

Learning Design, Co-Designing Learning

Collaborative Learning Design Workshops for Innovation in Teaching/Learning.

Stefano Perna and Pietro Nunziante

https://doi.org/10.21606/drs_lxd2021.01.211

The paper explores the field of *Collaborative Learning Design Workshops*, a specific type of participatory workshop designed to facilitate the process of co-designing learning experiences by interdisciplinary teams of academics and educators from all backgrounds. An overview of the field of Learning Design or “Design for Learning” is presented. A specific case study is then presented, The *Learning Experience Design workshop* a co-design workshop designed and run by the authors as part of the F.E.D.E.R.I.C.O. faculty development program for innovation in teaching and learning targeted to newly hired lecturers and researchers at the University of Naples Federico II, Italy. The workshop is aimed at promoting a collaborative and interdisciplinary approach for the innovation in teaching practices, with a special focus on blended and remote learning scenarios. In doing so the workshop introduce collaborative design and co-creation practices among academics from very different backgrounds. The workshop presented is an adaptation of a well-established model, the *ABC Learning Design Workshop* developed at the UCL, and has been adjusted and partially re-designed by the authors to fit the specific context of the project and the remote online collaboration scenario imposed by the Coronavirus emergency. Details on the implementation of the workshop and discussion are finally presented.

Keywords: Learning Design, Learning Experiences, Co-creation, Collaborative Design, Interdisciplinary Workshop

Introduction

Recent developments in Learning Sciences have seen a growing number of scholars advocating for a “Design Turn” in educators practices. An influential book by one leading scholar in the field, Diana Laurillard, is programmatically titled *Teaching as a Design Science* (2012). Scholars in this field are looking into the tradition of design research and design thinking to borrow models, methods and processes that would allow to better and more intentionally design learning experiences. Learning experiences are proposed as “processes” that can (and should) be designed, and teachers and educators of all disciplines are invited to become “designers” themselves. An entire new field of collaboration and co-creation between design disciplines, learning science and everyone involved in education is emerging.

Starting from the experience of F.E.D.E.R.I.C.O. (*Formation Experiences Didactics Competences Evaluation Organization Reflexivity Innovation*), a project aimed at activating a process of teaching/learning innovation through a path of professional development of newly hired lecturers and researchers (RTD-B in the Italian academic system) at the University of Naples Federico II (Striano et al. 2020), the authors present a specific opportunity for cross-pollination between Design and Learning Sciences represented by the *Learning Experience Design Workshop* that the authors developed in the context of the F.E.D.E.R.I.C.O. project.

Starting from an overview of the emerging field of Learning Design, and then focusing on previous experiments that have been conducted at the intersection of Learning Sciences and Design, the *Learning Experience Design Workshop* is then described in detail. The workshop is an adaptation of one of the most established models, the *ABC Learning Design Workshop* (Young & Perović 2020) developed at the UCL and progressively spread across many universities in Europe and worldwide, and it has been adjusted and partially re-designed by the



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authors to fit the specific context of the F.E.D.E.R.I.C.O. project and the remote online collaboration scenario imposed by the Coronavirus emergency.

Learning Design, Design for learning

Learning Design has evolved as a discipline in the last decade, with the goal of assisting educators of all types in making better and more intentional decisions when it comes to developing pedagogically relevant learning interventions or activities that make efficient use of recent developments in learning theory and emerging educational technologies (Conole 2013). In this context the term *Learning Design* is therefore not related to the theories, processes, methods aimed at educating designers, rather to the contribution that design theories, processes and methods can provide to the process of *designing educational experiences for learners* in all fields.

Diana Laurillard, in *Teaching as a Design Science* (2012), gives voice to the growing recognition in the field of education scholars and practitioners that the role of educators is “not to transmit knowledge to a passive recipient, but to structure the learner’s engagement with the knowledge, practising the high-level cognitive skills that enable them to make that knowledge their own” (2012).

Laurillard and other scholars in the same tradition position educational practices as acts of design. (Laurillard 2012, Maina et al. 2015, Hokanson et al. 2015). The framing of educational practices as design practices is substantiated by explicit references to seminal design authors such as Simon (1988, 1996), Schön (1983, 1987), Cross (1982, 2001) and others, that are often cited as main sources of inspiration when it comes to define this emerging cross-disciplinary field. The definition of *Learning Design* as “a goal-directed, problem solving activity that results in the creation of something useful that did not exist before” (Ertmer, Parisio, & Wardak, 2013) or as “the creative and deliberate act of devising new practices, plans of activity, resources and tools aimed at achieving particular educational aims in a given context” (Mor et al. 2015), echoes Herbert Simon’s classic statement: “Everyone designs who devises courses of action aimed at changing existing situations into preferred ones” (Simon 1996).

Drawing both on Simon and Schön, Holmberg (2014) sees educators as designers who devise new methods and artefacts to solve problems. In particular Holmberg builds on Schön pragmatist-constructivist view, recognising that education is full of an uncertain, ambiguous, ever-changing, ill-defined and complex “problems” (Mor et al. 2015). Design learning theorists and practitioners find resonance in Schön works when he writes that “from the perspective of designing as learning and learning as designing, the teaching/learning process could be seen, at its best, as a collaborative, communicative process of design and discovery” (Schön 1992).

A key principle of learning design is to help making the design process more explicit and shareable. Learning design as an area of research and development includes both gathering empirical evidence to understand the design process, as well as the development of a range of learning design resources, tools and activities (Mor et al. 2015). Conole (2013) defines learning design as a “methodology for enabling teachers/designers to make more informed decisions in how they go about designing learning activities and interventions, which is pedagogically informed and makes effective use of appropriate resources and technologies. This includes the design of resources and individual learning activities right up to curriculum-level design” (Conole 2013). For the process of planning learning programs, educators and learning design professionals use a variety of techniques and practical methodologies. Various types of representation and tools are used, both as a scaffolding method to guide educators/designers through the design process and as the result of the process itself (Pozzi, Persico & Earp, 2015). The product of a learning design process is a design artefact that externalizes the educator/designer thinking process and serves as a record of the designer’s thinking/planning process as well as an artefact that can be theoretically reused by designers for future implementations or by other educators. (Pozzi, Persico & Earp, 2015).

Collaborative Learning Design Workshops

A learning design process can be enacted at different levels of granularity – from a whole course down to an individual learning activity. For this process, Beetham and Sharpe prefer the term “designing for learning”, as “the process by which teachers – and others involved in the support of learning – arrive at a plan or structure or design for a learning situation” (Beetham & Sharpe, 2007).

Scholars and practitioners in the field developed several methods and functional workflows for designing learning experiences. In the context of the work presented here, “Learning design workshops” are particularly relevant. These workshops combine pedagogical concepts with techniques and approaches drawn from design disciplines such as user-experience design, service design, design thinking, and interaction design, with the aim

of enhancing educators' approach to learning design. What follows is a brief overview of the most relevant workshops documented in recent literature.

The so-called *Carpe Diem* workshop, which is a collaborative learning design workshop with a particular emphasis on developing learning environments with a strong focus on rapid prototyping and which is grounded on well-established pedagogical research, is one of the most developed and commonly used methods (Salmon 2014). Many of the common techniques and methods used in the original *Carpe Diem* are borrowed from design areas such as design thinking, service design, and interaction design (Armellini & Jones 2008; Usher et al. 2018). The *Carpe Diem* workshop involves participants, who are typically faculty members from the same department, in a hands-on design cycle that facilitates dialogue, decision-making, and rapid prototyping in order to create a course, module, or activities.

Carpe Diem evolved into *CAIeRO* (*Creating Aligned Interactive Educational Resource Opportunities*) workshops, designed to help educators and teachers create meaningful, interactive learning activities, with an emphasis on e-learning and blended learning. (Usher 2014, Usher et al. 2018). *CAIeRO* workshops aim at enabling academics and teachers to design effective, engaging learning activities. *CAIeRO*'s assets and outputs include course/activity blueprints and storyboards, as well as a range of tried and effective e-tivities (Salmon 2013). Both *Carpe Diem* and *CAIeRO* are intense, time-consuming and immersive workshops that necessitate a significant amount of time and effort, presenting non-trivial logistical challenges in contemporary academic settings. As a way to overcome these limits, other models aimed at a more synthetic, fast, and lightweight approach to learning design sessions have emerged in recent years.

The *Viewpoints* workshop (Nicol 2012) is one of the first learning design workshops to try a rapid prototyping approach, similar to what occurs in a design sprint workshop setting, with broad 'canvases', sticky notes, markers, and custom-built deck of cards that could be picked, sequenced, and annotated on the canvas and storyboards. The project, according to Nicol, has been found to be especially successful in promoting teamwork and innovation, helping participants in designing or redesigning courses while redirecting the focus on learning rather than teaching, following a learner-centred approach (Nicol 2012).

One of the most established and widespread workshops is the *ABC Learning Design* method proposed by Young and Perovic (2016), which is an iteration of *Viewpoints*'s principles and is conceived as a time-effective hands-on rapid-development workshop for faculties and academics. The ABC method utilises a slightly different set of tools, canvases and cards compared to *Viewpoints* and is grounded on a different theoretical background, namely Diana Laurillard's (2012) conversational framework with its notion of the six "learning types". In the ABC methodology, the six learning types, that are connected to a number of possible teaching/learning activities, are rendered in the form of a card deck. The deck is then combined with a custom designed canvas and a storyboard template, that allow workshop participants to collaborate in a highly visual and tangible fashion (Young & Perovic 2020). The *ABC workshop* gained a lot of traction in recent years across several universities in Europe and worldwide (Hasenknopf et al. 2019).

The Learning Experience Design Workshop

F.E.D.E.R.I.C.O. (*Formation Experiences Didactics Competences Evaluation Organization Reflexivity Innovation*) is a project aimed at activating a process of teaching/learning innovation specifically targeted at newly hired lecturers and researchers (RTD-B in the Italian academic system) at the University of Naples Federico II, Italy. The project is aimed at promoting opportunities to develop reflections on teaching and learning practices that could be leveraged for developing models and strategies functional to an effective organizational change (Striano et al. 2020).

In this context the authors designed a workshop aimed at promoting a collaborative and interdisciplinary approach for the innovation in teaching practices, with a special focus on blended and remote learning scenarios. The workshop was also an opportunity to introduce to a wider audience some of principles and approaches of Learning Design described in the previous sections.

A group of lecturers and researchers from a wide range of disciplines were invited to remotely participate to a collaborative design session that had the objective to produce concepts and outlines for brand new courses, seminars or workshops with a strong emphasis on interdisciplinary encounters, active learning approaches and innovative use of instructional technologies. The workshop was held 5 times between June and October 2020, involving around 100 lecturers and researchers from a wide range of disciplines, including Physics, Engineering, Arts and Humanities, Philosophy, Life Sciences and Social Sciences.

The workshop was in large part based on the *ABC Learning Design workshop* (Young and Perovic 2020) and it was partially redesigned both in the contents and in the structure to better fit the specific scenario of a completely remote realtime collaboration experience.

The original *ABC workshop* is designed as face-to-face, fast-paced activity, to be run in short sprints of 90 minutes in a typical design-studio setting, on wide tables with participants around collaborating through the use of large, printed storyboards, card decks, sticky notes and other tools that support an highly visual and material collaborative design process (Young and Perovic 2016). From a theoretical perspective the ABC workshop is grounded on Diana Laurillard's conversational framework (2012). The framework identifies six learning types (acquisition, inquiry, practice, production, discussion and collaboration) that in the context of the workshop are rendered as a set of coloured printable cards, each representing a type of learning. Participants to the workshops are invited to divide in teams and to manipulate and combine the cards over the storyboard (which represents the time dimension of the learning unit that is being designed) with the aim of collaboratively crafting the outline of an actual instructional activity, which ideally would blend different typologies of learning and technologies.

The redesigned *Learning Experience Design* workshop for the University of Naples program took into account the radically different setting and temporality of online collaboration and has been repurposed as a 6 hours workshop divided into 3 chunks of about 2 hours each (breaks included). The materials for the workshop (cards, canvases, storyboards, etc..) have been redesigned and adapted for a realtime collaboration platform named Whimsical (whimsical.com) that allows multiple participants to interact simultaneously over the same whiteboard, manipulating virtual "cards" and arranging them over an ad-hoc designed storyboard.

The redesigned workshop is structured as follows.

A short introductory speech is provided to give some broad context to the activity, clarifying the theoretical background and detailing the goals of the workshop, the expected outcomes as well as the detailed agenda of activities and exercises. The main prompt given to workshop participants is to design the outline and draft a storyboard of a tangible learning experience that could later be eventually implemented and delivered to actual students. Interdisciplinary interactions, blended scenarios and multiple teaching/learning approaches were encouraged.

On these general premises the workshop is then divided in 3 chunks, each characterised by different exercises and objectives.

Part 1: Co-creation of the "learning/teaching methods palette"

The first part of the workshop provides participants the opportunity to familiarise both with the concepts and the terminology of Laurillard's 6 learning types and with the remote collaboration environment provided by the Whimsical tool. Divided into break-out rooms through a videoconferencing software, interdisciplinary teams of 3-5 lecturers and researchers are provided with a set of guiding resources and a first collaborative canvas. The prompt given for this first exercise is to build the team's own collection or "palette" of teaching/learning activities, represented as small coloured cards and categorised according to the six different typologies provided by Laurillard's framework. Few examples are provided as starters, then the teams are prompted to continue on their own populating their collection of "learning/teaching cards" drawing on their own experience as teachers and educators, discussing and sharing ideas from their different perspective and disciplinary background (fig. 1).

This section of the workshop and the corresponding canvas are not part of the original ABC method and were designed by the authors for two main reasons: the first was getting participants comfortable with an educational framework that is new for the most part of them through an hands-on and active inquiry approach; the second reason was to engage participants in the co-creation of an initial collection of learning/teaching methods, that would already represents a valuable interdisciplinary outcome in the form of a repository of educational approaches. This repository also allowed participants to expand and customize the original collection of "building blocks" - the learning activity cards - that would be used in the following part of the workshop.

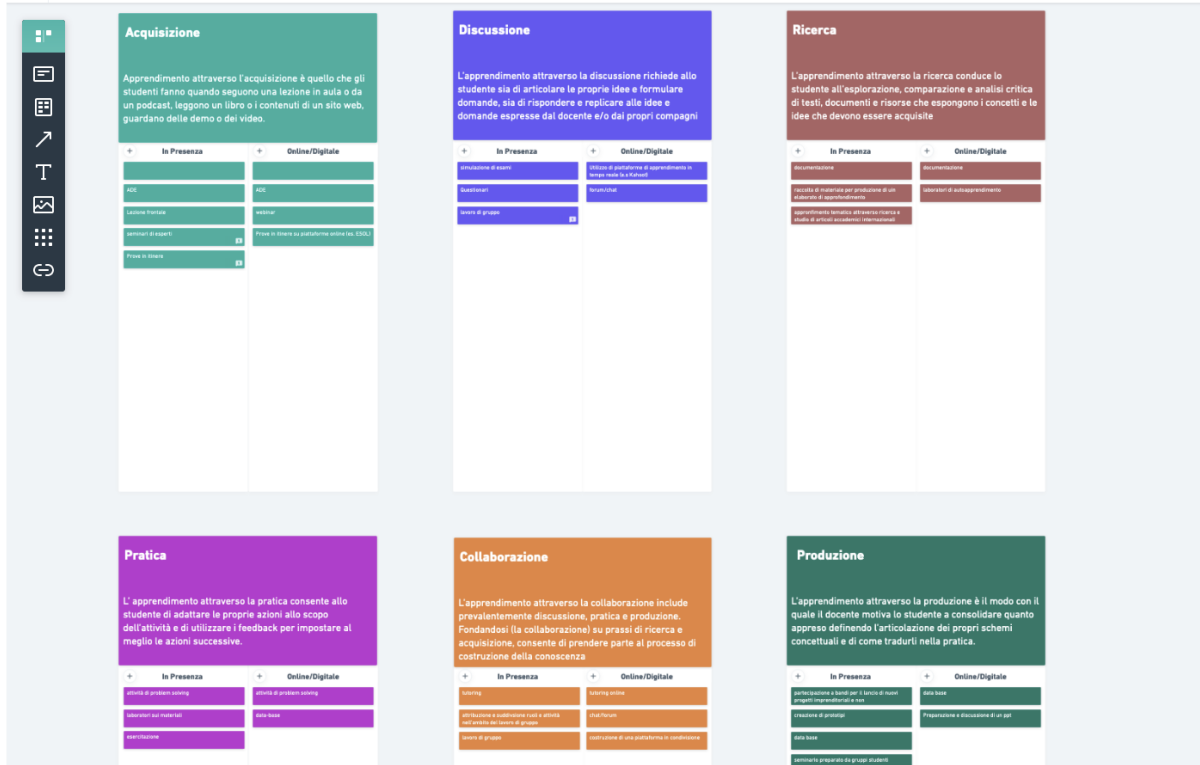


Figure 1: First Canvas. Collaborative creation of a collection of learning/teaching activities according to Laurillard's (2012) Framework

Part 2: Designing the learning experience outline

The second part of the workshop challenges the team to outline a broad overview of the course/program/module they're going to design. The group is asked to come up with a title, a tagline (a synthetic sentence that could "advertise" the course), main learning objectives (written in student-centric sentences such as: "by the end of the course students will be able to..."), learning evidences/artifacts expected to be produced by the end of the course. Then the team is asked to visually represent - with the help of an interactive spider-chart and a scale - the balance between the different learning types and the mix between online and face-to-face learning they would like to put into their designed module. To support the discussion and the co-creation of the outline another interactive canvas is provided to the team (fig. 2). The canvas is an extension of the original ABC workshop printable templates and its Italian translation by Milani and Pinelli from University of Milan (<https://abc-ld.org/download-abc/translations/>). Compared to the original one, the reworked version offers more space to participants to think about their proposed activities in terms of learning objectives (adding the "learning objective" box) and tangible outcomes (adding the "evidences of learning" box) that learners might produce and that teachers might be assess. In doing so the authors borrowed elements from other frameworks such as Backward Design (Wiggins & McTighe 2008) and Constructive Alignment (Biggs 2011) that are not part of the original ABC model by Perovich and Young. In addition to these elements, the interactive version redesigned for the Whimsical platform allows team members to collaboratively manipulate the graphs, add cards and textual details. The main objective of this phase of the workshop is to facilitate a high level discussion and the sharing of perspectives about the course being designed between participant that may have very different scientific backgrounds and views/approaches to teaching. There might be educators mainly used to traditional frontal lectures ("acquisition" in Laurillard's terms) and others more oriented towards active-learning or project-based approaches ("production" and "inquiry" in Laurillard's framework). By the end of the second part the team reaches a pretty defined high-level vision on the type of learning experience they want to develop, both in terms of contents and objectives, learning/teaching approaches and mix of remote/in presence experience.

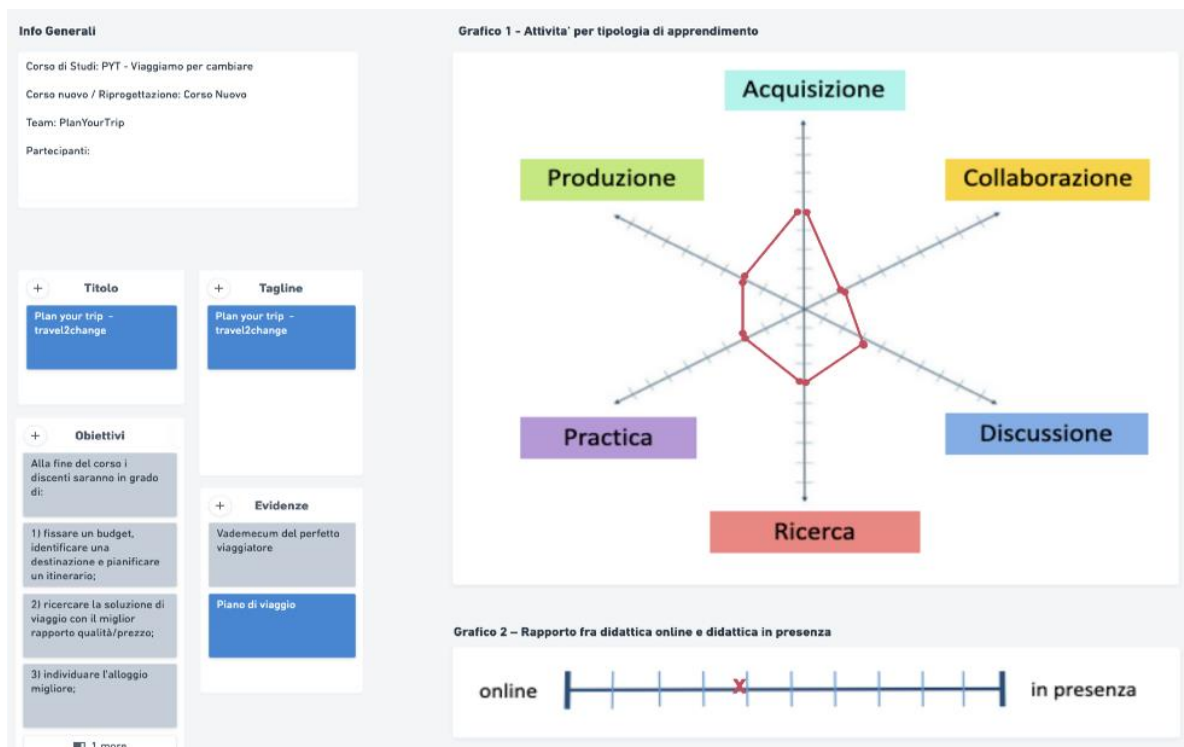


Figure 2: Second Canvas. Collaborative Learning Experience Outline Design. Re-worked starting from the original canvas of the ABC Learning Design by Young and Perovic (2016)

Part 3: Collaborative storyboarding

The third and last part of the workshop asks the participants to actually develop on a time-axis the educational experience they outlined in the previous steps, providing a more granular detail in terms of specific activities, approaches, mix of technologies and tools and how they will be deployed in time. Teams are asked to use the palette of teaching/learning cards created/collected during the first part of the workshop and to position the cards on a storyboard. The storyboard is built on Whimsical and can be easily adjusted by the participants and dynamically customised according to the intended duration of the experience they're designing: rows and columns can either represent hours, days or weeks depending the scope of the project. Compared to the original storyboard from the ABC workshop, here the individual cells are divided in two small subsections (online and face-to-face) that help the designers better specify if the intended activity is going to be performed online or in presence (fig. 3).

The learning/teaching cards created in the first part, or new ones created just in time, can be dragged and dropped over the storyboard and moved around while a discussion unfolds about different options and perspectives on how the experience should be shaped in time. Another addition to the original ABC model are some specific cards related to assessment strategies. Formative and summative assessment (Nicol&Macfarlane-Dick 2006) cards are added to the collection of draggable cards and can be used by participants to specify what assessment strategy they envision, and when/how assessment might be done. The main objective of the third and last part of the workshop is to support the team to reach a tangible outcome. The way the canvas is structured put some emphasis on the blending process, nudging participants to collaborate towards a more articulated and innovative approach to teaching and use of technologies. By the end of this section participants produce an actual prototype of a brand-new interdisciplinary learning experience that could be turned into a refined proposal and presented to university stakeholders and eventually implemented.

Discussion

The introduced *Learning Experience Design Workshop* combine concepts and methods derived from design thinking and design education on one side and established learning science and instructional design methodologies on the other, to support the faculty development program F.E.D.E.R.I.C.O. at the University of Naples Federico II, specifically targeted to newly or recently hired lecturers and researchers from all disciplines and backgrounds. The aim of the workshop is leveraging design thinking and design methods to promote

action and reflection on innovative practices in teaching/learning, with a special focus on blended and remote learning scenarios.

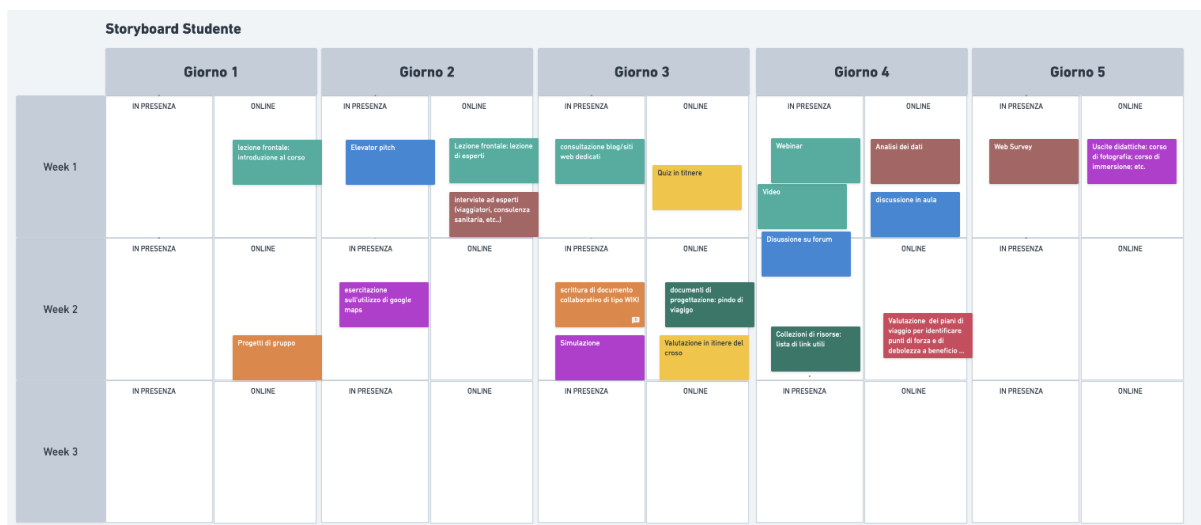


Figure 3: Storyboard. Collaborative design of the scope and sequence of learning activities and assessment approaches. Re-worked starting from the original canvas of the ABC Learning Design by Young and Perovic (2016)

Since the audience of the workshop is composed by lecturers and researcher coming from non-design backgrounds, it serves also as a first and practical approach to collaborative design methodologies and workflows, in line with Laurillard’s (2012) “call to action” for everyone that will be involved into education to “become designers” and adopt a “designerly” approach to learning and teaching.

Recent literature on learning activities theory and established methodologies in design for learning activities was reviewed. The *Learning Experience Design Workshop* connects findings on learning activity design and previous works on workshop design, drawing on established methods in the learning design field (Young & Perović, 2016; Hasenknopf et al. 2019, Young & Perović, 2020) and introducing elements of novelty.

The main reference is the *ABC Learning Design* workshop (Young & Perović, 2016) which is repurposed and adapted introducing some elements of novelty both in the content/structure of the workshop and in the way it’s conducted, especially taking in consideration the remote collaboration scenario achieved through the use of the realtime collaborative online whiteboard Whimsical.

The workshop was held 5 times between June and October 2020, involving around 100 lecturers and researchers coming from a wide range of disciplines, including Physics, Engineering, Arts and Humanities, Life Sciences and Social Sciences. The workshop was promoting the creation of cross-disciplinary teams with the aim of activating collaborative thinking and practices that would transcend traditional disciplinary boundaries both looking at established teaching approaches and themes and topics for the courses to be ideated. The role of the authors was to act both as co-designers along with the teams and as facilitators of the process, considering that the majority of the participants were coming from backgrounds that traditionally don’t promote participatory design and collaborative ideation/creation practices.

While an extensive and in-depth analysis of the results and evaluation of the impact of the workshop is still ongoing, preliminary observations collected during and right after the workshops indicate a positive impact in making the faculty members involved in designing learning experiences feel more collaborative, creative and productive. In a relatively short amount of time, small teams of people who had never met or worked together before, were able to rapidly immerse in a collaborative design flow, engaging in discussion and knowledge-sharing, and to deliver a tangible and valuable outcome at the end.

While a more structured and methodologically sound process of feedback collection and analysis of the results is still ongoing, a quick and “informal” collection of feedbacks operated through the realtime conference interaction tool Mentimeter allowed the authors to capture quick impressions and reaction from the participants. Most of the participants considered the workshop an engaging experience under several aspects. First of all, the co-creation process of a learning experience in a multidisciplinary setting was perceived as a value per se, in a context that doesn’t typically provide many opportunities for such type of interactions. Participants reported to be surprised of discovering such diversity in the approaches to teaching/learning between different areas and were inspired to borrow ideas and techniques from each other.

From another angle the idea itself of re-framing teaching as a “design activity” revealed unexpected possibilities in terms of creativity and innovation. The process of devising a plan for a course or a module in a way so different from the one they were used to reveal the role and the power that design methodologies, especially when participatory and co-creation processes are put in place, might have in shaping innovative and more engaging learning experiences. The unusual approach, with the use of “tangible” artefacts to manipulate collectively - the learning/teaching cards -, the process of arranging and rearranging the cards on a storyboard as a team and thus giving shape to a collaborative solution emerging almost in real-time, has been perceived by the lecturers involved as potentially transformative for their own teaching/learning design strategies and practices.

Another observation captured through the quick feedback collected via Mentimeter and post-workshop debriefing discussions concerned the ability of such a workshop to elicit reflective practices in participants, in both the sense given by Schön (1983) as reflection-in-action and reflection-on-action. Participants reported to be pushed by the different exercises in the workshop and the discussions with team mates to reflect on what can be called their “implicit theories of learning and teaching”, the unquestioned assumptions they were always applying when planning and performing a lesson or a course. The visual approach of the workshop which “make visible and tangible” the group thinking process, pushed participants to make explicit their positions and assumptions and doing so nudged them modifying, negotiating and changing the course of action and decision making as it was happening. Once finished, the composed solution, the storyboard, allowed for collective review that helped identify gaps, weak points and areas of improvement that might be used as starting point for a second round or iteration on the process.

Conclusion

The authors presented the *Learning Experience Design Workshop*, a workshop designed for multiple and concurring purposes: introducing collaborative design and co-creation practices among academics and educators coming from very different backgrounds; promoting a collaborative and interdisciplinary approach to innovation in teaching practices, with a special focus on blended and remote learning scenarios; elaborating on the field of “Learning Design” intended as the application of design methods and approaches to educational and learning experiences that extends the field of design education.

The F.E.D.E.R.I.C.O. (*Formation Experiences Didactics Competences Evaluation Organization Reflexivity Innovation*) project at the University of Naples Federico II, Italy, was an ideal context to run such an experimentation, being the project aimed at activating an organisational process of innovation and creativity in teaching/learning practices through a path of professional development for newly hired lecturers and researchers.

The workshop takes Diana Laurillard’s prompt for teachers and educators of all disciplines and backgrounds to “become designers” themselves and to re-frame teaching/learning activities as “design interventions” (2012). The workshop moves in that direction by letting educators of all kind to experience “designerly” ways of knowing and working together, introducing them to collaborative, interdisciplinary, co-creation processes. The workshop starts from the *ABC Learning Design* method (Young & Perović, 2020) as a main reference and extends it both in terms of internal structure and contents, borrowing elements from other learning design frameworks, and adapting it to realtime collaboration tools, redesigning some of the tangible elements - the cards and the canvases - or designing new ones, to better fit the remote collaboration scenario imposed by the Coronavirus emergency.

Next steps include a structured analysis of the results and in-depth evaluation of the impact of the workshop on participant practices. Also, iterations on the workshop format itself are needed to further explore the multiple setting in which it can take place: face-to-face, remote, blended, synchronous and asynchronous and all the various possible combinations that can be explored.

Anyway, preliminary collection of observation and direct feedbacks to the authors indicates that the workshop has been considered highly effective by the participants, which reported high levels of engagement, collaboration and creativity in processes (course or lecture planning) that usually are considered substantially individual activities and that not very often are seen as opportunities for innovation and co-creation with colleagues. Also, beyond the design activities, exercises and outcomes expected, the workshop promoted between participants discussions and reflections on their own practices, in line with Schön concept of a “reflective conversation with the situation” (1983; 1987) that professionals of all kind, researchers and educators in this case, can and should engage with.

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Stefano Perna

Università degli Studi di Napoli Federico II, Italy
stefano.perna@unina.it

Stefano Perna has a PhD in Information and Communication Design, conducted research at intersections of design, new media and humanities at University of Salerno, taught New Technologies for Art at the Academy of Fine Arts of Naples. He is a faculty member of the Apple Developer Academy at University of Naples Federico II.

Pietro Nunziante

Università degli Studi di Napoli Federico II, Italy
pietro.nunziante@unina.it

Pietro Nunziante tenured researcher in Industrial Design at Department of Architecture, University of Naples Federico II. Pietro does research in Industrial Design and Digital Design, deals with research at the crossroads between design methods and educational and process innovation. Previously at the Apple Developer Academy as Head Teacher and Design teacher.