

SERVICE DESIGN FOR AND WITH CHILDREN: A COLLABORATIVE STUDIO EXPERIENCE

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ABSTRACT

Despite the prevalence of service design solutions for children in everyday life, “service design” and “design for and with children” are rarely introduced together in design education. This paper presents a scholarship of teaching and learning study that examines how service design can be integrated with designing for and with children in an undergraduate collaborative studio. The analysis draws on a reflective evaluation of two iterations of a studio course, a review of student submissions, and verbal feedback collected during studio sessions. The findings suggest that service design can function as a mediating pedagogical framework when teaching design for and with children. Service design tools, such as stakeholder mapping and service blueprints, act as boundary objects that help students coordinate different disciplinary perspectives while navigating the complexity of multi-stakeholder service systems. The coherence required to develop a service design solution with multiple touchpoints also encourages students to move beyond approaches based primarily on intuition toward more systematic investigation. Using the studio experience as a basis for discussion, this paper aims to initiate dialogue in design education by highlighting the pedagogical potential of integrating service design with child-centred design contexts and showing how this integration can contribute to a more holistic understanding of designing for and with children.

Keywords: Service design, designing for and with children, design pedagogy, collaboration, studio

1 INTRODUCTION

Service design solutions developed for and with children are common in everyday life. Public libraries around the world offer literacy-based engagement programmes for children [1], while educational institutions provide developmental services such as the use of Scratch, a visual programming language, in both schools and after-school programmes [13]. Similarly, companies and healthcare organisations increasingly develop service-based solutions that address children’s needs, such as Ollie, a system developed to support children during MRI scans [17].

Despite the prevalence of such solutions in practice, service design and child-centred design have developed largely in parallel, with limited pedagogical integration. These two areas are rarely introduced together in design education. Instead, they are often taught as separate subjects through lecture-based courses or independent studio projects. This separation is not entirely surprising, as the two domains require different forms of expertise. Service design challenges designers to adopt systems thinking, including attention to stakeholders, interactions, and processes across time and space, as well as the infrastructures that support them [12]. Designing for and with children, on the other hand, requires sensitivity to developmental differences across age groups, including cognitive, emotional, and sensorimotor capabilities [2].

These distinct knowledge requirements may explain why the two domains are rarely combined within studio-based educational settings. However, integrating them can offer important pedagogical benefits. Designing for and with children inherently involves multiple stakeholders, such as parents, teachers, caregivers, and institutional actors. Service design is well suited to addressing such multi-stakeholder relationships and interactions. In this context, service design can function as a mediating framework, with service design tools such as stakeholder maps and service blueprints acting as boundary objects that support collaboration among team members in the development of child-centred service solutions. This paper presents pedagogical insights from an undergraduate collaborative studio in which industrial design and communication design students worked together on service design projects focused on children. The study is structured around a research question that also informed the course design: How

can service design be introduced alongside designing for and with children to support collaboration among student teams? Through reflective analysis, a review of student submissions, and verbal feedback collected during the studio course, the paper examines how service design can mediate interdisciplinary collaboration as students navigate the complexities of designing for and with children.

2 SERVICE DESIGN FOR AND WITH CHILDREN

Designing for and with children is often associated with creativity, playfulness, curiosity, and imagination. While these qualities may suggest that developing design solutions for children is straightforward, the process is in fact complex and demanding [2]. Adults frequently struggle to accurately understand how children think, behave, and interpret the world, as these perspectives are shaped by developmental stages that adults have long moved beyond. In addition, children undergo rapid physical, cognitive, and emotional development, with changes occurring initially over months and later over years. These developmental dynamics mean that design solutions intended for children must account for age-specific needs and capabilities. As a result, designing for and with children often requires specialised knowledge and methods, which is reflected in the emergence of dedicated research communities such as Interaction Design and Children (IDC) [18] community and initiatives like FabLearn [19].

This area of design research and practice is particularly significant because early interactions with designed artifacts and services can have lasting impacts on children's development. As digital media [8], interactive technologies [4], and child-computer interaction [6] have become increasingly embedded in everyday life, the importance of child-centred design solutions has gained growing attention. At the same time, discussions around children's rights, agency, and participation have shifted the focus from designing for children toward designing with children [3]. Participatory design and co-design approaches have therefore become increasingly influential in research and practice involving children.

In addition to these changing dynamics, the design of child-centred solutions has always involved multiple stakeholders. Parents, caregivers, teachers, and other actors frequently mediate children's interactions with designed systems. Depending on the context, these stakeholders may play active or passive roles in shaping how children experience products and services. Parental mediation theory [9], for example, illustrates how parental involvement can range from active engagement to more indirect forms of guidance that nevertheless influence children's interactions with technologies and services.

The inherently multi-stakeholder nature of designing for and with children therefore calls for a systems-oriented perspective. Service design represents another area within design that similarly requires systemic thinking. As a field, service design focuses on coordinating the steps, tasks, stakeholders, physical and digital artifacts, and environments that together constitute a complete service experience. It considers how interactions between users, service providers, and other stakeholders unfold across time and space, requiring designers to understand the end-to-end relationships and value exchanges within a service ecosystem [11].

To address this complexity, service design employs a range of methods and tools [15], such as stakeholder mapping, journey mapping, and service blueprints. While these methods support the development of new service concepts, they also play an important role in facilitating communication and coordination among different actors involved in the design process. In this sense, service design tools can function as boundary objects in the sense described by Star and Griesemer [14], providing both flexibility and shared structure that enable individuals from different disciplines to collaborate effectively. These characteristics of service design can help designers who are new to designing for and with children navigate the complexities of this practice more effectively.

Despite these conceptual overlaps, service design and designing for and with children have largely developed as separate bodies of research with only a few exceptions [e.g., 5, 7, 10]. As a result, limited work has examined how these two areas intersect. This is especially true of their application in design education. To the best of my knowledge, no prior work has examined this intersection or provided pedagogical insights on the topic. This paper addresses this gap by exploring how service design can be integrated with designing for and with children in an interdisciplinary studio context.

3 A PEDAGOGICAL EXPERIENCE

The content presented in this paper falls within the wisdom-of-practice category and the personal narrative type of Weimer's [16] classification scheme for scholarship of teaching and learning studies.

The study draws on reflections from two consecutive years of teaching a studio course on service design for and with children. Reflective analysis is complemented by a review of student submissions and verbal feedback collected from students during the course.

The course was offered as a collaborative studio for fourth-year undergraduate students in industrial design and communication design. Students were tasked with developing service design solutions, along with their key touchpoints, to support children's play, education, health, and wellbeing. Over the two iterations of the course, 33 students participated and developed ten child-centred service design proposals. These proposals addressed a variety of contexts, including a public library service encouraging families to harvest and learn about food production, a subscription-based service teaching financial literacy to children, a photo-based diary service designed to support children's self-esteem, and interactive activities at farmers' markets aimed at helping children understand food sources and their physical and emotional effects.

Across the two iterations of the course, the studio structure was also adjusted. In the first iteration, students were introduced to general service design concepts before transitioning to designing for and with children. In the second iteration, this sequence was reversed and the course began by foregrounding child-centred design. This adjustment appeared to help students adopt a child-centred mindset earlier in the semester and engage more deeply with research and stakeholder perspectives than in the previous iteration.

The studio followed a four-phase structure: 1) immersion in the project space, 2) designing the overall service, 3) developing individual touchpoints, and 4) revisiting the service proposal based on insights gained during touchpoint design (Figure 1).



Figure 1. Course structure

During the first session, students were introduced to the concept of service design and its distinctions from product design. This session was followed by a two-week immersion phase focused on designing for and with children. The aim of this phase was to help students adopt a child-centred perspective through a range of activities. During this period, students participated in field visits, including trips to a local museum's creativity centre for children and the children's section of a public library. They also engaged in play-based exercises exploring differences between free play and structured play. At the same time, students conducted research on existing design solutions for children by identifying iconic products developed over the years. Secondary research was also conducted to understand the developmental stages of childhood and related physical, cognitive, and emotional considerations.

To transition from designing for and with children to service design for and with children, students conducted a service benchmarking exercise in which they defined and analysed two existing service solutions targeting children. The product design examples that students identified as iconic (e.g., L.O.L. Surprise collectible toys, Lite-Brite illuminated art toy, Scratch visual programming language and online community) along with the service benchmarking results (e.g., KiwiCo monthly STEAM subscription boxes, Cincinnati Public Library Summer Reading Program) remained visible in the studio space throughout the semester and served as reference points for discussion and comparison (Figure 2).



Figure 2. Collaborative analysis of product (left) and service solutions for children (right)

Following this immersion phase, students formed interdisciplinary teams based on shared areas of interest (i.e., education, play, health, entertainment, wellbeing, or others defined by students) and specific target age groups (i.e., babies, toddlers, preschoolers, grade school children, and teenagers). Each team included both industrial design and communication design students.

Teams then began developing initial service concepts. During this phase, students were introduced to service design tools such as ecosystem maps, user journey maps, service blueprints, and business model canvases. They also conducted secondary and primary research with children and relevant stakeholders (e.g., parents, teachers, doctors). Their primary research involved interviews and observations. During their interviews with children, students also used a probe specifically designed to help children further express their needs and wants on the topic being studied. These interactions led each team to develop a service proposal aligned with their research insights. As part of their service proposal, around the sixth week of the fourteen-week semester, teams identified key service touchpoints, and each team member developed one touchpoint while ensuring alignment with the broader service system. Feedback sessions with children and other stakeholders were also conducted during this stage (Figure 3).



Figure 3. Photographs from a feedback session with on touchpoint designs

In the final two weeks of the semester, teams revisited their service proposals and refined them based on insights gained through touchpoint development and stakeholder feedback. The semester concluded with expert review sessions in which local practitioners working in service design or child-centred design provided feedback on the projects.

3.1 Student feedback

Although students generally reported positive experiences in the course, they often described the process as demanding and complex. This tension is reflected in students' definitions of service design collected during an in-class exercise. Two main patterns emerged in these definitions. First, several students emphasised that service design extends beyond isolated products. For example, one student described service design as "a way to deliver an experience beyond just a product," while another defined it as "a cohesive system of products and interactions that serve people in a continuous service loop."

A second group of responses focused on the importance of considering multiple stakeholders. One student explained that service design "considers everyone including stakeholders, customers, and employees."

Interestingly, the same characteristics that students identified as central to service design - its systemic nature and multi-stakeholder scope - also emerged as sources of frustration. Students described the process as "looking at everything at once," involving "lots of components," and being "a complex process" with "many moving parts." At the same time, the context of designing for children was frequently described as motivating and engaging. One student commented that "service design can be fun when it is for kids."

Students also noted the challenges of understanding children's perspectives. Some expressed uncertainty about fully grasping how children think. Nevertheless, many highlighted the value of perspective-taking, noting that designing for children allowed them to "see a new perspective when designing," "reconnect with inner child," or "pretend like a kid again and step into their shoes."

4 DISCUSSIONS

The pedagogical experience described in this study highlights the potential value of integrating service design with designing for and with children in studio-based design education. While these two areas have largely developed as separate bodies of research and practice, the findings from this course suggest that they share important conceptual commonalities that make their integration pedagogically productive.

The studio experience described in this paper highlights three valuable aspects of using service design to introduce students to designing for and with children. Although designing for children requires careful attention to developmental differences and children's physical, cognitive, and emotional capabilities, students may initially rely on their own experiences or childhood memories when developing design solutions. Service design methods and tools encourage students to conduct primary research with children and other stakeholders and to evaluate design options from multiple perspectives. These multiple perspectives were evident in students' verbal feedback as well as in their final presentations, in which they situated their service solutions in relation to multiple stakeholders. This required students to move beyond their own childhood experiences and develop a more holistic understanding of their project topics. In this way, service design helped shift students away from intuition-based design approaches toward more systematic investigation and stakeholder-informed decision-making.

Another important observation relates to the role of multi-stakeholder and ecosystem maps in service design. Prior work on parental mediation highlights how parents and caregivers shape children's interactions with media and technology through different forms of guidance and involvement [9]. Similar dynamics emerged in the studio projects, where students recognised that children's experiences with services are often shaped not only by children themselves but also by parents, teachers, and institutional actors. This multi-stakeholder structure required students to consider relationships between actors rather than focusing solely on children as individual users. Such considerations challenged students to broaden their understanding and engage with the nature of designing for and with children more realistically.

Lastly, service design methods played a particularly important role in helping students collaborate and navigate the complexity of designing for and with children. Tools such as stakeholder maps, journey maps, and service blueprints enabled students to visualise relationships between actors, touchpoints, and environments. In addition to supporting the development of service proposals, these tools also facilitated communication among students working from different disciplinary perspectives. In this role, service design tools aligned with the theoretical description of boundary objects [14]. They provided shared structures that enabled collaboration between industrial design and communication design students.

Student feedback further illustrates two pedagogical tensions inherent in this process. First, many students described service design as valuable but challenging. They emphasised that it required them to consider a large number of interconnected elements. These observations reflect broader characteristics of service design practice, which often involves coordinating complex interactions between stakeholders, artifacts, and environments [15]. Second, while students found service design challenging, they found designing for and with children enjoyable. Students frequently described designing for children as motivating and engaging, suggesting that the child-centred context helped make the complexity of service design more meaningful. Designing for children required students to engage in perspective-taking and empathy, reinforcing the importance of research and observation in the design process.

Across the two iterations of the studio experience discussed in this paper, the second iteration, in which designing for and with children was introduced first, appeared to be strategically useful in helping students consider child-centred solutions from the beginning. However, this sequencing also changed the orientation of the project. While learning service design was more central to the project in the first iteration, in the second iteration, service design became more of a supporting framework for a project centred on designing for and with children.

5 CONCLUSIONS

Taken together, these findings suggest that service design and designing for and with children can be effectively introduced together in design education. The developmental and participatory aspects of child-centred design encourage students to move beyond product-focused thinking, while the systemic orientation of service design provides tools for organising and understanding the complexity of multi-

stakeholder interactions. Their integration within studio education can support a more holistic understanding of design processes that involve complex social and experiential systems. This study represents a small-scale pedagogical reflection based on two iterations of a single studio course. Future research could extend this work by examining similar pedagogical approaches in other design programmes and by developing more systematic methods for evaluating learning outcomes in design studios. Further exploration of how service design methods support collaboration in child-centred design contexts can also contribute to broader discussions of systems-oriented design education.

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