

Module name

“Design thinking, co-creation and innovation games”

Module designed by: BUas training team

Within which training?

TT1 and also some aspects – more direct feedback/expertise provision in TT2

TT1 Design Thinking, co-creation and innovation games (4 hours)

TT2 Design Thinking, co-creation and innovation games (4 hours)

Duration within the framework of the training: 4 hours day 1 of TT1 and 4 hours as a sum within the three days – it is not a sequential training then but part of the general feedback and expertise provision

General information: (outline of the module)

The module is an introduction into Design Thinking as well as design-doing. What is Design Thinking and how to do it? In what does Design Thinking stand out from other approaches? And what is the toolbox that comes with Design Thinking? Furthermore the concept of co-creation will be deepened in this context and also the concept of playfulness will be touched upon via introduction of Innovation Games.

All the above to ensure the participant develops a Design Thinkers mind-set with a focus on creative confidence, optimism, empathy, make-it mentality, ability to learn from failure, embrace ambiguity, and the perseverance to iterate, iterate & iterate (source: The Field Guide to Human Centered Design from IDEO.org)

Content of the module (per sub-themes):

- 1. Essence and specifics/core principles of design thinking, co-creation and innovation games and their application to the context of higher education**
- 2. Design thinking – mapping appreciative realities**
- 3. Co-creation by means of Cover story carousel**
- 4. Innovation games by means of Product box and/or Storytelling cubes**

Detailed description

Design is being defined as “Changing existing situations into preferred ones” (Herbert Simon, 1969)

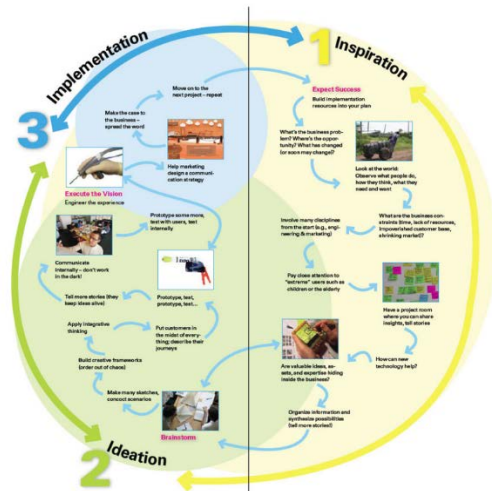
Design thinking is defined as the intentional, critical and creative process towards improvement in people’s life. Therefore it is an essential toolkit for tomorrow’s challenges.

BUas design manifesto

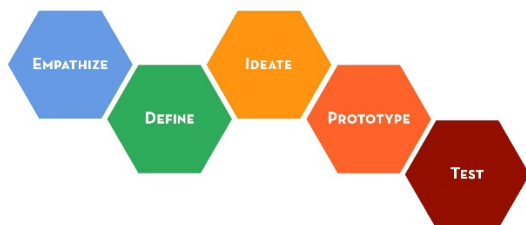
“We believe design to be the intentional, critical and creative process towards improvement in people’s life, and therefore to be an essential toolkit for the innovating managers and creators that our university of applied sciences intends to deliver”

- design deals with improvements in life (...)
- designing is engaging in solving (seemingly) impossible problems
- design is about exploring alternatives, seeking innovation, and finding the optimal solution for a real-world problem
- design is about finding solutions that meet requirements desirability, feasibility & viability
- design is deliberate in that it is based on research and experience (...)
- design is an iterative process that runs in a cycle of research, ideation, prototyping and evaluation
- design is not an innate quality, it is a creative process that can be mastered

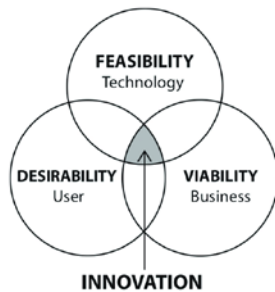
Design Thinking is a design methodology that provides a solution-based approach to solving problems. It is extremely useful in tackling complex problems that are ill-defined or unknown, by understanding the human needs involved, by re-framing the problem in human-centric ways, by creating many ideas in brainstorming sessions, and by adopting a hands-on approach in prototyping and testing. Understanding these five stages of Design Thinking will empower anyone to apply the Design Thinking methods in order to solve complex problems that occur around us — in our companies, in our countries, and even on the scale of our planet.



The design-thinking process:



Finding solutions that meet the requirements of:



Co-creation

Co-creation is more than a 21st century phenomenon, by means of which innovative solutions are being provided. Co-creative collaborators are by nature multidimensional insofar as a variety of issues are addressed in terms of interaction, organizational development, family culture, traditions and customs, leadership style, etc., which entails a significant degree of diversity in terms of knowledge basis in science and technology.

“The new paradigm of co-creation presents an enormous opportunity for enterprises that can figure out how to harness it. Individuals are far ahead of most organizations in their eagerness to engage in co-creating value, and organizations must now respond.” (Ramaswamy & Grouillart, 2010:109)

“[...] it is the enterprise that is quite not there yet – whether the enterprise is a “profit.com”, “social.org”, or “public.gov”. The co-creation movement must be seen as a journey in organizational transformation to the next paradigm of value creation – one that can lead to new growth and new sources of competitive advantage. [...] Welcome to the opportunity to co-create the future of value creation!” (Ramaswamy, 2009:17)

The 4 principles of co-creation, which have been adopted within the Master IMA education, following Venkat Ramaswamy and Francis Gouillart (2010) can be summarized as follows: 1) stakeholders won't wholeheartedly participate in customer co-creation unless it produces value for them, too. 2) The best way to co-create value is to focus on the experiences of all stakeholders. 3) Stakeholder must be able to interact directly with one another. And 4) Companies should provide platforms that allow stakeholders to interact and share their experiences.

Co-creation can take place within co-design processes but focuses much more on the collective creativity of involved users and stakeholders. Co-creation seems to open up into two interpretations: the first one is a creative moment, atmosphere in a co-design event. The second is a method in the co-design process or during an event where the users create solutions. Co-design is about as facilitation of exchange between people who experience products, interfaces, systems and spaces and people who design for experiencing”.

Collective consumer creativity is qualitatively distinct from individual consumer creativity - it occurs when “social interactions” trigger new interpretations and new discoveries that consumers thinking alone, could not have generated” (Hargadon & Bechky, 2006, 489). Hargadon et al. argues further on that “rather than relying on each individual's cognitive skills, collective creativity represents particular moments when people's perspectives and experiences are brought together to bear on problematic situations in ways that create distinctly new solutions”. At these points, what to think of as a problem and how to think of it become the products of a collective process.

Sanders & Stappers (2008) refer to co-creation as any act of collective creativity which is shared by two people or more. Looking at the definition in the business dictionary is co-creation a strategy focusing on customer experience and interactive relationships.

Co-creation allows and encourage a more active involvement from the customer to create a value rich experience. Frank Piller (2003) also writes extensively about the co-creation of value between companies and customers and websites such as www.NIKEiD.com already co-create with their customers, allowing people to customize their own shoes. For many co-creation is the latest trend in marketing and brand development but according to Fisher & Baird (2006) the landscape of education changes through the use of technology which causes a shift from student-centered learning towards collaborative learning where co-creation is an added value in learning processes. The shift from user-centered to a more co-creative approach is having an impact on the roles of all participants in the system (Piller, 2003). When co-creating the roles get mixed up and everybody can be an expert in his or her expertise. The focus of collective creativity in the interaction moves to the collective level when participants make new sense of what they already know (Perjanen, 2012).

Innovation games

The use of gaming to support education is not new, but it has received more attention and more diverse support in recent years. Within the field of education, gaming has been referenced as a method to support the related principles of active learning [2], experiential learning [3] and student-centric learning [4]. In parallel, research on early childhood development has also focused on the role of play in learning [5]. The business community has also identified gaming as a key means of educating students and leadership about strategic problems and decision-making [6] and encouraging innovation within the workforce [7]. Finally, military education has long seen games as a valuable teaching tool, and in recent years gaming has been highlighted as a way to make education more realistic and operationally relevant [8].

However, the difficulties inherent in measuring learning about unstructured problems have meant that there is a limited amount of systematic, experimental research that assesses gaming's specific benefits compared to other pedagogical tools. Furthermore, because games are time and resource intensive, many active, experiential and student-centric learning studies have focused on other techniques. Similarly, the majority of work describes particular games, rather than laying out how games can be designed to be more effective teaching tools. For example, while there is a rich canon of work in the field of international relations that describes specific games that instructors have found valuable in their teaching practices, there is little general guidance about how to construct useful games.

We need a more targeted understanding of when and how games are effective educational tools, and more thinking about what these findings can contribute to best practices and standards in game design. Meanwhile, anecdotal evidence suggests two primary hypotheses of how games teach:

- Games are models that players can relate to directly. They are helpful not only because they provide simple and memorable explanations of phenomena, but also because they manifest that explanation through compelling stories and experiences students can interact with directly. This makes games particularly effective when working with students who are used to learning on the job, as it can make abstract material relevant, memorable, and applicable in a way that abstract models presented directly often are not.

- Games are immersive, allowing limited replication of emotional and psychological experiences. This can make them effective ways to practice decision-making because they reproduce some of the emotional stakes of real life, without imposing many of the risks that decisions carry in the real world.

Innovation Games are a set of collaborative frameworks that help teams better understand customers and stakeholders. They are used for primary research into unmet needs, co-creating product and service roadmaps, driving innovation and helping Scrum/Agile teams prioritize roadmaps and conduct retrospectives. Used both in-person and online, they scale from small group use to large numbers of people organized into teams of three to eight people.

Game design for education

		Goal of Game	
		Creating Knowledge	Conveying Knowledge
Problem Type	Unstructured Problem	Discovery Games	Educational Games
	Structured Problem	Analytical Games	Training Games

Regardless of purpose, we can think of games as having five key elements. First, objectives define what is to be learned by playing the game. Second, the environment provides artificial context for the game's decision. Third, players are assigned to represent the roles of key decision-makers and stakeholders in the phenomenon of interest. Fourth, rules define how players can make decisions, and how those decisions will affect the environment. Finally, analysis draws lessons learned from the game to convert the experiences from the time-bound event into durable knowledge.

An alternative way to understand these elements is that educational games help students understand a model of the phenomena of interest by instantiating the model's structure and mechanism through the environment, rules and player roles. Thus, the players are assigned to represent the key actors defined by the model, the environment illustrates the key contextual factors the model implies shape decision-making, and the rules define the key tools and limitations of decision-making as depicted by the model. Finally, analysis determines how well the game was able to illustrate the model.

By this understanding, games are successful to the extent that they are able to recreate key structures, actors and interactions outlined in the model in the design elements. Incorrect or unintentionally omitted key elements will distort the model and often lead students to draw the wrong conclusions from game play. Conversely, inclusion of superfluous elements will add complexity that can confuse students and overwhelm the limited time available in the classroom.

Educational games exhibit particular requirements and limitations that impact how these elements manifest themselves in games. In the paragraphs that follow, we describe some of the major design considerations for each of these five elements, discuss some of the most common design choices, and briefly describe some of the design pitfalls that can limit games' effectiveness.

Innovation Games possess several qualities that stand out among

the various approaches of qualitative market research. One quality is reflected in their name: Innovation Games. By referring to them as “games of collaborative play,” I am intentionally conditioning your mind to think about the many fun ways you can work with your customers to better understand their needs. This can be contrasted with traditional surveys and focus groups, which are often not designed to be fun and may not include a heavy emphasis on collaboration.

The games themselves, while fun, are more than just play. As detailed in Part Two, each game leverages deep principles of cognitive psychology and organizational behavior to uncover data that is difficult to uncover using traditional market research techniques. As you come to understand the power of these deep principles, your use of the games will improve, and you’ll find yourself able to discover even richer data.

One area you’ll improve through experience is your willingness to put your customer in control and “trust” the process of the game. Innovation Games are not tightly controlled by a facilitator. In fact, a well-facilitated game has exactly the opposite effect; there is a bit of chaotic fun as customers become fully engaged in the game. You’ll know a game is going really well when your customers don’t want to stop playing (drawing their spider webs or creating their product boxes, for instance). This is precisely what you want, for when customers are fully engaged in the task, they won’t want to stop. Neither will you, because it is this deep level of engagement that gets past any barriers to communication and produces the most honest and useful feedback.

Relation to the other module(s)

Direct link to all modules because of the interaction, “inclusion of all voices”-perspective and the necessity of a complementary view on higher education not as a means to an end but as an engine towards new and never-ending beginnings and curiosity.

Some examples of the links mentioned above:

The module closely relates to innovative teaching, with a preference for real-life challenges and quick rounds of inspiration, ideation and implementation.

The module is available for diverse instructional designs (face-to-face, blended and online learning) and can be accompanied by diverse engagement tools.

The learning goals related to design thinking can be assessed by innovative assessment systems and problem-based learning portfolio’s.

Learning objectives

- Understand and be able to elaborate upon the main principles of Design thinking, Co-creation and Innovation games as concepts, methodologies and tools
- Analyze and evaluate the application of design thinking, co-creation and innovation games in and outside the educational context
- Apply diverse DT, C and IG tools and techniques
- Aspire the three methodologies (DT, C and IG) towards innovative educational design

In specific to the three themes:

Design Thinking

Able to explain the concept of Design Thinking is, what the Design Thinking process entails and what a Design Thinking mind-set characterizes.

Able to show and to apply Design Thinking to given challenges and to be able to use a variety of Design Thinking methods & tools to solve given challenges.

Able to design/create innovative teaching methods relevant for his/her own teaching context integrating elements of design thinking, co-creation and/or innovation games.

Able to critically reflect on his/her Design Thinking learning journey and mind-set.

Co-creation

Able to explain the concept of co-creation and can integrate it in his/her teaching context.

Innovation games

Has the knowledge of innovation games and is able to apply this knowledge in his/her own teaching context.

Teaching and Learning Activities

- Interaction lecture
- Exploratory workshop
- Concept carousel
- A game
- A role play
- Reflection moment and wrap-up

Assignments (if any) – in relation to the teaching and learning activities

The diverse activities implemented within the training are regarded as workshop assignments. No homework assignments outside the class and no preparation within the TT1 but within the MOOC.

Planning within the framework of the trainings (TT1 and/or TT2)

TT1: focus on new knowledge and practice to apply this knowledge to given challenges.

TT2: focus on integrating the new knowledge to the teachers' own practice and context. (feedback on assignments, study manuals, assessments etc.)

Literature/References

Brown, T. (2008). Design Thinking. Harvard Business Review, Jun, 1-9.

“Universal Methods of Design” (by Martin & Hanington, 2012)

“The Field Guide to Human Centered Design” from IDEO.org https://cipe.yale-nus.edu.sg/wp-content/uploads/sites/9/2015/12/IDEO_Field-Guide-to-Human-Centered-Design.pdf

<https://buas.libguides.com/designresearch>

<https://dschool.stanford.edu/>

<http://www.venkatramaswamy.com/>

“Toolkit for Design Research & Interventions” (by Margo Rooijackers e.a., 2017)

Models of co-creation: file:///C:/Users/Terzieva/AppData/Local/Temp/ecp16125022_small.pdf

<https://www.informs.org/ORMS-Today/Public-Articles/August-Volume-41-Number-4/INNOVATIVE-EDUCATION-Gaming-Learning-at-play>

<https://www.innovationgames.com/resources/innovation-games-book/>

Find out what’s wrong / where the pain points are

Speed Boat <http://www.innovationgames.com/speed-boat/>

Co-create ideal products and services

Product Box <http://www.innovationgames.com/product-box/>

Discover unexpected uses of your (existing) product

Show & Tell <http://www.innovationgames.com/show-tell/>

Describe a vision for the future

Cover Story

<http://gamestorming.com/games-for-design/cover-story/>

Quick & easy priority setting

20 / 20 Vision <http://www.innovationgames.com/2020-vision-old/>

Uncover hidden problems in a fun way

My Worst Nightmare <http://www.innovationgames.com/my-worst-nightmare/>

Assessment methods, type of evaluation and weight (if any)

See learning goals.

Formative peer feedback.

TT2: Campfire sessions in groups of 5/6, where the participants will discuss feedback, feed-up and feed-forward (each participant formulates them him/herself). The experts shall also provide a short overview on the tips and tops in general. Then the participants shall be asked to prepare a 1-minute pitch according to the G(goals) R(reality) O(opportunities) W(wishes) principles.

Assessment criteria

N/A

Important contact information

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Appendices overview (if any)

Appendix 1: Title...

Materials to be used during the training:

designers' toolkit - flip overs, post-it's, markers, sticky tape, colored paper, etc.

Appreciative cubes

storytelling cubes

Lego serious play kit

Storyboards (predesigned)

Specifics for the learning environment set-up if any:

screen – for the initial presentation – interaction lecture

Wi-fi connection

space for interaction - big enough to feel separate from the plenary style

flexible furniture.