FOSTERING SERVICE DESIGN EDUCATION: A MODEL FOR ENHANCING STUDENT ENGAGEMENT IN A TEAM-BASED STUDIO

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ABSTRACT
Corporate strategies are shifting from traditional manufacturing to Product-Service Systems (PSS), moving beyond tangible, product-centric views to a holistic, system-oriented perspective. This transformation requires designers to adopt integrated approaches that transcend conventional product-focused methods [1]. Driven by societal and economic changes, this shift has paved the way for the Service Economy and the evolution of design practice towards Service Design [2]. As systemic thinking becomes central to addressing global challenges, Service Design has gained relevance across sectors, but the lack of a universally accepted definition of Service Design [3] is mirrored in education, where effective pedagogical approaches remain scarce. This article examines a studio-based educational intervention aimed at enhancing graduate students' understanding of Service Design. The study focuses on two objectives: (1) assessing new learners' perception of Service Design and (2) fostering engagement and confidence through analytical tools. To support Service Design Education, this intervention seeks to develop pedagogical methods that introduce students to systemic design thinking. Following the "learning by doing" methodology [4] and findings on ice-breaking activities' impact on learning [5], three ice-breaking tools presented in order of increased complexity, were incorporated into a one-day workshop with international students to facilitate peer interaction and discussion. Survey results indicated that students often equated the concept of Service(s) with digital platforms. The findings suggest that structured interactions enhanced students' reflection on both material and immaterial aspects of Service Design and that the tools improved their understanding of the subject.

Keywords: Service design, design education, educational model, ice-breaking activities

1 INTRODUCTION
Along the 90s decade, a group of design thinkers such as Morello, Hollins, Manzini and Erlhoff [6, 7, 8, 9] saw on the economic changes a need for a new "design agenda", giving place to the concept of Service Design (SD) as a new discipline [2]. Although a definition recognised by scientific communities is still missing, some scholars consider services to be activities, processes, and interactions. For instance, according to Hill [10], services can be defined as changes in the condition of a person or something in the possession of the customer. For Edvardsson [11], a service is part of the wider concept of the product where the customer is most often involved as a co-producer in the production process, and service is created in and during a process. Most definitions focus on the customer and on the fact that services are provided as solutions to customer problems. Grönroos defines a service as "An activity or series of activities of a more less intangible nature that normally but not necessarily take place in the interaction between the customer and the service provider, as solutions to customer problems" [12]. SD is still in the process of a definite theoretical framework development, and in the context of SD Education, it is currently more of a briefing and tutoring process (explaining the ecosystem, proposing methods and tools, and observing their application) during project development. Acquiring SD skills is relevant for designers as it equips them with the capabilities needed to drive innovation within private and public organisations [3]. The interdisciplinary nature of SD intersects theory and practice, which can result in the amalgamation of service business with design, strategy, and management [13], particularly considering the growth of technology and service-oriented businesses and the emergence of new professions within this field [14]. Especially in the transition towards a new economy demanding sustainable approaches and network creations, forming what according to Meroni and Sangiorgi will

shape the next economy. Involving a more holistic development process, SD could improve innovation in businesses, rooted in the design thinking and integrating relevant methods and tools [15].
SD Education has gained importance as organisations recognise the value of designing and delivering exceptional service experiences. Undergraduate and graduate programmes have extended their educational offer to include SD to prepare professionals with such competences. The focus and drivers in each curriculum can vary according to the particular perspective, such as design, business, engineering and computer science and social and behavioural services [14]. Some key contents focus on understanding the complexity of networks and systems for business, as well as empowerment, co-creation and customer interactions in user-centred approaches. This poses interesting opportunities and challenges in international programmes, since the expectations and perspectives of each group of students can vary according to their context. To effectively address these complexities within a systemic context, education should also integrate the significance of value co-creation, the role of infrastructure, and considerations of scalability and governance [16].

2 STATES OF THE ART OF SERVICE DESIGN (IN) EDUCATION

Current approaches of SD applied to higher education pedagogy can be traced to four main categories: SD applied to courses and assignments, pedagogical methods or models, pedagogical applications for specific groups, and pedagogy outside formal education [17]. Design education pedagogy plays a crucial role in preparing future designers to address complex, interconnected stakeholder needs – including social, environmental, cultural [18], and industrial interests [19]. Service designers contribute by navigating power dynamics, proposing sustainable solutions, and translating local initiatives into broader policy changes. Design education, in particular, can support innovation in local business communities by addressing their service-related challenges [20]. This highlights the importance of encouraging a service-oriented mindset early in design education, enhancing students' ability to approach user experiences and product contexts holistically [21]. To achieve this, experiential and inventive pedagogies are essential for building empathy and understanding user behaviour through real-world, system-oriented problem-solving. Studio-based approaches to SD have shown substantial benefits in promoting design thinking [22], enriching the educational experience, and deepening engagement with real-world contexts and communities [23]. This contribution reports preliminary findings of a workshop held within an international studio-centric didactic course involving postgraduate design students, not familiar with the topic of SD. In particular, it focuses on the development and assessment of a didactic framework aiming at facilitating a more profound grasp of the concept of Service(s) towards systemic thinking. The particular scope of this model encompasses a dual purpose: to assess the extent of SD comprehension among novice learners and to implement generative SD tools to augment student engagement and confidence within the discipline.

3 METHODOLOGICAL FRAMEWORKS

The intentions of this investigation are framed within the main transformations observed both in the methodological approach to SD and in society-driven solutions, shifting control of value creation from designers and producers to stakeholder interaction [16]. This shift highlights differences and similarities between products and services, and how these two components should be seamlessly integrated and enhance each other. Intangibility, Heterogeneity, Inseparability and Perishability (IHIP) were identified as the main characteristics making services different from products [24], a paradigm that essentially proposed the concept of Service as anything that is not identifiable as a product [16]. As interactions with products and services become increasingly complex, a strict distinction between the two is not always applicable. With the focus shifting from the level of punctual artifacts to systems, designers are required to work towards new models and methodologies of Product/Service Systems [1]. Participatory learning methods offer opportunities for active student engagement and the development of skills, such as teamwork and collaboration, critical thinking, communication and problem-solving. Complementary to traditional teaching methods (more focused on transferring factual knowledge), they can support students in acquiring a theoretical background to guide hands-on experimentation. While discussing the matter of Service(s) with students from traditionally product-oriented design backgrounds, it was observed that most of them manifested uncertainty when asked to define the differences and points of contact between products and services. This highlighted a need for specific attention in introducing new learners to SD. To address this challenge, ice-breaking activities were selected to go beyond the class routine, as they help soften up participants before they face the core material of the training and improve

the overall training process [5]. Their use can facilitate the introduction of new topics by making students more familiar with the subject previous to more profound explanations and discussions [25].
Implementing a "learning by doing" methodology [4], a workshop was organised to understand and assess how the concept of Service(s) is perceived among design students with low to no familiarity with SD. Three ice-breaking activities were designed and carried out to stimulate student engagement. A total of twenty-four graduate students enrolled in the Master of Science in Product and Service Design of Sapienza University of Rome were involved, with backgrounds including design, computer science and engineering. The activities were purposefully sequenced with increased levels of complexity, assisting students in gradually building knowledge about service(s). The tools "Draw a Present", "24h Services" and "Dice Challenge", offered insights on the students' approach to SD (Figure 1).

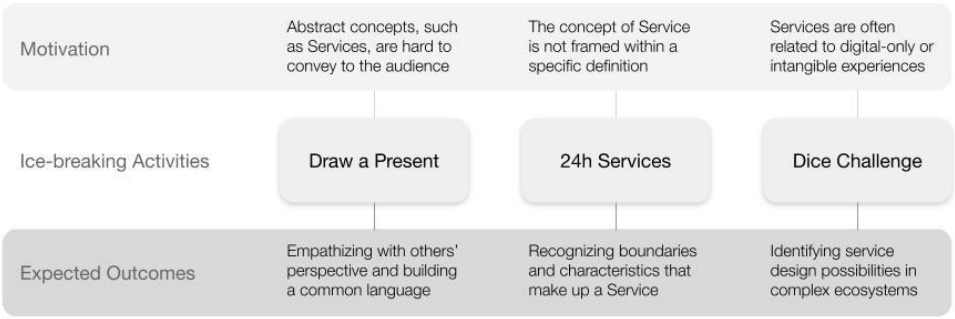

Figure 1. Schematic representation of the Methodological Framework

4 PROCEDURES AND RESULTS

4.1 Draw a Present

The tool was originally developed by Emmanuel Lançon [26] as an ice-breaking activity to introduce participants to the concept of Design Thinking. Inspired by Justin Ferrell at the Hackers Community of Dublin, it consists of challenging participants to convey abstract concepts through simple representations. The concepts used, namely "a present" and "the perfect present", sought to encourage participants to reflect on how personal perception might have effects on a given brief; and to shift from it towards a user-centred and empathic perspective.
The activity was expected to provide students with an initial understanding of User Experience, referring to products and services (tangible and intangible); and had two main objectives: (i) getting students to understand that simple representations can deliver complex messages and meanings to a diverse audience, and (ii) to change into the users' perspectives when designing solutions for them.
Process - The dynamic consisted in asking twenty-four students to draw a present on a piece of paper in 10 seconds, without giving any specific instruction on the meaning, typology of the present, or the representation style to use. Participants showed the drawing, describing the present and its meaning, and were asked whether they had ever received a present like the one they had drawn. Afterwards, they were asked to repeat the dynamic but now drawing what they would consider *a "perfect present"* repeating the. Then, they were asked to form couples to exchange *the perfect present* with each other and to give their opinion on whether they considered the present they received to be *perfect* also for them (see Figure 2).
Observation and Results - At first, students seemed doubtful as no specific instruction was given. However, most of the students draw a box with a ribbon, confirming observations made by the author of the tool. As expected, very few of them had ever received a present actually looking like the one they drew. Surprisingly, when asked to draw the perfect present, some students replicated the same representation box with a ribbon, potentially focusing on conveying the concept of "gift" as it is commonly known as a symbol, highlighting the common language that we share even when coming from different cultures. The exchange of the "*perfect gift*" allowed the participants to reflect on how each individual is a potential "user" who has different needs, perceptions and expectations.

4.2 24h Services

The tool challenged the students to reflect on their relationship with services, by discussing the services they usually interact with within a day. This aimed to give students an experiential perspective around the concept, as they tried to provide definitions of what they considered a Service(s).

Process - The class was divided into three groups of about ten members. They were asked to draw images that represent the services they use or encounter in their daily routine on post-its, adding optional text. Then, they were asked to draw a timeline of their "typical day", locating the services to which they have access chronologically (from 6:00 am to 12:00 am). The inputs of each team were discussed within the whole classroom. Subsequently, they were asked to locate each post-it note in three columns dividing the categories: "*Service", "Not a Service", "Not Sure"*. In doing so, students shared their own perceptions with others, justifying them in an open discussion (see Figure 2).

Observation and Results - In past years, difficulties were observed by the authors when students tried to distinguish services from products or infrastructure. This might be due to the fact that new coming generations (mostly digital natives) have had access to services thanks to digital platforms during their whole adult lives. In many cases, they have not had the opportunity to use a service separated from the application or platform that allows them to access it. Most of the services listed by them were related to the use of a mobile application, except for a few examples, like transportation. The rest usually included the use of social media, and applications, such as streaming platforms, online banking, online shopping, gaming and food delivery. The activity gave place to participative discussion inside the teams and integration among the group, as well as with the facilitators, raising interesting topics such as the characteristics that could differentiate a tv show from a free video site or paid streaming.

4.3 Dice Challenge

Facilitators gave three topic dice about different possibilities on the fields and targets that they could consider for designing a service. The topics of the dice were: *(1)Field of the service:* Describe themes related to the 15-minute city model, such as learning, working, enjoying the outdoors, being engaged in the community, getting around (mobility and transportation) and sharing and reuse of goods and/or materials; (*2) Target users or audience:* Presents different kinds of specific users, including children, students, workers, vulnerable individuals (due to a particular physical, mental or socio-economic state), minority groups and foreigners or tourists; and (3) *Modality of the service:* Shows the categories in which the services can be presented according to the technological or physical means used; considering analogue service, digital and hybrid (a mix between both).

Process - The participants were introduced to the activity and divided into three teams of ten, to be then provided with three dice, each representing a different subject: "*target user*", "*field of action*", and "*modality of the service*". After rolling the dice, each team obtained a set of three criteria that their service should attend, based on the resulting themes. Teams were given thirty minutes to make short research, discuss and search for related examples, to finally make a summary of findings and opinions to the class, for mutual inspiration on the outline of their projects along the course (see Figure 2).

Observation and Results - Most of the teams had no problem exemplifying the theme of the service in regards to the target user, nor to relate them to the concept of the 15-minute city, however there were cases in which the boundaries between the analogue and the digital services were blurry, confusing a digital product with a service, or databases and websites with a hybrid services. The activity allowed an initial understanding and a critical approach on existing services, as well as first hands-on research for benchmarking.

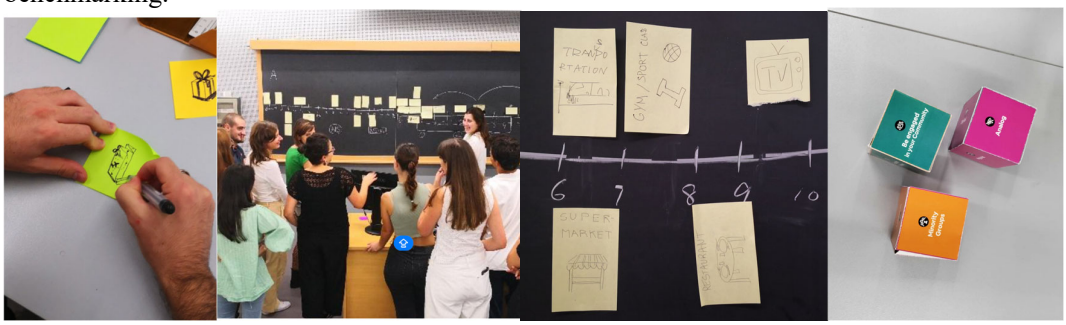

Figure 2. Images from the "Draw a Present" the "24 h Services" and "Dice Challenge" activities

5 DISCUSSION AND CONCLUSIONS

At the end of the activities, a questionnaire consisting of 5 questions – 2 open-ended and 3 closed-ended – was administered to the 24 participating students to evaluate the effectiveness of these activities as analytical tools. The two open-ended questions exhorted students to reflect on their idea of SD before and after attending the workshop. Responses to the first question showed varying levels of prior knowledge, from vague or product-centric definitions to more systemic views. Several students initially equated SD with app development or digital services, while others described it more generally as a process to support or improve everyday life. In contrast, the second set of responses demonstrated a clear progression in students' thinking. While a few answers remained unchanged or slightly refined, the majority demonstrated a clearer understanding of the intangible nature of services and the importance of interaction between components. A comparative analysis of the two responses showed that 8 students experienced a significant improvement in their understanding, 13 showed moderate progress with some repetition from their initial answers and 3 showed no change in perception. This highlighted a clear shift in understanding, indicating the effectiveness of the activities in deepening students' knowledge of SD. Overall, nearly 80% of the students found the activities useful, 20% were unsure, and none reported that the activities were unhelpful. Among the three activities, 24h Services was the most engaging and informative with all students feeling involved – half "enough" and half "a lot" – and 100% stating it helped them understand SD. Draw a Present elicited moderate engagement but was rated less positively in terms of its informative value, with more students selecting "not at all" than "a lot". The Dice Challenge was slightly less engaging but still considered useful for introducing the concept of SD.

This didactic experience showed that many students initially had difficulties distinguishing the concept of service from that of user experience. As a consequence, deeper reflection on their own personal experiences was required to internalise differences between concepts, such as digital vs intangible, interfaces vs touchpoints, app vs services. Although the three ice-breaking activities implied varying degrees of engagement and perceived value, they proved effective in stimulating curiosity and initiating a critical shift in students' perspectives regarding SD. Beyond the proper execution of each individual activity, the three steps of the workshop collectively contributed to activating a meaningful dialogue, both among teachers and peers, on the complexity of designing for services.

Some preliminary repercussions of the activities have been observed in the development of the students' group projects – eleven in total – during the semester. Most notably, higher mastery and autonomy in project management and development were observed, with lower need for expert supervision compared to previous academic years. This proves the pedagogical model to be a promising opportunity for enhanced engagement and development of critical thinking in new learners in SD Education.

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