

Jun 25th, 9:00 AM

## Organizational learning through collaborative project-based service design course: The flip side of the coin

Suzan Boztepe  
*Malmö University, Sweden*

Follow this and additional works at: <https://dl.designresearchsociety.org/drs-conference-papers>



Part of the [Art and Design Commons](#)

---

### Citation

Boztepe, S. (2022) Organizational learning through collaborative project-based service design course: The flip side of the coin, in Lockton, D., Lenzi, S., Hekkert, P., Oak, A., Sádaba, J., Lloyd, P. (eds.), *DRS2022: Bilbao*, 25 June - 3 July, Bilbao, Spain. <https://doi.org/10.21606/drs.2022.670>

This Research Paper is brought to you for free and open access by the DRS Conference Proceedings at DRS Digital Library. It has been accepted for inclusion in DRS Biennial Conference Series by an authorized administrator of DRS Digital Library. For more information, please contact [dl@designresearchsociety.org](mailto:dl@designresearchsociety.org).

# Organizational learning through collaborative project-based service design course: The flip side of the coin

Suzan Boztepe

Malmö University, Sweden

suzan.boztepe@mau.se

[doi.org/10.21606/drs.2022.670](https://doi.org/10.21606/drs.2022.670)

**Abstract:** Collaborating with public or private sector organizations in project-based courses equips design students with key skills to future-proof their careers, but this gives only one side of the story as the key feature of these partnerships is that they are mutualistic collaborations. However, the benefits to organizations of collaborating are not fully explored. This paper presents a case study of partnerships with four different public organizations in a service design course over a five-year period. It argues that collaborating in project-based courses serves as risk-free experimentation and paves the way for organizational learning. The paper first reviews the existing research on collaboration in design education and organizational learning. Then, three types of learning that emerged from the data are analyzed. Next, the steps to successful collaboration are discussed, noting the ups and downs of managing the project partnerships. Finally, the challenges of teaching a collaborative project-based design course are discussed.

**Keywords:** design education; design management; organizational learning; service design

## 1. Introduction

Over the past few decades, the design profession has gone through some remarkable changes. Designers increasingly deal with issues strategic in nature and help organizations and communities address complex problems in the face of uncertainty. That is, the “focus is no longer on material systems—systems of “things”—but on human systems, the integration of information, physical artifacts, and interactions in environments of living, working, playing, and learning” (Buchanan, 2001, p. 12). Not just the object of design, but designers’ ways of working have also evolved to become highly interdisciplinary and collaborative. Cross-disciplinary (e.g., Beckman et al., 2018; Dorst, 2018), as well as collaborative project-based courses with industry, government agencies, or third sector that expose students to the complexities of real-life design problems, are seen as one way to better prepare students for their future careers (e.g., Annala et al., 2015; McAra & Ross, 2020). Against the backdrop of



curriculum models such as project-based learning, these collaborations are known to increase students' creative, problem solving, critical thinking, project management, and communicative skills (Ríos et al., 2010; Thomas, 2000). While there is a fair amount of research that examines how collaborative project-based courses improve student learning, little research exists about how partner organizations benefit from these collaborations. Research on university-industry partnerships in organizational learning (e.g., Cyert & Goodman, 1997), knowledge transfer (see de Wit-de Vries et al., 2019), and participatory design (e.g., Bossen et al., 2010; Bowen et al., 2016) focused on the organizational gains from research collaborations with universities, rather than teaching collaborations. In organizational learning that results from collaborative project-based teaching, partner organizations are typically projected as a source of knowledge and expertise which they readily share with students. That is, the knowledge is assumed to flow from the organization to the students. Partners are also assumed to be willing and able to participate in student learning. As with any collaboration, however, partner organizations have their agendas. Their expectations significantly influence the nature of collaboration and what students get from it. Therefore, it is necessary to look at the flip side of the coin to see what collaborating with students means for organizations. Analyzing both student and organizational perspectives are needed for a holistic understanding of how collaborative project-based courses work. In this paper, I will examine the experiences of four different local government agencies in Sweden whom I collaborated with as a (co)instructor and course responsible for a service design course over a period of five years. By so doing, I hope to provide insights that will support design educators to make informed decisions and better plan collaborative project-based courses, as well as advance knowledge on organizational learning by illustrating how seemingly less knowledgeable partners like students could support organizational learning.

## **2. Collaborative project-based courses and design education**

In the face of increasingly complex and networked problems facing our societies and changes in the design profession, the calls for a paradigm shift in design education over the past two decades have intensified. Among the well-known examples are ICOGRADA's 2000 and 2011 manifestos authored by prominent design professionals and educators (Bennett & Vulinari, 2011). Design education has since expanded to include design processes, user experience, and social and environmental issues in the curriculum. However, concerns over design education's ability to respond to transformation remain (Meyer & Norman, 2020; Norman & Stappers, 2015; Pontis & van der Waarde, 2020). One reason is that changes and challenges faced by design are multifaceted and substantial (Friedman, 2012), requiring an ongoing approach to curriculum development. To this end, the need to integrate organizational and relational aspects of design into design education is a recurring theme in recent suggestions on how to prepare design students for their future jobs (e.g., Frascara, 2020; Friedman, 2012; Meyer & Norman, 2020; Pontis & van der Waarde, 2020; Weil & Mayfield, 2020). Poggenpohl (see Frascara, 2020), for example, suggested fostering leadership and collaborative skills in design education for designers to reach their full potential.

Collaborative project-based courses are particularly well suited to equip students with these skills (Annala et al., 2015; Beckman et al., 2018; Dorst, 2018; McAra & Ross, 2020). Traditionally, however, instructors in design education commonly rely on fictitious projects made up by them. Pontis and van der Waarde (2020) argued that, while such projects provide a safe learning environment, they disguise the ambiguities and intricacies involved in real-life design situations. Also, as there are no real project partners involved, there is no way for students to improve their skills to work with people from other disciplines. Working on real problems with real partners, on the other hand, according to Pontis and van der Waarde (2020), not only forces students to deal with several constraints and interdependencies that exist in real life but also increases students' autonomy and connects them to the professional community. For example, case studies on courses that engage students in real-life design projects support these claims (e.g., Junginger & Sangiorgi, 2009; Lee, 2020; McAra & Ross, 2020; Thorpe et al., 2017). They showed that students are introduced to vital organizational skills by being forced to navigate diverse agendas, working practices, and priorities of different stakeholders. Lee (2020), for example, described how students had to grapple with the conflicting expectations and risk-averse culture in the public sector (e.g., Bason, 2010) to get acceptance from their project partners. Such situations potentially offer opportunities for a unique learning experience, but, if not managed well, could have the opposite effect and hamper student learning and confidence, as well as lead to the reproduction of the existing, possibly dysfunctional organizational practices. Therefore, working with external project partner organizations is a pedagogically challenging undertaking that must be planned and managed carefully. However, little, if any, research exists to this end. The same also holds for any kind of institutional guidance and support system for instructors. One critical aspect is the nature of a partner organization's involvement. To orchestrate appropriate partner engagement, Thorpe et al. (2017) suggested considering their intentions for collaboration, the actors involved, the organizational context of collaboration, and the methods of collaboration. While their recommendation offered a useful starting point, they did not elaborate on how those considerations would be weaved into course planning and teaching, which I hope to shed some light on in this study.

### **3. Collaborative project-based courses and organizational learning**

For organizations, collaborations may serve as a means of learning by leveraging the skills and knowledge of collaborators that could lead to improved organizational capabilities (see Easterby-Smith et al., 2008). Knowledge is seen, specifically in uncertain environments, as an organization's most strategically important resource (Grant, 1996; Nonaka & Takeuchi, 1995) and organizational learning as a capability that leads to sustained innovation, strategic renewal, and competitiveness (Eisenhardt & Martin, 2000; Teece, 1997). Therefore, learning is naturally considered a key outcome of collaborations (see Easterby-Smith et al., 2008).

Organizational learning is typically defined as a process that begins at an individual level when organizational members are exposed to and recognize useful external knowledge. Then, knowledge passes on to groups, and it eventually becomes institutionalized (Crossan

et al., 1999). For this to take place, organizations have to deploy their *absorptive capacity*, described as the ability to utilize external knowledge by recognizing valuable information, assimilating it, and eventually applying it to create value (Cohen & Levinthal, 1990). As learning occurs, organizations gradually modify or change their behaviors, processes, structures, or mental models (Chiva et al., 2010). What changes and to what degree, however, varies depending on the breadth and depth of learning. Organizational learning research distinguishes between two types of learning: (1) adaptive, or single-loop learning, and (2) generative, or double-loop learning (Argyris & Schön, 1974; Chiva et al., 2010). The former is about gaining the ability to detect and correct errors through established rules and procedures. The latter involves questioning root causes and modifying an organization's underlying norms, policies, and values. For generative learning to happen, organizations need to overcome *defensive routines* (Argyris & Schön, 1978), support experimentation and exploration (Eisenhardt & Martin, 2000; March, 1991), and make room for reflection (Senge, 1990).

Exploratory and experimental processes that lie at the core of design, such as alternative framing, prototyping, and iterative thinking, are considered key for learning (Schön, 1983) and particularly effective in generating situation-specific knowledge essential in rapidly changing environments (Eisenhardt & Martin, 2000). In the context of building anticipatory capabilities in government, Kimbell and Vesnić-Alujević (2020) even described design as creating an “inventive and experimental space to explore and assess potential future responses” (p. 99). Also, design, it is argued, prepares multiple organizational actors for change and fosters safety by engaging them in experimentation (Liedtka, 2021), which is one of the ways for tackling resistance. Due to its strong connection to organizational learning, Cousins (2018) even suggested a reconceptualization of design from problem-solving to an organizational learning construct.

Exploiting design's learning potential, however, is a long-term process (e.g., Acklin, 2013). Further, learning from collaborators requires active engagement and consideration of the power balance (Easterby-Smith et al., 2008). Collaborative project-based courses are typically ad-hoc events framed as situations where organizational partners serve as the prime source of knowledge. Given this, could such collaborations lead to organizational learning? And, if so, could inexperienced student designers leverage design's potential?

## 4. Method

The data for this study was collected from collaborations with external partners in a project-based, 10-week, 15 ECTS, full-time, required service design (SD) course offered in the fourth semester of the undergraduate program in Interaction Design at Malmö University from 2017 until 2021, for which I was (co)instructor and course responsible. The number of enrolled students varied from 28 to 36 depending on the semester. Partner organizations were local and regional government agencies with varying levels of prior design experience (see Table 1). The collected data consisted of (1) notes taken during preliminary project meetings with partners, detailed in section 6.1 below, where I asked questions about their

expectations, organizational practices, and any related work going on in the organization, (2) observations throughout each semester, (3) student deliverables, (4) end-of-semester course evaluations, (5) notes from project evaluation meetings with partners done immediately after the project was completed, and (6) in three cases, follow-up interviews approximately one year after the project was completed, as detailed in section 6.5. The project evaluation meetings included questions about the efficiency of the collaboration, its perceived value, and plans for student projects, if any. Participants were asked to get feedback from within their organizations before the session. One-year follow-up interviews lasted from half to one hour and included questions about the organization’s work in the project area since the collaboration, and any specific uses of students’ specific recommendations, insights, and deliverables.

Table 1. Partner Organizations

Project Theme	Semester	Partner	Design Experience
1 Reducing Food Waste	Spring 2017	City of Malmö, Environmental Dept.	No design experience
2 Pregnancy Care	Spring 2018	Innovation Skåne	Worked with design consulting firms
3 Close Care	Spring 2019	Innovation Skåne	Worked with design consulting firms
4 Libraries as Social Hubs	Spring 2020	Malmö Public Library	Trained in design
5 Citizen-Driven Services	Spring 2021	City of Malmö, Malmö Civic Lab with - Dept. of Culture - Dept. of Preschools - Labor Market Dept. - Youth Community Center	In-house design lab Departments with no design experience or training

SD is a project-based studio course in which collaborative project work is the core learning activity supported by lectures, seminars, and workshops. The project consists of two stages: research and design. Students are provided with an open brief, broadly defining a problem area. In the first stage, working in teams, they are expected to define the scope of their project through research on the needs of stakeholders, using ethnography, mapping techniques, desktop research, and co-design, among others. Learning how to plan, conduct, and present research, dealing with ambiguity, and being open to emerging insights, rather than imposing preconceived notions of potential solutions, are key themes in the first stage. The most important deliverable of the first stage is writing a research report in which the problem area and potential opportunities are identified and visualized, and presenting this work to an audience of members of the partner organization and classmates. The next phase involves

translating research insights into specific design recommendations. This includes co-creating with stakeholders, idea generation, sketching, blueprinting, and several rounds of prototyping and testing. Deliverables include a presentation, video prototype, and a report targeted at the decision-makers and implementers. The project may result in an improvement of the existing service and/or policy recommendations or a completely new service. It may also include consideration of new citizen groups, changes in organizational processes and roles, implementation of new technologies, and new touchpoints.

## **5. Three types of learning through collaboration**

Partners mentioned the value of collaborating with students mainly in terms of their gains from the experience of working with a service design approach. The value of students' solutions was secondary, even though selected student projects were later implemented in some form. All four project partners related their collaborations with students to their organizations' efforts to build innovation capabilities, experiment with new approaches and learn about design. Partners described students' ways of approaching problems as being distinct from their existing ways of working and thinking. Issues of risk aversion, task-focused mindset, and institutional norms hampering innovation, which previous research identified as barriers to change in the public sector (e.g., Bailey & Lloyd, 2016; Bason, 2010), were frequently brought up. Projects were described as opportunities that allowed them to do things differently and see what result those different ways might yield in terms of improved efficiency, cost savings, fulfillment of policy objectives, etc. That is, the projects allowed them to experiment within a safe-to-fail environment.

The three types of learning were as follows: (1) gaining domain knowledge, (2) gaining process awareness and skills, and (3) supporting innovative thinking.

### *5.1 Gaining domain knowledge*

The most valuable outcome noted in all projects was the stakeholder research and problem framing, as it allowed a better understanding of the issues that needed to be addressed. Responding to the existing problems as they relapse and relieving the symptoms, as described in earlier research (Bason, 2010; Junginger, 2015), defined most of the work in the partner organizations. The research allowed stepping out of this way of thinking, building a holistic picture of the situation, and getting into the underlying causes of the problems. Seeing the existing services from the point of view of users was considered particularly valuable because it not only paved the way for higher quality innovative solutions but also helped establish an emotional commitment to users among the staff. Project partners spoke with approbation about how user research, such as a one-minute clip of a senior citizen's home, created a sense of empathy and a common point of reference among the civil servants. Research that brought into light user groups that had not been previously considered, such as the partners of pregnant women, was also deemed highly useful as it "showed the blind spots," in one project manager's words.

Learning about dysfunctional organizational processes was also often noted as a key takeaway of the research. As a unit manager in the municipality noted, “Students, in only a few weeks were able to point out the problem we have been struggling with for years and get to the bottom of it. It is fascinating.” For field contacts, locally employed civil servants from the partner organization who assisted the students at the research site, the students’ enthusiasm to get to the bottom of the problems was often a rare opportunity to articulate and reflect on their practices. “We don’t do that,” commented a librarian, “just explaining to students what we do, how we do it made me realize things that don’t make sense.” The visualization of work processes in blueprints, or other maps, was considered an additional opportunity for reflection: “I saw problems with some things I had not seen before,” explained another municipal worker, describing that in their day-to-day work they focused on their task only and they rarely, if at all, thought about the process as a whole.

With its focus on bringing people’s experiences to the fore, and by making what was hidden before visible and tangible, the research phase created some space for questioning key processes, actions, and even values. Students’ inquiries triggered questions that are prerequisites for double-loop learning, such as *Are we doing the right thing?* and *Why do we do things the way we do?* (Argyris & Schön, 1974). The ability of partners to bring up and reflect on those questions, rather than get defensive, was linked to the students’ approach and their role when interacting with the partner organizations. As one municipal worker described, students showed “real curiosity” and “did not impose any assumptions.” This has put the civil servants working in the field into the role of teachers of their work situations.

The visual models and the written report allowed some of the lessons learned to be documented and shared across the organization. A social worker discussed the blueprint students created as an “example of how to get everyone on the same page.” But the one-year follow-up interview showed that, after an initial circulation of the reports, there was little, if any, done to understand how they were used. Nevertheless, it seems that the partners linked their increased understanding of the use context to diverse organizational processes and agendas that they later got involved in, such as initiating change, revising other services, pushing for policy-level changes, or negotiating resources. It may be possible to argue, then, that the research has created domain knowledge that applies to a range of situations, beyond the one defined by the projects at hand.

## *5.2 Gaining process awareness and skills*

Learning about the SD process and its impact was one of the major takeaways noted by all project partners. They mentioned that working with students exposed them to a process that was user-centered, creative, and holistic, which sharply contrasted with the typical ways of work in their respective organizations. However, the degree of procedural learning varied based on the partner organization’s prior experience with design. While a partner without any prior SD experience typically described this learning as gaining an awareness of SD, those with prior SD experience focused on specific methods, applications, and situations. For



example, librarians who had earlier received training in design thinking considered projects as a way of better understanding how design could be applied in specific situations, such as anticipating the future.

In all five projects, the partners found the SD process helpful to work through complex, system-level problems. A librarian vividly described how difficult it was to begin to tackle big social challenges they were faced with and expected to address:

“We feel like “Are we going to save the world?” And that can be like: you sit and do nothing. Because it is so overwhelming! [...] We saw that service design can help to narrow down and prioritize. And then, you can change a lot.”

This ability to frame complex problems was attributed to the “overall methodological approach” by a manager at Region Skåne. Another partner linked it to the “trust in methodology,” which, in his eyes, allowed approaching a given situation in an open-minded way, without the fear of failing and simply trusting that both problem and solution would emerge. This emphasis on methodology was commonly voiced by partners who had been exposed to the dominant design thinking discourse through seminars, training, etc. They perceived the projects as a trial of the process, and as evidence that the methods and the process of design thinking work.

How students (re)framed problems was of particular interest, and partners seemed to support projects that pushed the boundaries. They said they could not do so in their day-to-day work, and that they believed in the potential of new framings. Not only the main contact partners had some interest in driving change in their respective organizations, but also employees in the field too were supportive of alternative frames. This appreciation of alternative framing conflicts with previous research claims that new perspectives are deemed disruptive in the public sector (e.g., Bason, 2010) and that students’ alternative framings could result in the so-called frame failures (Lee, 2020). One reason could perhaps be the absence of commitment for real implementation. The lack of resistance to alternative frames could also be due to the involvement of partners as co-creators, and consideration of organizational legacies, which Lee (2020) suggested increases organizational buy-in. Alternative framings were even instrumental in reducing fears associated with change. For example, a manager at the Labor Market Department in the City of Malmö claimed that students showed them “that it is possible to digitize and streamline without losing client contact—on the contrary, what students did creates even more time for personal contact.” That is, students’ consideration of automation possibilities about not just efficiency but, more importantly, citizen needs, illustrated that personal contact would still be possible. In this way, they also addressed a fear shared by all employees that digitalization would make them obsolete.

Engaging stakeholders in innovation provided another learning opportunity for partner organizations. Just as citizens are rarely engaged in change processes, in government agencies, the processes for enabling employee-generated innovations are not yet well-established. Thus, even though employees may have insights and ideas about improving their ways of working, this often goes unrecognized. Co-creation, it was noted, showed that it was not

that difficult to tap into those resources and that viable solutions are already developed daily by civil servants. For example, a co-creation workshop revealed how some public kitchen chefs had developed ways of meal planning that minimized waste and reduced environmental footprint.

One final learning about the SD process relates to the cyclical nature of prototyping-testing-refining which the students used throughout. While acknowledging its value, partners were concerned that it would be too difficult to align it with the commonly used development processes in the public sector.

Overall, the partners had the opportunity to observe, or to some extent, try out new methods and discover what might work for them. One-year follow-up interviews revealed that partners with little or no prior design experience tried a few of the methods only. An increased awareness of the potential impact of the designerly ways of working and small-scale experimentations are only the initial steps in organizational learning. Changing organizational processes, however, is a long and complicated process.

### *5.3 Supporting innovative thinking*

A recurring claim from the partners was that collaborating with students pushed them to think and act differently. While the role of design as a driver of organizational change is acknowledged (e.g., Junginger & Sangiorgi, 2009), it would of course be naïve to say that broad organizational transformations could be attributed to ad hoc student collaborations. When talking about student projects as they related to organizational change, partners spoke of how they weaved these projects into their ongoing efforts to influence change within their respective organizations. For example, for the Civic Lab, an in-house design lab with the City of Malmö, collaborating with students was a part of their ongoing efforts to build broad design competencies in the city. Among other things, they noted, student projects were effective in showcasing the effectiveness of SD in the eyes of senior administration and civil servants. While getting executive support is crucial, participation and ownership from civil servants are also necessary for a successful transition toward a more innovative culture.

Exposure to and experimentation with design methods, such as user research and co-design, as well as the tangible nature of design storytelling, was considered particularly supportive in the shift into innovative thinking. For example, user research tools were associated with the development of a user-focused culture, idea generation tools were viewed as ways of generating alternatives to deal with ambiguity, and prototyping and testing were seen as essential to building a creative organizational culture. According to civil servants in the field, working with students encouraged them to switch to a user-centered mindset as the project progressed: “These types of projects [...] force us to act in [a] different way,” an administrator in the Pre-School Department noted, explaining how seeing through the eyes of a newly employed teacher pushed her to think about what her job meant for others.

Co-creation and prototyping seemed to have created a safe space, where civil servants were able to explore new ways of working and engaging with citizens. It also paved the way for them to be empowered. However, this was not without tension. Students' involvement with nurses in an elderly home, for example, made their manager uncomfortable as nurses began to reflect on their work, questioned the status quo, and introduced small changes on their own initiative.

Storytelling used throughout the design process in the form of storyboards, enactments, video prototypes, etc. was considered to have convincing power. By making processes, roles, norms, and technologies visible, models made it easier for civil servants to reflect on their work. Specific deliverables such as user journeys, blueprints, and video prototypes were also used by project partners to influence certain decisions thanks to their tangible nature. Following the project, they became boundary objects (Star & Griesemer, 1989), creating a common understanding of problem areas. Video prototypes, for example, were widely used to communicate a certain vision within their organizations. A project manager in Region Skåne once told me how easy it was to reject a proposed redesign of a digital healthcare service by only showing a student video prototype as an example of what the desired user experience would look like.

However, one still cannot argue that the seemingly positive impact in the ways of thinking over the course of project development would be sustained—unless capacities and skills are built into respective organizations. Partners such as designers from the Civic Lab hoped that those civil servants who participated in the projects and who showed signs of beginning to shift their mindset would become champions for design in their respective groups.

## **6. The terms of collaboration**

As with professional design settings, each project partnership had a unique set of constraints and required certain adaptations concerning the terms of collaboration and the course syllabus. Five steps to successful collaboration were identified: (1) aligning expectations, (2) defining the challenge, (3) executing the project, (4) dissemination, and (5) evaluation. The factors that could potentially impact learning for both students and organizations are discussed under each step.

### ***6.1 Aligning expectations***

This step includes a preliminary discussion with the potential partner organization to ensure that the project is on the right track and of the right scope to achieve the learning goals as well as to set the right expectations. Further, this step aims to establish a firm foundation and an open discussion about the priorities, potential outcomes, and the nature of the collaboration.

### **6.1.1 Purpose**

Mutually beneficial collaborations depend first and foremost on a good fit between the goals of the parties. The first step is, therefore, identifying the interests, goals, visions, and expectations of the partners. For partners, initial expectations ranged from specific digital products to getting help in understanding a new area and exploring what SD has to offer. Together we define a project that is explorative to a certain degree but also relates to the organization. I avoid situations where students would end up replacing a consultant's or an internal team's work. An open discussion about the priorities concerning the course format and the learning goals is key to setting realistic expectations in the partner's mind about students' work and potential outcomes. I encourage partners to think not only in terms of potential project deliverables but also of the project's potential influence on broader organizational goals.

### **6.1.2 Organizational Culture & Capacity**

As a prerequisite, the nature of the organization must allow welcoming students and new ideas. To ensure this, I try to understand the organization's norms, beliefs, and the existing ways of working with design and innovation. After all, considering organizational practices and legacies is critical to the effectiveness of design interventions (Junginger, 2015). Similarly, understanding the level at which design is employed gives me an idea about how much and in what capacity I could engage partner organizations, as well as the ways the collaboration could support the organization.

Also, in terms of logistics, the partner needs to have the capacity to enter a collaboration. This includes allocating time and resources which I explain in the first meeting with the partner organization. I make sure that partners are committed to the project and together we agree on a work plan which specifies the amount of time they need to invest and the resources they are expected to bring in.

## ***6.2 Defining the challenge (co-framing)***

This step is about the joint framing of the project, making commitments, and drafting the brief.

### **6.2.1 Project Challenge**

The project needs to be broad enough to allow students to identify specific problem areas. For generative learning in partner organizations to occur, the project must go beyond uncovering and fixing day-to-day problems. At the same time, it needs to promise certain outcomes that, from the outset, partners would perceive as potentially valuable. Partners may tend to define the challenge in terms of a specific solution. By discussing the reason why they think they need a specific solution, the problem must be gradually reframed to allow addressing the underlying causes of the issues they face. For example, one of the partners'

initial expectations for an app that would visualize how much food the chefs threw away was reformulated at a broader level as reducing food waste in public kitchens. That is, the partner had to shift from a solution-finding mindset to an exploratory mindset. Also, they had to learn to trust that the SD approach would lead to some useful outcomes—though not knowing at the outset what those would be. In other cases, collaborative projects were seen from the start as an extension of the partner organization’s project at hand, and an additional opportunity to uncover aspects of the problem which seemed too vague or risky to invest any resources. For example, while Innovation Skåne was already working on redesigning its digital service for pregnancy care at the beginning of our collaboration, student projects were set to explore aspects of pregnancy care that seemed too far-reaching to be justified within the constraints of the ongoing project.

If managers authorized to implement students’ work were involved in setting up the challenge for the project, then there was better student support, greater dedication, and increased buy-in within the organization. As far as possible, I encourage their participation in formulating the challenge. With the Malmö Public Library, for example, this was done at a brainstorming session with interested unit managers. In the most recent collaboration, the Civic Lab issued a call for challenges to the city units who wanted to improve certain aspects of their work.

### **6.2.2 Roles & Responsibilities**

Throughout each project, several stakeholders from partner organizations are involved. Clearly defining their roles and responsibilities is therefore essential for ensuring appropriate support for students and efficient knowledge sharing with students as well as within each organization.

To achieve this, I usually have two types of contact persons: Headquarters contacts and field contacts. The contact persons in the headquarters of partner organizations were typically responsible for orchestrating the organization of the collaboration, making necessary commitments, and communicating with instructors and students throughout the project. As managers, they typically worked in close partnership with the operations, but at the same time were involved in or had an influence over strategic decisions within their organizations. This made them well-positioned for upward and downward intra-organizational knowledge sharing. They usually had their agendas to advance, or mandates in their organizations, such as building certain capabilities, pushing for policy changes, etc. For example, the contact persons in the public library defined their goals in their organization as “to create the right conditions for innovation, support the management in strategic decision making, provide training across the organization, create networks and the mindset change when it comes to design.” They viewed project-based course collaboration as a stepping stone to achieving these goals.

Field contacts, on the other hand, were civil servants in the field, such as midwives, nurses, chefs, librarians, social workers, etc. who dealt daily with the problems addressed in the project. They acted as key informants and participated in co-creation sessions and the testing of prototypes.

### **6.2.3 Commitment**

The partner organization must significantly commit to the project over a period of several weeks. This includes dedicating the time necessary to make the collaboration work, committing to the process, arranging the sites for research, and setting aside the resources needed. This is perhaps one of the most critical aspects, given that the duration of the project is limited, and any logistical challenge could thus disrupt students' work. Informing and motivating civil servants in the field who constantly provide support to students is the key to successful data collection.

## **6.3 Executing the project**

This step refers to the actual collaboration throughout the project period.

### **6.3.1 Ongoing Involvement**

The extent to which and in what capacity the partner organizations got involved depended on their experience with design—and of course their availability. However, the goal was to engage the headquarters contacts throughout the project and involve the field contacts in the research and testing phases. Feedback in earlier stages, especially when students began to identify key themes, was essential. It helped students focus, find out about prior organizational efforts about the same or similar issues, get access to additional resources, or get an idea about the value of their insights from an organizational standpoint. Partners typically commented on the benefits of getting involved throughout the project, instead of just being presented with the finished work. Seeing how students used the tools to progress, especially those for visualization, was considered inspirational. The Malmö Civic Lab was a unique example in that designers from the lab acted as professional mentors by constantly providing input to students on their progress every week. The Civic Lab's availability to professionally mentor students was highly motivational for them. For the Civic Lab, on the other hand, it was time invested well, as the collaboration, in one of the designers' words, "helped better understand the challenges within the city while at the same time explore what impact having more service design competency within the city could have."

### **6.3.2 Communication**

Building effective channels of communication between the partner organization, the course instructor, and the students is essential to leading effectively. It helps quickly resolve problems that might arise. For example, helping students was sometimes seen as extra work or

distraction for civil servants although the potential benefit from students' work was obvious and the partner organization offered ongoing access and support. Also, the constant flow of data may require modifying previously made arrangements. For example, based on the raw data from the field, new field contacts may have to be arranged quickly—so the channels must be always open.

#### *6.4 Dissemination*

Making the results of the project public allows knowledge to be readily shared both within and beyond the organization. The main dissemination event of the service design course was the final presentations, attended by a large number of organizational stakeholders. Every year, these presentations sparked lively discussions among team members from different divisions of the partner organizations. Specifically, field contacts used this session as their opportunity to be heard. In addition to presentations, students were sometimes invited to internal meetings or training seminars. The headquarters contacts circulated project reports and video prototypes within the organization. Finally, student work was featured in organizational outlets such as their websites, blogs, or newsletters.

#### *6.5 Evaluation*

Evaluating the collaboration occurred on an ongoing basis, although it appeared as a formal step that took place in the end. I elicited feedback from partner organizations to assess the effectiveness and the value of the collaboration in two follow-up evaluation sessions: The first one took place a few weeks after the project's final presentations. This gave enough time to partners to read student reports, circulate them, gather internal feedback, and start discussing the next steps—just absorb the experience. Civic Lab, for example, conducted an internal follow-up workshop with the participating units where specific implementation plans were discussed, captured, and shared with the teaching team. The second session was usually around one year after the project was completed—if possible. It aimed to capture the impact, if any, the collaboration may have had on the internal work of the organization. It allowed reflecting upon the experience after the initial excitement that the novelty of the projects might trigger has gone away.

### **7. Challenges ahead**

There seems to be considerable value in collaborative project-based design courses for both students and partner organizations. However, teaching these courses is a challenging task. For instructors, it is extremely time-consuming and requires heavy preparation and dedication. While higher education institutions in Sweden strongly encourage collaborations with external partners, they never allocate sufficient resources—administrative support, for example, is rare at best. Institutional award and promotion systems often do not recognize such work and it has little or no contribution to career advancement. Working like an inspiring activist towards achieving a workplace culture and infrastructure that supports and rewards collaborative teaching is therefore essential.

Collaborating as a partner organization also has its challenges. For contact persons, collaborating simply means an additional burden on employees who may already be stressed out. It is an open-ended process, the outcome of which is unknown in the beginning. Additionally, ad-hoc and externally developed projects might have a limited impact in organizations. While collaborating in a project-based course seemed to create a safe space for exploration and perhaps trigger double-loop learning by pushing for reflection on the root causes of the issues, the learning is mostly limited to those directly involved in the project.

## 8. Conclusion

This study provided some initial insights into the benefits to organizations of collaborating in a project-based course in service design. It illustrated how collaborating with students could promote risk-free experimentation and organizational learning. Five factors stood out as essential to successful collaboration. These include aligning expectations, co-framing problems, partner commitment, ongoing partner involvement, and reflection. By bringing people's experiences into focus, encouraging experimentation through prototyping, and employing visualization and storytelling, students' design work seemed to expose partners to new ways of working and thinking and trigger reflections. However, research on how these designerly approaches employed by students support organizational learning is needed. Specifically, the question of how collaborative project-based courses could be planned for greater impact would be worth exploring. Through longitudinal studies, the questions of how to ensure buy-in, follow-through, and scaling up in the organization also need to be explored. Achieving a sustained and long-term impact certainly requires a change of mindset, continuous efforts, strong ownership, and resource allocation. These are efforts that go well beyond the limits of collaboration in a project-based course and need to be addressed at multiple levels in organizations.

## 9. References

- Acklin, C. (2013). Design management absorption model: A framework to describe and measure the absorption process of design knowledge by SMEs with little or no prior design experience. *Creativity and Innovation Management*, 22(2), 147-160.
- Annala, M., Kaskinen, T., Lee, S., Leppänen, J., Mattila, K., Neuvonen, A., Nuutinen, J., Saarikoski, E., & Tarvanien, A. (2015). *Design for government: Human-centric governance through experiments*. Helsinki: The Prime Minister's Office of Finland.
- Argyris, C., & Schön, D. A. (1974). *Theory in practice: Increasing professional effectiveness*. San Francisco: Jossey Bass.
- Argyris, C., & Schön, D. A. (1978). *Organizational learning: A theory of action perspective*. Reading, MA: Addison-Wesley.
- Bason, C. (2010). *Leading public sector innovation: Co-creating for a better society*. Bristol: Policy Press.
- Beckman, S., Scott, S. J., & Wymore, L. (2018). Collaborative innovation: Exploring the intersections among theater, art and business in the classroom. *Journal of Open Innovation: Technology, Market, and Complexity*, 4(4), 52-68. doi:<https://doi.org/10.3390/joitmc4040052>



- Bennett, A. G., & Vulinari, O. (Eds.). (2011). *ICOGRADA design education manifesto*. Taipei: ICOGRADA.
- Bossen, C., Dindler, C., & Iversen, O. S. (2010). *User gains and PD aims: assessment from a participatory design project*. Paper presented at the Proceedings of the 11th Biennial Participatory Design Conference, Sydney, Australia. <https://doi.org/10.1145/1900441.1900461>
- Bowen, S., Durrant, A., Nissen, B., Bowers, J., & Wright, P. (2016). The value of designers' creative practice within complex collaborations. *Design Studies*, 46, 174-198. doi:<https://doi.org/10.1016/j.destud.2016.06.001>
- Buchanan, R. (2001). Design research and the new learning. *Design Issues*, 17, 3-23.
- Chiva, R., Grandío, A., & Alegre, J. (2010). Adaptive and generative learning: Implications from complexity theories. *International Journal of Management Reviews*, 12(2), 114-129. doi:<https://doi.org/10.1111/j.1468-2370.2008.00255.x>
- Cohen, W. M., & Levinthal, D. A. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly*, 35(1), 128-152. doi:10.2307/2393553
- Cousins, B. (2018). Design thinking: Organizational learning in VUCA environments. *Academy of Strategic Management Journal*, 17(2), 1-18.
- Crossan, M. M., Lane, H. W., & White, R. E. (1999). An organizational learning framework: From intuition to institution. *The Academy of Management Review*, 24(3), 522-537. doi:10.2307/259140
- Cyert, R. M., & Goodman, P. S. (1997). Creating effective University-industry alliances: An organizational learning perspective. *Organizational Dynamics*, 25(4), 45-57. doi:[https://doi.org/10.1016/S0090-2616\(97\)90036-X](https://doi.org/10.1016/S0090-2616(97)90036-X)
- de Wit-de Vries, E., Dolfsma, W. A., van der Windt, H. J., & Gerkema, M. P. (2019). Knowledge transfer in university–industry research partnerships: a review. *The Journal of Technology Transfer*, 44(4), 1236-1255. doi:10.1007/s10961-018-9660-x
- Dorst, K. (2018). Mixing practices to create transdisciplinary innovation: A design-based approach. *Technology Innovation Management Review*, 8(8), 60-65.
- Easterby-Smith, M., Lyles, M. A., & Tsang, E. W. K. (2008). Inter-organizational knowledge transfer: Current themes and future prospects. *Journal of Management Studies*, 45(4), 677-690. doi:<https://doi.org/10.1111/j.1467-6486.2008.00773.x>
- Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: What are they? *Strategic Management Journal*, 21(10-11), 1105-1121.
- Frascara, J. (2020). Design education, training, and the broad picture: Eight experts respond to a few questions. *She Ji: The Journal of Design, Economics, and Innovation*, 6(1), 106-117. doi:<https://doi.org/10.1016/j.sheji.2019.12.003>
- Friedman, K. (2012). Models of design: Envisioning a future design education. *Visible Language*, 46(1/2), 132-153A.
- Grant, R. M. (1996). Toward a knowledge-based theory of the firm. *Strategic Management Journal*, 17, 109-122.
- Junginger, S. (2015). Organizational design legacies and service design. *The Design Journal*, 18(2), 209-226.
- Junginger, S., & Sangiorgi, D. (2009). *Service design and organizational change: Bridging the gap between rigour and relevance*. Paper presented at the 3rd IASDR Conference on Design Research, Seoul, South Korea.
- Kimbell, L., & Vesnić-Alujević, L. (2020). After the toolkit: Anticipatory logics and the future of government. *Policy Design and Practice*, 3(2), 95-108. doi:10.1080/25741292.2020.1763545

- Lee, J.-J. (2020). Frame failures and reframing dialogues in the public sector design projects. *International Journal of Design*, 14(1), 81-94.
- Liedtka, J. (2021). Putting technology in its place: Design thinking's social technology at work. *California Management Review*, 62(2), 53-83. doi:<https://doi.org/10.1177/0008125619897391>
- March, J. G. (1991). Exploration and exploitation in organizational learning. *Organization Science*, 2(2), 71-87.
- McAra, M., & Ross, K. (2020). Expanding studio boundaries: Navigating tensions in multidisciplinary collaboration within and beyond the higher education design studio. *International Journal of Art & Design Education*, 39(4), 795-810.
- Meyer, M. W., & Norman, D. A. (2020). Changing design education for the 21st century. *She Ji: The Journal of Design, Economics, and Innovation*, 6(1), 13-49. doi:<https://doi.org/10.1016/j.sheji.2019.12.002>
- Nonaka, I., & Takeuchi, H. (1995). *The knowledge-creating company: How Japanese companies create the dynamics of innovation*: Oxford University Press.
- Norman, D. A., & Stappers, P. J. (2015). DesignX: Complex sociotechnical systems. *She Ji: The Journal of Design, Economics, and Innovation*, 1(2), 83-106. doi:<https://doi.org/10.1016/j.sheji.2016.01.002>
- Pontis, S., & van der Waarde, K. (2020). Looking for alternatives: Challenging assumptions in design education. *She Ji: The Journal of Design, Economics, and Innovation*, 6(2), 228-253. doi:<https://doi.org/10.1016/j.sheji.2020.05.005>
- Ríos, I. d. I., Cazorla, A., Díaz-Puente, J. M., & Yagüe, J. L. (2010). Project-based learning in engineering higher education: Two decades of teaching competences in real environments. *Procedia - Social and Behavioral Sciences*, 2(2), 1368-1378. doi:<https://doi.org/10.1016/j.sbspro.2010.03.202>
- Schön, D. A. (1983). *The reflective practitioner: How professionals think in action*. New York: Basic Books.
- Star, S. L. & Griesemer, J. R. (1989). Institutional ecology, "translations" and boundary objects: Amateurs and professionals in Berkeley's Museum of Vertebrate Zoology, 1907-39. *Social Studies of Science*, 19, 387-420.
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509-533.
- Thomas, J. W. (2000). *A review of research on project based learning*. San Rafael, CA: Autodesk.
- Thorpe, A., Prendiville, A., Salinas, L., & Rhodes, S. (2017). Anatomy of local government/design education collaboration. *The Design Journal*, 20(sup1), S4734-S4737. doi:[10.1080/14606925.2017.1352975](https://doi.org/10.1080/14606925.2017.1352975)
- Weil, D., & Mayfield, M. (2020). Tomorrow's critical design competencies: Building a course system for 21st century designers. *She Ji: The Journal of Design, Economics, and Innovation*, 6(2), 157-169. doi:<https://doi.org/10.1016/j.sheji.2020.03.001>

#### About the Author:

**Suzan Boztepe** is a Senior Lecturer in the Department of Computer Science and Media Technology at Malmö University, Sweden. Her research interests include generating economic value by design, design as a driver of organizational change, the strategic impact of design in organizations, and service design.