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Designing new learning experiences in pandemic time: how digital can support a new didactic in Service Design.

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Abstract | The Covid-19 pandemic had a strong influence on several aspects of our lives. Among these ones, the didactic experiences had been impacted and the limits of traditional education emerged. In particular, the design field, based mainly on a design-studio based didactic, has been affected. In the last period, many teaching teams struggle with the challenge of translating course planned to be deployed in-person to remote didactic. The common question that arose has been: how to develop proper didactic experience for designers in a time of remote teaching and learning? To address this question a small experimentation using a digital platform has been designed to comprehend how digital could become a tool to enhance the learning process rather than creating barriers.

KEYWORDS | SERVICE DESIGN, EDUCATION, DIGITAL, LEARNING

1. Introduction

During 2020, the pandemic has affected how we were used to interacting, forcing us to rethink several aspects of society. If we look at the educational context, UNESCO estimated that over 1.5 billion students in 165 countries are out of school due to the worldwide health emergency (United Nations, 2020). The consequence of this situation is that universities are going through a series of considerations on how to adapt to this context and develop new strategies for the future.

These reflections come in a time of transformation of the educational context in which already previous pedagogical models are put in discussion, and several attempts, to understand how digital affects the learning process, are put in place (Radcliffe et al., 2008). The Covid-19 pandemic pushed on this last aspect, obliging universities to experiments with new model and activity that make use of digital platform. These experimentations sometimes proved to be ineffective given the short time to properly design the didactic activity and sometimes proved to be successful, allowing teaching teams to efficaciously deliver didactic contents to the students.

The paper aims to illustrate a digital learning experience developed during the covid-19 pandemic and draw some reflections on the feedbacks received. In particular, with this paper, the intention is to present a didactic initiative that investigates how remote teaching and learning could take advantage of digital platforms, elaborating and building something which didn't limit just to the digital replica of an in-person event, but use as well the virtual space with its potential.

The article is divided into four parts. The first section aims to provide a theoretical background for the experimentation, focusing the attention on the evolution of pedagogical models. Following, the second section illustrates the methodologies, illustrating the structure of the format of the didactical activity proposed and the structure of the surveys used to gather feedbacks upon the initiative. Subsequently, the third section outlines the analysis of the results of the survey. Finally, the last sections are dedicated to the discussion of these results and conclusion are drawn on those, highlighting the limits of the experimentation, and the possible future developments.

2. Theoretical Background/Framework

Literature of Service Design illustrates how it emerged as a research field during the last decade of the XX century (Erlhoff et al., 1997; Hollins & Hollins, 1991; Manzini, 1993; Pacenti, 1998). During the first years of 2000, some design agencies start to work specifically with SD, such as Livework and Engine, and it started a period in which the research around SD explored how it could integrate its tools into the design practice (Sangiorgi & Prendiville, 2017). From an educational point of view, it can be seen that SD appear as a subject in a design curriculum at KISD in parallel to the first research into the field, and later as a Master

degree course in 2005 at Politecnico di Milano and in 2009 at Laurea University of Applied Sciences (Ojasalo, 2012). Since then many other courses in Service Design emerged.

Nevertheless, the research on Service Design Education has been fragmented and not rigorous. In fact, the previous studies on the topic tend to consider, with a narrow frame, specific educational programme. Moreover, many contributions on this topic come from Touchpoint-The Journal of Service Design, a non-peer-reviewed journal, in particular the volume 3. No. 1 (2011) "Learning, Changing, Growing" and the volume 9, no. 1 (2017) "Education and Capacity-Building". The first attempt in the direction of a comparative study on service design programme has been developed by Ferruzca et al. (2016) however the criteria in selecting and collecting the data do not consider the development of the field and are based on the course provided by the best universities considering the World University Rankings 2015-2016. Later a wider effort to map the courses has been developed within a research project with the production of Service Design Map developed for ServDes aiming at building a database containing the educational offer in Service Design worldwide. Building on this, and integrating with other resources, Becermen and Simeone (2019) proceeded in comparison of the several courses offering Service Design programme, observing common educational threads and differences in the educational approach. Focusing our attention on the common aspects it emerges that the degrees in Service Design tend to combine "hands-on" project work with lectures and seminars, often accompanied by collaboration with external organizations, with the aim of exposing the students to a real situation to practice their ability to develop a service design project throughout the different phases. The teaching and learning methodology through which these objectives are achieved is usually the Studio-based Learning (SBL), traditionally considered the educational approach for the Design discipline, which combines different learning pedagogies, such as social constructivist, problem-based, and active learning to mimic real-world working experience (Kumar et al., 2020). At the base of SBL approach is the shared learning environment of a studio (Burroughs et al., 2009) which enable the learners to engage both among peers and with experts (Schön, 1985). The pandemic situation required universities to change the modalities of teaching to reduce the chance of transmission of the Covid-19 virus. Therefore, it has been missing an essential component to the learning process according to the SBL approach. Given the situation of the emergency, several actions have been put in place (Crawford et al., 2020). These can be cluster into two main areas, first, those actions that have been structured to guarantee the didactic and can be considered as temporary and emergency solutions. Secondly a cluster composed by those initiative aimed at researching and experimenting new activity, which does not limit themselves into moving online and remotely the teaching activities but try to take advantage of the digital to create new possibilities for students to learn. These second cluster of actions have accelerated the research in the intersection between digital and education and has been built on the knowledge of the recent research in innovative didactics models (Sancassani et al., 2019). This paper, although is based on a small experimentation, try to fit into this area of research, considering as field of application the discipline of Service Design.

3. Methodology

This paper is based on the didactics experience the author had during the 2020 (Taverna, 2020) in the M.Sc. course of Product Service System Design in Politecnico di Milano (Italy), which due to the Covid-19 pandemic has been translated remotely during the early part of the year, and then in the second part has been structured in a blended setting, where students could follow both in-presence or connected remotely, and finally moved again all remotely, when the situation required to take precautions. Specifically, the considerations are built on the DE-BRIEF initiative, in particular taking into account observations of the students during the process, and a set of two surveys submitted both to the students taking part and to the larger audience participating in the final public event.

3.1 DE-BRIEF format

The DE-BRIEF format considered in this study is a didactic experience developed for students participating in an event. The outline of the initiative is made of four phases: students' application, source event, elaboration, and final event. First, it has been requested to the students to present a motivation letter to participate in the initiative, once selected they took part in the source event, which in the case considered has been the SDN conference "Virtual Service Design Global Conference 2020 – Embracing Change", later some meetings have been held to arrange the work of synthesis of the conference and give ownership of the topics to the students and, in the end, the participants illustrated to a broader audience a series of conceptual maps representing the contents of the conference in a final event.

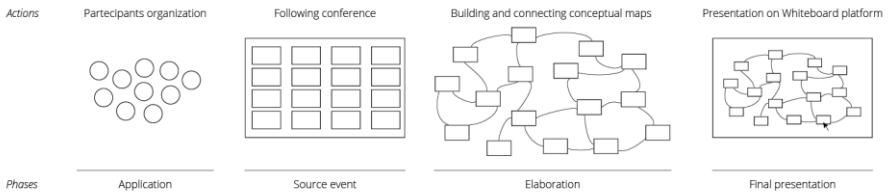


Figure 1 Phases and actions of the format DE-BRIEF

The activity aims to make students reflects upon the talks provided in a conference and to be able to present those to the rest of the course who did not follow the event. The main didactic component of the initiative is the reflection on the topic presented during the conference event. Students are requested to synthesize the themes into a conceptual map and to create a link among the various talks. The workflow of the activity has been designed considering the limits as week as the opportunities given by the actual context of the pandemic, in which in-person interactions are limited. Therefore, the challenge is deployed by using a collaborative digital tool which can support the interaction and is versatile to create and connect conceptual map. The tool of choice, in this case, has been Miro, an

online collaborative whiteboarding platform that enables distributed teams to work together. The peculiarity of the format is that the final event was managed using the same board on Miro as the one used to elaborate the topics. The board was shared with the participant who could navigate on their own and interact with the contents.

The learning outcomes of the didactic initiative expected for the students participating in it are to be able to select the important contents to explored in the conference, being able to take notes on the major elements, build a critical reflection on these topics and synthesize it in a conceptual scheme. Throughout the activity, it is requested for the students to interact with colleagues and take responsibility over some thematic areas in order to present a portion of the contents to a broader audience of students.

3.2 Surveys

Both the forms had the aim of understanding how the format used in the pilot could be improved in the following iteration during future events. The survey is structured to contain a mix of quantitative and qualitative question, the first ones, quantitative, in order to have a comparison scale among the answer and for future initiatives, the second one, qualitative, in order to deeper some understanding and receive insight by the people taking part in the initiatives.

Both the survey contains a series of question which aimed to understand how the initiative performed and it has been promoted, in order to comprehend the area in which future iteration might need an improvement. The first form directed to the students taking part in the initiative had the objective of comprehending the effectiveness of the experience in term of didactics. The second form directed to the audience had the goal to analyse the value of the output event.

4. Results

The DE-BRIEF results here illustrated are collected through direct observation, to describe the initiative, and the analysis of the survey, to understand the value for students and the audience that participated in the final event.

The analysis of the results has been developed by reading the answer provided to the form and discussing those with a student that took part in the initiative and support the whole process.

4.1 The Initiative outline

The DE-BRIEF initiative took place between October and November 2020. The selected participants to the initiative were 10, nine were students from the second year of the master course and one an alumnus. The group of participants had a first meeting to organize and

distribute the ownership of the conceptual maps referred to the talks followed in the conference. During the meeting, each student took the responsibility to synthesis one or more talks and to review the conceptual maps of other students.

Later the working group held two meetings to discuss the advancement of the conceptual maps and to co-design the final event structure. In the first one, students focused on proposing for each intervention of the conference a set of keywords and quotes in the second presenting the conceptual maps (Figure 2) and connecting the talks between them (Figure 3).

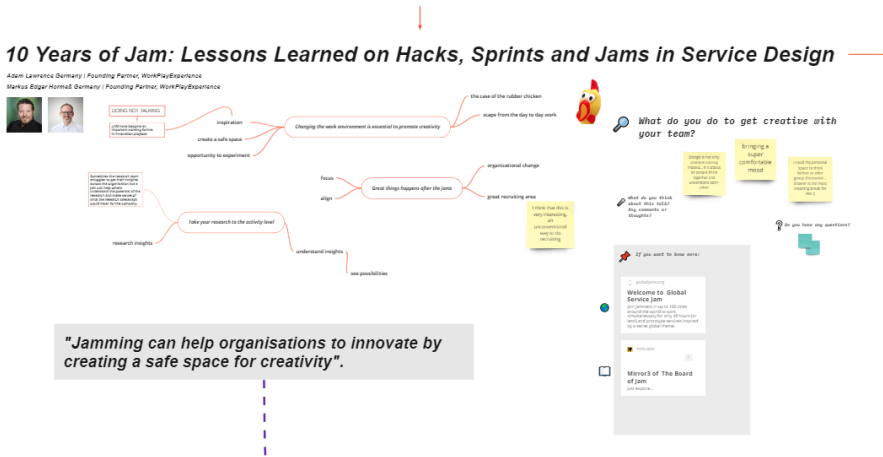


Figure 2 Example of a conceptual map produced during the initiative

Each conceptual map synthesizes a talk of the conference and it has been built following a semi-structured template co-designed with the participants of the DE-BRIEF initiative. It is composed of the following elements:

- Title of the talk
- Author and affiliation of the speakers
- Conceptual map
- Quote
- A question for the audience
- A space for question from the audience
- A space for deepening the topic of the talks with link to extra resources

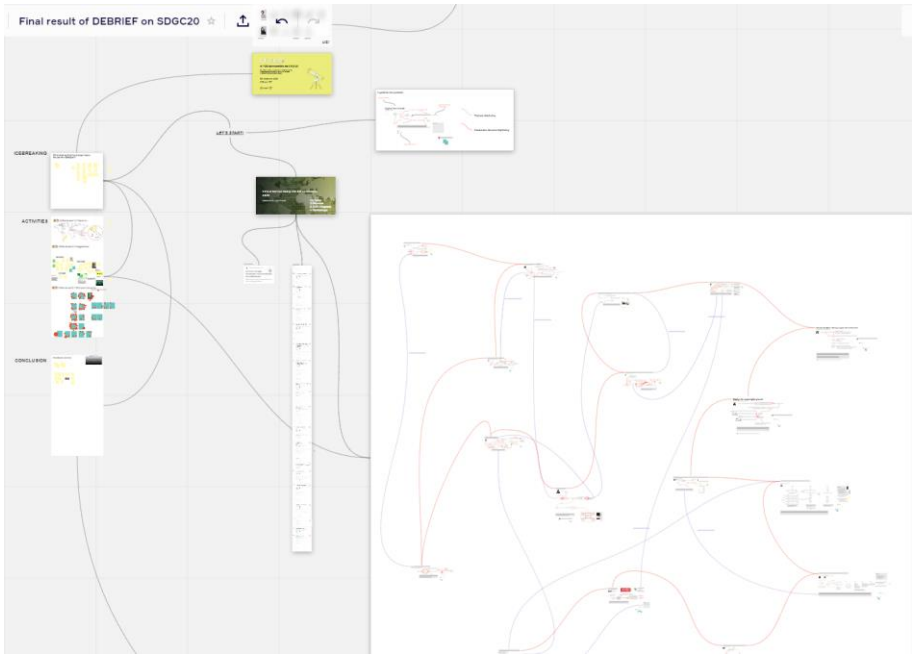


Figure 3 Overview of the whiteboard, with the proposed path and the connections between the different conceptual maps

Once the various conceptual maps have been developed, the students connected the topic of the talks to create a network of conceptual maps.

Before the final presentation, two sessions of rehearsal and review of the presentation material have been held in a collective moment where the working group took actively part in providing peer-feedback.

In conclusion, the final presentation has been held sharing with the audience the digital whiteboard through a twofold way: the audience was connected via web-call to the event and could see the shared screen, which followed the narration of the various talks or could simply navigate and explore the multiple connections and interact with the contents. This enabled an interactive approach to the presentation of the synthesis.

The final event has been developed dividing the explanation of the conceptual maps into two blocks and complementary activities have been designed to entertain the public. The activities aimed to create and facilitate interaction. The icebreaking activity consisted of asking a question regarding the theme of the conference: "What does embracing change means for you as a Designer?" and take confidence with the use of post-it in the virtual space. The other set of activities focused on recreating the informal conversation happening

in a coffee break during physical events, in particular proposing a set of question and leaving a space for a suggestion of books, movies, events and other various elements.

4.2 Students involved: survey analysis

The students directly involved in the didactic activity have been 10, selected to represent various years in the educational path of the master course, and involving an alumnus as well. The survey has been answered by 8 of the students. The first set of questions aimed to understand if there were any weakness in the process, and it was asked to the students to scaling the elements of the experience on a Likert scale from 1 to 5, where the 1 means that the element needs significant improvement and the 5 means that the element was excellent. From these first answers, as we can see in the graph (Figure 4), we can consider the initiative a success, where no elements have a considerable negative note. The highest positive peak is on the communication with the working group and the lower on the ownership of the topics.

By using the provided scale, can you rate the following elements of the initiative?

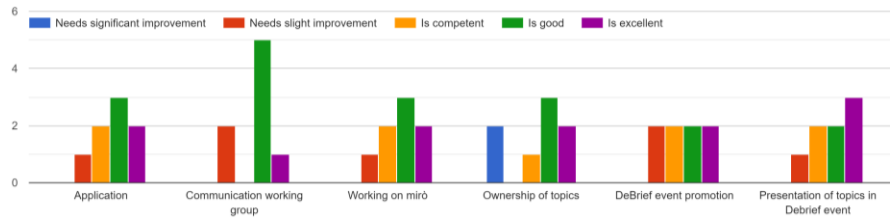


Figure 4 First set of questions

Considering the digital platform used as a working place for the elaboration of the conceptual map an important matter of the inquiry regards the interaction between the students. As shown in the figures (Figure 4, Figure 5, Figure 6) there is a difference between the actual interaction compared with the desired one.

How much did you interact with the working group during the preparation of the event.
8 responses

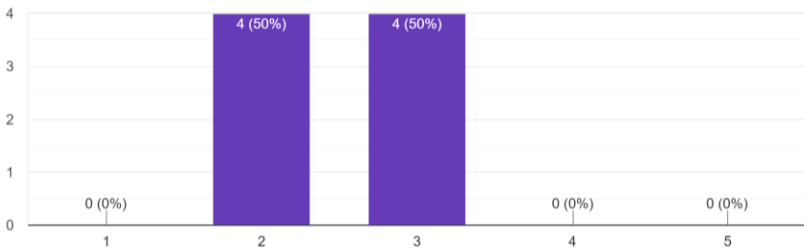


Figure 5 Interaction during the activity

How much would you have liked to interact with the working group during the preparation of the event.

8 responses

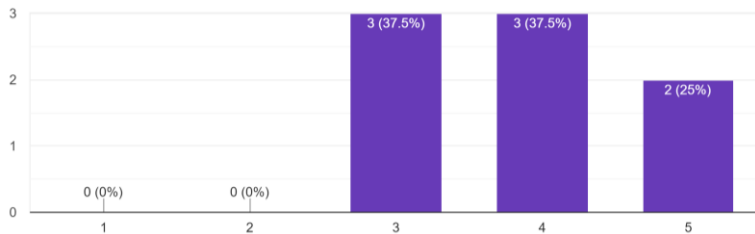


Figure 6 Expected interaction during activity

All the students considered that the De-Brief format adds something to the comprehension and the understanding of the conference contents. To understand how the experience enriched the participants, it has been used an open question; the answers provided converge on one main insight about the elaboration, which has been an opportunity for them to reframe some aspect of the talk and build a personal point of view on the matter. The main set of questions posed to the students focused on comprehending which among the expected learning outcomes were the most achieved with the format and which others were not considered fulfilled by this experience. Also, in this case, it has been used a Likert scale from 1, which corresponds to “This experience didn't teach me this”, to 5, which is equivalent to “This experience absolutely helps me to improve this”.

Looking at the graphs (Figure 7), we can say that the students generally perceived that the experience meets the expected learning outcomes.

In reflecting on the experience how you would evaluate the following listed learnings?

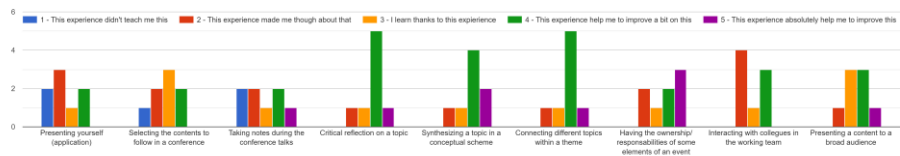


Figure 7 Evaluation learnings

The learning outcomes which scored the lowest score, therefore considered the less achieved, corresponds to the first three: Presenting yourself (application), Selecting the contents to follow in a conference and Taking notes during the conference talks. On the other hand, the learning outcomes which gained the highest value are the one corresponding on the elaboration of the topic, hence: Critical reflection on a topic, synthesizing a topic in a conceptual scheme, Connecting different topics within a theme.

It is as well interesting, considering the need for improvements on the ownership elements in the figure, to see that the learning outcomes regarding the ownership of the topic have scored a positive score.

4.3 Audience: survey analysis

The feedback from the audience has been gathered in multiple ways, the main and more structured one has been the form shared with the participants at the end of the event, but as said given the digital medium used during the final presentation, some unstructured feedbacks has been provided on the board used for the event.

The audience was composed of students, professors, and alumni of the Master course, for an average number of people connected of 70 (highest peak of 78), only 6 answered the questionnaire. To evaluate the final event, it was asked to the audience to scaling the elements of the experience on a Likert scale from 1 to 5, where the 1 means that the element needs significant improvement and the 5 means that the element was excellent. Looking at the graphs (Figure 8), it can be observed that none of the elements has a negative aspect, considering that the highest score has been considered the schemes produced by the students and their presentation, and the welcome part and the questions and answer (Q&A) element collected the lowers score.

By using the provided scale, can you rate the following elements of the event?

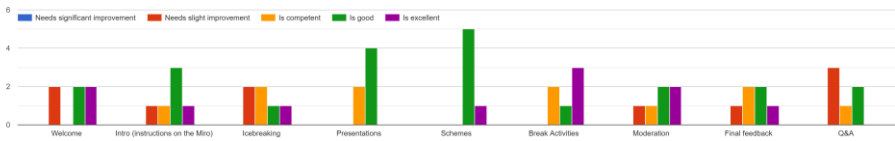


Figure 8 Evaluation elements of the event

5. Discussion

According to the feedback received, the initiative can be considered a success in term of experimentation of a new approach to didactical activity. It highlighted the strength of the format, such as the potential of achieving the learning outcomes and the positive response from the students taking part in the experimentation to the format.

In general, the versatile use of the virtual whiteboard, not only as a tool of design but also as a medium of presentation, prove to be an innovative way to use digital instruments to overcome barriers given by the distance. Furthermore, the choice of using an unconventional medium to present, such as a digital whiteboard, allow the audience to have a freer approach to the presented contents. Built on this aspect and on the development of complementary activities the format enables to perceive the event as a conversation rather

than a frontal lecture of the synthesis bringing stimulus reflection to open up discussion and create a connection with the audience.

The results of the survey directed to the audience provided a set of metrics as well to understand the value of the initiatives and to compare with future experimentations in this direction. In particular, the highest scores collected in the core contents of the final event underline the efficacy of the digital tools for delivering a set of conceptual maps, on the other hand, the lowest score (the welcome and Q&A), the elements that imply an interaction (Icebreaking and moderation) and the elements that relate to the presentation of the tool itself present some limits of the virtual environments. Moreover, the difference between the desired and the expected interaction during the activity highlights that digital can sometimes limit natural interaction that might happen if the activity would take place in a classroom.

6. Conclusion

Taking into consideration the presented experiments and its result the following conclusion are drawn. The use of a whiteboard digital platform, besides the web-call, can support didactics, when dealing with complex themes, on three aspects: collaboration, non-linearity and asynchrony.

Considering the limits of the SBL approach when translated remotely, the possibility to emulate a virtual shared environment thanks to the digital platform can provide a major connection over a simple web-call, when it comes to collaborative work. The use of a digital whiteboarding platform with a potentially infinite space provided a medium in which the complexity of some topics could be represented taking into consideration all the non-linear interconnections. Moreover, the possibility to access asynchronously to the virtual working space made it possible for the students to adapt the working time to their schedule, enable them to customize the activity according to their needs, and not forcing the whole didactic process in a specific time and space.

The experimentation presented is a small initiative, therefore, is not immune by limits, therefore it is important to follow up with iteration of the initiative and new experimentation to inquiry unexplored research space and digital tools to strengthen the didactic process.

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