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Collective Knowledge Mobilization Through a Community–University Partnership

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Abstract

This article tests the project-based research model by analyzing the processes and outcomes of a partnership between a grassroots environmental organization promoting community-based sustainability practices and a series of university-based capstone courses. We begin by contrasting scientist-driven and community-based approaches to sustainability. We then describe a series of three knowledge mobilization projects codesigned by The Natural Step Monona (TNSM) and university-based capstone courses led by a graduate student and professor. The first project performed a community diagnosis, from which we codesigned a prescription that the second capstone course helped TNSM implement. The third course worked with TNSM to evaluate the process. That evaluation, along with follow-up interviews, showed that the process had substantial and concrete positive community impacts that furthered TNSM's mission, but it also led to partner fatigue as the organization was pushed past its realistic capacity.

Keywords: community-university partnership, knowledge mobilization, collective action, capstone, project-based model

Community–university partnerships have become increasingly popular as campus-based researchers try to make their studies more impactful. Researchers use various models that are expected to facilitate successful partnerships. Some researchers work with community partners to "translate" the findings of academic research into a form that can be better understood by broad lay audiences (Mercer et al., 2007), but because they do not ask the community what studies would benefit them, they do not empower communities. Other researchers go directly to the community and administer a more participatory process (Ballard & Belsky, 2010), asking the community what research they want. However, they often do not design their research to be directly usable by communities. Some of these researchers also engage students in the research. Doing so, however, can shift the focus away from community problem-solving in favor of student learning (Stoecker & Tryon, 2009). A project-based research model avoids these problems by pursuing knowledge production and social change simultaneously. The model begins with communities defining issues they want to address, and then connecting research (with or without credentialed researchers) with action through a cycle of diagnosing community issues, prescribing solutions to the issues, implementing the solutions, and evaluating the outcomes of the implemented solutions (Stoecker, 2005, 2013). The community, through its own leadership structure, remains in charge of the process throughout.

Applying the project-based model, which was developed mostly from social science research, to environmental issues poses further challenges. Environmental research has been driven predominantly by positivist natural science models and highly technical natural science methods that inhibit community participation. We seem to be lacking

in models showing how community–university partnerships could effectively contribute to more effective solutions to environmental degradation. The challenge is to strategically identify an approach to help implement such solutions in a specific community while also building the community's knowledge power (Foucault, 1975, 1980).

In this article we seek to develop such a model through studying a partnership between a grassroots environmental organization and a university graduate student and professor. The partnership used the complete project-based model, moving from diagnosing local environmental issues to designing a "prescription" for one issue, implementing the resulting solution, and then evaluating its impact. The results show the usefulness and challenges of the project-based research model for facilitating successful community environmental change.

Modes of Community–University Partnership

Because environmental issues so often involve natural science questions, it is helpful to look at practices framed as partnerships within natural science fields, as well as those derived from the more general engaged scholarship literature.

Scientist-Driven Approaches

The dominant models of community–university partnership are actually not partnership models at all. Scientist-driven *knowledge transfer* or *technology transfer* approaches may produce valid scientific knowledge, but they are unlikely to enhance community power. They are essentially a one-way flow of knowledge from scientists to segments of the public such as policy makers, clinicians, or clients (Johnson, 2005; Teece, 1977). Similarly, *translational research* "translates" scientific research to the "public" (Mercer et al., 2007), but that public is usually medical practitioners (Butler, 2008; Woolf, 2008). In these models, the common motivation is to communicate complex scientific knowledge generated through research, or to market products created through the scientific process, to the public.

The common issue facing these models is the unequal power relationship between the scientists and the public. Scientists are the active subjects providing the scientific information, while the public is passively receiving the information. Even when the scientific knowledge is valid, it also must be actionable. When a mutual understanding about the connection between the scientific information and the problem that needs solving is absent (Freire, 1973), the information is not actionable and the public, treated as passive by scientists, has little motivation to act on it.

In a second type of scientist-driven approach (though it is often described as collaborative), scientists invite the public to be involved in one or more stages of knowledge production designed to solve either practical or hypothetical problems. The original *action research* model, created by Kurt Lewin in 1934, included active participation of those experiencing the identified problems, but the scientist remained in charge of the research process (Marrow, 1969). More recently, Whyte's (1989) *participatory action research* practice involved some key informants from the partnering organization as collaborators in a later stage of the scientific inquiry. The *citizen science* model—also known as crowd science, crowd-sourced science, civic science, and a few other labels—encourages individuals without formal training to contribute data to a variety of research projects designed by credentialed scientists (Hand, 2010; Lamb, 2008). In all of these approaches the research question and methods, and the form of community participation, are determined by scientists with very little input from the community participants. When scientists treat community members as free labor for scientist-controlled research, community members are constrained to relatively passive participant roles, and the chances of their taking action on the science are reduced.

None of these approaches genuinely engage the community in participation that allows their views to strategically guide the process. Instead, members of partnering communities are treated as token participants or free labor. The ultimate learners in these science learning processes are scientists, who not only direct the knowledge production with little input from the community, but also maintain the ongoing dichotomy between credentialed experts and "experiential experts" with lived experience. The absence of community in strategic decision-making suggests an ongoing inequality in power-sharing in these knowledge produc-

tion approaches.

In a truly collaborative process, the technical expertise of credentialed scientists would matter only when connected with, and guided by, the experiential expertise of community members and leaders about community needs and perspectives (de Roux, 1991; Nyden & Wiewal, 1992; also see Nyden et al., 1997). Equalizing power in the knowledge production process increases the potential to distribute the benefits more equitably (Maguire, 1987) and increases the opportunities to produce societal levels of change through collective action (Stoecker, 1999). Equal power-sharing helps social relationships to empower community in addressing social injustice (Stoecker & Bonacich, 1992). Eventually, knowledge production that is driven by an empowered community would influence policy development and implementation, and help create a democratic society (Fischer, 2000).

This is not to say that forming an equal subject–subject partnership is without problems. Because communities are used to becoming victims of the dominating structure led by credentialed experts (Rahman, 1991), they are not used to a collaborative process where credentialed experts try to honor community-identified agendas. Implementing a participatory process with marginalized communities can be dilemmatic, unless the credentialed experts are genuinely willing to engage in a process that empowers communities.

Community-Driven Approaches

In contrast to the scientist-driven approaches that maintain power inequalities are community-driven approaches focused on developing a foundation for social change. Paulo Freire (1968) critiqued the traditional education system as serving the needs of the privileged while constraining the uneducated to live in a system created by and for those educated elites. Freire developed popular education to engage those excluded from power—for example, small farmers, racial minorities, poor families, and manufacturing workers—in knowledge production. The method is focused more on critical consciousness-raising that aims to empower marginalized people to liberate themselves and their communities (Freire, 1968). This approach also developed in the United States through the work of Myles Horton at the Highlander Folk School, now called the Highlander Research and Education Center, particularly in the civil rights movement (Adams, 1975; Horton et al., 1997). Horton thought that Blacks and Whites could meet together and improve their lives by participating in free discussions of problems, without indoctrination from preconceived ideas (Horton & Freire, 1990). This model has many empowering aspects, but it has not often been used in relation to environmental issues.

A related practice is the study circle model, started in Russia and then further developed in Sweden, which was designed to support popular movements organized by the working class and small farmers (Oliver, 1987). As marginalization occurs in both knowledge production and material production, the application of study circles has expanded from addressing social issues to science- and engineering-related issues and a variety of other problems where information is limited, in order to encourage the public to act (Oliver, 1987; Sarkadi & Rosenqvist, 1999). A facilitator, not a teacher, usually leads a study circle. Their role is to make sure that every learner in the study circle is also a teacher, and to build a supportive learning environment where everyone is comfortable learning from and teaching to their fellow participants (Barski-Carrow, 2000; Moss, 2008). In many cases, however, the study circle approach has become too formal and is not well linked to collective action (Brennan & Brophy, 2010; Oliver, 1987).

The *project-based* research approach is a relatively new model, building on the other community-based approaches and designed to connect knowledge production and social change, including research projects that use natural science information (Stoecker, 2005, 2013). Project-based research draws on the most empowering community-driven research approaches, which go by many names (Chandler & Torbert, 2003). The model follows four logical, looping steps. As a community (usually organized through some group or organization led by community members) defines an issue they want to address, they begin by *diagnosing* that issue—doing research to understand the issue and how it is impacting the community. Next, they engage in research to develop a *prescription*—a strategy for addressing the issue. Third, the community *implements* the strategy, and fourth, it *evaluates* the implementation. Sometimes community groups engage credentialed researchers in these

steps, and sometimes they perform them on their own. Regardless, it is the issue, and the community's desire to act on the issue, that leads the process. What has been missing in the previous approaches, which this model is trying to incorporate, is the integration of a community development practice that includes collective empowerment (Hickey & Mohan, 2005; Nelson & Wright, 1995; Selener, 1997). The community development approach enhances Foucault's (1975, 1980) power–knowledge loop where grassroots community members actively lead the knowledge production process to build their capacity to address their immediate community issues (Ball, 2012; Gore, 1995; Green, 1998).

The project-based approach, when it includes credentialed researchers, involves more collaboration than scientist-driven approaches. More than a mere supporter who has only a marginal or "advisory" role, a collaborator is involved in all research stages and is part of important research decision-making processes (Stoecker, 1997, 2012). Consequently, as collaborators fully participate in the knowledge production process, the learning that results can empower them to carry out their own future knowledge production activities that truly follow their goals for change and for a stronger power–knowledge relationship (see Foucault, 1975, 1980). In addition, this approach often focuses on specific issues in specific situations, increasing the likelihood that the research findings will be applicable in solving specific issues.

Our research explores how the project-based research model works when addressing environmental issues. How do partnering organizations benefit from a community-driven approach? What outcomes did the constituents of the partnering organization experience? How did the model challenge the community partner's capacity and leadership? To address these questions we will explore how a grassroots sustainability organization combined research with community development through the four-step project-based model, evaluating both the strengths and weaknesses of the model in this context.

Methods

This study focuses on a community–university partnership between The Natural Step Monona (TNSM) and a series of capstone classes offered through the Nelson Institute for Environmental Studies at the University of Wisconsin–Madison (Nelson Institute) between 2010 and 2013. The lead author had a relationship with TNSM for 18 months prior to the formal partnership as a participant in their study circle process and as a volunteer in a variety of community events. The second author became involved at the beginning of the project-based model.

In conducting the research on this community–academy partnership, we used a case study methodology (Yin, 2014). Case studies are particularly useful for investigating "holistically the dynamics of a certain historical period of a particular social unit" (Stoecker, 1991, 97-98). Our unit of analysis that constitutes a case is the partnership, not the individuals in it. Case studies are both historically and structurally bounded (Stoecker, 1991). For this case study the historical boundaries are the beginning of the first capstone course through the end of the third course. The structural boundaries are the social units most directly involved in aspects of the partnership—the graduate student and professor involved with the capstone courses, TNSM, Monona residents, the City of Monona, and other community-based organizations that participated in the implementation phase of the project-based model. Both the research conducted in support of the phases of the project-based model, and the research on the partnership, had IRB approval.

Data collected for the case study included interviews and documents. The first author conducted in-depth interviews with two members of the TNSM planning team, the second author, one member of the TNSM Board of Directors, and one Monona resident. We also analyzed documents (including a large number of exchanged emails) created throughout the project. Data analysis was conducted in a manner consistent with a case study. First, through interviews and documents we constructed an accurate history of the partnership, using a process called respondent validation (Torrance, 2012) or member checking (Birt el al., 2016) whereby we asked interview participants from TNSM to review and comment on the history. In analyzing the data we looked for major themes from the interviews and documents (H. Rubin & I. Rubin, 2012). We counted as major those themes that appeared in multiple interviews or documents and were affirmed through the member

checking and respondent validation process.

The Project-Based Research Model Process

TNSM was an all-volunteer community organization, established in 2005, that used The Natural Step framework, elaborating a whole-systems approach for the sustainability of human activities on Earth (James & Lahti, 2004). They focused on the approximately 8,000 residents of the city of Monona, a small suburb of Madison, Wisconsin. The Nelson Institute offers an interdisciplinary education and research program focused on complex environmental issues. In 2010–2015, the Nelson Institute provided funding for capstone courses that offered advanced undergraduates practical learning experiences with community-based organizations. We received funding for three consecutive capstone courses, taught on an annual basis, that comprise this project.

Five members of TNSM—the executive director, two members of the Board of Directors, and two Monona residents—joined in a TNSM planning team. The Nelson Institute team included the first author (a graduate student) and the second author (a professor who taught the capstone classes). A University of Wisconsin academic staff member also provided support for the first capstone.

In the textbook project-based research model, the first step is diagnosis. TNSM, however, was in the real world rather than a textbook. When the first author, who was already involved with the group, approached them with the partnership offer, their interest was in evaluating what they had been doing and then figuring out what to do next. So the first capstone course *evaluated* the impacts of TNSM's community programs from the previous 5 years and *diagnosed* what environmental issues were on Mononans' minds. To accomplish this, the partnership designed and implemented a citywide survey. Twelve students partnered with 12 TNSM members to knock on doors and drop off paper surveys (which could be mailed or completed on the web) at all 3,000-plus households in the City of Monona. In order to participate in the survey distribution and recruitment, TNSM members—some of whom had not taken a multiple choice test in 60 years—all had to pass the university's arduous human subjects research training. The capstone students analyzed the 631 surveys, then created and presented posters at a TNSM public event, during which we also facilitated roundtable discussions where we asked Mononans to prioritize issues and *prescribe* strategies based on the survey results.

The survey results and community event highlighted the importance of water issues in the community—both the health of Lake Monona and the quality of drinking water. So the second capstone course supported the Year of Water—a collaboration between TNSM and the City of Monona (the new mayor was a TNSM member). The prescription resulting from the community meeting and subsequent meetings between TNSM and the authors included two strategies. TNSM carried out its own "water challenge"—a contest with prizes for residents who could conserve the most water and come up with the most innovative water conservation strategies. The second strategy involved other Monona community-based organizations in designing and implementing water conservation projects. These prescriptions were not derived from a traditional research process. The community event served as a kind of crowd-sourcing process to collect possible prescription strategies, which set the boundaries for the possible prescriptions. TNSM had been thinking about enacting the first strategy for some time. The professor then brought existing research supporting the second strategy to TNSM.

We then moved into the *implementation* phase. For the second strategy, the TNSM planning team and 12 students enrolled in the second capstone course identified community-based organizations (CBOs) in Monona. They designed a PowerPoint presentation about the Year of Water and various water conservation activities for individuals and groups. The students presented the PowerPoint to the CBOs and recruited 13 of them for water conservation projects ranging from education programs to rain gardens. As predicted by the project-based model, some of these implementations also involved research, as groups had to educate themselves about things like how to create a rain garden, or start their own water conservation education program.

The third capstone evaluated the impacts of the CBOs' water conservation projects on their members. After obtaining IRB approval, nine students conducted in-depth interviews with leaders of the CBOs that

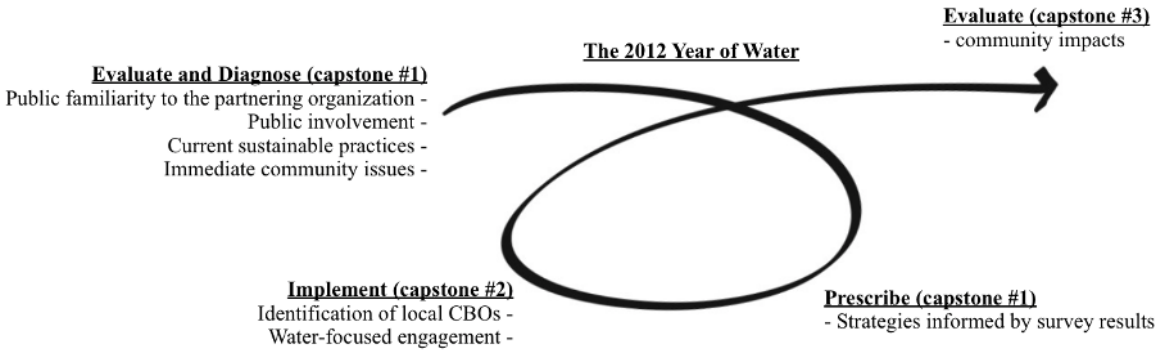

Figure 1. Summary of the Community–University Partnership Between The Natural Step Monona and the Nelson Institute as Presented in the Project-Based Research Cycle

had organized water conservation projects so that TNSM could learn what worked and didn't work in implementing the second strategy. The overall partnership process is summarized in Figure 1.

Findings

How Partnering Organizations Benefit From a Community-Driven Approach

The community–university partnership is increasingly regarded as a strategy to help academic scholarship be more relatable to the community (Curwood et al., 2011; V. Rubin, 2000). For a small all-volunteer organization such as TNSM, partnering with a research university can serve to enhance legitimacy. All three TNSM members interviewed indicated that the partnership gave significance both to TNSM as a grassroots organization and to the environmental cause TNSM was committed to addressing. TNSM members believed the enhanced legitimacy allowed them to expand their outreach to more Mononans, as the following quotes illustrate.

> "So great benefits . . . we got out there in the public in a way we never could have, to give us a name recognition and the cachet of working with the university. It made us more substantial."

> "It was huge for the organization, The Natural Step organization, and huge for the community to be able to establish a partnership with you and your studies and the Nelson Institute. It helped within our realm of people who were supportive of environmental studies to know that there was almost a legitimacy."

> "It gives it more appearance of something that is important that should be paid attention to, that more people could follow. And maybe would break down some barriers for some folks that are like, 'Is it something that it's worthwhile for me to put my time into.' So I think with more legitimacy behind it you get more support."

One of the typical challenges for an organization as small as TNSM is being strategic about fitting local actions to available resources. Without a carefully crafted planning process, an organization can risk having either too many disjointed ideas supported by inadequate resources or too few ideas with resources not being optimized (Staples, 2012). The first partnership project supported this need to focus by conducting a study that combined evaluation and diagnosis (Hidayat & Stoecker, 2018; Hidayat et al., 2014). This combination requires an intensive planning process that a small community organization like TNSM may not have the resources to support. The academic partners provided the needed skills and expertise so that TNSM could carefully develop priorities and the strategies to realize them. TNSM planning team members agreed that the academic partners helped TNSM choose practical ideas.

> "I am thinking about those meetings [between academic partners] and our team, and I think we would

> go far if we start talking idealistically and what ifs, and I think, [the professor] wouldn't let us do that. He would be bringing us back to what we really mean."
>
> "I was totally amazed, I think, throughout that process, both in how you dealt with us and how you kept throwing the questions back to us: 'What is it that you want, please clarify, help us understand, what it is that would be most valuable?' And at the same time, there was some guidance in terms of maybe what we could accomplish; what resources the university could provide. But so much about it was I thought focused on really helping us figure out what the idea was, what really did we want to accomplish, and how could we step forward initially."

The academic partners intentionally put TNSM in a critical decision-making role for the project. When asked about how much voice they had in the partnership, and how they felt about their roles in directing it, TNSM members were confident that TNSM had a strong voice.

> "The community was in control. We established that survey [in the first capstone course] and gathered input from the community. So that was what this is all about, and that was what The Natural Step was about as well, that is, having this as community-based. So making sure that it was representative to what was important to the community."
>
> "I never felt that we were backseat. I felt we were directly . . . you know . . . that it was real important for us to be there. And that we were almost leading the acting [laugh hesitantly]. I mean, really! And we weren't . . . but we were!"

Another member of the planning team suggested that being a female in the group (all of the members of the TNSM planning team were female, and the academic partners were male) could be a factor. In such a gendered relationship that overlaps with a status-difference relationship, there is often a problematic power imbalance. In this case, the male academic partners' supportiveness toward the female community members helped form a trusting relationship.

> "I clearly felt supported, I guess I have to say that. And maybe that's just the female experience [laugh], it's not usually a supported one, we're usually the supportive [one]. And so . . . to have . . . your opinion or your thoughts really valued in that way was kind of unique. Not that it never happened before, but it certainly was so continuous in the process."

Community engagement was central to the project goals identified by TNSM, but group members lacked a clear concept of how they should achieve such engagement. The planning group appreciated learning how the academic partners practiced community engagement.

> "The methodology behind how to help getting community engaged. What types of tools and practices to use and theories behind when you are looking at people—What do they find important? How do you help find out what is important to them? And how . . . you have to understand how each individual is going to need to balance their priorities. It's the social science part of it. That's what I learned a lot. And having a particular focus, a topic focus, where everybody in the room is focused on one thing but still seeing how each individual has their own perspectives and their own experiences and talents and skills to bring to the conversation to see how that is . . . representative of a diverse community and being able to . . . effectively spread the message out."
>
> "Because, again, not having the right type of people in the structure to go out and legitimize ourselves and as an organization to start building it up, it's more like 'Hey, I am in the community, I think this is important, come and join me, we'll talk about this thing.' . . . This [partnership] provides us more structure [in how to engage Mononans]."

The involvement of students in the part-

nership offered additional brain power and energy to execute civic engagement strategies that both partners would agree on.

> "It was totally amazing to me that [the professor] could take a group of students that had committed to something they really didn't have any idea what they were committed to. So they must have been special . . . students anyway. But it was just so exciting to see them engaged in a way and I don't remember what it was like to be a college student, but they were so sophisticated and so willing to reach out and to be left in this amorphous thing and drawn into it and be part of it. I think I felt that connection was just amazing. And they have this knowledge base along with [the professor] that they brought to us. The manpower, the intellect, and the engagement, that was so neat to have."

> "I think that with the small local community like we were in Monona here it was difficult to engage people. With your support we were able to bring more people and with students to have more work to be done."

Outcomes for TNSM and the Community

Building on the momentum of the first capstone course, and its identification of water sustainability as an important theme, the partnership focused the second course on engaging Mononans on water sustainability (Hidayat et al., 2014). The preparation and execution of the second course allowed the partnership to discuss community engagement theories and practices. With the involvement of the capstone students, the partnership designed strategies to support water conservation projects during the city-designated Year of Water.

The planning process for the second course was dynamic, and it took some time for the planning team to come to agreement. The partnership eventually committed to adopting a bloc recruitment strategy that is popular in social movements. Bloc recruitment is "the way in which social movement organizers often recruit members and participants among groups of individuals already organized for some other purpose" (Oberschall, 1993; see also Oberschall, 1973). It is relatively low cost, because it relies on existing trusting relationships, mutual interests, and consolidated routines within a network of CBOs (Diani, 2013). Our implementation involved identifying local CBOs, engaging them in the Year of Water, and encouraging them to carry out a water conservation project. Engaging these groups would allow TNSM to dramatically expand its impact without having to do it all themselves.

Planning team members had differing opinions on the bloc recruitment strategy. One member was immediately supportive because she recognized TNSM's limitations.

> "I think that it's [bloc recruitment] very natural. I think that it should be promoted more. I am a process efficiency perspective person and process improvement and so [I asked], 'How come all of these disparate efforts are going on to accomplish the same thing? Why don't those organizations—either nonprofit, or business, or for-profit—find a way to partnership together in a similar cause and bring all those efforts together?' Because, The Natural Step Monona, we're a small organization. We don't have a lot of power behind us. We maybe just try to reach our community, but we could be reaching others. But we're putting time and efforts and asking for participation, and asking for money, from the same pool that other people are as well. So, it's great if you want to just have a little branch in your community and that's all that you do. But if you're trying to build up and to really want to be a voice, and get support, the partnerships are vital and they're crucial, because you have to band together resources."

Despite being unclear about the strategy, the idea of connecting members through existing groups made sense to another member.

> "The group idea hadn't really been mine and I don't think I understood all the ramifications even afterward. But I understood that it made sense to sometimes go through community groups, churches, fishing

> groups, or business association[s]. I think ultimately it has happened to some extent here. And that was probably a good thing."

While eventually agreeing to the strategy, a third member was pessimistic that CBOs would actually be willing to participate. She feared the project might become a burden because it would require additional planning and implementation beyond their existing programs.

> "We were asking more of people. [The professor] had the idea of working with groups because then you get a lot more people involved, but we were asking them to do a lot. The first thing we do [is the] survey, 'Fill out the survey, take 20 minutes, you're done, bye, we don't see you again.' We will see how much it would have been an impact to your life. But when we were going to a group and said, 'Hey, we want you to take on a project!' . . . 'What? Huh? You want me to add more on my plate?' I think the request might have been too big and that there were not enough groups out there to make it worthwhile."

The strategy facilitated TNSM in helping local groups build on their unique interests and turn them into practical actions. In addition, the various types of groups—formal learning, faith-based, and advocacy groups—participating in the actions demonstrated the flexibility of this strategy in engaging the broad interests of local communities.

How the Partnership Challenged the Capacity and Leadership of TNSM

Although community–university partnerships have become common in the past three decades (Hutchins et al., 2013), it is still uncommon for universities and colleges to mobilize their resources under the direction of a local community group (Mondloch, 2009; Ward, 1999). The participatory practice integrated into the project-based model allows the local community to play a key role throughout the project (Stoecker, 2009). Analysts also believe that the long-term partnership—ours lasted for 3 academic years—multiplies those benefits (Tryon et al., 2008). However, the benefits may come with consequences to the community partners, especially for small community organizations (Busza, 2004).

The interviews reveal challenges that TNSM experienced as they participated in the partnership. Being collaborators and leaders of the partnership cost members of the planning team a significant amount of time and energy. All members of the planning team were enthusiastic and committed to the first capstone class. As the partnership progressed to the second and third classes, the level of commitment was not as strong. One planning team member indicated that the big difference between the three classes was mostly caused by the different level of enthusiasm from the planning team.

> "I think the first one was exciting for people. By the time we were at the third one, there was not a lot of support from anybody, like it was not that exciting, and I feel I was the only one who cared about any of it. I think [one member of the planning team] maybe came to one or two of the classes on the third one."

Another member of the planning team discussed the experience of getting involved intensively in three capstone courses, adding that it could be a natural consequence in a voluntary organization working over a longer period of time.

> "I think the organization, because the length of time that the leadership had had to engage more independently, kind of fried that group of people. I don't think the participation of the university made that worse in any way. I think it was sort of a natural [consequence] of those who make that first step forward."

The ability of the leaders of a voluntary organization to devote time and attention to the organization's changing context is crucial. The desire of those of us from the university to have TNSM lead the process created two challenges that many nonprofit organizations have not faced. First, despite, or perhaps because of, the strong intention of the university partners to honor the voice of the local community in the partnership, community members were expected to invest time and energy at a level they may not have been prepared for. The disconnect between the well-intentioned expectation

from the university actors and the actual capacity of the local community to meet that expectation can lead to burnout for community organization members. For a TNSM staff member, the impact of the partnership on their workload was more significant than for other members of the planning team who were volunteers.

> "I think the frustrating moments for me were mostly just how. . . . There was so much added to the plate, because we didn't stop doing Green Tuesdays and Thursdays and we didn't stop doing all other things we were doing which I couldn't remember. . . . and then we got the board trying to organize like we were a huge organization, trying to do our operations or whatever. Oh, it was too much, it was too much, I exploded, 'Busshh.'"

Next, in a small nonprofit setting, like TNSM, it is common to find a single staff member who works alone to get things done because explaining the task to others would take more time (Hayman, 2016; Mondloch, 2009). So instead of communicating with others as part of building the collectivity within the organization, this staff member goes ahead completing the task alone. This is a missed opportunity that could lead to capacity building for collective action. A board member who was not in the planning team indicated the lack of clarity about the partnership that can result:

> "I knew that the Nelson Institute was involved. I never did have a really clear idea all those years of what was your goal. From my point of view, it was we had access to people who could do some research in the community that we could then get some information from or we could have some impact with. Maybe even more than students giving us information, they would be our ambassador to some degree in the community to get more information about us too. That was my primary understanding. It was never clear to me, quite frankly, what the Nelson Institute was going to get out of it, and what we're going to get out of it."

Others also noticed the challenges facing the TNSM staff member who was also a member of the planning team. This staff member was very involved in the partnership and was "really enjoying" being part of it. The staff member was also a cofounder of the organization and was understandably committed to its mission. But it was difficult for her to communicate all that was involved in maintaining the partnership, as illustrated by a board member's comments:

> "She was spending an awful lot of time with the Nelson Institute. I do remember at the time thinking, 'What's going on, why didn't you spend more time on the Natural Step business rather than the Nelson Institute business.' She was really excited and pleased and she loved going to those classes and stuff. As I am sitting here I do remember in the board meeting [she said], 'Well, I got to do such and such, I have to be at the university,' you know . . . that sort of thing."

For a small organization like TNSM, the already challenging environment is made more difficult with the additional task of having to provide support for the university in running its capstone courses.

Discussion

Based on a 3-year community–university partnership involving three capstone courses, this case study investigates the benefits and costs of the partnership to the partnering organizations. The findings demonstrate consistency with the literature, and also extend it.

TNSM interviewees were confident that they had at least shared control of the partnership. Rarely do we find community control as a main descriptor of a community–university partnership. In the literature, reciprocity (Suarez-Balcazar et al., 2005), mutual learning (Gelmon et al., 1998), and active participation (Curwood et al., 2011) are more often cited to describe a collaborative relationship between communities and academics. The problem with using these terms is that people do not always recognize that communities and academics come from two different power positions (Stoecker, 2016). Following Freire, academics have had the privilege of accessing high quality education, whereas community members may not have. The assumption that community partners would input the same amount of

resources as academics in a partnership is not only unfair (because they do not have the same amount of resources) but also uninformed (because academics typically have more resources than communities do).

This assumption of resource equality is even more problematic in a typical scientist-driven environmental partnership context. The possession of scientific information by academics and the consumption of the information by communities will set up two distinct roles in most environment-focused partnerships. In our case, however, TNSM had developed its own natural science–based environmental expertise, and thus was not at a knowledge disadvantage in terms of environmental science in this project. In fact, neither of the authors were natural scientists, and TNSM's expertise actually helped balance power in the partnership. This has important implications for natural scientists wanting to partner with communities. It may be a prerequisite for community members to have their own expertise before engaging in partnership.

However, it is also true that TNSM members did not possess the same breadth of knowledge on community engagement as the academic partners, which could have created a power imbalance. Fortunately, it did not, possibly because TNSM members possessed other kinds of knowledge that the academic partners lacked. Our takeaway from this is that academic partners need to both ascertain and respect community expertise in any partnership. We believe the other reason we maintained a relative balance of power is that we followed the project-based model, which emphasizes the importance of community leadership, not academic leadership, in the partnership. That means community leadership even in the research aspects of the partnership.

TNSM's status as an all-volunteer grassroots organization makes their perception of control more important. The challenges for this type of community organization in supporting a partnership are immense (Stoecker, 2016; Stoecker & Tryon, 2009). For example, members of the TNSM planning team had to make time to attend planning meetings and organize community meetings and actions, at least some of which involved evenings and weekends. Scheduling often presents challenges in community–university partnerships (Tryon et al., 2008). So it is not surprising when academics typically partner with organizations that have better resources and dedicated staff members to participate in the partnership, such as government agencies, schools, businesses, or well-established nonprofits (Ward, 1999). Indeed, the practice of selecting well-resourced partners to meet academics' agendas at the expense of organizations that need the most help in addressing immediate local issues is common (Stoecker, 2016; Tryon et al., 2008).

Although TNSM managed to take strong leadership in the partnership, they could not escape the extra workload that the partnership had added to their plate. After the successful first capstone class, where TNSM went at full speed in participating, they had exhausted their limited resources such that they were unable to demonstrate the same commitment and energy in the second and third classes. This finding poses questions regarding the efficacy of the project-based research approach as well as the long-term partnership standard, and suggests that the broader practice of community–university partnerships has not been sensitive to the challenges that a community has to endure to be a full partner.

How could the approach be more sensitive to the community's "partnership fatigue" that likely affects the success of the partnership itself? In the case of our partnership, the offer of a capstone course led to a kind of add-on approach. TNSM added the partnership onto their existing activities without adding any capacity to participate in the partnership. That meant that the TNSM core group went to even more meetings and did even more work. Perhaps we could do better at designing partnerships around existing activities instead of designing projects that expand the work of the organization. It might be possible to engage in an initial partnership conversation to find out what the organization is currently doing, and what information gaps they are experiencing in accomplishing their current work. For example, TNSM was engaged in regular community education programming. We might have been able to set up the capstone course to search out and curate further education resources, or design education modules. That would have been a one-off effort, not a long-term project. It also would not have had the visible and significant impacts that we observed. And we can't say whether that would have impacted the longevity of the TNSM leadership. In the end, of course, if the community is going to lead, they have

the right to choose the more intense route. What is important is for them to understand that it may be a more intense route. Our research now can help academic partners have a conversation with community groups about the potential consequences of such a choice.

In the final analysis, one of the most important benefits of community–university partnerships is that, as scholars become more engaged in the community, the products of scholarship can be more relevant and impactful (Sadler et al., 2012). The hope is that, by building positive relationships with community partners, academics will be better informed by the community's socially and culturally grounded understanding of particular issues (Silka et al., 2008). Additionally, this study shows that TNSM was at least partly motivated to participate in the partnership because they recognized their need to better understand the theories and practices of community engagement. Indeed, effective community engagement is not only important for academics (Laing, 2016) but also for communities (Bell & Carlson, 2009). It is for this reason that the project-based research model offers a good case of a subject–subject relationship that facilitates productive learning, and at the same time balances the power differential between the two partners in learning (Freire, 1973).

We know that not all community partners and academic partners approach a partnership the same way as TNSM and the Nelson Institute did. In our case the project-based research approach facilitated the partnership so both partners were encouraged to learn from each other. This contrasts with the scientist-driven models of community–academy partnership focused on the environment that offer content knowledge more than process knowledge. The lack of success in building broad public support for environmental sustainability suggests that such content-focused models will not work. Instead, this study demonstrates that paying attention to the process of the partnership helps build additional capacity for environment-focused organizations such as TNSM and offers more effective solutions to environmental degradation.

How does this study inform the practice of community–university partnership? The partnership showcases how both partners embraced Arnstein's (1969) ladder of participation and brought their collaboration further toward the top of the ladder of community-based power. It shows that community-based power does maximize the benefits of community–university partnership to partnering organizations, especially small organizations with limited resources. However, partnering with such organizations requires that academics develop a deeper understanding of the organization's available resources so that the partnership maximizes benefits and minimizes burdens. The challenges facing short-term partnerships are well documented (Tryon et al., 2008); however, as this case illustrates, long-term partnerships present challenges too. Additionally, scholars may want to focus more on community engagement research so that they are better equipped with theories and best practices. Finally, an important element of community–university partnerships is capacity building so any partnering organization will be better off once the partnership is complete.

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