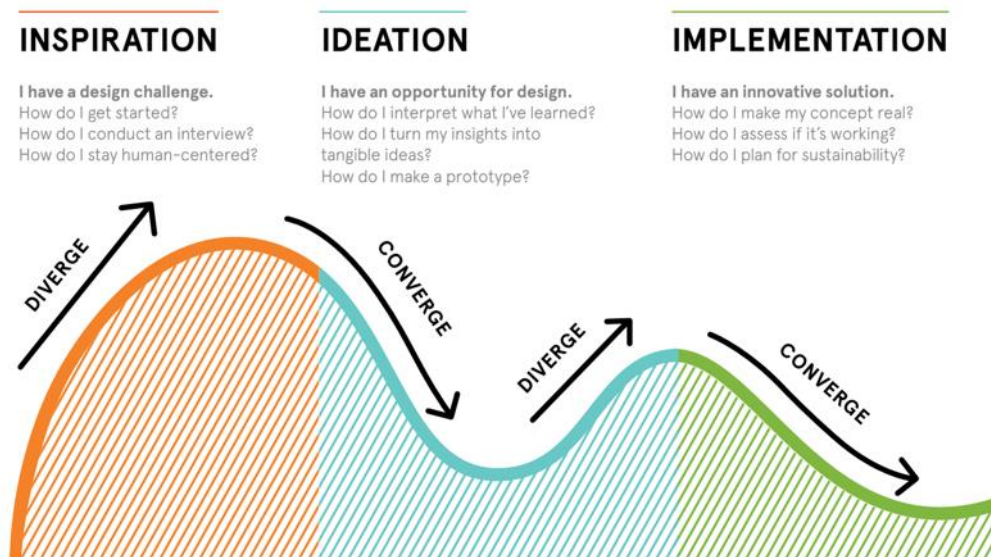


Figure 23: Convergent and divergent thinking (<https://medium.com/digital-experience-design/how-to-apply-a-design-thinking-hcd-ux-or-any-creative-process-from-scratch-b8786efbf812>, Accessed on 21.08.2017)

“The ideation phase doesn’t concern coming up instantly with the perfect idea, but it pushes to go as wide as possible with your mind. It means to ride the biggest waves of your imagination generating the broadest range of outcomes. Hence, you’re facing the divergent thinking again. This time it will bring you to generate innovative solutions for your users passing through the prototyping of your ideas” – introduces Daniela showing the image of a bold surfer riding a big wave, while students look intrigued at the picture. Students need to be pushed in the ocean to activate their survival mechanisms, that is their imagination to come out with many possibilities to surprise their users.

The ideation phase leaves from the insights, or better it translates them into *How might we...* questions, which encourage the brainstorm session for the generation of opportunities for design. From the reframing of insights into several *How might we...* questions students had to select few of them for employed them as launch pads during the brainstorming. These questions have the crucial role to be both narrow pillars and breadth point of departure to explore many hot and wacky ideas (IDEO, 2015).

Then, what matters is to choose an empty wall or a big poster where to stick *How might we...* questions in plain view, gather many post-it notes, pens, paper, all the team members, but also external people to start the brainstorming. The aim is to generate as many creative ideas as possible being stimulated by others’ ideas. Participants have to be frankly open to discussion.

At IDEO, few, but substantial rules have been determined to perform a brainstorm session with unlocked creativity:

1. defer judgement;
2. encourage wild ideas;
3. build on the ideas of others;
4. stay focused on the topic;
5. one conversation at a time;
6. be visual;
7. go for quantity (IDEO, 2015).

“Let’s take action guys! Did you remember the challenge I launched you during the last ActionFriday when we used the Ideo cards?” – asks Daniela to refresh students mind. The answer is affirmative and comes from the majority of the class.

“Well, now you have 10 minutes time to brainstorm with your team 3 ideas to redesign the classroom space. You have to start from the insight written here: – she says pointing at the slide <Lack for space for teacher and students to collaborate and do their work.> Remember that first of all you have to reframe the insight into one or more How might we... questions. Then a discussion about your creative ideas will follow. Equip yourself with post-it notes, pens and Internet...Are you ready?” – shouts Daniela triggering students to build their teams and become active in the ActionThursday!

After the class activity, the workshop carried on explaining the importance to rest some minutes, look at the ideas came out during the brainstorming and cluster them into groups in order to sketch some meaningful patterns. From individual concepts students had to move to more robust solutions. What is relevant here is to mix and match the best part of each idea “to create more complex concepts” (IDEO, 2015, p. 97). One of the best way to select promising ideas is mind mapping. From thinking visually, students would get the benefit to make their ideas more real. Mind maps embrace words and images to incite links to inspire further ideas. The starting point, that is the topic to explore, should be placed at the centre of the page and then several branches, that are key themes, have to be added with no restrictions. Sketches, pictures and colours help to make links between branches. After having exploited this visual tool, each team member had to vote his favourite idea. Usually 2/3 winning ideas can be brought to the prototyping phase.

Before moving on teams had to discuss how to bring their ideas to life. Sketch to think is the first step of this process. It is followed by core ideas’ examination to arrive listing the possible constraints the team might be facing with that ideas and how those barriers could be overcome finding creative solutions. The last step of the process concerned the creation of one sentence description of each idea.

What students found out during the sixth ActionFriday had been asked them to put into practice studying their creative and cultural organization in the fourth assignment. The assignment was uploaded to the Facebook closed group on the 22nd of November and students had one week time to deliver it.

7.2. Students' personal thoughts

Figure 24 is in charge to show some mind maps I screenshot from teams' assignments. It is notable that colours and sketches stand out in students' work. Some teams chose a paper while others a whiteboard to visualize their ideas.

In addition, Figure 25 exhibits some screenshots depicting some teams during their brainstorm session. Pictures were uploaded by teams to the Facebook group. Copies students wrote to introduce their pictures were quite hilarious. It really seems they had fun during the activity. Team 6 did a time-laps to record their afternoon of creative ideas, while team 8 did a short video to show the amount of post-it notes used and discussed. Screenshots are taken out of the Facebook closed group: Design Management Ca' Foscari

(https://www.facebook.com/groups/1583351125231539/?ref=br_rs, Accessed on 21.08.2017).

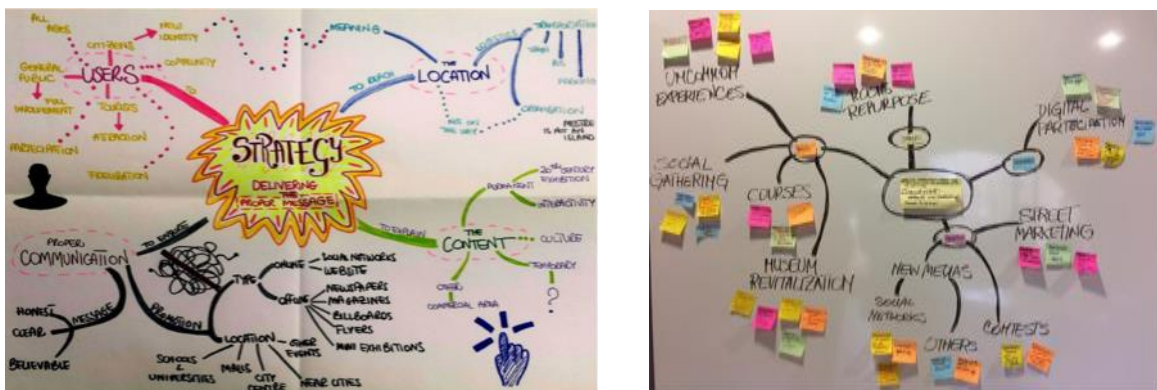


Figure 24: Mind map Team #1 on the left and Mind map Team #2 on the right (4th assignment #Team 1 and :4th assignment #Team 2)

Following process books' extracts are mainly dated 17th November 2016 or at least refer to the brainstorm session.

Few are the considerations found on process books regarding the brainstorming. Some of them are very positive, while some others are not. Hence, it is not possible to generally summarize how management students approached the sixth ActionFriday and related exercises.

Student 1, F – Team 1 noticed she loves the brainstorm activity. Her team-mates Student 3 and 5, F were not of the same opinion. Student 3, F affirmed it was “not a very interesting lesson”, while Student 5 disapproved the class discussion organized after the 10 minutes brainstorming to analyse each team ideas. She “found this part kind of slow” because it took up lots of time. Student 55, F – Team 11 did not find the exercise very useful too because both he and his team “were not stimulated in developing interesting ideas.”

Student 10, F – Team 2 is the exchange member of the team and shared an interesting thought. Since she interiorized and appreciated the brainstorming so much, she thought this tool could be useful also working in teams in her home university. What is considerable is that knowledge started to be shared.

“To my mind the brainstorming is really helpful thing, because you can better understand the ideas of your group mates and by doing it you can find more solutions and more interesting ideas for your work/project. I think that I will continue using this strategy in my home university while creating projects with our design group.”

(PB: S. 10, F – Team 2, date is omitted)

Student 7, M – Team 2 complained about the little time the class had to deliver the assignment. Although his team worked the entire week until “awful times”, he was “proud” of their final brainstorming and mind map.



Figure 25: Brainstorming – from up to down
Team #6, 7, 5, 3, 4, 11, 9, 10

Student 16, F – Team 4 stressed the importance of brainstorming’s non-judgment nature to get many ideas come out. Student 23, M – Team 5 wrote down that “the brainstorming session was the most interesting lecture “in terms of Querini Stampalia’s project” for his team, because it “has helped a lot to develop ideas for the final presentation.”

Student 31, F – Team 7 found “very useful” to visualize ideas, but according to her it was “not clearly explained what a mind map is.” Then she wrote down a request in capital letters: “WE NEED STANDARDS, WE NEED RULES!! → otherwise we work in different ways.” From this quote emerges the fair students have to be free and different from each other in their learning process and their usual management attitude to always behave following the same instructions and strategy. Student 32, M

– Team 7, Student 36, F – Team 8, Student 37, F – Team 8, all described the brainstorm session as “a really interesting process.” Student 44, M – Team 9 defined it as a “powerful tools of idea generation” and “mind opening”, while Student 49, M – Team 10 used the adjective “amazing” and explained that for him the lab was that useful because it was the proof of Design Thinking power “to help in generating good ideas!”

1st December 2016

8. The Implementation Phase

***Will, I ever be able to try and make mistakes and
be ok with this and maybe laugh?***

(PB: S. 35, F – Team 7, 1st December 2016)

8.1. When, What, Why did it happen?

The seventh and last ActionFriday was scheduled again for a Thursday and precisely for the 1st December 2016. Time was passed and teams had almost two weeks-time before their final presentations.

The teaching assignment started the workshop with few slides retracing Design Thinking concepts already discussed: (i) the importance of teams and diversity; (ii) context observation; (iii) empathy; (iv) insights; (v) idea generation; (vi) selection of promising ideas.

“Next step is experimenting!” – announces Daniela showing again a picture of Emmett Lathrop who tries to experiment something with electrical cables. The picture generates funny gazes among students and makes the class at his ease.

“Now, it’s time to speak about the prototype you are so afraid about. In order to ideate and solve your problem statement, the prototype helps you to communicate your idea and to test diverse possibilities. It answers a specific question. The prototype is anything a user can interact with, which come close to your final solution. You have to create realistic experiences without run after the user with explanations, because once you have put the prototype in his hands you have to watch how he uses it. Pay highly attention because you need to gather feedbacks from the interaction your users have with the prototype, because you have to refine and implement it. The testing phase becomes another opportunity to know your users better keeping an empathic relationship with them. Makes sense guys? Consequently, starting from your ideas, please don’t spend too long on one prototype and don’t become too emotionally attached to it because it is subjected to further changes” – says Daniela trying to answer all questions students frequently asked her during weekly meetings. Students actually felt the stress of the prototyping phase since the moment they realized they should have done one for the final presentation of their teamwork.

Prototyping is not about being maniacal precise, but it concerns choosing the right and critical elements to be tested (IDEO, 2015). Experimentation embodies “[...] trial

and error, directed by a certain amount of insight as to the direction in which a solution might lie” (Barron, 1988, in Thomke et al., 1998, p. 316) and it is perceived as a decisive step of the process of problem-solving. It is necessary to chase innovation (Rosenber, 1982).

The testing phase is fundamental to gain feedbacks from people the prototype is designed for in order to learn even more how to implement the final solution. In fact, prototyping is another step of the learning process and it belongs to the learning by doing philosophy. “As the object’s effectiveness is defined by the context in which it needs to perform” (Ewenstein and Whyte, 2009, p. 8), the testing phase has to be organized in a location that would remind the real situation to cause the appropriate feedbacks.

For the final presentation, the teaching assistant suggested to teams to explain the prototype, they are asked to develop for their organization, together with a storyboard, which helps to visualize concepts from the beginning to the end. It does not matter to create something beautiful, but what matters is to go through concepts to learn more details and implement them. Usually, a storyboard is illustrative and it is composed by 4 main frames:

- the first one is dedicated to present the users the prototype;
- the second one shows the problem and when it happens;
- the third one shows the detail of one user interacting and enjoying the idea;
- the last one is applied to sketch what happens after the user actually use the prototype and if he is satisfied with it.

The workshop ended in a fragile, but funny way. Looking at the desk eleven eggs were ready. But ready for what? To be broken or to be saved? It finally arrived what students were waiting for, the activity. Given that it was the last ActionFriday, everyone was expecting a great challenge to conclude the process in a rippling way.

Here we are at the end of our workshops. But hopefully we still have some time for the Egg Drop Challenge! – proclaims Daniela loudly, while students smile even if they still do not know what to do with those eggs.

Given that today’s main topic is the prototype, let’s see you in action.

Please, build some teams of 5 people. Try to mix members to collaborate with colleagues you have never done before to save the egg. The goal is to design and build a structure that will prevent the raw egg from breaking from a certain high drop. Each team will throw it standing on a desk. Initially, each group has the same engaging and interesting key materials at his disposal: tape, straws, string, balloons and a sponge. But pay attention because maybe during the challenge some other materials could be given. Obviously, you have limited time to prototype your structure. You have 15 minutes time, to be exact. Ready? If more than one team will succeed, then the winner will be the one who used fewer straws. GO! – states Daniela setting up the stopwatch. Students are exciting and start encouraging their creativity and prototyping skills. The class is loud, everyone is trying his best!



Figure 26: Collage 3 made by the author

(https://www.facebook.com/groups/1583351125231539/?ref=br_rs, Accessed on 23.08.2017)

Students undertook the Egg Drop Challenge to experiment and reflect on Design Thinking process. Until the seventh workshop they had never tried to prototype. Their worries were usually expressed during weekly meeting and this challenge helped them understand what prototyping is and approach their anxiety to perform better for the final presentation. Teams' structures were tested; one member of each team stood up on a desk to throw his teams' structure while his colleagues crossed their fingers and hoped the egg was safe.

Collage 3 shows some prototypes and how students were amused by the activity. Unfortunately, one egg gets scrambled, but it was part of the game and no one get angry for this, although it was "a very intense moment" (PB: S. 25, F – Team 6).

The following picture is taken out of the Facebook closed group: Design Management Ca' Foscari

(https://www.facebook.com/groups/1583351125231539/?ref=br_rs, Accessed on 23.08.2017).

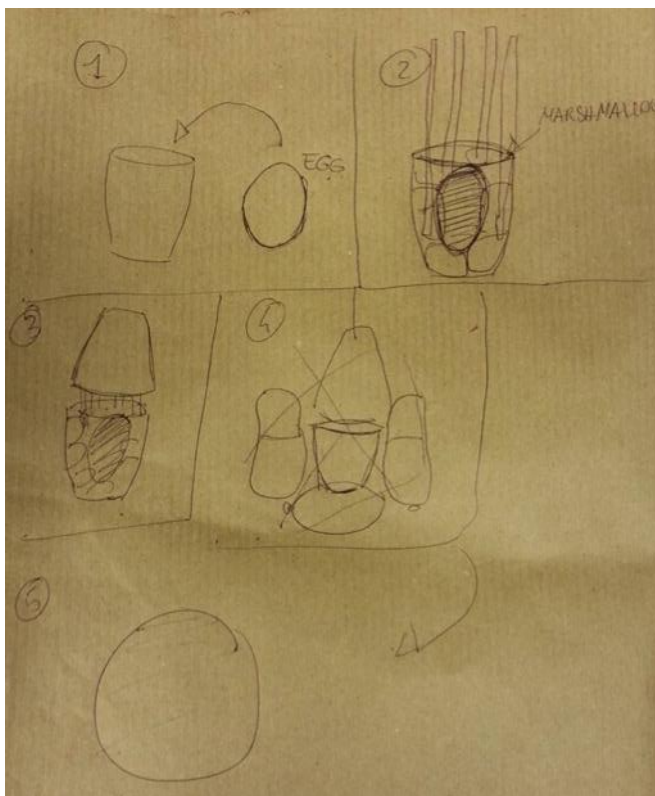


Figure 27: Project of an egg saver

On the Facebook closed group, Student 54, F – Team 11 replied with a picture under the video which recorded her teammate Student 3, F – Team 1 throwing the egg. The picture, reported besides proves some groups did a plan before start working manually.

Additionally, it was linked to the following copy:

"The realistic storyboard/prototype of this challenge...impressionante somiglianza xD."

What Student 54, F wrote in Italian is quite ironic. She wanted to say that the final prototype did not accurately respect her team's initial plan, but she laughed about it and her teammates did the same.

8.2. Students' personal thoughts

Following process books' extracts are mainly dated 1st December 2016 or at least refer to the Egg Drop Challenge.

The last ActionFriday was “funny” (PB: S. 12, F – Team 3; S. 32, M – Team 7; S. 35, F – Team 7; S. 38, F – Team 8; S. 39, F – Team 8; S. 49, M – Team 10), “messy, funny and educational” (PB: S.1, F – Team 1), “funny and atypical” (PB: S. 7, M – Team 2), “exciting” (PB: S. 3, F – Team 1), “active” (PB: S. 28, F – Team 6) “amazing” (PB: S. 3, F – Team 1; S. 22, F – Team 5; S. 49, M – Team 10), “great” (PB: S. 11, F – Team 3; S. 25, F – Team 6; S. 31, F – Team 7; S. 39, F – Team 8), “challenging” (PB: S. 35, F – Team 7; S. 38, F – Team 8), “special” (PB: S.17, M – Team 4), and “useful” (PB: S.40, M – Team 9). It was “cool to have a common goal that has an immediate tangible solution” (PB: S. 44, M – Team 9); it was “another memory that let me think that going out of the schema, can help more to achieve results” (PB: S. 23, M – Team 5).

According to Student 3, F – Team 1, this workshop also brought doubts to students. Unfortunately, she did not go deeper in her thought and it became difficult to interpret her consideration without any other hints. Did she mean the prototyping phase caused doubts in her team for the development of its ideas or did she mean her team was full of doubts regarding which ideas' elements choose to test? It remains unclear.

Some students stressed the potential of the Egg Drop Challenge for their learning process. For instance, Student 1, F – Team 1 portrayed the Egg Drop Challenge as an efficient teambuilding exercise which assisted problem-solving theory. Many colleagues stressed the fact of having worked with different colleagues as a positive

and valuable experience (PB: S. 11, F – Team 3; S.7, M – Team 2; S. 35, F – Team 7; S. 39, F – Team 8; S. 40, M – Team 8; S. 54, F – Team 11). Student 29, F – Team 6 breathed a sigh of relief when she understood she could finally work with his friends, described as her “best team ever”. Her team was one of those who suffered because of team members’ diversity and who had some difficulties in collaborating. She described her experience and complained about her team’s focus, which was the mere result of the project, without any reference to the process of learning, whose effects would have been amplified if it were experienced together by team members.

The Egg Drop Challenge *“was the class activity that reminded me the most how difficult it is to work with those who are different from you. Everyone has their own ideas, values and methods of execution. It is often difficult to understand others and give others the right information to understand what you mean. You have to repeat things several times! But with people that are closer to you, the ones you call friends, this process is facilitated. There is a different time. I love working in groups, but even if I’ve done many projects, the Design one had creatively penalised and stressed me, especially for the group mates. It makes me sad because I’ve seen the focus on the result, not in doing things well, all together...and, in my opinion, this is important too!”*

(PB: S. 29, F – Team 6. 1st December 2016)

Some criticism came from Student 4, F Team 1 and Student 17, M – Team 4 who expressed the desire to have done the activity with few materials available in order to make it more challenging and to increase innovative outcomes; evidently, there was “a poor variety of solutions” (PB: S. 31, F – Team 7). As the same mind was Student 12, F – Team 3 who, although considered the activity very funny, thought that “it was pretty easy”.

Another emerging topic was the similarity with the Marshmallow Challenge. Student 7, M – Team 2 linked the two challenges because both of them were about “building something with unconventional tools in short times.” Regarding this connection,

Student 16, F – team 4 expressed she did not enjoyed the last challenge because she felt it as a repetition, while Student 33, F – Team 7 really liked this repetition because according to her it was a way to realize how much students improved with respect to the beginning and how much their working in teams' abilities grew, which is something she considered “extremely useful in the future.”

“I like this kind of activities because they help to combine critical thinking and problem solving in a funny way” noted Student 37, F – Team 8 setting forth the critical thinking which surrounded the activity's success. Definitely, the challenge let students think creatively to build the egg structure, but close to the creative thinking there was the critical one too, which allowed to immediately build the prototype and implement it to improve the structure's performance.

Furthermore, although Student 26, F – Team 6 was not attending the last ActionFriday, she wrote down some critics about it as well. She saw her classmates “enthusiastic” for the challenge. She interpreted the exercise to prototype a way to protect the egg as a metaphor to learn how to protect own ideas and thoughts within a team.

And finally, Student 22, F – Team 5, precisely replied to the inquiry launched before process books analysis. The last workshop definitely exceeded students' expectations.

“This different approach was amazing because sometimes we need to challenge ourselves to do something new, beyond our expectation and usual constraints!!”

(PB: S. 22, F – Team 5, 1st December 2016)

Of the same opinion was Student 52, F – Team 11 as well.

“Today things got real... for real!!! Today we did the egg drop challenge and I can say without any doubts that it was the most fun and exciting ActionFriday among all.”

(PB: S. 52, F – Team 11, 1st December 2016)

To develop prototypes for their final presentation, teams had the possibility to go twice to the FabLab for a thirty minutes consultation. The FabLab settled in the department of Management of Ca' Foscari university is the first university FabLab in the Veneto Region. It helps everyone to design and create functioning prototypes in a short time through digital and 3D tools. Prototyping is “a highly interactive activity and spans discipline-specific” (D’Adderio, 2001, p. 1412). Hence, collaboration within team members is highly recommended to hold different viewpoints and in this sense the FabLab consultations as well.

Eleven teams out of eleven took advantage of meeting the Fab Lab experts, while the second consultations registered ten teams.

In their process books some students commented the possibility they had to spend some time in the FabLab. Opinions were discordant.

Student 53, M – Team felt really excited to get a help to prototype his teams’ ideas. Student 7, M – Team 2 said she imagined the meetings with FabLab more useful than how they actually were, while Student 47, F – Team 10 wrote down that those meetings were strange, but useful.

Student 20, F – Team 4 discussed the difficulty that her team had to share its project’s point of view with FabLab experts and let them understand it because of their external attitude. Albeit, she considered FabLab meetings very challenging opportunities.

Student 31, F – Team 7, thanked FabLab to be available to shape teams’ ideas, but she complained about the fact it was not clear the effective support they could truly dispense.

13th December 2016

9. The Exhibition

Today was a very long morning, all of us was nervous, excited and anxious to show the prototype.

(PB: S. 25, F – Team 6, 13th December 2016)

9.1. When, What, Why did it happen?

The Presentation Day was coming and students started to feel stressed and excited even some days before. They had to finish their prototypes to be ready for the exhibition. Yes, it was set up as an exhibition, rather than a normal presentation day students were used to. Students struggled with the innovative presentation format they had to deal with. They asked many questions about how the day would be organized. For instance, they asked if they could do a power point or not, how big their desks would be, if they could be asked about theoretical topics too. They looked scared and motivated at the same time.



Figure 28: Collage 4 made by the author; from left to right Team #2, 3 and 4 (https://www.facebook.com/groups/1583351125231539/?ref=br_rs, Accessed on 26.08.2017)

Collage 4 shows some pictures Teams 2, 3 and 4 shared on the Facebook closed group few days before the exhibition:

- Team 2 copy refers to prototypes finishing touches;
- Team 3 wrote they were using weird design tools; actually Student 11, F – Team 3 was using a spatula to detach the prototype from the wall;
- Team 4 uploaded the picture during the weekend and noted down they were working on Sunday too without any rest to be ready for the exhibition.

The entire process, and in particular the prototyping phase, required teams a lot of effort as Student 49, M – Team 10 considered in his process books' thoughts:

“It was an amazing afternoon spent with my team, we really had fun building the prototype all together. The entire process was NOT so EASY... our prototype was supposed to be a physical one (spoiler alert: We succeeded ☺) but getting through it required lot of effort from team #10 as a whole. Cutting wood, gluing wood, writing sentences... MAKING EVERYTHING AS PERFECT AS POSSIBLE... all of this combined was hard to accomplish. And yet, WE DID IT!”

(PB: S. 49, M – Team 10, 9th December 2016)

Definitely, Teams worked really hard and the majority of them understood the necessity to work together as complementary actors to succeed the challenge. Despite this, sometimes it has been absolutely difficult to manage different personalities and the entire process loses out, as Student 12, F – Team 3 frankly affirmed.

“Today our prototype was completed. I actually feel relieved both because this was a very long and time - consuming process and because Student 11, F and I might have finished our primary school experience!”

(PB: S. 12, F – Team 3, 11th December 2016)

Due to some issues with her teammates she felt to have to do with childish persons. Therefore, her Design Thinking experience became even more trying. The diverse attitudes within the team were considered as braking features towards a successful outcome.

As the Professor Monica Calcagno already did for Biennale sessions, she wanted to make buzz around the prototypes and storyboards exhibition too. Her aim was to captivate external stakeholders' interests. She wrote a post on her personal profile on Facebook and then she shared it on Design Management Ca' Foscari group to allow students to see it and contribute to broaden the event's notoriety beyond

primary persons involved. Figure 29 is the screenshot of Professor's post and summarises all the essential information to be appraised of D&IM project groups' final presentations.



Figure 29: Making buzz around the Presentation Day
 (https://www.facebook.com/groups/1583351125231539/?ref=br_rs, Accessed on 26.08.2017)

Exhibition's location was unusual. If you are thinking the Department of Management was the right place to test prototypes and watch storyboards you are wrong. The 13th December 2016 the event took place at Fondazione Querini Stampalia, one of the four organizations analysed by some teams. The Fondazione hosted D&IM students and some of its staff attended the day to catch ideas and to

show their interest and thankfulness towards the great amount of time and dedication students allocated to this project. Unfortunately, other organizations' representatives were not present. In her process book, Student 39, F – Team 7 made a note of the absence of any Altobello Lab's delegate; she was sorry the organization was not really engaged and interested in the entire Design Thinking process students went through even though teams' ideas would have been inspirational to improve Lab's services. Nevertheless, a pleasant and meaningful e-mail arrived from Nicola Fuochi, the bookseller of Il Libro con gli Stivali. It was not just addressed to those teams who investigated the library users' needs, but to all students engaged in Design Thinking learning process. I chose to report the email in its original Italian version to keep all its emotional features.

"È con l'impressione di mancare a qualcosa di significativo che comunico la mia impossibilità ad essere presente.

Lo faccio ringraziando tutti gli studenti che hanno partecipato al progetto, e sperando che Il libro con gli stivali abbia rappresentato un interessante punto di osservazione e riflessione; e che io sia stato di qualche aiuto.

Per chi sta chiuso nella propria attività molti giorni e molte ore al giorno, risulta difficile ritrovare un punto di vista fresco e genuino: il confronto con gli studenti rappresenta invece una splendida occasione di riflessione sulla propria realtà, anche solo per il fatto di doverla raccontare.

Sono ansioso di poter prendere visione del risultato del vostro lavoro, e intanto vi ringrazio e mi scuso per l'assenza.

In bocca al lupo, con la speranza di poterci rivedere!"

Nicola Fuochi

Il Libro con gli Stivali

Venice, 13. 12. 2016

Nicola Fuochi communicated his impossibility to come to the exhibition showing his sorrow to be absent from a really substantial event. He says thank you to all students who participated in the project, not only to those who analysed his organization. He affirms that for entrepreneurs who spend many days and many hours locked in their organizations, it looks difficult to gain some fresh and genuine points of view – again, it comes out the necessary role of interpret the reality from different perspectives to catch meaningful and different insights. Hence the dialogue with students stands as an excellent opportunity to reflect on own activity, if only for the fact of being involved in describing it. The bookseller concludes his message with the hope to take a look to students' outcomes. The email was appreciated both from students and professors, who reached their goal. Professors were able to get students and entrepreneurs involved in a two-flow dialogue which brought evident advantages for both parties who reciprocally learned a lot. From one side students had to face real issues and from the other side entrepreneurs had the possibility to compare with totally external questions and ideas.



The exhibition started at 10 am. Students had the possibility to set their prototypes up and to hang their storyboards. Each Team had a space in the Fondazione courtyard. The setting up was recorded by Professor Maria Lusiani and she highlighted students' emotions. They were in a rush. They were proud of their learning process results. They were excited to show their outcomes.

Figure 30: Professor Monica Calcagno while presenting the exhibition (https://www.facebook.com/groups/1583351125231539/?ref=br_rs, Accessed on 28.08.2017)

“Good morning and thank you all for being here for the exhibition” – says the Professor Monica Calcagno standing at the centre of the courtyard.

“Today we are here to discover what happened after twelve weeks of Design Thinking and we are all curious to interact with your prototypes. We divide into two groups to go through all of your desks and to explore your process of learning thanks to the storyboards you have already hung, your speech and of course the prototypes you designed. I go through the exhibition with Professor Maria Lusiani and the tutor Stefania, while the teaching assistant Daniela Pavan makes her journey with Mister Matteo Giannasi” – announces the instructor of D&IM module while students are shaking with excitement at the thought of starting!

Now it is the moment to give voice to students' prototypes. To present the outcomes from teams' point of views I decided to describe their prototypes reviewing ethnographic notes about the presentation day, pictures and also emails students had to send after the exhibition in which they were asked to include:

- a picture of your prototype / link to the demo;
- a picture or link to the storyboard;
- video for those who did it;
- digital version of the flyers and coupons they made;
- quick description of: users (1 word), challenge (1 short sentence), why that precise prototype improves the life of the users (1 short sentence).

Three teams out of eleven did not send the email. The reasons why three teams missed the task are diverse. Team 4 did not send it because it gave paper flyers and related information during the presentation, while Team 1 and Team 7 were pretty dissatisfied with their performances.

TEAM	ORGANISATION	USERS	CHALLENGE	PROTOTYPE
1	M9	Students, citizens, children, elderlies, tourist	To improve the actual weak communication plan, that needs to be addressed in order to keep the interest high before the opening and to involve users in content creation in the future.	*A labyrinth with bonbons and a box with origami game to represent a strategy in delivering a proper message. → it was not a proper prototype, but a very good metaphor to explain Team 1's goal to make users fully feel involved in M9 as the labyrinth was not translated in a real prototype.
2	Fondazione Querini Stampalia	Young people	To improve the communication (internal and external) and the engagement of young users with Fondazione Querini Stampalia.	*MeetQuerini app designed with Proto.io with a particular focus on unconventional events and related contests.
3	Il Libro con gli Stivali	Parents with strollers and children	To provide users with more space and enhance the visibility of the shop.	*Scale model of the library with improved action for space (e.g. backyard usage; book rotation) and visibility (children draws on the left window following the topic of the book of the month). *Ridipingiamoci fliers (a contest to make graffiti in agreement with the PA to regenerate library's adjacent places).
4	AltobelloLab	Co-workers and potential co-workers	To create a real network characterized by the sense of community.	*New communication strategy: coupons for potential users, new video on the website, coupons for users
5	Fondazione Querini Stampalia	University students studying and living in Venice	To make users feel a deep connection with the Fondazione as their cultural reference point and its network.	*FQS membership card to enjoy particular events.
6	M9	Students	To create a partnership between M9 and universites/high schools, in order to revitalize Mestre and to involve people from different cities interested in culture and creative processes.	*Scale model of some M9 possible services (eg. Prototype room; bar).

7	Il Libro con gli Stivali	Adult (parents, relatives, teachers, etc.) and children	<p>*To bring visibility to the library, by providing easier access and further information.</p> <p>*To improve the overall experience by making it interactive and sensorial.</p>	<p>*A store sign for the offline experience.</p> <p>*A mock website and app for tablets for the online experience.</p>
8	AltobelloLab	Families, especially freelancer parents	To attract more users and potential users trying to overcome their individualistic approach, by enhancing their relationships at co-working.	<p>*Scale model and fliers of Aperithink – a traditional aperitivo combined with the possibility to think and discuss into small groups about a precise topic run by an expert.</p> <p>CLICK HERE TO JOIN ALTOBELLO COMMUNITY</p>
9	M9	Everyone engaged in M9	To allow users to share their feelings and consideration after having participated in M9 visit.	*Scale model of a speaker's corner.
10	AltobelloLab	Freelancers	To improve the user experience allowing the space to be more flexible along with instilling the importance of the meaning of co-working to all users.	*Reorganization of spaces: Scale model of Altobello Lab divided into private and common spaces in which users can work, but also have the chance to create network of contacts thanks to the modular tables and the board to ask for help.
11	M9	Mestre inhabitants, families, tourists and students	To get Mestre noticed among all the other cities and to exploit the combination of culture, technology and fun/entertainment.	*App (M9useum finder – featured events – M9 contests) designed with wood and paper to get M9 and Mestre noticed by relating M9 cultural offer with what offered by other museums in the Veneto region.

Figure 31: Table 1 – Exhibition's outcomes

Going through teams' desks was really stimulating. Students came out with a large variety of prototypes and colourful storyboards as Figure 32 proves.

Creativity and proactivity were the main actors of the day and the location reflected students' necessity to move freely in the space to make audience interact with their prototypes. Business school stiff paradigms seemed to have been left out of the

Fondazione entrance. Students reacted positively to the possibility they had to present their final outcomes in Fondazione Querini Stampalia. They approached the space feeling the cooperative atmosphere it nurtures and the context benefited from a vibrant and fresh energy. After students started to feel at ease they began their performances acting as the maximum experts of their prototypes.

As a matter of fact, they were experienced the last stop of twelve weeks of theory and ActionFridays, of assignments and free time, of difficulties and happiness, of teams' disagreement and teams' complicity. Presentations ended after 1.30 p.m. The time just flew and teams' satisfaction echoed.

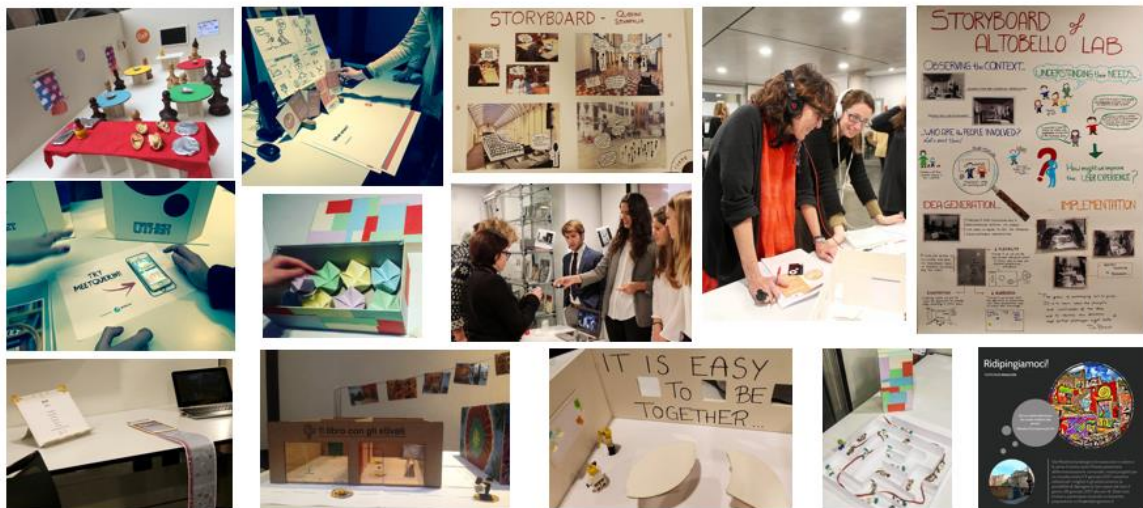


Figure 32: Collage 5 made by the author
https://www.facebook.com/groups/1583351125231539/?ref=br_rs, Accessed on 28.08.2017)

9.2. Students' personal thoughts

Following process books' extracts are dated after the Final Presentation and refer both to the Exhibition and to final reflections on the D&IM module.

At the end of the twelve weeks students commented on their development of Design Thinking process. Even if there had been frustrating and anxious moments, students appeared pleased with their travel through the new design mind-set. Indeed, they expressed their satisfaction towards their prototype too. Their last assignment was already completed and the performance was done.

“Today was a very long morning, all of us was nervous, excited and anxious to show the prototype.”

(PB: S. 25, F – Team 6, 13th December 2016)

“These weeks have been long, many times there have been frustrating moments, we weren’t always surfing the same waves but in the end, we managed to put aside our differences in how we dealt with things to reach the best solution and an excellent result.”

(PB: S. 1, F – Team 1, date is omitted)

“I think that our prototype is great and I hope that other people will think the same.”

(PB: S. 3, F – Team 1, 16th December 2016)

“The app looks very cool in this prototype version. We did a good job team #2!”

(PB: S. 7, M – Team 2, date is omitted)

“It was our BIGGEST satisfaction!”

(PB: S. 24, F – Team 5, 13th December 2016)

“In my group, we were really proud of our prototype (not only for the idea of the event itself, but also for how we managed to present it in a concrete prototype rich of details).”

(PB: S. 39, F – Team 8, 13th December 2016)

“I’m tired, exhausted, nervous, a bit frustrated, but all in all very happy of what group 11 has accomplished at the end of the journey.

We’ve done a lot, met a lot, discussed a lot, worked like crazy and pushed through. But we also had many good moments, some great conversations, a few snacks and meals here and there, a few trips to Mestre and a lot of fun.”

(PB: S. 52, F – Team 11, 13th December 2016)

Satisfaction and pleasure came also by the possibility some teams had to share their outputs with people directly involved in the organization analysed in order to get feedbacks by them too and to have trained how to behave in a professional way.

“I was little bit anxious but I think everything was ok at the end (or I hope so!) I really appreciate the fact that there were also people who work in Querini and that they see the result of our project. It was satisfying to know that they liked it and that they found it feasible. It was also a good occasion to understand how would it be in a possible future work: we had to set as professionals, explaining our offer to the clients and clarifying all their doubts.”

(PB: S. 21, F – Team 5, date is omitted)

The format of the exhibition was not appreciated by the class as an unanimity. Due to the exhibition format, some students were sorry for not having participating in other teams' performance. Hence, they suggested to step back to usual presentation format in which one team presents in front of teachers and colleagues (PB: S. 4, F – Team 1; S. 23, M – Team 5; S. 51, F – Team 10). Some other classmates, although being really happy about the experience, were disappointed with how time was managed during the exhibition day (PB: S. 28, F – Team 6; S. 54, F – Team 11), but they had not proposed any advice to manage it better. They complained because they had to wait many hours until professors came to listen to their performances, but they had not thought that during usual oral exams they had to wait similarly.

Obviously, there could not missed some quotes about team management in the last process books pages too.

Some students were happier with their team...

“About the relationship with my team, in my opinion it was well composed. Each one has a specific role and there weren't too many conflicts among us. This group experience was exactly what I was looking for.

I chose Ca' Foscari because its reputation was to be "open minded" and with a European approach. All my expectations became true so => WELL DONE CA' FOSCARI!"

(PB: S. 8, F – Team 2, 13th December 2016)

"I really liked working with my team, and I think we did a good job."

(PB: S. 36, F – Team 8, date is omitted)

"It was great to work with my group! I'm really happy because we didn't choose each other, but in this way, I had the opportunity to meet new classmates and to develop strong relationships with them. I think we did a great job together, everyone doing his/her part and that's great and it's also a big luck, because I heard that it wasn't the same for many other groups, so I am really happy about that and I feel really lucky! :)"

(PB: S. 39, F – Team 8, 13th December 2016)

"The most important thing that I have learned is to work in a team. I think this is the most difficult part of all the work. I think that is very hard to work with people you didn't choose and who are very different from you. It was difficult but challenging and it helped me to understand my weaknesses. I don't have to be afraid to talk and to give my contribution and I should overcome my shyness.

Sometimes I got angry too because it is not easy to find people who agree to compromise and they maybe want to prevail; but I think that even these kind of things, are very significant for me. What we experienced is a situation that we can easily deal with in our future workplace. For this reason, I really enjoyed our project and I really keep the learnings with me in my future career."

(PB: S. 51, F – Team 10, date is omitted)

...than other actually were.

"It was really hard work in group with people that you haven't choose; we had some problems linked with the participation in my opinion."

(PB: S. 9, F – Team 2, date is omitted)

“I learned something: working in group (in such a group) is REALLY DIFFICULT. Different people from different life situations and countries aren't easy to manage. The challenge, in my opinion was to find the right flow of thoughts. At this time, we aren't able to find it. We should collaborate for other many months in order to collaborate in the right way. This project has been really challenging.”

(PB: S. 54, F – Team 11, 4 hours after the exhibition)

Many process books ended up with a thanksgiving formula towards the Professor and the teaching assistant, towards the opportunity students had to be active in their process of learning opening their minds and starting to think big, despite the steady difficulty to manage different activities simultaneously. Students were intrinsically looking for a different and challenging experience during their Master programme and D&IM module absolutely met their necessities.

“Office hours was something necessary and extremely useful. Every single suggestion was a starting point of discussion for our group.

Thank you for the experience we deal with, for the suggestion, for a new perspective and for that blink in your eyes (you and professor Calcagno also) that clearly explain you care about the project and about us, students not a matricola number.”

(PB: S. 8, F – Team 2, 13th December 2016)

“At the end, I want to say thank you to prof Monica Calcagno and Daniela Pavan for such interesting course... what is important is the fact that lectures were not only in ordinary way but there were a lot of different activities and also guest speakers... And the action Fridays with Daniela were something awesome and very creative! I enjoyed a lot all the challenges and group works. All the creative things are so cool. What's more they also teach us very important skills [...] So, in my mind, this course is one of the most interesting and extraordinary courses in Ca' Foscari. And I am very happy that for my short period of studying here I have chosen it!”

(PB: S. 10, F – Team 2, date is omitted)

“Is it already over?! [...] I would like to find this type of approach also in other future courses, but I know that this wonder cannot be repeated.

Thank you (I know you will read this...) for everything, I hope this ideas of mine will be helpful.”

(PB: S. 22, F – Team 5, date is omitted)

“Thanks for this course and experience!”

(PB: S. 26, F – Team 6, date is omitted)

“I enjoy this course, teach me lot. Sometimes maybe I wasn’t able to link all the stuff but this challenges me. Anyway, thank you of everything.”

(PB: S. 28, F – Team 6, 13th December 2016)

“Thank you for the opportunity to work and study with my team #10. It was amazing. Every lesson I sat with ‘open mouth’ because I like all what you say and all what you offer. It was amazing course.

I know for sure that I will miss these lessons... #DIMCAFOSCARI process was one of the best processes in my life.”

(PB: S. 47, F – Team 10, date is omitted)

“Today we all saw the end of this... it was amazing. I take the occasion to thank all my teammates... we made a great team <3

And thank professor Calcagno and professor Pavan for giving us the opportunity to experience every step of the incredible and unusual journey we had together.”

(PB: S. 52, F – Team 11, 13th December 2016)

“I just want to spend some words for what, in my opinion, is the best project work we’re done so far in Ca’ Foscari [...]

We developed also many relationships really important that can inspire us for our future jobs as well!

Finally, I think that this project was “complete” because thought us how to work, how to manage the development of something, how to relate with people etc.

So, I can just say THANK YOU for this project and this course too!”

(PB: S. 53, M – Team 11, date is omitted)

As a consequence, many students looked enthusiastic about the course and they stressed their excitement of having learned a lot due to the learning by doing methodology.

*“This has to be the more diverse and articulate course I ever took!
I loved learning and doing, and not always have to listen to a classic lecture, also because it’s easier to learn while you’re having fun!
Although the timing (for assignments mostly) was very strict, we learned to cope with the environment and made the best we could!”*

(PB: S. 7, M – Team 2, date is omitted)

“This one was the most interesting course I had ever done.”
(PB: S. 8, F – Team 2, 13th December 2016)

“This course was amazing! I’ve never had so much fun while learning very useful things! It was the perfect mix of learning and enjoying time together.”
(PB: S. 49, M – Team 10, date is omitted)

“In conclusion, I am happy with what I learned and I hope one day to find myself involved in a design thinking project.”
(PB: S. 50, F – Team 10, date is omitted)

“It has been very useful because we followed a project from the initial steps to the implementation of the prototype and this really helped us to understand what means to be involved in a project and make him progress and grow.”
(PB: S. 51, F – Team 10, date is omitted)

“This course gave me food for thought (I can’t stop) and it was well organized! The Action Fridays, the process book, the BIENNALE and all the ideas both of you always gave us was something different. THANK YOU FOR THIS OPPORTUNITY!”
(PB: S. 56, F – Team 11, date is omitted)

30th May and 1st June 2017

10. Interview Sessions

I feel freer to be creative.

(Interview: S.54, F – Team 11, 30th May 2017. Author's translation)

10.1. Five months after

On the 30th May and 1st June 2017, five months after the end of the module, the teaching assistant and I met some students to investigate some pinpoints. Three main questions were asked:

- If it changed, how is your world's view changed after D&IM module?
- Considering Design Thinking as a toolbox containing many tools singularly usable, can you detect three practical examples in which you used any tool you learned from the methodology? Examples could come both from professional and private life.
- What did you appreciate more and what did you like less from the process? What was more useful for you?

To the interview sessions came 8 teams out of 11, totalling 14 spokespeople - 1, 2 and sometimes 3 persons per team - 328 minutes recorded and 52 pages transcribed. We strongly desired to have the possibility to meet more students, but unfortunately it was actually a busy period for them. Students had to prepare exams and lots of them were commuters and did not come to Venice just to do the interview. Some of them asked to do the interview through a Skype call, but we did not consider this possibility because we were looking for face to face interviews to detect students' body language too and to catch more details and veiled suggestions in their talks. Moreover, mostly exchange students already leaved the city. Therefore, only 25% of D&IM module's participants contributed to the interview sessions.

During the conversations students used many valuable adjectives to describe D&IM module. They said it was considerable, demanding, important, intense, arduous, innovative, practical and stimulating. They stressed the fact it was something totally different, something they were not used at during their bachelor courses and they declared it allowed them:

- ✓ to become more open minded and consider many reality's aspects;
- ✓ to become aware of own potentialities and more self-confident;
- ✓ to feel much more freely to share information and ideas;
- ✓ to listen to other people;

- ✓ to cooperate within a team;
- ✓ to deal with new people;
- ✓ to find out how different people respond to different stimuli;
- ✓ to design a solution.

Student 26, F – Team 6 said that the project group could be described as an ode to creativity which allowed students to find their value within the team. She really liked the possibility she had to investigate her own competencies and to give her contribution to her teammates.

The contact with real organisations and with a new design mind-set were deep changes in students' habits of learning and approaching problems. Actually, thanks to the involvement of true case studies teams felt more motivated to do their best acting in a more professional way and to astonish the audience during the exhibition day. They placed near the working world and their challenges resulted hard²⁵, but satisfying experiences. For someone it was even the best experience of his master's first year. Students appreciated to be pushed to go out of their comfort zone and to work with exchange students. Finding the right balance within team members personalities was not easy at all, but it was a test for further experiences in the world of work too. Some teams were closer than others and teams' conflicts often affected on the final prototype. Also for this reason students were asked to develop their empathic skills. Exactly empathy was one of the main themes discussed during the interview sessions. Students were really proud to have practiced how to make interviews, how to explore a field of interest, to understand consumers' needs and how to put in someone else's shoes. For instance, S. 50, F – Team 10 exploited this skill in her private life too to put in contact with one of her best friend who was living psychological difficulties. Additionally, the why question became one of the principal guide questions students adopted to go deeper and deeper in a conversation and to grab meaningful information. Thanks to the D&IM projects some students affirmed they began to meticulously observe the reality without taking anything for granted

²⁵ The hardest elements of the module students often alluded to were the weekly assignments and the time pressure.

and some others figured out the unavoidable central role of consumers in any design and marketing proposals to solve challenges.

Students stressed the utility of Design Thinking both in the university environment than in their private life, even if some of them were still wondering if they really had internalized every single step of the process. For many students, it was pretty impossible to completely understand the process while they were going through it, but nevertheless they undaunted continued to ask for clarifications until they were able to build up the entire framework. For instance, S. 18, F – Team 4 told she practiced some Design Thinking steps during her internship in the crowdfunding reality and only in this context she started to perceive the power of the methodology. From students replies it emerged they acquired more self-confidence due to the fact they were (i) followed step by step, (ii) asked to be active in the process of learning and (iii) asked to give themselves a challenge with different actors beyond the university context.

Thanks to Design Thinking labs, students admitted they learned a mental structure, a template, a systematic process they used for other projects and business ideas too. During the second semester, mostly of them participated in other university projects²⁶ or organizations²⁷ and they found essential Design Thinking tools and skills to approach the challenges without losing precious time. They especially referred to those modules where there were not any weekly deadline and in which teams had to independently organise their work and sketch out an action plan with connected guidelines. Students who resorted to Design Thinking mind-set noticed to be a step ahead of those who did not know it. They perceived to be more proactive and dynamic and to face the challenge with speed and dedication. Hence, they firmly highlighted the importance to keep D&IM module in the first semester of the Master curriculum to serve students' growth in the learning process.

²⁶ For instance, the Experior project in the module of Brand and Marketing Management or the discussion about innovation in the module of Economics of Innovation.

²⁷ For instance, MARKETERS Club or Culturit.

The problem-solving nature of Design Thinking was frequently discovered as a useful basket of tools to solve various problems in everyday life too. For instance, students used:

- ✓ the brainstorming to choose (i) where to go for a night-out or for holidays with friends – engaging friends who did not know anything about the tool, (ii) the perfect moment to do an activity together with busy friends, (iii) the courses' schedule of a year abroad (iv);
- ✓ the mind map to think about future objectives;
- ✓ visualization concepts and Lego support to solve problems during internships' routines involving many actors in the development of new ideas;
- ✓ empathy skill to understand not only consumers, but friends' and relatives' behaviours too.

After the module, an optimistic point of view survived in students' life: they learned that each problem can be solved because even if the solution does not exist yet, being innovation's drivers, they would be able to design their own.

Thinking about Design Thinking utility, many students mentioned the brainstorming as one of the main tools they then frequently used in different contexts. Even if some students implicitly used and knew the brainstorming before attending the course, the advantage they gained was to be able to label and classify it with the other tools in order to be ready to use them consciously to the need. In this way, the process to solve problems speeds up. This concept was better discussed with S. 11, F – Team 3 who perceived the course as a helper to define the borders of her natural character. She talked about a way of thinking and approaching things she already possessed, but that she did not know how to define and improve before attending the module. She bravely mentioned her attitude to observe new contexts with itemized lenses and to chat with strangers to get to know their habits and needs. Furthermore, her passion for the photography assisted her to record her observations. Hence, the module perfectly fitted her disposition, helped her to define and label her attitude and gave her more tools to continue and better her personal explorations. What she liked at most about the course was the tendency not to give straight answers, but to inspire students to find their own. This was another topic for discussion during the session. Even if she was speaking for herself, she drawn to

the attention her colleagues' points of view too and their destabilization towards the difficulty to study, to take an exam whose lessons were not in charge of offering answers on a silver platter, but rather of addressing to specific ways of learning with original classes.

When the conversations moved on to what students disliked about the course, their answers were quite similar. I have already examined students' disapprovals toward the focus on creative and cultural organizations and guest speakers and the related problems concerning the interpretation of extra-activities which came to light during the sessions. Next to this topic they asked for more integration between labs and theoretical lessons and between theoretical lessons and papers to study for the written exam. Sometimes they felt a conceptual gap they were not able to fill. The responsibility could be addressed both to their negligence to force themselves to do an interpretative leap and to their predominant economic background. Then complaints about weekly assignments and time pressure were prevalent, as well as the advice to split theoretical lessons and labs in two separated periods in order to be more focused on one activity at a time and to avoid being overwhelmed by deadlines.

10.2. Liedtka - Emerging cognitive biases in students' process of learning

In a strategic decision-making context, where uncertainty and risks are high, the literature about cognitive bias studies human deviations from rational reasons and innovative outcomes (Gilboa, 2011). In the strategic decision-making process, many scholars classify more or less biases that could occur²⁸. Understanding how cognitive bias affect strategic decision making is essential to prepare managers for taking effective decisions (Das and Teng, 1999).

²⁸ For instance, Bazerman (1994) examines thirteen cognitive bias that could happen in the managerial decision-making, while for Barnes (1984) are only five the biases that could emerge among managers and decision planners.

In *Perspective: Linking Design Thinking with Innovation Outcomes through Cognitive Bias Reduction* (2014), Jeanne Liedtka argues that many Design Thinking tools and practices reduce cognitive biases in a decision-making setting. She examines nine cognitive bias summarized in Figure 33.

Cognitive Bias	Description	Innovation Consequences
Projection bias	Projection of past into future	Failure to generate novel ideas
Egocentric empathy gap	Projection of own preferences onto others	Failure to generate value-creating ideas
Focusing illusion	Overemphasis on particular elements	Failure to generate a broad range of ideas
Hot/cold gap	Current state colors assessment of future state	Undervaluing or overvaluing ideas
Say/do gap	Inability to accurately describe own preferences	Inability to accurately articulate and assess future wants and needs
Planning fallacy	Overoptimism	Overcommitment to inferior ideas
Hypothesis confirmation bias	Look for confirmation of hypothesis	Disconfirming data missed
Endowment effect	Attachment to first solutions	Reduction in options considered
Availability bias	Preference for what can be easily imagined	Undervaluing of more novel ideas

Figure 33: Table 2 – Cognitive Biases (Liedtka, 2015, p. 930)

Each bias brings innovation consequences about. To face these innovation restrictions, she suggests some mechanisms coming from the Design Thinking mind-set. By mitigating biases, innovative and valuable outcomes spread. In order to make her analysis easier, she gathers the nine biases into three categories:

1. decision-makers' ineptitude to move:
 - from their own past and current emotional state (projection bias and hot/cold gap);
 - from their individual preferences (egocentric empathy gap);
 - from the inclination to be strongly influenced by particular factors (focusing illusion);
2. users' or customers' ineptitude to communicate future needs or to give right feedbacks on new proposals, making it arduous to prototype ideas for them (say/do gap);
3. decision-makers' deficiency to inquiry their hypothesis because they are:
 - unimaginative (availability bias);
 - overly optimistic (planning fallacy);
 - wedded to initial solutions (endowment effect);
 - wedded to preferred solution (hypothesis confirmation bias).

To reduce category 1 biases, Liedtka founds three possible propositions. Design Thinking decreases the effects of category 1 biases:

Proposition 1: *“By insisting on the collection of deep data on customers’ concerns and perspectives as central in the need finding stage”* (Liedtka, 2015, p. 932 and 933);

Proposition 2: *“By improving decision-makers’ ability to better imagine the experiences of others in the need- finding stage”* (Liedtka, 2015, p. 933);

Proposition 3: *“By insisting that innovation tasks be carried out by diverse, multifunctional teams”* (Liedtka, 2015, p. 933 and 934).

To reduce category 2 bias, Liedtka founds two possible propositions. Design Thinking decreases the effects of category 2 bias:

Proposition 4: *“By using qualitative methodologies and prototyping tools, design thinking improves customers’ ability to identify and assess their own needs”* (Liedtka, 2015, p. 934);

Proposition 5: *“By using methods that do not rely on users’ ability to diagnose their own preferences”* (Liedtka, 2015, p.934).

To reduce category 3 biases, Liedtka founds two possible propositions. Design Thinking decreases the effects of category 3 biases:

Proposition 6: *“By teaching decision-makers how to be better hypothesis testers [...] It does this by insisting that they prototype, surface unarticulated assumptions, and actively seek disconfirming data”* (Liedtka, 2015, p. 935);

Proposition 7: *“By insisting that decision-makers work with multiple options”* (Liedtka, 2015, p.935);

Proposition 8: *“By insisting that decision-makers conduct and reflect on the results of marketplace experiments”* (Liedtka, 2015, p. 935).

Therefore, in the light of the fact that Design Thinking should be one method to mitigate cognitive biases, I decided to investigate students’ answers during the interview sessions to check if the methodology intrinsically eliminates the cognitive biases from the start, when it is adopted to face a challenge.

Actually, I detected that three teams suffered from some cognitive biases in their learning path and I wondered if this finding could be associated to a Design Thinking inability to row against human cognitive biases in a complex problem-solving context or to management students' difficulty to move from their tendency to go straight to the solution. Figure 33 reports students' quotes that I consider guilty of showing the presence of some cognitive bias, which bias is identified and which category it belongs to and which propositions are suggested by Leidtka (2014) to reduce them.

TEAM	QUOTE	BIAS AND CATEGORY	HOW TO MITIGATE?
2	<p>Daniela Pavan: Talking about the project you worked on, when did the idea about the app emerge?</p> <p>S. 8, F – Team 2: At the end. Actually, we proposed the events, that did not come to light during the exhibition, that emerged during the brainstorming session and we thought at the app as the tool, as the device, as the contact point with the final user.</p> <p>Daniela Pavan: But did it emerge for any reason?</p> <p>S. 8, F – Team 2: For the presentation in Querini. We had it in mind since the second/third assignment, but we said: "It's too early. We have to wait." We felt like we already solved the challenge, but you didn't ask us to solve it. We were dealing with the insights and we said: "We can store this idea, then if we need it we can reuse it!"</p> <p>Daniela Pavan: But did you reuse it just to do an original presentation in Querini or was there actually a reason?</p> <p>S. 9, F – Team 2: For both reasons. Both for the presentation day and to engage the user more.</p> <p>S. 8, F – Team 2: We noticed that there were some shortcomings both through social networks and through the app. Hence, we said: "Ok, we can propose the events, but it would be easier to offer a device." Then, we had so many events that we did not know which one would have been chosen.</p> <p>S. 9, F – Team 2: I remember that during the Palazzo Strozzi's lecture there was talk of an app. Then I downloaded it and it was super useful. From this point, we get inspired to engage users.</p> <p>(Interview: Team 2 - 1st June 2017. Author's translation)</p>	<p>Egocentric empathy gap – category 1</p> <p>Endowment effect - category 3</p>	<p>Propositions 1, 2, and 3</p> <p>Propositions 6, 7 and 8</p>
3	<p>Stefania Silipo: As regards your prototypes, when did the idea emerge?</p> <p>S. 11, F – Team 3: Oh god! It's just hard to go back...</p>	<p>Egocentric empathy gap – category 1</p>	

	<p>Stefania Silipo: I'm asking to you, if at the beginning you were already focused on spaces...</p> <p>S. 11, F – Team 3: Yes, then the graffiti idea was born the first time we visited the bookshop and the thing about the garden too...we didn't decide it in detail what to do, but to do something in that direction. Then the window idea emerged in a second moment because it was linked to make some meetings in the garden and to enhance the bookshop's visibility, that was another critical point we discovered. The book rotation was born because there are too many books and then instead of showing the same books for a long time, we thought to make them rotate.</p> <p>Daniela Pavan: How much did your interviews impact on these ideas?</p> <p>S. 11, F – Team 3: According to me they had an impact, because what we noticed during the first observation allow us to do specific interviews about the problems we previously found. Hence, it was like a rediscovery of what we observed.</p> <p>Daniela Pavan: So, did you adjust the interview on what you already observed?</p> <p>S. 11, F – Team 3: We didn't do it completely, but we brought out initial problems too, visibility and space, even though the interviews were open to let other ideas out. I don't remember if we approached both users' and experts' interviews like this.</p> <p>Stefania Silipo: Given that, from your starting observations already appeared these two problems that you took with you along the process, did this fact limited the birth of new problems and as a consequence of new ideas?</p> <p>S. 11, F – Team 3: Yes, ok...how can I explain it...We knew that we wanted to improve these ideas because we love them from the beginning, but then when we did the brainstorming we tried to start from a zero moment without being influenced by those ideas...but then due to the difficult teamwork situation we were living, there wasn't any proactive inclination to change anything. Honestly, I prefer someone who rows against me to call me into question showing other perspectives. Unfortunately, no one was doing this. Hence to reply your question, surely it limited the birth of new ideas because our ideas were linked to these problems. It's wrong to say like this, but having in mind two huge interventions in a really small space, it was difficult to move from these findings, unless you move to a totally different point of view, that could have been the digital, but according to us it would not be the right decision.</p> <p>(Interview: Team 3 - 1st June 2017. Author's translation)</p>	<p>Hypothesis confirmation bias – category 3</p> <p>Endowment effect - category 3</p> <p>Availability bias – category 3</p>	
11	Daniela Pavan: The idea you prototyped about the app...	Egocentric empathy gap –	Propositions 1, 2, and 3

	<p>S. 54, F – Team 11: Sincerely, it came to light from the beginning the idea to prototype something to link different museums.</p> <p>Daniela Pavan: But did it emerge from the interviews?</p> <p>S. 54, F – Team 11: Yes, something emerged because we found in Mestre neighborhood something similar and we said: “well, we can store this idea as a starting point, and then if we need it we can make it re-emerge. By accident it emerged during the brainstorming.</p> <p>Daniela Pavan: So, you said that something similar emerged at the beginning, but then you leave it aside, right? Hence, for which reason did you bring it out again?</p> <p>S. 54, F – Team 11: Honestly, there was a leader in the team and his ideas came to light again. They were stronger than others and the team agreed with him...</p> <p>Daniela Pavan: But, was there any reason behind your process that supported this idea?</p> <p>S. 54, F – Team 11: Yes, there was a motivation. At the end, he asked us: “Did you remember what we thought at the beginning?” We replied affirmatively. Hence the idea re-emerged contextualizing it in our process.</p> <p>(Interview: Team 11 - 30th May 2017. Author’s translation)</p>	<p>category 1</p> <p>Endowment effect - category 3</p>	<p>Propositions 6, 7 and 8</p>
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Figure 33: Table 2 – Cognitive biases in students Design Thinking process

This analysis shows that only three groups out of eleven suffered from cognitive biases. First of all, it is a good outcome considering that teams were completely new to Design Thinking. Teams 2, 3 and 11 suffered from the same two cognitive biases:

- egocentric empathy gap – category 1;
- endowment effect – category 3.

Moreover, from the conversation with Team 3, Student 11, F reported some thoughts that revealed the presence of other two cognitive biases in her teams’ project. These biases are:

- hypothesis confirmation bias – category 3;
- availability bias – category 3.

The four cognitive biases are connected by the fact of being associated to decision-makers’ inability to move from their initial solutions and preferences to force to design the best solution ever to that precise challenge around users’ needs. This inability is probably caused by students’ management background that has always spur them to directly run to the solution. The egocentric empathy gap could have

been mitigated by insisting on the collection of data to comprehend users' needs and preferences differ from decision makers' own. The adoption of storytelling and metaphor could have helped in this way to better imagine users' experiences. If deeply explored by the teams as unique multidisciplinary actors, users' needs and reality could have led to create more valuable ideas. Actually, both in Team 3 and 11 the team spirit was missing and the prominent ideas were proposed by few students who tended to give voice to their own perspectives. The endowment effect, the hypothesis confirmation bias and the availability effect belong to category 3 and could have been mitigated by bettering the testing hypothesis phase, by working on multiple options and therefore moving multiple solutions into active testing decreasing the focus on first solutions only and by testing prototypes with real customers to gain active feedbacks that act as a springboard for reviews, implementations or novel ideas. Hence, the materialized biases could be more associated to the fact management students were unfamiliar with Design Thinking, than to Design Thinking unfitness to solve decision-makers' inner cognitive alterations. Furthermore, as I already stated, students were not exposed to periodic feedbacks during their process of learning and doing. This caused disorientation in some students more than in others, but it was done on purpose in order (i) not to prevent students to make a mistake, (ii) to respect teams' unique path towards Design Thinking spaces and (iii) to observe and examine students' decisions, difficulties and successes. Definitely, if teams 2, 3 and 11 had received some feedbacks they might have noticed that their management affinity was prevailing over the design one, but the research had not had the possibility to detect how much their background conditioned students' dispositions and choices.

Conclusions

Every story has its end and this is mine. Actually, this is not the end of a story, but it is just the end of a chapter. It is a stop because the research has not finished yet. The 2017 - 2018 academic year is already started and the Professor Monica Calcagno took it upon herself to lead the D&IM module's third edition. Many students are attending the module: 102 Innovation and Marketing students and 35 Erasmus students. They are more than twice than in the last year. This high level of participation reflects the success of last year module and students' word of mouth to spread its novelty and utility. Some variables changed in the third edition: from the schedule of theoretical and practical lessons to the research assistant, from the project groups' focus to the speaking guests. But, this is another chapter that is going to be written in the following months to increase the research and compare the outcomes. Which year performed better and why are questions that could not find an answer yet.

The thesis' aim was to analyse marketing management students' reactions to Design Thinking spaces. Discipline and experimentation were mixed to help and stimulate students to be active actors in their process of learning. Thanks to the qualitative inductive research, the aim has been satisfied: each ActionFriday had been fully examined through ethnographic notes and students' process books to conclude with the Exhibition day and the interview sessions. The immersing approach gave voice to students' impressions and allowed me to depict the story in the form of an introspective diary intertwined with many vignettes.

The module stood and still stands in favour of a management curriculum redesign. The launch of Design Thinking in an Innovation and Marketing Master class reacted:

- ✓ to business schools' difficulty to bring good and positive leaders to the society;
- ✓ to companies' necessity to hire more designers of solutions, than just managers of processes.

The module embraced an interdisciplinary approach and enhancing diversity within its lessons and labs, spurred students to appreciate and taking advantage of their

colleagues' diversity too. Multidisciplinary teams were required to push collaboration among teams' members and to face each Design Thinking phase with the power of an interdisciplinary and multicultural mix of thinkers, doers and creative people.

"[...] the failings of management are most directly attributed to a famine of good ideas."

(Boland and Collopy, 2004, p.7)

The synergy within team members was one of the main elements in charge of leading the co-creation of good and new prototypes, turning challenges into opportunities to better the existing reality - products or services.

Creativity was a peculiar aspect in the process of innovation too and "it is a collective condition and refers to a process of recombination, which is socially and culturally contextualized" (Calcagno, 2017, p.72). It is a collective condition precisely because problems' complexity asks for solutions coming from teams composed by different people with different perspectives and ideas (Hargadon and Bechky, 2006), while it is a process of re-combination (Brown, 2009) because it is pushed by the exploration of various settings (Sutton and Hargadon, 1996; Hargadon and Sutton, 1997; Calcagno, 2017).

Design Thinking methodology comes from the world of design which slowly tries to insert in today's management practice and education to provide managers to acquire new skills useful to go "beyond default solutions in creating new possibilities for the future" (Boland and Collopy, 2004, p. 4). The goal is to lose interest in being mere decision - executors and to ignite an inner proactive behaviour towards the design ability to reply to a problem, to create a story and be able to interpret all its paragraphs. Instead of making "choices among the alternatives presented to them" (Boland and Collopy, 2004, Preface XII), if managers embraced a design attitude they would face problems with the tendency to be sensitive promoters of new solutions for the society. They would be personally engaged in the process of human betterment.

Hence, the module showed up as students' first experience to be finally engaged in real projects, where they were asked to propose fresh ideas to improve users' experience in selected cultural and creative organizations.

“Assuming a design thinking perspective, the project focuses on identifying a gap in terms of unmet needs, entering deeply into the multidimensional facets of its emergence, and finding the best feasible solution in order to fill this gap.”

(Calcagno, 2017, p. 61)

Albeit students experienced many tensions during the process of learning due to their management background, process books and interview sessions highlight that innovation and marketing students feel to be emerged from their condition of hibernations. Additionally, most of them thanked a lot for having acquired a new mind-set to face complex problems in the real world: they doubtless realized Design Thinking feature to be suitable to different contexts.

Students feel more self - confident. They feel better observers and interviewers. They feel more emphatic. They feel more open - minded. They feel more creative. They feel more collaborative. They feel more powerful. They feel able to fight for an outcome. Innovation and marketing students feel able to design something out of nothing.

To conclude I think it could be right to emphasize the relationship between management and design. Design has become more and more related to managerial research for different reasons (Dumas and Mintzberg, 1989; 1991; Boland and Collopy, 2004). For instance, it is used to improve users' experiences, exactly as students did in their project groups, to stimulate managers to exploit the creative asset of their organizations to be innovative and competitive (Calcagno, 2017) or to cope with a new product development. But, what does design management mean?

Design management effectively masters change - Timothy Bachman, Principal, Bachman Miller Group (Kelley, 1998, p. 14)

Design management strives to create understanding and awareness among personnel at all levels – Torsten Dahlin, President, Swedish Industrial Design Foundation (Kelley, 1998, p. 14)

I like to think of design as a vision – Lizbeth Dobbins, Manager, Corporate Branding and Identity, United States Postal Service (Kelley, 1998, p. 15)

I view the role of design management as one of facilitation – Martin Gierke, Director, Industrial Design, Black & Decker (Kelley, 1998, p. 16)

Design management is about applied innovation – Thomas A. Kelley, General Manager, IDEO Design and Product Development (Kelley, 1998, p. 17)

Design management is the key strategic innovator helping to shape and establish the end user's perception of a product – Gary Van Deursen, Corporate Director of Industrial Design, The Stanley Works (Kelley, 1998, p. 18)

Design management connects a company with the world around it – Sohrab Vossoughi, President, Ziba Design (Kelley, 1998, p. 19)

Already in the summer of 1998 the Design Management Journal gathered many views on the definition of design management. 18 professionals were interviewed. As reported in previous quotes, even if they suggested varied viewpoints, they all agreed about design as an indispensable resource in their corporate enterprises.

In *Managing as Designing* (2004), Wanda J. Orlikowski reflects on managing and designing. After introducing the etymology of the word designing, which comes from the Latin de- + signer, she connects the meaning of designing to that of managing.

“To design, thus, is to make representations of the world. By this view managing is designing, as is evident in the discourse of management, which reflects a preoccupation with operating on the world through symbolic means. [...] both design and management are engaged in the production of representation.”
(Boland and Collopy, 2004, p. 91)

For this reason, design and management are related to everyday life and are intrinsic in people’s routine. Even more so, managers are asked to be more valuable and emphatic leaders and to lead the process of innovative answers to complex challenges to meet consumers’ needs. Even if Design Thinking tools are suitable for helping them, they additionally need to train their interpretative abilities. They need to become smart promoters of particular and unknown insights and therefore of a better and attractive world.

So, what is better than starting from a revolution in the management education?

The experiential learning would serve the purpose!

Appendix – Creativity test



NAME AND SURNAME:

DATE:

CREATIVITY CHALLENGE #1

Call Pay Line

THE ANSWER IS

Blue Cake Cottage

THE ANSWER IS

Christmas Birthday Surprise

THE ANSWER IS

House Village Golf

THE ANSWER IS

Plan Dance Tile

THE ANSWER IS

Green Room Britain

THE ANSWER IS

Water Soda Trevi

THE ANSWER IS

Basket Snow Dance

THE ANSWER IS

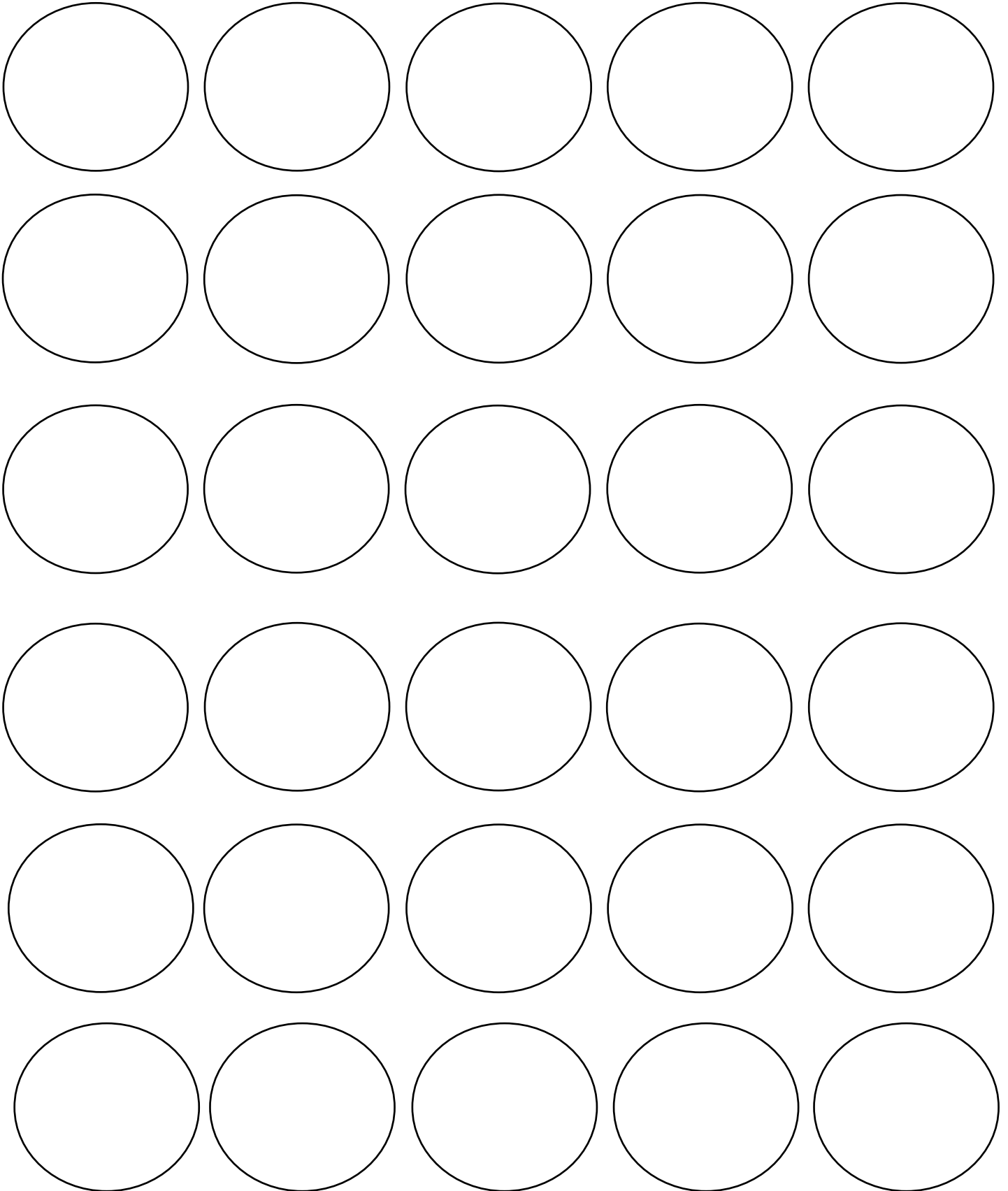
Around Kart Slow

THE ANSWER IS

Band Book Phone

THE ANSWER IS

CREATIVITY CHALLENGE #2



MY 10 MAIN TALENTS ARE

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

THE ACCOMPLISHMENT I AM PROUD OF IS

.....
.....
.....

THE PERSON I ADMIRE THE MOST IS

BECAUSE.....
.....
.....

SHOW WHO YOU ARE IN A CREATIVE WAY

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