Integrating Service-Learning Earlier in Architectural Curriculums through Engaged Design

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Service-learning provides a variety of benefits for student learning while providing the opportunity to serve local communities. Community design, design-build, and live project represent service-learning models within architectural education that have been the most widely explored and discussed, but the scope of these models often limits their flexibility to connect to multiple-levels of an architectural curriculum. This has led to architectural curriculums where service-learning only occurs at the advanced levels of a curriculum. This research explores the possibility for new service-learning models that can accommodate a greater range of connections with architectural curricula, faculty, and students. The research first presents a brief history of service-learning models. Then an alternative service-learning model described as "engaged-design" is presented through a case study involving three museums. The work then concludes with a discussion highlighting how engaged-design models might be used in combination with other service-learning models to create an architectural curriculum more centered around community engagement at multiple levels.

INTRODUCTION

Service-learning is a pedagogical approach in which community service is combined with learning objectives.[1] It uses experiential learning to engage students and connect learning in the classroom with community needs.[2] Service-learning can connect students to real-world problems and provide them with the opportunity to develop skillsets in addressing their complexity. Research also suggests that students involved in service-learning projects tend to remain engaged in public service into adulthood.[3,4] These benefits have led architectural programs to experiment with service-learning in their curriculum for several decades, but the pedagogical models that have emerged can be prohibitively resource intensive, while sometimes promulgating worldviews that can limit community engagements, experimentation, and the free exchange of ideas. The development of alternative service-learning models to address these problems would allow more faculty and students to engage and serve local communities and is, therefore, a pressing problem for the discipline.

The benefits of service-learning have been well documented and so have the challenges that can make engaging in these projects difficult for faculty, students, and community stakeholders.[5,6] Some of these challenges revolve around the time, space, labor, funding, and legal oversight required for the execution of these projects – which can create a high-bar for entry. These programs have also been criticized for having ideological biases that can exclude faculty, students, and stakeholders due to a narrow definition of what constitutes a "community need."[7] Despite these criticisms, many architecture programs funnel much of their community engagement efforts and resources through one or two moments in their curriculum (i.e., a single studio and/or seminar course) instead of promoting approaches where service-learning is distributed across a curriculum in a diversity of ways through a pluralism of ideologies.

This research explores the evolution of service-learning models in architectural pedagogy and the possibility for new models that can accommodate a greater range of connections with architectural curricula, faculty, and students. First a history of service-learning models is presented. Then a case study involving three cultural institutions that uses an alternative service-learning model described as "engaged-design" is discussed. The research concludes with a discussion of the benefits of engaged-design and the potential of creating architectural curriculums more centered around service that provide a greater variety of community service opportunities for students and faculty. In an era in which the architectural discipline is confronting several overlapping crises (e.g., environmental, economic, social, etc.), community engagement and service-learning has never been more important. The discussion and development of alternative pedagogical and curricular models for service-learning is therefore crucial.

SERVICE-LEARNING IN ARCHITECTURAL EDUCATION

Service-learning is a form of experiential learning in which students learn by engaging real community problems through a pedagogical framework guided by learning objectives.[1] The foundational principals of service-learning as an educational model were put forward by John Dewey in the early 20thcentury. In his writing on democracy and education, Dewey argued that community-building, democracy-building, and education

were inextricably linked and reliant on one another.[8] Further, he argued for the value of experiential learning models in which students co-create their education through engaging real social problems that create meaningful experiences. Successful learning then unfolds along a continuum of meaningful experiences and reflection on those experiences. In addition to Dewey, other researchers and theorists in education, such as Jean Piaget, helped to build a corpus of work on experiential learning theories that have been influential to the development of service-learning models to the present day.[2]

Service-learning manifested itself in a variety of ways in different educational contexts and different disciplines. By the late 70's it was clear that a more precise definition of service-learning was needed to distinguish it from other forms of volunteerism. In 1979, this need for clarity was articulated with the publication of "Service-Learning: Three Principles" by Robert Sigmon. In his text, Sigmon argues that service-learning must involve a focus on both those serving and those being served.[1] In other words, the service being done must provide for a rich educational experience, while also fulfilling the needs of a served constituency. In later works, Sigmon goes on to provide a schema to classify different service learning models based on the emphasis they place on pedagogical goals and service goals.[9]

The ideas of service-learning have been influential in architectural education and have informed the development of three dominant pedagogical models in the academy: community design; design-build; and live project. These models will now be discussed along with their perceived benefits and criticisms.

The Community Design Model

The social discord in the 1960's in the United States led to a variety of new legislation, such as the Demonstration Cities and Metropolitan Development Act of 1966, that sought to involve and empower local communities in the planning of their own environments.[10] These laws helped build grassroots movements in the architecture and planning fields around community advocacy and set the stage for the emergence of the community design pedagogical model in the academy. Community design is a type of service-learning model for architectural and planning education founded on a vision of a more democratic design process in which the architect plays the role of facilitator, or advocate – helping engage, empower, and include community members in design decision making.[3] From a pedagogical perspective, student learning occurs through the experience of playing this advocacy role and engaging with the complexity of a real-world design problem that may or may not be fully defined.

From its roots in the activism of the 1960's to the present day, the community design movement in architectural and planning education has generated a wide range of pedagogical models.[10] The categorization and comparison of these models by researchers in architectural education is fragmentary, with some researchers distinguishing between models based on their level of community engagement. For example, Dewar and Isaac (1998) propose a possible distinction between community service models that are "consultant-based" versus "community-based." Consultant-based models are less connected with the communities they serve, while community-based models involve learning experiences in which students may engage in a more collaborative dialogue with the community, and even engage with local political and policy creation processes.[11]

Proponents of community design highlight the value of having students learn from first-hand experience by engaging the complexity and human-dimensions of real problems in under-served communities.[12] Proponents highlight the following learning outcomes: students develop the ability to facilitate community design discussions and negotiation with multiple project stakeholders and across disciplinary divides; students learn to collaboratively define and solve problems with the communities they serve; students co-create their own learning trajectories with community interests at the center; students learn how to rigorously collect, prioritize, analyze, and reflect on the data given to them through experience.[3]

In addition to the benefits, there have also been some notable criticisms of community design and service-learning in general. One area of critique centers around the demanding nature of such projects which may suffer from unrealistic goals that ultimately make projects impractical to accomplish for students in training that have restricted time schedules.[1] Others have criticized that such projects often promulgate certain ideological perspectives by defining what constitutes a worthy community of service, while excluding other perspectives and limiting academic freedom.[7] There have also been criticisms regarding the mismatch between the demographics of students serving a community and the community itself; conflicting time schedules between community projects and academic calendars; communication inconsistency between the faculty/students and the community partner; mis-matching expectations between community members and faculty/students about the roles each is to play and the goals of the design project; and lastly that personal connections between faculty/students and the community can be damaged when projects come to an end and communications abruptly stop.[13,14]

The Design-Build Model

In the 1990's, design-build programs found new popularity in the academy as a service-learning model.[5] Design-build programs, such as Auburn's Rural Studio, have garnered international attention for providing community service and engaging issues that range from low-cost housing to social justice. The distinction between design-build and community design models is that design-build tends to emphasize teamwork and learning through making, while community design emphasizes discursive
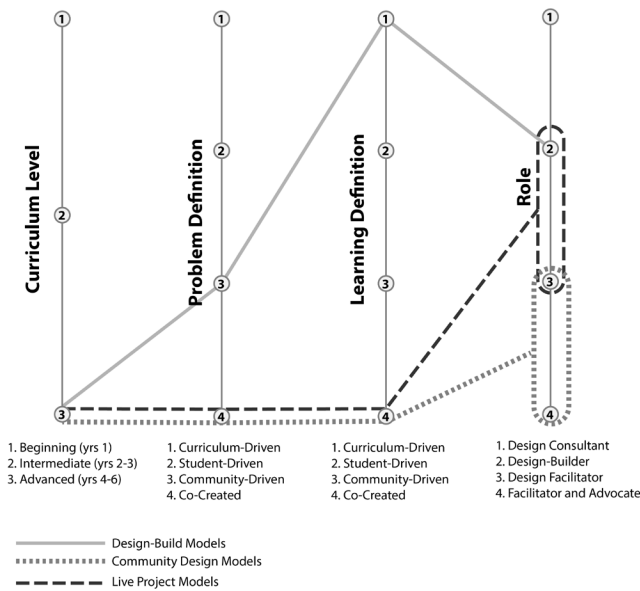
Figure 1. Four parameters are used to compare service-learning models in architectural education.

(Chart labels:)

Curriculum Level
Problem Definition
Learning Definition
Role

1. Beginning (yrs 1)
2. Intermediate (yrs 2-3)
3. Advanced (yrs 4-6)

1. Curriculum-Driven
2. Student-Driven
3. Community-Driven
4. Co-Created

1. Curriculum-Driven
2. Student-Driven
3. Community-Driven
4. Co-Created

1. Design Consultant
2. Design-Builder
3. Design Facilitator
4. Facilitator and Advocate

—— Design-Build Models
········ Community Design Models
– – – Live Project Models

skillsets for communicating and negotiating with communities and institutions.[15]

Proponents of design-build models, therefore, tend to cite these experiences as valuable pedagogical outcomes. The criticisms of service-learning and community design that have been made can be equally applied to design-build models, but there are also some additional criticisms that are worthy of note. One criticism is that design-build projects often only expose students to remedial building construction skills in the design of basic structures instead of providing them with a more comprehensive building design experience that touches on the full range of issues of a typical architectural project.[16] Other criticisms have been made that such models tend to promulgate ideologies of architectural design that often exclude perspectives that come from more theoretical perspectives.[17]

The Live Project Model

Live project pedagogy was developed in the 1950's in the UK and has since found varying degrees of resurgence up to the present in the UK.[18] The live project model is similar to community design and design-build - in that learning is structured around the engagement of real design problems with community clients. Their distinguishing characteristic is that they combine the notions of community negotiation and consensus building found in community design with the emphasis on building construction from design-build models.[15] The result is a hybrid approach that shares the pedagogical views of its constituent models as well as their criticisms. Further, the ambitious scope of these projects can make them difficult to complete within the constraints of academic schedules.

Alternative Service-Learning Models

A large variety of community design, design-build, and live project pedagogical models have been explored in architectural education. Previous research has attempted to classify these models based on the role the students take on in the process, or the way problems are defined.[11,19] These parameters, while important to the description of these models, leave out two key pedagogical concerns. The first involves how learning objectives are defined. Are the learning objectives curriculum-driven, student-driven, community-driven, or co-created? The second issue involves the skill and curriculum level of the student, or class. Models occurring in advanced levels of an architectural curriculum will have a very different set of pedagogical needs and skillsets from those at beginning levels. A more complete list of parameters by which to compare service-learning models in architectural education should, therefore, include the following:

• Curriculum level: What is the experience level of the class involved? Are they at the beginning, intermediate, advanced, or from multiple levels of the curriculum?

• Problem definition: How are design problems defined in the process? Are they curriculum-driven, student-driven, community-driven, and/or co-created?

• Learning objective definition: How are learning objectives defined? Are they curriculum-driven, student-driven, community-driven, and/or co-created?

• Role: What is the role the students assume in the process? Are they playing the role of design consultant, where the design is driven by the student, team of students, or class? Are they playing the role of design-builder? Are they playing the role of design facilitator, where design decisions are community-driven and co-created between students and the community? Are they playing the role of facilitator and advocate, in which they not only facilitate a community-driven design process, but also play an active role in advocating for the community (e.g., advocating for policy, engaging in community organizing, etc.)? Are they playing multiple roles?

Figure 1 shows these parameters and uses them to compare community design, design-build, and live project models. While there are many variations of each model, the figure shows the characteristics of the most common versions of these three models. All three models are most commonly found in architectural curriculums at more advanced levels (e.g., years 4 and up). This is typically due to the ambitious scope of the community engagements, which often require students with more design experience. This often limits service-learning within the larger architectural curriculum to occurring towards the end of a student's program of study. A key question then follows. What alternative service-learning models might be appropriate

Figure 2. (Left) Student meeting with museum staff of the Great Plains Art Museum in 2017. (Middle) Student meeting with museum staff of the International Quilt Museum in 2018. (Right) Student meeting with museum staff of the Sheldon Museum of Art in 2019.

for beginning (years 1) and intermediate (years 2-3) levels of architectural curriculums?

In addition to the issue of curricular level, Figure 1 suggests other areas where alternative models might be explored. In the community design and live project models, design problems are often co-created with communities through structured discussions with community members. In design-build models, communities usually already have an articulated need and/or problem that faculty and students then work towards resolving through a design-build project. In all three models, there is typically no place for curriculum, or student-driven problem definition to occur – limiting the places where service-learning can occur in a curriculum and the type and scope of problems.

Another area where alternative models might emerge, involves the way learning objectives are defined. Design-build models often bring to service projects their own learning objectives centered around building construction, while community design and live project models often allow learning objectives to be co-created by students as they engage with the specificities of the design problem. This allows the community needs to drive the learning objectives but can make these models difficult to connect with parts of a curriculum that have specific learning objectives. Design-build models, therefore, provide an example of service-learning in which more overt curricular-based learning objectives might be connected with community service, but the learning objectives of such models tend to be narrowly focused on building construction and may not be appropriate at every level of a curriculum. Developing alternative service-learning models that can integrate a more diverse array of learning objectives into service projects would, therefore, allow service-learning to occur more easily throughout a curriculum.

The next section presents a case study of an alternative service-learning approach that investigates how service-learning might be brought into more levels of an architectural design curriculum. Specifically, the case study explores how service-learning might be structured for beginning to intermediate levels of architectural education - where learning objectives

are less flexible and may be directly tied to accreditation requirements and other curricular objectives. This approach, which will be referred to here as "engaged-design," suggests ways that service can occur, while allowing for learning objectives, problem definitions, and student roles to be driven by the needs of a larger curriculum and the interests of students and faculty.

CASE STUDY: THE THREE MUSEUMS - SERVICE-LEARNING IN EARLY DESIGN THROUGH ENGAGED-DESIGN

Public museums play a key role as civic and cultural spaces in modern democracies. They provide a forum for the exchange of ideas and for a plurality of voices to be given representation. Public museums are not often considered to be communities in need of service, but in smaller cities budget cuts in public funding and lack of public engagement can cause these institutions to have many unmet needs that could benefit from service-learning projects. These needs prompted a service-learning effort conducted by the author to engage three different local museums through service-learning projects over a period of three years from 2017-2019.

The museums are located in Lincoln, Nebraska and represent a variety of museum types. The Great Plains Art Museum is a smaller museum founded in 1981 that focusses on art of multiple media types relating to the Great Plains. The International Quilt Museum is a mid-sized museum founded in 1997 that focusses on textile arts. The Sheldon Museum of Art, designed by Philip Johnson and built in 1963, is the most prominent of the three and features 19th and 20th century art in multiple media types. All three museums are connected with the University of Nebraska-Lincoln and have an explicit mission that prioritizes public and local community engagement, but each were at a kind of crossroads in considering how their facilities might be adapted to better serve and engage local communities. Service-learning projects were then developed in relation to this need.

The service-learning projects involved architectural design studios located in the beginning of the 3rd year of the undergraduate curriculum at the University of Nebraska-Lincoln's
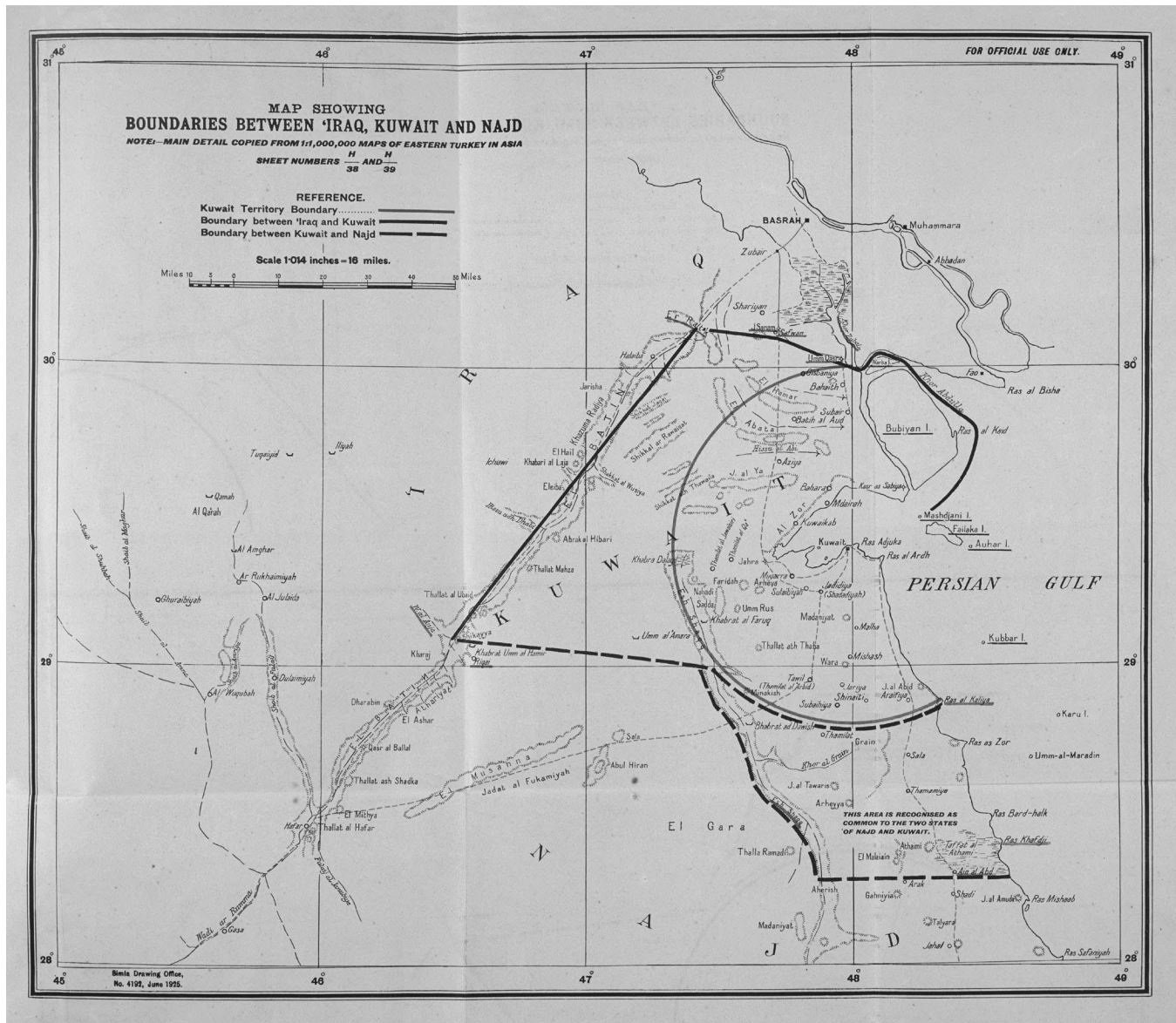
Figure 3. (Top) Student exhibition of work at the Great Plains Art Museum in 2017. (Middle) Student exhibition of work at the International Quilt Museum in 2018. (Bottom) Student exhibition of work and presentation to Sheldon Museum of Art staff in 2019.

College of Architecture. This studio level represents an important transition point from beginning design to intermediate levels in the curriculum and, therefore, has a number of learning objectives that are foundational in the curriculum and are directly related to accreditation requirements for the undergraduate degree. These objectives require students to prepare a comprehensive architectural program through the assessment of user needs and relevant regulatory requirements and to demonstrate the accommodation of that program through a building design proposal. These objectives, therefore, required an approach to service-learning that could be more curriculum-driven, while also allowing each student to develop their individual design skills and voice.

Engagement Process and Outcomes

In order to address the needs of the museum on one side and those of the curriculum on the other, a service-learning project was developed in which the museum staff played the role of clients for the design of a hypothetical addition to the existing museums, while the students took on the role of design consultants. The design consultant role was chosen because it allowed students with little design experience to build their individual fundamental design skills - which can be difficult to do in team-based, or community-driven models. As design consultants, the students were charged with developing a comprehensive program and design proposal for a new museum addition that

explored how each museum might adapt its facilities to better engage the changing needs of local communities.

The structure of each museum engagement was designed to provide maximum benefit to both the students and the museum stakeholders. The schedule was designed in a manner that minimized the time-commitments of the engagement partners but maximized impact on student learning. Specifically, the academic term was organized around a series of meetings that brought students together with museum staff and stakeholders (e.g., museum volunteers, the public, and donors). These meetings were used to foster discussions around where the museum was succeeding in engaging the public; where it needed improvement; and how facilities might be adapted to improve engagement. These meetings, pictured in Figure 2, provided a forum for museum staff and stakeholders to share ideas about the museum's development, while providing students with the experience of guiding client discussions in order to identify user needs and prioritize design goals.

Each engagement project then culminated in an exhibition of student design work that benefited both the museums and the students in a variety of ways. Figure 3 shows images from these exhibitions. The exhibits were used by the museum staff to prompt public discussions around the current and future role of each museum in the communities they serve. In addition, because the engagement spanned over three years, each museum was able to see how the other was contemplating their future role in the city - fostering conversations about shared strategies.

The process also benefited the students by engaging them in critical discussions around the future development of their community and providing valuable field experience in the development of a comprehensive program from the assessment of user needs – a critical learning objective for the curriculum. The student-driven design process allowed students the latitude to serve the community, while developing their individual design skills and exploring ideas that interested them but were informed by the community. A sample of these designs is shown in Figure 4. Further, the process connected students with the museum leadership and the local cultural community in new ways – highlighting the student's agency to effect positive change locally through service and fostering a potentially lifelong connection with these civic spaces.

DISCUSSION AND CONCLUSIONS

The case study presented one example of a service-learning model for earlier stages of an architectural curriculum called engaged-design. In this model, the definition of learning objectives, design problems, and student roles are curriculum-driven. Versions of this approach can be found occurring in a number of architecture programs by individual faculty looking to balance the needs of a curriculum with those of local communities in need of service. These efforts, however, have not generated the type of attention and representation in the service-learning literature for the architectural discipline as community design, design-build, and live project service-learning models have. This may be due to the fact that these efforts have never been understood to be sufficiently unique or important enough to warrant their own category. It is clear, however, that these engaged-design approaches are different in how they relate to curriculums and also that the service they provide can be important and impactful. These models, therefore, need to be given greater attention by the discipline and discussed as their own category of service-learning more directly.

The benefits of engaged-design are multiple and often fill in the gaps left by other service-learning models. One benefit of engaged-design can be providing a broader notion of what communities are worthy of service. This directly addresses criticisms of other service-learning models noted previously.[7] In the case study, the local museum community wouldn't normally be seen as a community in need and may be overlooked by other approaches, but the engaged-design project that was conducted gave the local museum network a forum to represent and collaboratively address problems that were latent and in critical need of discussion.

Another benefit of these models is their ability to allow faculty and students with a broad range of interests and ideologies to participate in service-learning. In the case study, students used community feedback to inform their design approach, but were still free to develop a building proposal that reflected their own emerging design voice. The process also afforded the academic freedom to challenge community ideas and biases of what a museum should be, as well as to question long held assumptions regarding the types of public engagements that should take place there. The freedom to have these discussions not only benefited the students and faculty, but also the engagement partners by bringing new perspectives and ideas to the table.

Engaged-design also brings the potential benefit of fostering a longer term relationship with a community partner that can unfold over several years. This is due to the fact that the time commitments of these models can be very flexible. This allows community partners to engage with a curriculum less intensely over a longer period - versus models where there is intense engagement for a short time that may abruptly stop. The presented case study used this capability to strategically design its engagement to evolve over three years involving a network of museums. Looking beyond the case study presented involving only one course, one could imagine engaged-design projects that build long-term relationships with partners that could unfold across multiple courses at different levels in a curriculum and over a number of years.

Currently, engaged-design happens most often in architectural programs without the guidance of a larger curricular strategy. This misses an opportunity to strategize their use more effectively in relation to other service-learning models occurring

Figure 4. (Top) Student work samples from the Great Plains Art Museum engagement project in 2017. (Middle) Student work samples from the International Quilt Museum engagement project in 2018. (Bottom) Student work samples from the Sheldon Museum of Art engagement project in 2019.

within a curriculum. An alternative approach would be to build a curriculum around these models. This service-learning-centric curriculum could use community-design, design-build, live-project, and engaged-design service-learning models in a strategic fashion across multiple levels of the curriculum to involve a greater diversity of students and faculty with local communities in a wider variety of ways.

Developing service-learning-centric curriculums could allow architecture programs to become more effective advocates and partners with the communities they serve and open a new chapter in experiential architectural education. An important step in this process is building the concepts that allow the discipline to think about service-learning in new ways. This requires reaching into the messiness of the everyday and naming what was previously unnamed and unrecognized. This work has attempted to do this through the discussion of engaged-design. It is hoped that this concept can foster new critical discussions and also inspire innovation in how architecture programs engage communities - helping to move towards more pluralistic and polyvalent models of community engagement.

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