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# Interdisciplinary Service Learning as a Critical Knowledge Transaction Space in University–Community Engagement

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**ABSTRACT**

In this article we present a framework for interdisciplinary service learning as border pedagogy grounded on Dewey's educational philosophy and critical social theory. The project Stoa Malakopi allowed design and social science students from two universities in the US and Greece to collaborate in a necessity-driven field of inquiry through engagement with local knowledge. Evaluation showed that students embraced polyphony, reflexivity and situational problem solving as conditions for meaningful university-community partnerships.

**KEYWORDS**

Border pedagogy; design as social innovation; extension and engagement; interdisciplinary service learning; public sociology

Significant concerns continue to be voiced about power relationships within community–university partnerships. These discussions center on participation policies, protocols and control, and how inadvertently their application may work against the publics that the partnership is intended to benefit. Within a neoliberal context that foregrounds simplistic "narratives of success" (Porfilio & Hickman, 2011, p. xviii), many authors have questioned how effectiveness is determined in community engagement outcomes vis à vis educational practices at the heart of higher education agendas (for example, Wright & Shore, 2017). Questions around knowledge, reflexivity and instrumentality, ownership and voice, are critical for educators, researchers and students actively engaging with the community.

In service learning, discussion centers on whether students can identify opportunities for self-reflection and learning while freeing themselves from deficit-driven conceptions of the "served" communities. Additionally, service-learning can be seen as superficial, "[…] more concerned with technique and process than content and substance, and often […] dangerously associated with the disturbing anti-intellectual and vocation list trends" (Packo, 2015, p. 12). Such critiques posit a larger critical framing of service-learning practices and epistemologies regarding student and stakeholder positions and the intellectualization of service-learning outcomes.

These and other observations suggest a disjointed experiential learning paradigm, one that conceptualizes and discusses education and engagement separately. Critical theories of social change highlight the need for reciprocity in university–community interactions (Asghar & Rowe, 2017), redefining the role of specialized knowledge represented through service-learning interventions and enabling new perspectives of the world by valuing local tacit knowledge

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and expertise (McMillan et al., 2016). Frameworks of co-creation with community stakeholders are one such attempt to create meaningful narratives toward identifying solutions to social problems (Mitchell, 2008; Porfilio & Hickman, 2011).

While these critiques are well known in service-learning literature, there is little to draw from on how to structure a larger practical framework, how university and community engagement might be integrated, or what kind of social participation should take place (Breunig, 2005). Such a framework would need to leverage social capital, available or under-recognized resources, people's knowledge and assets, and enable interactions for learning, agency and change for students and community stakeholders alike (Ramaley, 2014).

Working in and with communities and multiple stakeholders acknowledging expert and insider knowledge suggests the necessity of transaction spaces and *boundary* or *border* work. Border pedagogies focus on those transaction or boundary zones where the practices, knowledge and assumptions of community members, students, and scholars confront, meet, and cross-fertilize, creating new forms of knowledge and innovative ways to deal with social problems (McMillan et al., 2016).

In view of the increasing complexity of social problems, boundary work would involve a collaborative and situational type of inquiry supporting emergent practice, concepts, and frameworks, rather than preset fixed approaches to change. It would also involve the integration of diverse disciplinary and local perspectives (interdisciplinary work) into intellectually rich and holistic knowledge (transdisciplinary knowledge) leading to innovative "wicked problem solving" (Ramaley, 2014). Wicked problems—first defined in 1973 by Rittel and Webber—critique a singular optimal solution for all social contexts:

> […] In a pluralistic society there is nothing like the undisputable public good, there is no objective definition of equity, policies that respond to social problems cannot be meaningfully correct or false, and it makes no sense to talk about "optimal solution" to social problems unless severe qualifications are imposed first. Even worse, there are no "solutions" in the sense of definitive and objective answers (Rittel & Weber, 1973, p.155).

We therefore argue, that an interdisciplinary outlook to community engagement is both necessary in principle and conducive to critical perspectives in service-learning experiences for students and communities. In this light, the role of expert knowledge is to uncover and engage local knowledge in joint problem solving.

Here we present and discuss an interdisciplinary service-learning framework engaging public-interest social sciences and design grounded on critical reflection and situational problem solving. This framework is then illustrated by way of a case study of service-learning collaboration of social science and design students in a community context. Our case study is based on a collaboration between graphic design and social science students from North Carolina State University (NCSU), USA, and the American College of Thessaloniki (ACT), Greece, as a pilot exploration of local entrepreneurship in Stoa Malakopi. Stoa Malakopi is a historically important commercial arcade in Thessaloniki ("stoa" means arcade in Greek). This is an initial step to refine our approach for the creation of an interdisciplinary service-learning framework for public social sciences and design as social innovation.

As course leaders, we designed a framework where students collaborate with professional stakeholders in the arcade. The intended collaboration is dialogical and reflective, encouraging both student researchers and stakeholders to reflect on their roles, knowledge, input, agency

and responsibilities in the project. The primary objectives of the project are twofold: (a) to explore the strategies and goals of the identified stakeholders for their businesses, along with their experiences working in Stoa Malakopi and perspectives on local development, and; (b) to support and advance community engagement through documentation of students' research and use of design and visual tools in view of informing urban planning and municipal decisions affecting Stoa Malakopi and the surrounding neighborhood.

A critical component of the project is based on both recognizing and integrating the community members' knowledge and experience as "experts" in their ingrained and detailed knowledges of their social context. This is reflected in both tacit and contextual forms of knowledge, which influenced our approach on an ongoing critical level of questioning. Simply stated, beginning students often rely on the presentation of a "foundational knowledge" in a single discipline, from which they measure their variable progress and competency. Placing students into an interdisciplinary and immediate social context changed these assumptions, necessitating more complex understandings of how knowledge operates in ambiguous real-life social contexts. Out of necessity, students embraced modes of reflexivity, openness, and acknowledgement of polyphony as conditions to create meaningful partnerships (discipline-to-discipline as well as discipline-to-social context).

## Critical Service-Learning in Public Design and Sociology: A Short Interdisciplinary Perspective

In public sociology a critical turn to the community involves the active and inclusive engagement of different disciplines in the social sciences and universities with their publics (Burawoy, 2005). For Burawoy, it involves "the engagement of sociologists with publics in which each brings something to the table" (2008, p. 2), and "interrogates that common sense for generalizable principles [drawing up] a design that is accessible to and thereby an object for discussion by other communities" (2005, p. 325). Critical service learning is, therefore, identified as a pedagogy for public sociology. As a socially-engaged pedagogy, critical service-learning arguably addresses issues of epistemology—knowledge by whom, for whom and to what end as outcome—plus the commensurate issues of methodology concerning the context, opportunity, spaces and engagement tools for bringing different publics together in dialogue.

Briefly, design in Western culture is defined as a praxis, shaping built environments, communication and informational systems, urban planning, and the design of services. Service design is still a relatively new practice that can be typified by standard understandings of services (such as public transportation or health care), but can also include more open explorations of what and how services can be created through designing social, technical, or other interactions (for example, Facebook and Twitter). Contemporary design is thus involved in the design of interactions and experiences for users in contexts, as well as the design of objects and products. What was more or less a vocational practice has led to a significant critical rethinking of positioning and the social role of design, becoming more reflexive and polyvocal. Working in this enlarged context requires contribution from other disciplines. The social sciences, especially, are recognized as important contributors to design research as evidenced by the backgrounds of many key design researchers from psychology, anthropology, etc. Newer design influences are, therefore, not necessarily uncritical nor wholly instrumentalized, often sharing with sociology the need to examine epistemologies and ontologies (Willis, 2006).

Specifically, our interest in design is in shared similarities with the general positioning of public sociology, where *design as social innovation* (Manzini, 2015) posits design's role as a catalyst for communities working with local expertise and resources in long term change, and in notions of design as supporting long term change and sustainable practices (Escobar, 2018). Arguably, therefore, critical positions in public social sciences, here sociology and design, are grounded on the premise of "reflexivity and multiple conversations with diverse publics" (Burawoy, 2005, p. 321). This is supported by contemporary design thinkers with the conviction that "we design our world, while our world acts back on us and designs us" (Willis, 2006, p. 80; see also Irwin, 2018). Introducing intersubjectivity in design discourse further erodes notions of design as objective control acting on a closed off design problem. Critical service learning is posited on catalyzing change through a critical framework, rather than applying a set of outcome-based methods irrespective of particular public contexts.

## A Deweyan Framework for Critical University-Community Interactions

These epistemological and pedagogical positions align with John Dewey's theories of education and democracy, which have inspired experiential and service-learning practices (Giles & Eyler, 1994). According to Dewey, connecting learning institutions with the public creates space for diverse community stakeholders, researchers, scholars and students to identify areas of joint inquiry, build common experiences and develop critical social consciousness. Dewey builds conviction for communal engagement with problem solving. His position highlights joint inquiry and experimentation toward connecting different experiences and knowledge for a more holistic solution (Honneth & Farrell, 1998). The experiential quality of a shared learning process thus makes it a communal democratic project (Dewey, 1910; see also Packo, 2015).

Dewey's action-reflection theory of experiential learning (Dewey, 1916/2001) emphasizes uncertainty, unpredictability, and ambiguity of community workings. This perplexity requires a reflective stance (Packo, 2015). To achieve this, it is necessary to break routinized ways of seeing and doing things in everyday life activity and, in so doing, to challenge the habits that enforce non-reflective experiences (Miettinen, 2000, p. 61). Applying this to university–community partnerships suggests a dialogical epistemological mindset and outlook to action and reflection. This type of engagement brings to the fore the distinct nature and language of specialized disciplines, as well as their emergent tensions. Importantly, it allows scholars to cross their disciplinary borders and build shared narratives by means of a common focus on co-creating meaningful and useful outcomes with and for the community. The emerging polyphony also suggests a flexible, situational and multimodal way of dealing with social problems, given the different socio-cultural circumstances and historical precedents within which communities and their different stakeholder groups address everyday challenges, as well as the diversity of these publics (for example, ethnic and religious backgrounds, entrepreneurial activity, geographical location and identities).

Learning as a kind of open system is echoed in the metaphor of *border crossing* (Giroux, 1988; cited in King, 2004), and is pedagogically grounded in Dewey's action-reflection theory. This kind of learning creates discomfort and deviation from our own experiences and assumptions, and involves our interdependence as members of academia and our communities. Dewey was "confident of the potentialities of education when it is treated as intelligently directed

development of the possibilities inherent in ordinary experience […]" (Dewey, 1986, p. 251). His perspectives offer an understanding of interdisciplinary critical service learning as "an active process of grappling with conditions and problems in the world; constructing and testing solutions; and interacting with others to make sense and make progress" (Packo, 2015, p. 13).

## *Case Study: Stoa Malakopi*

Built in the late 19th century, Stoa Malakopi is a listed building and urban heritage landmark in Thessaloniki. Since the early 2000s entrepreneurial development was gravely affected by multiple social and economic challenges in a society under austerity. Some businesses in the arcade have endured the crisis, others have closed, while recently new entrepreneurs have moved in. Economic turmoil was and remains painful for many business owners, while it has created entrepreneurial possibilities for others. During the case study, businesses in Stoa Malakopi included a fashion atelier, a law firm, a fashion photography studio, a textile business, a hair salon, a sandwich shop and a pub. Stakeholders covered a broad range of ages (approx. 30–80 years old).

Following a qualitative approach was deemed significant in that students become more observant of social complexity, problematize their understanding of often reductive "learning objectives," and develop a sense of socially responsible agency in their actions. From a community engagement perspective, a qualitative approach to exploring stakeholders' personal and business histories was necessary, given our intention to situate socio-culturally and historically the community engagement process, and coauthor with our participants visual and textual narratives that foreground their own understandings and interpretations of their entrepreneurial trajectories.

Specifically, we chose a focused ethnographic approach, which Wall (2015) understands as a form of "mini-ethnographies," or "quick and dirty ethnographies," to provide an open exploration through stakeholders' perspectives and routine, and support the particular interdisciplinary work at a distance in the later parts of the project. This was based on short-term, but intensive multi-method data collection, including audiovisual recording combined with more traditional ethnographic methods, such as observation, document analysis and interview. Thirteen professionals and business people were interviewed and voice-recorded. The study was approved by the ACT review board prior to the research activity and informed consent was obtained from all the participants.

Social science and design students worked together as part of a common service-learning course. Work proceeded in three phases: (a) field research (June-July 2017); (b) data analysis; and (c) the creation of design and visual data, and the programming of an event hosted at the arcade (August-December 2017). The two faculty leads, three local ACT students (one sophomore or second-year English Literature and New Media student, and two senior or final-year Political Science and International Relations students) and one senior NCSU Graphic Design student engaged in field research, while fourteen sophomore NCSU Graphic Design students joined the project in the second and third phase online.

As an experiment rather than a completely structured course, student participation was somewhat limited (in terms of time and student numbers, course design, etc.). ACT, more specifically, comprises a small student community (approximately 800 students per academic

year), which accounts for the handful of ACT students who took part in the project. While this compromises the ability to make comparisons or extrapolations regarding the learning experience for design and social science students, our observations and reflections on the outcomes out of this interdisciplinary service-learning project, coupled with our students' and community stakeholders' positive feedback, opens up a range of possibilities for future collaboration.

## Crossing Borders: Research Activity, Student Collaboration, and Community Engagement

The ACT team began with a historical literature review of the development of Thessaloniki beginning in the first half of the 20th century, a time when significant socio-cultural and urban changes impacted the cityscape (e.g., the great fire of Thessaloniki in 1917, and the mass arrival of Greek refugees from Asia Minor with the 1922 exchange of Greek-Turkish populations). The economic history of the city was further explored through the expertise and guidance of Dr. Evangelos Hekimoglou, historian and curator of the Jewish Museum of Thessaloniki, who was interviewed by the ACT lead with a specific focus on the city's commercial arcades. This background research contextualized the Stoa Malakopi project, juxtaposing stakeholders' histories within the collective history of the space and entrepreneurial and social change taking place within a longer historical arc.

ACT students then worked on the design of—and participated in—semi-structured interviews with Stoa Malakopi stakeholders. These often took the form of walking tours that then led to narrated photo-documentation of spaces and personal archives. Walking tours generated place-bound and value-laden stakeholder narratives, a form of "micro-geographies of meaning" (Lynch & Mannion, 2016). While the stakeholders showed the student researchers around Stoa Malakopi, walking tours often involved broader community interactions, which enabled the student researchers to understand everyday communal and business practices and use of the arcade space. The ACT students were urged to record their reflections in their field notes, a formative exercise in reflexivity that later informed an assessed, summative course component. They also helped to transcribe and translate collected material for their US-based student colleagues and explored the data through different, yet interconnected analytical lenses.

Specifically, one senior student's detailed historical account provided context for several of the interviews, especially where key stakeholders had an extended family or business history in Stoa Malakopi. The second senior student used Hofstede's cultural dimensions theory (Hofstede & Bond, 1984) to frame participant values, attitudes, and behaviors within broader cultural practices in the arcade community. The third student's (sophomore) speculations through fictional writing presented at the final event "what may have been" in comparison to "what is" and "what might be" in Stoa Malakopi, envisioning entrepreneurial and socio-cultural potentialities as open scenarios.

The next task for the ACT students was to clearly communicate their analyses to their US student counterparts. The primary data collected by the social science students consisted of tangible "design assets", such as text and image (neighborhood photographic panoramas and details), tied to stakeholder interviews. These design assets were shared through Google Drive with the intention of the US design students creating posters as information design. Information

design's goals, in general, are to make often complex data comprehensible to particular groups of readers. Information design helps guide the user's interpretation of particular data through choices in typography, hierarchy, proximity and grouping, visualization of concepts and ideas through visual diagrams, and in how images are created and ordered to support written content.

Design students are usually introduced to information design as choices in different formats (for example, informational poster, signage system used in a public space, visual consistency in a series of screens on a smartphone application) to convey content that is provided to the designer at the beginning of a design project. While design students looked at what might be considered best case examples of information design to help guide their design decisions, feedback from social science students and stakeholders in the local context put them into a position of interrogating how these purported good design solutions actually functioned. During the project a different set of expectations began to be substituted in peer-to-peer interaction and in formal presentations. The informational posters were understood to function as a prompt for discussion between different stakeholders about local history, while imagery and visual hierarchy were discussed as way to convey the experiences of the stakeholders.

Interpretation of various collected and written material thus became the focal point of three group Skype sessions between the US and Greek students along with additional sessions through email follow up. This dialogical mode helped create a different understanding about how design can function as aiding active interpretation, rather than as only functional and supporting the original author's written content to a receptive single reader.

The iterative process of analysis and interpretation based on design prototypes also positioned community stakeholders as active members of the research project (a form of university and community reciprocity). Interviewees were consulted about their portrayal in the posters prior to finalization. Rather than viewing it as a validation strategy of the student work, which comes with a number of challenges—Goldblatt et al. (2011) aptly problematize this—the intention was for Stoa Malakopi stakeholders to critically reflect on their accounts and their participation in co-creating the research outputs (Dennis, 2014). This provided ACT student researchers with another opportunity to be part of community interactions, which often involved our participants critically reminiscing about past and current experiences of the historical arcade, their attitudes to and interpretations of everyday interactions and events in the neighborhood.

Our experimental case study culminated in a presentation and two-month exhibition of students' work and collaboration with Stoa Malakopi stakeholders. This public event was organized around ACT students' individual projects, a video including extracts from the interviews and moments from stakeholders' everyday practices at the space (e.g. the fashion designer at work), and posters co-produced with their fellow NCSU students. While the ACT students presented their individual work, the video ran in silent as visual background allowing a multisensory communication of the findings; it later functioned as a stand-alone audio-visual artifact. When students' presentations ended, the event participants were invited to take a closer look at the posters and the ACT students facilitated discussion. The audience included Stoa Malakopi stakeholder interviewees, neighborhood professionals and business people, ACT faculty and peers from other higher education institutions, two architects, students' parents and friends, and the ACT course lead.

### *Project Evaluation*

Our assessment of the Stoa Malakopi project is based on the following types of data: (a) student accounts in their reflection diaries (an assessed component for ACT students), course evaluations and project debriefings; (b) feedback from the research participants during interviews, follow-up consultation using the in-progress design poster as a common item of discussion, and at the public presentation of the project findings; and finally (c) our own observations and ongoing exchange of reflection notes in the planning and implementation process as course leads.

*Student Accounts*. For ACT students, critical immersion into community interactions and issues through qualitative research was "the most challenging, but also most fulfilling part of the experience," the sophomore student mentioned in his reflection diary, presenting them with an opportunity to understand the research process more fully and "connect the dots between theory and practice." The senior student who explored stakeholder values and cultural practices through Hofstede's cultural dimensions theory appreciated the opportunity to identify her own area of interest and scope for analyzing the data. This encouraged her to "find the right fit" (Ricke, 2018) for her individual project through selection of appropriate methodological and analytical framework. The other senior student "felt rewarded" in her exploration of an "historically unknown [to her] part of the city" and "a sense of responsibility" for now being able to share with the local community the historical account of the landmark building, and the role and evolution of commercial arcades in the city more broadly.

Finally, that students' work was presented publicly, rather than simply graded as part of their course participation, was an incentive to "put more effort and produce better quality work," an ACT senior student commented. The communal dimension of the project thus led the ACT sophomore student to reconsider what he initially thought would be a "daunting, inflexible and impersonal" research experience.

For NCSU students, feedback from their ACT counterparts and stakeholders moved past broad esthetic appreciation, to issues about how both written content and form portrayed the interviewee in a public context. In their accounts, US-based students pointed out that they had to reexamine the self-referential qualities of individual performance, and their own motivations for learning. What they identified as developing a personal style (as something unique to their individual value) in their work evolved quickly into "What are the qualities of the reception of the message for the intended audience?" (Maher, 2003).

Comments from stakeholders also presented them with other kinds of potential audience reception issues, such as functional readability. Several of the NCSU design students contrasted their understanding of interview and stakeholder approaches introduced in a "design thinking" lecture course the previous semester, and noted that the Stoa Malakopi service-learning project provided them with an experiential way of testing out and integrating methods and concepts. Most interestingly, NCSU students defined their work as practical in attempting to address the social conditions of Stoa Malakopi as a real-life problem. This neatly excised the inevitable polarity between theory and practice that practice- or theory-based disciplines often must contend with in student perceptions, as we both observed was the case with our discipline-specific programs (Breunig, 2005).

*Stakeholder Feedback*. The public event activities generated discussions among the audience concerning the community's perspectives on local development, the history and problems in the Stoa Malakopi space and adjacent neighborhood, and stakeholders' own strategies and

goals for sustainable entrepreneurial development. Attendees reminisced about their early experiences of the landmark building juxtaposed with the current conditions of the space and neighborhood renewal projects (prompted by the senior student's historical account of Stoa Malakopi and the ACT sophomore student's short stories); engaged in discussions on the changing cultural values in the community (prompted by the senior student's application of Hofstede's cultural dimensions framework); discussed stakeholders' individual business trajectories as captured on the posters, and; contemplated on ways in which existing problems (for example, practical maintenance issues, given that Stoa Malakopi is a listed building) could be collectively addressed. Overall, the community interactions prompted an interest in sharing and discussing communal issues, which the stakeholders confirmed in our conversations.

The feedback we received from the stakeholders was positive: they applauded the student work, enjoyed the communal ritual organized in Stoa Malakopi, an occasion, even, to some of them to meet outside of their everyday work routines and share memories of the space, and, appreciated that the informational posters responded to them individually, and were offered to them as a token of thanks for their participation. Peer academics took particular note of the moments within the lives of the stakeholders that we managed to capture, a focus that, according to an ACT colleague, "animated the research process, prioritizing the community perspective over disciplinary interpretations"—or, as Liebenberg (2009, p. 443) puts it, the "human experience as opposed to abstract systems"—in the representation of findings.

*Instructor Reflection Notes.* NCSU design students were initially confused about how to function within a collaborative setting with their ACT student peers and with stakeholders in Greece. Prior to this interdisciplinary service-learning project, preparatory design projects at NCSU emphasized experience mapping techniques and task analysis through a simplified experience. These techniques are an accepted method in service design (Penin, 2018) however how they represent experience in practice is rarely discussed in design practice, despite the role that they play as a form of ethnography. Students' ability to address successfully the dynamic and culturally diverse social learning modality of the Stoa Malakopi project established the idea that they have social agency and responsibility as designers (Breunig, 2005). This meant that a key course learning objective was met: "Develop(ing) the ability to plan and take design action in ways that respond to social, cultural, and technological contexts that account for the cognitive, emotional, and physical characteristics of users/audiences."

ACT students' direct contact with community stakeholders and co-creation with NCSU peers of tangible outputs shifted the former into a more performative level of engaging with the data analysis methods that they had chosen and rationalized into their research conclusions. In so doing, they assumed a more active, critical learner role. This is a crucial service-learning component that ACT students who attended the service-learning program in previous terms often found missing, due to the absence of communication and dissemination media, other than written text, which constrained the creation of touchpoints between the students and the community (Maher, 2003).

On another level, the culturally diverse interpretations of data among the Greek and US-based students were often discussed in ACT group meetings as part of a broader reflection on cultural relativism and intercultural understanding. ACT students often had to suspend their perceptions and judgments, self-evaluate their own meaning making processes and reconcile with the emerging contradictions informing their analysis. One of the ACT seniors, in particular, was constantly cognizant of her choice of particular voices to accompany her narrative, and the extent to which her interpretations would represent accurately stakeholder

voices. Questions around values and what is right and just as part of local community politics were raised, interweaving issues of social justice with problem solving and learning (Asghar & Rowe, 2017).

The dialogue between design and social science students thus developed into a transaction space and a border zone, offering them multiple views of community issues, enriching their learning experience, and allowing them to explore ideas together creatively. For example, the senior NCSU design student and the sophomore ACT student on their own initiative stepped outside of their disciplinary and curricular borders to experiment with audiovisual methods and collaborate on the video compilation. Our students' transactions can therefore be seen beyond the level of creative collaborations or enrichment of the project outputs; they embody a necessary step outside of their disciplinary zones toward a more integrative perspective of "what counts as knowledge," which we found was limited in our solo service-learning programs.

Overall, this interdisciplinary partnership led to a more rounded appraisal of discipline-specific conventions and limitations, helping our students to question knowledge claims (Rooks & Winkler, 2012). It also provided an actionable framework to develop effective communication skills and a sense of informed ownership of one's own disciplinary outlook. In this case, design and social science students had to explain their discipline-specific positions and thinking processes to one another, and to the community stakeholders, which requires clarity of perspective, avoidance of jargon, and situational relevance.

## Discussion

The interdisciplinary context of ACT and NCSU students' service-learning engagement necessitated a more flexible, culturally responsive, and collaborative approach to teaching and learning. The interconnectedness and dynamics of students' research activity and stakeholder engagement at Stoa Malakopi illustrated in practice Dewey's action-reflection theory and critical, border crossing pedagogies (King, 2004; McMillan et al., 2016).

Our exploration focused on the community context first, rather than a particular institutional or disciplinary framework, with stakeholders actively taking on the participant role in constructing their identity and story within the arcade community. The use of audiovisual artifacts, more specifically, helped to create a space for them to reflect on their individual realities and community lives seen in the historical and urban context of Stoa Malakopi (Liebenberg, 2009). Stakeholders as active participants enabled our students to work with active placemakers, "cultural activists" (Manzini, 2015), knowledgeable about social problems and opportunities, capable of discussing complex problems, and sharing their vision for sustainable development.

Manzini's model of inclusive practices in communities between "expert and diffuse design," is a first stage in building design coalitions (Manzini, 2015). Diffuse design refers to local knowledge, practices, and potential social capital existing within the community. Through uncovering and engaging stakeholders and others, a framework for joint problem solving is created. The role of expert knowledge is in facilitating this framework, and we argue that this is a useful interdisciplinary framework originating in design that responds to the issues of alternative frameworks: reciprocity, local and tacit knowledge valuation, and social capital and transaction spaces. We posit that this framework provides a focus back in the community.

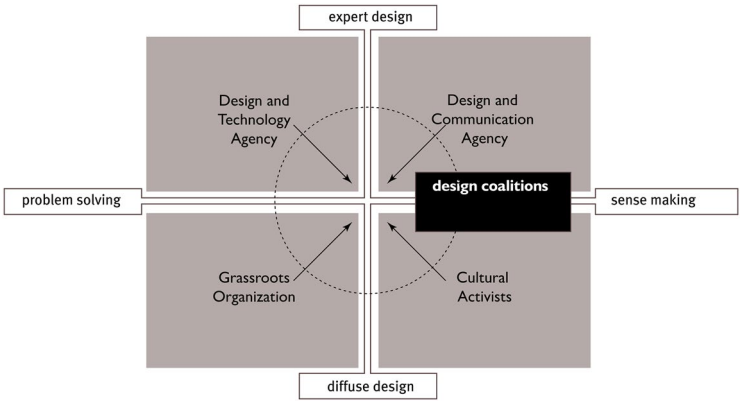


**Figure 1.** After Ezio Manzini, 2015. Design mode map.

Our work is now focused on refining the exploratory work so that actual case studies will be created. Landmark commercial arcades in Thessaloniki are undergoing new entrepreneurial activity. They are historically important as community and heritage signifiers, however in the light of urban regeneration initiatives it is questionable whether they will continue that role, potentially leading to a further loss of local cultural and community identity. Based on Manzini's mapping of "design coalitions," our first step is to focus on sense-making, bringing together cultural activists, (or, more properly in this case, a more diverse set of entrepreneurial and local neighborhood stakeholders), and providing means and opportunities to both capture and communicate across this group the various forms of local knowledge and interests in the community. From this coalition-building, the archived visualization and written content can lead to further engagement with more external urban planning issues, as well as catalyzing a dialogue about the importance of local preservation efforts.

## Conclusion

Interdisciplinary service-learning and critical border pedagogies, alongside Dewey's action-reflection theory, introduced and helped to frame pedagogically and epistemologically a fundamental complexity in working with, and designing and planning for, a community of different stakeholders representing diverse understandings and interests. Connecting to the community emerged both as a learning tool and pedagogical process, thus marking a shift "from *what* is done in (or *for*) the community to *how* learning is framed, implemented, and disseminated both with and alongside various community constituencies" (Watterson et al., 2011, p. 8). At the heart of this interdisciplinary learning process, therefore, lied a critical appreciation of the values of social responsibility, inclusion and interdependency, which are echoed in the metaphor of *border crossing* (Giroux, 1988; cited in King, 2004).

Finding ways to visualize and share interdisciplinary perspectives is essential—in the Stoa Malakopi project, for example, the posters were a catalyst to communicating our findings to different stakeholder groups and enabling discussion on community issues. Visual artifacts as boundary objects (Singh, 2011), i.e. as open discussion points, helped to give our research project a transactional, interactive quality between the students, the arcade stakeholders, and the data produced (Liebenberg, 2009, p. 443). Communication design can assist in creating a

shared, systems perspective across disciplines and stakeholders. In the creation of a systems perspective, writ large also with historical positioning, a more complex and structural understanding of the immediate problem can help formulate a more systemic response. In other words, looking at larger connections, rather than idiosyncratic local phenomena, may lead to transferability to similar problem areas. Working in, and learning through interdisciplinary and participatory systems suggests a dialogical and cooperative service-learning framework that begins to extend network-based open community laboratories, such as the DESIS online network of design and social innovation (Manzini, 2015).

Rather than viewing service learning solely as a mechanism to create better places and services, or better learning experiences for students, we argue that an understanding of service-learning as social participation and learning, as a transactional space of joint inquiry, dialogue and interactions, bears potential for more publicly engaged universities and for more socially engaged students. From our experience as service-learning course leads in our respective disciplines, reciprocity in university–community engagement and critical intellectualization of student and community stakeholder experiences are not a given, which the assessment of our intradisciplinary service-learning programs attests to. Interdisciplinary service-learning helps to create boundary zones for dialogic knowledge interactions, and the collective creation of negotiable, realistic and actionable frameworks toward social change. Using Manzini's (2015) model, the design coalition between students and Stoa Malakopi stakeholders enabled diffuse, or lay/local, and expert knowledges to meet and find common language for future community dialogue and potential municipal decisions affecting the building and the neighborhood.

Although here we focused on border zones in design and sociology, working across disciplines more broadly to develop frameworks, such as the one discussed in this article, will help diversify disciplinary-specific methods and practices that have an educational commitment to social change and public interest, and help build an open framework for sharing ideas, (re)thinking pedagogies and experimenting with diverse techniques and learning tools.

## Declaration of Interest Statement

The authors state there is no financial interest or benefit they have arising from the direct applications of this research.

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