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Leading for Innovation in Higher Education: A Design Narrative

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Abstract

This paper relates how leaders of a higher education program, the Wisconsin Collaborative Education Research Network, sparked and managed innovation across communities of scholarship, research, and practice. This paper uses a *design narrative* method to describe how leaders orchestrated organizational change by bringing diverse communities together into research–practice partnerships. The narrative uses the idea of *boundary objects* to describe how initiatives were progressively developed to create more inclusive spaces for sustained innovation. The insights and the capacity that resulted from initial design efforts created a richer space for subsequent initiatives. The paper shows how design narratives can illustrate the role that boundary objects can play in organizational change and concludes with a discussion of the role that leaders can play in creating inclusive cultures of innovation in higher education.

Leading for Innovation in Higher Education: A Design Narrative

Richard Halverson

This paper describes a program developed by higher education leaders—the Wisconsin Collaborative Education Research Network (the Network)—to encourage innovation across interdisciplinary communities of scholarship, research, and practice. From 2014 to 2021, the Network brought researchers, educators, and community partners together to create a vibrant environment of creative research. The Network identified shared problems to create opportunities for collaborative design, mobilized hundreds of graduate researchers to participate in transformational community-based partnerships, and developed an internal grant program (Grand Challenges) to forge new interdisciplinary research pathways. This paper develops a design narrative to share the story of the Network through the programs it developed, the impact these programs had on local and statewide communities, and the lessons learned about how to spark communities of innovation in higher education.

Higher education holds tremendous creative, material, and intellectual potential to envision and mobilize innovation. Innovation happens when these potentials are mixed in new ways, with participation from partners across sectors, to create new pathways for productive action. However, the rich potential of higher education networks is often mired in organizational routines that constrain the emergent recombination necessary for innovation. The work of academia is typically organized into routines that coordinate everyday activities into predictable patterns of production and interaction. Organizational inertia presses researchers and staff to live and work in traditional lanes defined by academic values. Higher education leaders who see the potential for interdisciplinary work among faculty, students, and staff can establish the conditions to transform these diverse powers into forces for innovation. Leaders must simultaneously a) develop the capacity and organizational will to challenge the existing routines that isolate expertise within and across the school, and b) coordinate the design and implementation of new opportunities to create partnership, knowledge production, and collaboration.

Channeling the power of higher education to spark collaborative innovation that can have a positive impact on the world does not happen by accident. This paper uses a *design narrative* method to describe a series of initiatives that leaders at University of Wisconsin (UW)—Madison used to orchestrate an interdisciplinary culture of innovation, inquiry, and impact. Design narratives are the stories of how artifacts such as programs and curricula come to be, are used in practice, and are subsequently altered by users and designers to fit new purposes (Hoadley, 2002; Mor, 2011). Design narratives originated in methods of design-based research (Edelson, 2002; Design-Based Research Collective, 2002) to relate the stories of how complex artifacts are developed and used in practice.

The design narrative will define and highlight the role of *boundary objects* (Star & Griesemer, 1989) as a sequence of initiatives developed by the Network to bridge social capital

across organizational structures and spark innovative activities across diverse communities. The paper will describe how the insights and the capacity that resulted from one boundary object created a design space for the design of subsequent objects. The paper concludes with a discussion on how boundary objects can facilitate in organizational design, the role that leaders play in orchestrating this kind of change, and how the concept of relational equity can be used to create more inclusive cultures of innovation.

Ideas

In *Where Good Ideas Come From*, Steven Johnson (2011) describes the natural history of innovation as a function of social interactions with participants who share related, but not identical interests. Good ideas are typically slightly modified versions of existing concepts formed through interaction in “adjacent possible” spaces where they take on new forms in conversation with different forms of expertise. Organizations such as schools, research labs, and coffee houses can be engines of innovation when structured to invite and support serendipitous interactions, where participants can see their basic assumptions about inquiry or practice transform in new directions.

Liquid Networks. The kinds of organizations that allow for adjacent possible spaces can just as easily become closed networks, where commitment to the same core assumptions solidifies into ideological echo chambers. Closed networks shut down speculative interaction in the interest of preserving fidelity to shared presuppositions. To activate the potential for serendipitous interaction, organizational leaders must create and support boundary-crossing interactions. Johnson describes organizations in which members are regularly motivated to share assumptions across communities of inquiry as “liquid networks.” Innovation is sparked when peers from different disciplinary and epistemological communities interact to reconsider their problems of practice from the perspectives of their peers. Johnson calls this situated collision of ways of knowing “the collective project of exploring the adjacent possible” (Johnson, 57).

Higher education is an archetypal space where good ideas can emerge. Research universities bring together an extraordinary variety of faculty, staff, and student expertise to create and share new knowledge and skills. However, the organizational routines of higher education can constrain the range of action for innovation in higher education. Tierney and Lanford (2016) describe how the traditional rituals and structures of higher education produce incremental change in the interest of supporting the status quo of social and disciplinary organization. Professional school faculty are hired to establish, fund, and conduct independent research programs. There are administrative controls for research space and staffing and how research finances are regulated, but faculty and staff typically retain the autonomy to determine the direction of their research inquiry. This autonomy structures the kinds of professional communities that faculty and staff build around shared questions and research methods. Professional research communities can, over time, evolve into silos of expertise that offer few opportunities for uninitiated researchers and staff (who may work right down the hall!) to introduce new questions, challenge core assumptions, or offer alternative interpretations of findings. Turf wars can erupt between cliques who make different assumptions about appropriate

research methods and evidence. These boundaries are often reinforced by prominent researchers who exercise their capital to increase the influence of their favored ideas or methods, which, in turn, can exclude equitable participation in hiring and resource allocation. The range of innovation in higher education improves, Tierney and Lanford suggest, when participants are intrinsically motivated to engage, when innovative activities flow from the researcher autonomy, and a diverse range of identities and epistemologies are accessible to participants. Organizational leaders need to design strategies to unlock this capacity by creating new routines that bring disparate expertise into regular, scheduled, and serendipitous contact.

Leadership for Innovation in Education. Higher education leaders are responsible for establishing the structures, routines, and ultimately the cultures to create and support liquid networks of idea exchange—both with one another and with external partners. Within the organization, leaders are responsible for design and implementation of internal structures and routines to support new forms of interaction. In our prior work with colleagues James P. Spillane and John Diamond (2001; 2004), we described a model of distributed leadership to show how leaders orchestrate change in organizations. We argued that organizational cultures that shape interaction within schools result from the long-term interaction of members according to established routines, which are in turn formed around an aggregation of policies, procedures, and programs that define an organizational status quo (Halverson, 2006). Transformational leadership involves designing and situating new routines that redirect action to address defective or inequitable routines, then using leaders’ political influence to allow the new routines to disrupt the status quo culture (Spillane, 2015). Cultures “push back” on such change efforts when actors subvert intended changes by leaders with actions that preserve organizational inertia (Barnett & Ponitkes, 2008). Leaders must identify opportunities to design and introduce new routines at multiple levels to challenge prevailing routines. Effective leaders identify opportunities for strategic design to foster new pathways for productive interaction (Halverson, 2004).

Leaders also face challenges opening higher education to engagement with community partners. Coburn et al. (2013) consider how leaders can structure *research–practice partnerships* as mutually beneficial networks that design projects to increase the capacity for change across communities. Bryk et al. (2014) discuss how improvement science orchestrates researchers and practitioners into *networked improvement communities* that coordinate vertical expertise partnerships to design processes that focus on local problems of practice. Improvement science “is premised on the notion that those who face the problem day-to-day are the ones who best understand it” (Biag, 2017). Daniella DiGiacomo and Kris Gutiérrez (2015) proposed the idea of *relational equity* to describe how the perspectives of all participants must be recognized and brought into joint activity in symmetrical networks of interaction. These models illustrate how leaders can mobilize organizational capacity to engage with community partners. By situating collaboration around problems of practice, we draw researchers out of their home communities to participate in the activities that shape the lives of people outside academia. These models suggest how leaders can orchestrate efforts to bring higher education expertise into adjacent possible spaces that might spark innovation. The power of a liquid network is its ability to make unanticipated connections between members who share similar interests but who work and think

in different ways. Structuring interaction around principles of relational equity can unsettle the conditions of higher education work and increase the power collaborations, to spark novel pathways for potential research and practice.

Social innovation design provides an additional perspective on mobilizing the capacity for higher education leaders to spark innovation. Social innovation efforts organize partnerships that bring together material social and human capital from across sectors by using entrepreneurship models to develop public goods (Alvord et al., 2004; Elkington & Hartigan, 2009). These kinds of organizations incubate new ideas and partnerships by helping interested actors to obtain funding and to participate in broad, sustainable networks. While research–practice partnerships and networked improvement communities gather diverse expertise in structured solutions to specified problems, social entrepreneurship organizations tend to support multiple teams to focus on separate problems. Organizations like the Hive Network engage researchers, private sector leaders, educators, and community members to develop and implement urban youth-serving programs (Santos et al., 2016). Hive researchers propose five core practices to support social innovation: creating a common narrative that communicates a shared mission; enabling community contributions (relational equity); organizing design activities around rapid prototyping and testing in authentic contexts; generating feedback from public users; and creating remixable work products (284–286). Social innovation design principles describe the simultaneous development and support of multiple projects, showing how liquid networks can facilitate the flow of knowledge and resources across connections to shape many occasions for design.

Higher education leaders interested in creating liquid networks are faced with a two-level design challenge. The conditions for innovation exist in every higher education community, but the organizational pathways that guide everyday work typically segregate faculty and staff into siloed affinity groups. Individual faculty can develop robust and productive research programs, but most faculty and staff self-organize into professional communities that limit the inclusion of diverse perspectives. Without ready access to adjacent possibles, faculty and staff can be confined to self-confirming discourse communities. The gap between academic and external communities becomes more formidable as the definition of professional affinity groups hardens. For genuine liquid networks for innovation to emerge in higher education, leaders must explicitly forge and maintain bridges between internal and external communities.

Methods

This paper relates a series of design efforts over 5 years at UW–Madison to forge sustainable linkages across a diverse research community. It tells the story of how the Wisconsin Collaborative Education Research Network (the Network) strategically built linkages across graduate researcher communities, university, state and local community partners, and ultimately between the researchers themselves to create an existence proof of how liquid networks for innovation can be designed and can flourish in higher education.

Design Narratives. This story of the Network draws on design-based research (Design-Based Research Collective, 2003), or how interventions are developed, used, measured, and

refined to test hypotheses about action in real-world contexts. Design-based studies occupy a middle ground between effects studies that document the impact of interventions and critical studies that question the underlying design and use of interventions in a normative framework (Halverson & Halverson, 2020). In many cases, design-based researchers tell a story, or a *design narrative*, that highlights the evolution of an intervention over time (Hoadley, 2002). A design narrative describes the context for the work; the intentions, resources and goals of the designers; the (iterative) design and implementation process; the reception of the design by the desired community; and the results of the intervention. These steps structure design narratives that can yield practical lessons to researchers and educators as well as principles that can act as heuristics to guide future design work (Edelson 2002).

Boundary Objects. The paper uses the idea of a *boundary object* to structure the design narrative about how the Network’s mission developed over time through the successive development of initiatives. Each stage of the Network narrative can be viewed as a *boundary object* designed to connect diverse communities of practice. The concept of a boundary object was developed by Star & Griesemer (1989) to describe initiatives “that allow different groups to work together without consensus” (Star, 2010, 602). Boundary objects are viable conduits for interaction and meaning that allow different communities to initiate processes for communication. Boundary objects sometimes emerge from the existing context as found objects that support collective use (like maps), or they can be designed to intentionally direct shared work across diverse communities. Tim Brown (2008) suggests that effective design leadership involves orchestrating a series of safe spaces for interested actors to frame problems and to risk collaborative development and testing of solutions. The paper considers the design of safe spaces for interaction as a series of boundary objects that create inviting occasions for the development of liquid networks.

This design narrative highlights three successive Network initiatives that served as boundary objects to facilitate higher education interaction with diverse groups to support innovation. First, we consider the **founding of the Network** itself as a boundary object that connected the School of Education with various state professional communities. Next, we explore how the **Network Fellows initiative** served as a boundary object to support interested graduate researchers to develop mutually beneficial research–practice partnerships with a wide variety of campus and community groups. Finally, the **Grand Challenges initiative** was designed as a global boundary object that mobilized the capacity developed by the Network and the Network Fellows initiatives to create adjacent possible spaces for faculty and staff to define and engage in interdisciplinary collaboration. Tracing the stages of object development through the narrative helps to unpack how the capacity that resulted from solutions to early problems became organizational capacity for the next rounds of design. After we discuss the development of each initiative, we return to the concept of the intentional design of boundary objects as model for higher leadership for innovation.

Research Process. The data used to develop the narrative was drawn from over 800 pages of emails, documents, websites, meeting notes, transcribed interviews and graphics developed over the 8-year history of the Network. As the co-founder and co-director of the Network, I had

access to the primary sources necessary to relate the main design narrative, and I consulted with current and former colleagues for access to their documents and recollections of Network activities. The narrative relies heavily on reports of all Network activities submitted annually to the UW–Madison School of Education (SoE) Dean’s Office (2014–2021) and the Wisconsin Department of Public Instruction (2014–2020), as well as annual evaluations of the Network Fellows (2015–2021) and the Grand Challenges (2017–2022) projects.

The analytic process that resulted in the design narrative involved a round of inductive data review, a deductive coding stage, a member check with relevant Network and community actors of a draft narrative, and the development of a final narrative (Miles et al., 2014).

I reviewed documents inductively to get a sense of the developmental sequence of Network activities. This phase showed that there were two main categories of Network team activity: large-scale design activities (such as the Network Fellows and Grand Challenges), and a large number (about 15 per year) of smaller-scale activities directly responding to requests from campus partners and opportunities to initiate and deepen partnerships. These latter activities included organizing film screenings, faculty, and visiting scholar talks and events; designing networking receptions; and facilitating meetings to bring together diverse partners. Some of these small-scale activities led to larger-scale design, and most built social capital with campus and external groups. Finally, the inductive coding process helped to develop a timeline to show the sequence of Network activities.

Second, I engaged in a deductive coding process emphasizing codes drawn from design narrative ideas (see Hoadley, 2002; Mor, 2011) to identify the “context” for the work; the “intentions,” “resources,” and “goals” of the designers; the (iterative) “design and implementation process”; the “reception of the design”; and the “results” of the intervention. I also developed codes to identify the “identity” and “positionality” of the actors and the “networking activities” that brought various groups together. The analysis was used to show how the work unfolded, who was (and was not) involved, and to provide evidence of the consequences of the work. For example, this stage of the analysis process documented the lack of participation by members of the Departments of Art and of Theatre and Drama in many Network activities and helped to trace how Network actors collaboratively developed events to improve relational equity.

Third, I developed and shared a draft of the design narrative with nine members in the Network and SoE community, including five former Network staff members and four senior leaders in the SoE. I did this to check for accuracy and the inclusion of interpretive details necessary to provide a worked example of the Network evolution and design principles. Five of the readers provided written feedback, and three accepted an offer to meet and talk about possible changes in the details and directions of the narrative. The member-checking process added interview data examples about the experience of graduate students as Network Fellows and helped to situate the overall narrative in the context of innovation in higher education.

These activities helped me to assemble a design narrative of the activities and effects of the Network from the extensive document evidence. As a former co-director of the Network, I am

partial about my description of the design and impact of the network. The narrative reflects my perspective on the design, implementations, and results of each aspect of the Network activities. The final version of the paper relies on the member-checking conversations and comments with key collaborators from across the SoE community to add new insights and to question the interpretation of the design process and results presented as a path to check my bias as a central actor in the story. My hope is that that the resulting narrative will ring true with my colleagues and similarly situated practitioners to overcome the biases I had in shaping the narrative.

1. The Network

The Wisconsin Collaborative Education Research Network was developed in 2013 to connect faculty, staff, and students at the UW–Madison School of Education with local school districts, state agencies, community organizations, and regional networks throughout Wisconsin. Over the next 8 years, the Network grew to develop innovative programs for statewide education networks, for graduate education, and ultimately to build a new grant program to support interdisciplinary, community-engaged research programs. The design narrative of the Network tells the story of the development of a responsive organization that changed its mission as the needs of the university and wider community evolved.

The Network was a boundary object designed to facilitate connections between local and statewide community and organizational partners. Its founding reflected a shared, loosely defined ambition by SoE leaders to make stronger research–practice connections between state and local communities and the university. Jack Jorgensen, an SoE leader and long-time educator in the Madison Metropolitan School District, envisioned a networking organization that would link educators across the state with UW–Madison people, ideas and resources. Jorgensen framed his vision around listening to the research needs and opportunities of educators to broker matches between researchers and statewide education partners. He developed a distinguished career as a trusted liaison between the research and practitioner world and sought to create an office that would signal the value of making connections at the heart of the SoE.

The Wisconsin Idea. Jorgensen’s vision was anchored in the Wisconsin Idea that the boundaries of the university should be the boundaries of the state (Myers, 1991). The Wisconsin Idea suggested that research communities should be open to frame and solve problems of practice and aim to improve the lives of all citizens of the state. The need for an organization like the Network was inspired by contemporary events in Wisconsin. Just prior to the Network founding, newly elected Wisconsin Governor Scott Walker introduced legislation in February 2011 to cut benefits for public employees and reduce the ability of public employee unions to bargain. Act 10 gave rise to bitter protests in winter and spring of 2011 and revealed deep divisions among Wisconsin citizens about the value and support of public institutions. Kathy Cramer (2016) documented how Wisconsin small town and rural citizens felt increasingly resentful and disconnected from public institutions, including higher education. The undertone of political division between institutions and state communities eroded the social trust necessary for building research–practice collaborations. As budget cuts and threats to academic freedom shook

the state education system, many educators wondered how to revive a Wisconsin Idea in this fractured political context.

Jorgensen worked with SoE Dean Julie Underwood to form the Wisconsin Collaborative Education Research Network (the Network) with a main function of building connections between the university and state communities. Jorgensen recruited me¹ to serve as co-director of the new office. Jorgensen and I felt that obtaining support by both the university and by the state education agency would signal an intention to build the kinds of cross-sector partnerships that would establish collaboration at the heart of the new Network. The UW SoE, the Wisconsin Center for Education Research (WCER), and the Wisconsin Department of Public Instruction (WI DPI) were founding partners who shared a commitment to create a Wisconsin Idea-centered focused organization. The Network was born as an expression of how cooperation could serve as a platform for connecting state administrative and research capacity.

Connect + Engage = Transform. The mission of the Network was organized around the equation *Connect + Engage = Transform*. The Network's purpose would be to bridge the social, intellectual, and material capital of the university to make new connections across campus and external communities. Building sustainable bridges would come to mean *connecting* people around shared interests, *engaging* new colleagues in productive partnerships, and directing these partnerships to *transform* their worlds. These ideas grew from a commitment to a user-centered design perspective that highlighted the research values and aspirations of current and future partners. Jorgensen and I recruited a team of graduate researchers and staff dedicated to building projects around the themes and problems that emerged through engagement with internal and external communities. The team developed interview and interaction tools to explore how communities understood their own relation to research and innovation, and sought to frame projects that could address the organizational, cultural, and epistemological constraints that might obstruct efforts that would bring shared aspirations to fruition. The Network would act as a mediating organization to enact the Wisconsin Idea by facilitating activities with a steadfast focus on the research and innovation aspirations of campus, local, and state community members.

The Network team envisioned its initial function as an office that would translate academic research for practitioner audiences. However, the Network team began to meet with state education and community leaders who did not necessarily prioritize translational research. Instead, external partners spoke of a willingness to engage with researchers on projects of local importance. Faculty and staff also expressed interest in building research–practice partnerships—mostly around the interests of researchers. Community leaders already had calendars bursting with activities, and they were not as interested in committing more time to engage in tasks designed by researchers unrelated to their primary service delivery activities. Rather, state and community leaders expressed an interest in two key areas: developing *relationships* with researchers to write grants and receiving *evaluation* support to determine the effects of their local interventions on outcomes such as student learning and community health.

¹ I am a UW–Madison professor of educational leadership and policy analysis.

In response, the Network team sought out faculty and staff who had already expressed an interest in collaborations that would address the interests of local partners. The team worked with WCER, researchers, and staff to develop several initiatives that would facilitate greater interaction with the state education community:

- **Rural Education Research and Implementation Center (RERIC)** invited researchers to research and test solutions to problems identified by rural schools and communities.
- **Wisconsin Education Research Advisory Council (WERAC)** invited researchers and educators to guide the development of the WI DPI research agenda.
- **Wisconsin Evaluation Collaborative (WEC) Clinic** mentored graduate researchers to provide culturally responsive evaluation services for Wisconsin schools and non-profits.

Each initiative was designed to provide ready access to collaboration for interested partners, and each continues to support the SoE's priority to engage local educators in meaningful partnerships. However, the scale of partnerships supported through these programs did not sufficiently address the lack of meaningful connections across state and university communities. In 2015, the Network team set about designing a new approach to bring researchers into multi-level research–practice partnerships across the university and the state: The Network Fellows program.

2. Network Fellows Program

The Network Fellows program was a boundary object designed to connect graduate researchers with similarly interested state, community, and campus partners in mutually beneficial research–practice partnerships. Many higher education institutions attract aspiring scholars interested in acquiring the skills, knowledge, and networks they need to change the world. Full-time graduate researchers in the SoE, for example, receive support from the university to work on the research projects of their advisors or to serve as teacher mentors, teaching assistants or undergraduate instructors. These experiences are rewarding to students, advisors, and their programs. However, they may not include opportunities to build meaningful connections to the communities that students came back to graduate school to serve. Supporting graduate researchers to make research–practice connections to effect lasting change is particularly relevant in applied fields such as education, the arts, and health, where scholars typically work closely with practitioners.

To create more connections between campus, state, and community partners, the Network team initially explored a design that would focus on faculty-driven research–practice connections. However, early interviews with faculty, staff, and students revealed that many faculty had limited time for open consultation with community partners. The Network team also learned more about the appetite that many graduate researchers had for making connections with relevant practitioners and community groups. Graduate researchers spoke about the need for opportunities to apply what they were learning to real contexts of practice as a part of their education experiences. While some researchers talked about the opportunities for community-engaged work provided by their advisors and research projects, others expressed a strong desire

for a more systemic program that could become a standard feature of their graduate experiences. This program would invite graduate researchers to describe the kinds of community partnerships they felt would advance their learning.

While the Network team was brainstorming a pathway to involve graduate students in research–practice partnerships, WCER Director Robert Mathieu proposed a legislative fellowship for graduate researchers to collaborate with members of the Wisconsin State Legislature Education Committee. Mathieu pledged a WCER-funded stipend to support the fellowship, and the Network recruited and placed four education graduate researchers as inaugural Legislative Fellows.² The Network team began thinking of the Legislative Fellows initiative as a pilot for a broader Network Fellow initiative that could connect graduate researchers with the legislature and beyond. Based on the initial success of the Legislative Fellows, Mathieu agreed to support a broader initiative and pledged a \$1000 stipend for each successful Network Fellow match. The Network Fellows program was born.

The Network Fellows program flourished for the next 6 years as a boundary object to connect interested researchers and community partners. The Fellows were not traditional interns, rather they were invited to engage in research-based inquiry with similarly interested organizations. The Network team developed a sophisticated recruitment and placement process to match graduate researchers with interested partners. Each year, the program was formally evaluated to determine the quality of matches from student and partner perspectives in an iterative, continuous improvement process. From 2015 to 2021, over 300 UW–Madison graduate researchers from education, health, the arts, engineering, business, and social work completed 550 fellowships with over 100 campus and community organizations.³ The WI DPI alone hosted 6–8 graduate researchers every year in the offices of educator effectiveness, special education, data and technology, and as special assistants to the State Superintendent. The Collaborative Education Service Association (CESA), a 12-site regional Wisconsin professional development and education services network, also hosted 4–5 Fellows annually. Together with the Legislative Fellows, WI DPI and CESA Fellows were able to influence education statewide and to establish valuable connections between the university, education, and legislative sectors. Fellows also served with non-profits such as the Nehemiah Center, Centro Hispano, and the Wisconsin Rural School Alliance to improve access to education and healthcare among Wisconsin families and communities. WCER researchers used Network Fellows to staff a Wisconsin Evaluation Center program that prepared dozens of graduate researchers to conduct culturally responsive program evaluations for local non-profits. Other Fellows honed their skills and knowledge with campus partners on research and service projects to advance educational opportunity at UW–Madison

² The initial Legislative Fellows, Zach Nelson and Emily Gullickson, were masterful in providing research-based expertise across the partisan aisle of the Education Committee. One of the subsequent Legislative Fellows, Gwendolyn Baxley, helped develop the Wisconsin [Community School Model](#) as a support for creating more equitable schools in Wisconsin. Baxley, now a professor at SUNY-Buffalo, used the idea of community schools as a foundation for her doctoral studies. The efforts of these Legislative Fellows helped to humanize the work of researchers and built connections between the state academic and political worlds.

³ Some Fellows completed two or more partner assignments during their time as graduate researchers.

and the state university system. These kinds of win-win relationships helped to build stronger trust networks to share social capital across campus, state, and local communities.

Many Fellows considered their experiences in the Network as a highlight of their graduate education. In a 2020 evaluation, Fellows spoke about how the program helped them apply coursework to practical research. Eighty-four percent said that the Fellow experiences helped to connect theory and practice and provided access to meaningful professional development. One Fellow noted how the experience “made me a better candidate on the job market and shaped how I was perceived at my new institution.” The program allowed students to pursue the passions for change that drew them to graduate studies. Ninety-five percent reported that their fellowships allowed them to engage in meaningful work directly related to career mission, and 80% said their experience increased their sense of belonging at UW–Madison. One Fellow noted how his experience gave “a weight behind my name to pursue a project I was passionate about to fill a need in the community.” The Fellows’ value was also expressed by the client organizations. One community organization leader commented that “without a dedicated volunteer like [Fellow name], our special projects would not happen.” Another campus leader noted that “the value we have received . . . has had a positive impact on our (organization).” A leader of a statewide professional network reflected on his experience with the Fellows program that “I know I can always walk into the Network and be connected with the right people.”

The Fellows program proved an excellent example of how an adaptive, relationship-driven organization like the Network could fashion a boundary object to distribute social and intellectual capital through interdisciplinary research–practice partnerships. Fellows received valuable professional experience and connections; the university received increased visibility and opportunities for meaningful engagement with dozens of previously untapped community and campus organizations; and state and local organizations saw UW SoE partnership as a viable pathway toward innovative research and program development. The Fellows program enabled the distribution of social capital across institutions through the design of multiple research–practice relationships that successfully paired researchers and external partners to address shared problems of practice (see Coburn & Penuel, 2016). The Network Fellows program created trust networks grounded in mutual interest and shared expertise at scale. The next question for the Network team was: How can we involve faculty and staff in these kinds of interdisciplinary research–practice activities?

3. Grand Challenges

The UW–Madison SoE Grand Challenges (GC) project was a boundary object designed to spark interdisciplinary research among faculty, staff, and community members to address key problems in education, health, and the arts through an internal grant program. Dean Diana Hess arrived at UW–Madison in 2016 with a commitment to pursue an innovation agenda that would generate new pathways for inquiry. Through a number of meetings with Network leaders, we began to consider a GC model to organize our process. GC competitions emerged in the 2000s as a model for mobilizing knowledge and people to address big social, medical, and environmental problems (Ferraro et al., 2015). In 2003, the Gates Foundation launched a GC initiative with a

focus on global health. Gates awarded \$450 million to support 44 research teams working on 14 scientific challenges.⁴ This was followed with a 2007 program to award \$100,000 to hundreds of teams to support innovative approaches to scientific, engineering, social, ethical, and health problems. The Obama White House picked up the GC idea with a 2013 initiative that invited research universities to start their own GC programs (Peña & Stokes, 2019). GC emerged as a model that set “ambitious yet achievable goals for society that mobilize the profession, capture the public’s imagination, and require innovation and breakthroughs in science and practice to achieve” (Kalil, 2012, p. 34). There are now hundreds of GC programs on every continent that address a wide range of social, health, and engineering issues.⁵

The Fellows program showed the Network team how to build a boundary object to connect graduate researchers, campus, and the community in mutually beneficial research–practice networks. The next step for the Network was to build a new boundary object that could engage faculty and academic staff to participate in these kinds of interest-based, cross-disciplinary interactions to facilitate innovation. The unique, multidisciplinary organization of the UW–Madison SoE departments provided an interesting design context for building research–practice connections. The 165 faculty of the UW–Madison SoE are in four traditional education departments (education leadership and policy analysis; education policy studies; curriculum and instruction; and educational psychology), three education and health-related departments (rehabilitation psychology and special education; kinesiology; and counseling psychology), and three art departments (art; dance; and theatre and drama). An additional 400 research and practice staff worked in these 10 departments and in WCER, the Morgridge Center for Public Service, and several other units. The diversity of research methods, questions, backgrounds, and goals of the disciplinary fields represented across these departments and units made it difficult to see a common ground for innovation around shared problems of practice.

Diversity of Research Epistemologies as a Design Affordance. The traditional GC model involved selecting an important, shared problem to solve, then awarding the teams that provided the most viable solutions. Identifying a shared problem itself proved a challenge in the SoE community. In early 2015, Network and WCER leaders brought education researchers from across the school together around the apparently shared topic of improving student outcomes. Leaders developed a day-long Achieving Excellence for All meeting to identify “interventions to reduce opportunity and achievement gaps” and invited participants to their share “evidence of intervention effectiveness.” After introductory remarks, facilitators invited the 50 participants from across the SoE departments to discuss potential solutions. Almost immediately faculty and staff challenged framing the discussions in terms of achievement gaps, interventions, and effectiveness. One faculty member proposed to “reframe the conversation to create spaces for comprehensive approaches to social, emotional, and cultural capacity building”; other participants pushed to have the discussion focus instead on learner agency, creativity, performance, families, and health care. The day blossomed into an unanticipated, rich,

⁴ <https://gcgh.grandchallenges.org/about>

⁵ <https://grandchallenges.org>

multidisciplinary discussion about what was worth studying in education, and how. While some of the organizing team interpreted the lack of shared agreement as a failure for the Achieving Excellence agenda, others were inspired by the passion expressed by the participants and the diverse range of viable pathways for research and practice discussed.

In reflecting on the Achieving Excellence experience, Network leaders proposed a GC program that would draw on this diversity of epistemological and methodological perspectives as a strength. How could a GC initiative spark collaboration across diverse methodological and epistemological expertise to create capacity for meaningful innovation? To document the epistemological diversity represented across the school, the Network team conducted 180 interviews with SoE faculty and staff across all departments, research groups, and service units to discern what motivated their research and practical interests in education, health, and the arts. Analysis of these interviews revealed a rich variety of compelling research programs with investigators who noted the lack of meaningful opportunities for authentic interdisciplinary engagement.

The Network discovered three distinctive epistemic voices that shaped research and practice communities across the school:

- *Positivist* researchers framed their work to measure the effects of interventions on desired outcome. Many positivist researchers came from kinesiology, educational psychology, and education leadership and policy analysis (ELPA). These researchers tended to focus on the development and application of precision methods to justify inferences about the causes and results of learning and health care. Positivists often developed well-funded research programs that aligned with federal grant-making initiatives sponsored by the National Science Foundation, the U.S. Department of Education, and the National Institutes of Health.
- *Design* faculty and staff developed, tested, and reflected upon artifacts, such as programs, curricula, and interventions to communicate intention to educators, learners, and audiences. Artists made, shared, and wrote about artifacts in a variety of media. Some education faculty and several WCER staff members created artifacts such as policies, assessments, video games, performances, and learning tools, reflected on usage, and revised designs to fit learner (or client) needs. Some design researchers who focused on STEM areas of teaching and learning received support from the National Science Foundation and private foundations; most non-STEM designers received little to no external support for their work.
- *Critical* researchers examined how the underlying forces of power, race, gender, and privilege shaped the design and assessment of educational, health, and arts initiatives. The goal of critical research and practice is to reveal hidden or obscured corrupting factors in established (and innovative) practices, and to open a space for new, more equitable

approaches.⁶ Some critical researchers received external support from a small number of private foundations, but most received no external support for their work.

This diversity of faculty perspectives on research methodology and what counted as teaching, learning, and educational outcomes obstructed easy consensus on what could count as a shared problem of practice. However, the same diversity provided an unanticipated resource to design interdisciplinary, adjacent possibles.

Designing a Grand Challenges Program for the School of Education. The SoE Grand Challenges initiative was designed to mobilize interdisciplinary diversity to spark new problems of practice. Prevailing GC models defined a target goal, designed a program to select participants, and supported awarded researchers (Peña & Stokes, 2019). This process privileges a single big problem and could have the side effect of creating communities of winners and losers among the applicants. The definition of success in terms of a small number of awarded proposals, with a larger number of teams who did not win, would undermine the intention to build a culture of interdisciplinary partnerships. The SoE GC would reverse the first two stages of the traditional GC process, first focusing on designs to connect interested researchers and community members, then inviting teams to specify a significant problem of practice through interdisciplinary engagement. Rather than pre-defining a shared problem, the GC program would be designed for relevant projects to emerge through interdisciplinary interaction among faculty and community members. Thomke and Von Hippel (2002) suggest that innovative work happens when participants are given the tools and skills needed to design and develop new approaches.

⁶ If these three stances were vertices on a triangle, most members of the SoE community could place themselves somewhere along the axes. This 2016 picture shows a Network team analysis of UW SoE faculty along an education research-type triangle. Departments are represented by card color—note the concentration of education policy studies faculty (yellow) in the Critique category, and education psychology faculty (green) in the Test (positivist) corner.



The SoE GC program would be designed with a “choice architecture” (Thaler & Sunstein, 2021) to nudge faculty and staff toward choosing new interdisciplinary partnerships.

In 2017, the Network kicked off the SoE version of the GC as a competitive grant program nested within a design for interaction that would build capacity for innovation around good ideas, regardless of who would receive grant support. We sought to support work that addressed four criteria:

- *Inquiry* – does the work push the frontiers of knowledge in education, health, and the arts?
- *Innovation* – does the work feature new ideas and programs?
- *Impact* – does the work describe how to make and measure real differences in the worlds of scholarship, practice, and creation?
- *Interdisciplinarity* – does the work access the power of interdisciplinary perspectives to inspire new ways of thinking?

The role of the Network staff was to connect interested faculty and staff with new partners from outside their departments. The team worked with each researcher group to help prepare strong proposals, then designed a peer-review process that would make recommendations to the Dean’s Office about which proposals would be funded. The Network team worked with each winning team to structure and report the results of their research and offered consultation for each unfunded proposal to develop alternative pathways for support. The separation of supporting from awarding allowed Network staff to act as advocates for the development of strong ideas and new partnerships regardless of funding outcome. Over the next 4 years, 62 research teams with 300 faculty, staff, and community partners submitted GC applications. Twenty-one teams with over 100 SoE and community research team members received \$1.8 million in awards for projects to connect, engage, and transform the SoE worlds of research and practice in the arts, health, and education.

The Network motto *Connect + Engage = Transform* defined the GC stages. In the *Connect* stage, the Network team organized opportunities (and times) for participants to meet other faculty and staff who might share interests, but who came from different epistemological and methodological backgrounds. Each possible proposal began with a Network consultation to learn more about the interested team and possible new partners for the proposals. The Network staff would then help to identify compatible research and community partners from other fields to join the project. This consultation process guided each team toward a novel course of interdisciplinary discovery of adjacent possibles in the formulation of their GC. The requirement that each team include people from outside existing professional and disciplinary networks disrupted existing thought partnerships and assumptions about what was possible.

The Network team designed a series of *Connect* interactions at different scales to bring people together around shared ideas:

- *Meet-ups* were larger-scale events (50–100 people) organized around the shared interests and aspirations we identified in the faculty and staff interviews. Meet-up topics included global

education, rural education, mobility and immigration, and digital media and the arts. The Network team individually invited each person who had expressed an interest in a meet-up topic to participate, made real-time connections during meet-ups, and arranged follow-up meetings for potential partnerships.

- *Spark Dinners* brought together 8–12 potential collaborators to design proposals based on shared ideas such as prison reform or arts collaboration. Dinners were hosted by a Network team member and allowed participants to develop new connections around shared interests. Network team members facilitated interactions during Spark Dinners and followed up with offers to develop proposals with new colleague relationships.
- *Engage Lunches* brought together 2–5 potential collaborators to focus on structuring a successful proposal. Network staff hosted over 40 lunches to support proposal conceptualization and development. Lunches often resulted from Meet-ups and Spark Dinners as occasions for Network team members to work with interested partners in developing GC proposals.

These events were designed to make connections across the SoE community. Through *Connect* events, the Network team began to observe how faculty and staff with different disciplinary commitments engaged in the process. For example, the team observed how artists had initial difficulties with the GC proposal process. Social science language of “research,” “data,” and “evidence,” used to define the grant competitions, often failed to resonate with artists, actors, directors, and dancers. The Network team responded by working with arts, theatre, and dance faculty and staff to reframe the call for proposals, using language and structures from programs in the National Endowments of the Arts and the Humanities, and the UW–Madison Creative Arts Awards.

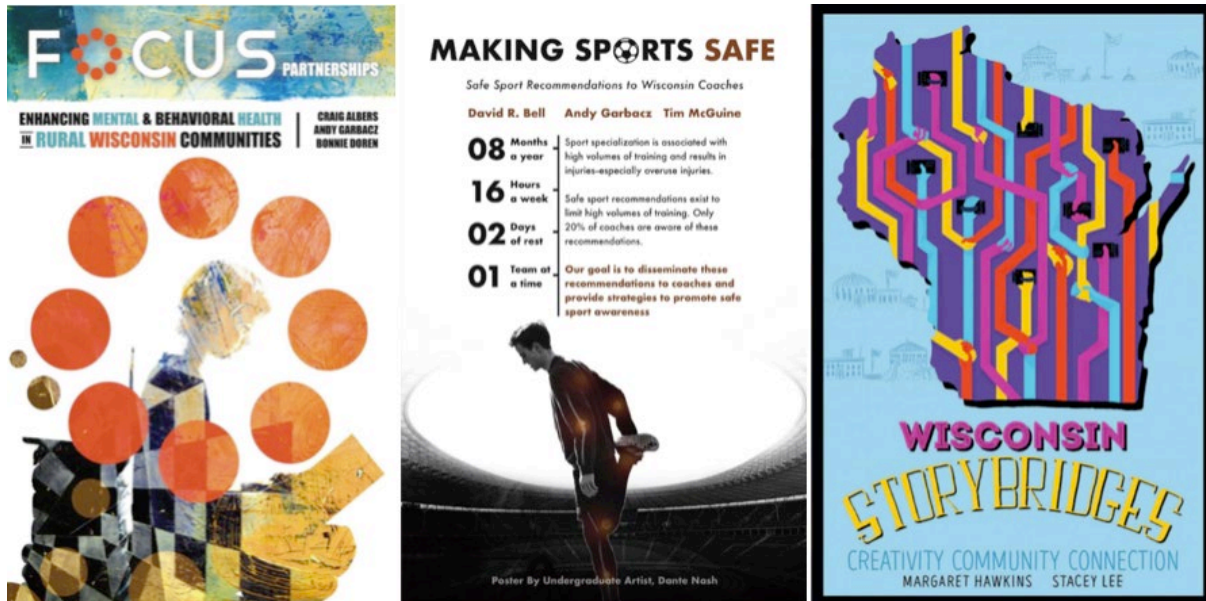


Figure 1: Grand Challenges Poster Examples. Focus Partnerships, designed by Taylor Srebnick; Making Sports Safe, designed by Dante Nash; and Wisconsin Storybridges, designed by Autumn Brown.

Connect also allowed Network staff to develop new pathways for student participation in Grand Challenges. The Network team was regularly challenged to make meaningful connections for graduate artists and community partners in the Fellows program. For the GC, the Network designed a requirement that graphic artists collaborate to develop representations of key ideas with each GC proposal team. Graduate artists received a stipend to work with teams throughout the proposal development process on representations that then became the face of the project (see **Figure 1**). Posters were shared at events where the entire SoE community had the opportunity to talk with the team members and to rate the quality of the proposals. The poster development pathway integrated aspiring artists into the GC process, invited proposers to participate in the graphic design process, and helped the entire SoE community to appreciate the role of interdisciplinary creation in the development of innovative ideas.⁷

Engage and *Transform* became the names of the first two GC competitions. *Engage*, the initial 2017 grant program, awarded \$25,000 1-year grants to eight (of 14) teams to build partnerships around interdisciplinary research projects and programs. In 2018, the *Transform* competition recruited teams to build on ideas they had already developed to focus on community and scholarly impact. Four of the 18 teams that applied received 2-year \$250,000 *Transform* awards. The GC concluded with a 2020 competition of *Seed* awards to spark new research–practice partnerships. Nine of 30 applying teams received 1-year, \$75,000 *Seed* awards.

⁷ The [Grand Challenges Art Book](https://tinyurl.com/2wfabxd7) includes more detail about the poster program and the full range of Grand Challenges art produced. (<https://tinyurl.com/2wfabxd7>)

The range of novel partnerships supported by GC displayed the potential for interdisciplinary collaboration. Funded projects included a collaboration with kinesiology and arts faculty to develop innovative approaches to Alzheimer’s therapy; a multidisciplinary team to mobilize youth voices to engage in racial justice work; an international partnership to support education for children with disabilities in Malawi; and a project to develop and test medical devices to restore balance control for stroke victims. Each of these projects supported new partners from different disciplines to frame new pathways for inquiry and impact. Other funded projects were successful at sustained interdisciplinary organizations:

- The *Deep Dive Digital Research Library* project brought experts from the UW–Madison Children’s Cooperative Books Center together with data scientists from the Wisconsin Institutes for Discovery to digitize selected children’s books and provide query tools for researchers and librarians to analyze book contents around issues of diversity and equity. This work expanded into a funded partnership with the WI DPI to provide statewide access to digitized children’s literature resources.
- The *UW Community Arts Collaboratory (CoLab)* brought scholars and practitioners together from dance, theatre, art, and curriculum and instruction to create and study performing and fine arts programs to support underserved youth. The CoLab has developed sustained partnerships with the Dane Arts Commission, the Madison Youth Arts Center, and the Madison Overture Center, and continues to flourish with support from the National Endowment for the Arts, the Wallace Foundation, the Madison Metropolitan School District, and through partnerships with local arts foundations and education spaces.
- The *Toward a Culturally Responsive Indigenous Learning Lab* connected researchers from special education with program leaders from the UW–Madison Student Diversity program to develop and pilot culturally appropriate behavioral support systems with Native American students, families, and community leaders in a Wisconsin district. The team used data reports to highlight disparities in the existing disciplinary programs to engage the school and local communities in a redesign project. The team received subsequent support from the Spencer Foundation and campus support to sustain the project.

The GC program proved a great success with the SoE community. In a 2019 evaluation report, 83% of 155 survey respondents reported that the GC fosters collaboration, and 73% agreed that the projects benefited society. Seventy-seven percent felt that the program fostered innovation, and 64% anticipated that their GC partnerships, whether funded or not, would continue to work together. In 2019, the Network staff conducted a social network survey to capture the nature and number of interactions sparked by GC activities. The sociogram in **Figure 2** depicts the interdepartmental interactions across all GC proposals. Each line represents a GC proposal partnership made and each actor in a cluster reported attending a GC connection event.

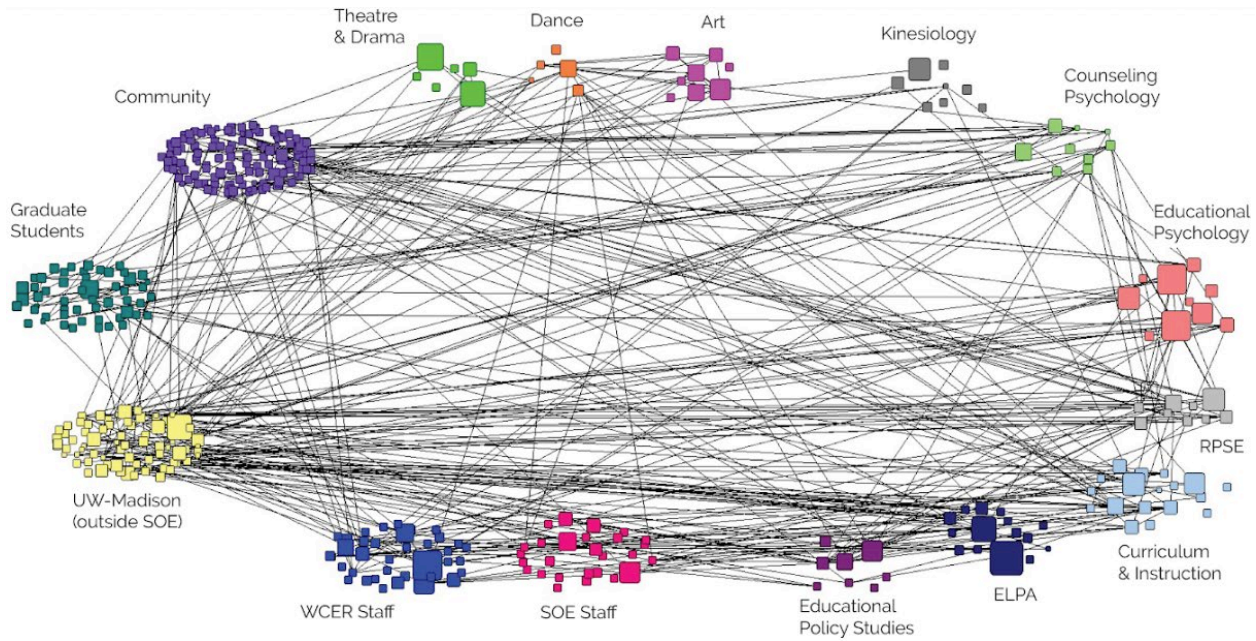


Figure 2: Sociogram of Cumulative Network Participation in Grand Challenges Activities, 2016–2020.

- The smaller cluster around the top and right side show the number of faculty members in each SoE department who participated. Ninety (of 165) faculty members across the 10 SoE departments participated in a GC proposal or activity.
- The larger rectangles in each cluster signify a GC principal investigator (PI). The GC rules stated that only SoE faculty or senior staff could serve as PIs, and there was at least one PI in each qualifying community.
- The “spaghetti bowl” in the middle of the graphic signified the ideal of interdisciplinary innovation for SoE leaders. The dense clusters on the left side of Figure 2 provide evidence of the GC’s goal to connect faculty with campus and community partners.

The GC enabled faculty and staff from across SoE departments, services units, and the campus and local community to find a welcome space for people to bring their talents and interests together to envision new possibilities of research and practice. Nearly half of the survey respondents said that the GC encouraged them to find new partners for collaboration.

The GC created accessible, adjacent possibilities across communities. For a time, the GC projects formed a liquid network where ideas from different perspectives flowed toward new possibilities for research and action. However, like so many events in our recent past, the global COVID-19 pandemic and racial justice reckoning radically shifted the innovation agenda of SoE leaders. Moving an almost entirely in-person educational and research world to on-line delivery systems, while also supporting student and staff mental and physical health concerns, required all SoE leaders to work non-stop in unexplored spaces with untested tools. This need for a new kind of innovation abruptly altered the momentum of existing Network initiatives and justly called for the redirection of support at the SoE and the state levels into complicated new efforts to maintain

high-quality learning for all students in perilous new circumstances. When the final GC *Seed* competition closed in 2021, the Network was also ended as an SoE initiative.

Discussion

This design narrative showed how a higher education leadership team sought to develop the capacity for innovation. Design narratives focus on how actors build initiatives to change activity patterns within socio-cultural learning environments. Higher education learning environments are shaped by a complex, inherited, organizational culture of rules, structures, work routines, and values. This design narrative tells a story of leadership for innovation where certain actors built up trust with internal communities through conversations that identified unrealized research aspirations, then developed strategic initiatives to link and support potentially interested partners in meaningful research activities.

The design narrative provided a sequential story of how Network leaders engaged in this organizational reform work. This section turns the narrative on its side, so to speak, to highlight key themes that characterized the Network leadership practices.

- First, I consider how the concept of the *boundary object* can serve as a powerful tool to describe how Network leaders reinvented routines through mobilizing social, material, and intellectual capital in new directions. The Network's programs are considered as designed *boundary objects* that helped to bridge interests and expertise across communities of practice, and subsequently created the capacity for new forms of collaborative innovation.
- Second, I discuss the role *organizational leaders* can play by creating spaces, providing resources, and conferring legitimacy for experimentation that establishes the conditions for actors to design new pathways for innovation. The design and maintenance of Network initiatives was made possible by leaders who aimed for relational equity through inclusive activities, drawing in diverse communities of inquiry who may not have previously engaged in coordinated innovation activities.

Finally, in the conclusion, I revisit the idea (and limitations) of a design narrative as a research method to document the work of leaders interested in building new forms of research and collaboration and realizing the potential of higher education spaces for social and cultural change.

Boundary Object Design. The development of Network initiatives can be understood as a sequence of *boundary objects* that served increasingly diverse community interests. Star and Griesemer (1989) described how boundary objects facilitate communication across multiple social worlds. Successful boundary objects are “plastic enough to adapt to local needs and the constraints of the several parties employing them, yet robust enough to maintain a common identity across sites” (393). Generic boundary objects, such as maps or directories, facilitate activity across a wide range of communities. Bringing clearly defined groups together, though, often requires an intentional focus on the needs and interests of each community to create low-risk occasions for interaction. Wenger (1998) discusses how the histories of discourse communities create boundaries that protect safe spaces for shared meaning. Designed boundary

objects can encourage actors nested in existing discourse communities to risk new possibilities for interaction (Wenger-Trayner & Wenger-Trayner, 2014).

Each Network initiative can be seen as a boundary object to help support connections across disparate communities. The Network itself was developed as boundary object to expand the connections between the SoE and state education communities. The mission of the Network was to identify and broker opportunities for more sustained interaction between university and state communities. Internally, the Network mobilized faculty and staff resources for outreach and partnership and provided a friendly gateway for external communities to become more familiar with the rich (and sometimes bewildering) university networks. The resulting Fellows program design explicitly recruited suitable partners to participate in carefully defined research–practice partnerships that deepened trust between campus and community partners. The GC built on the experience of Network Fellows staff to design productive partnerships with faculty, staff, and external communities. Considered individually, each Network initiative identified viable opportunities for certain types of productive cross-community research activities.

Network initiatives can also be considered as a sequence of successive boundary objects that build on prior levels of experience and interaction. The connections that resulted from each boundary object served as a condition for the next round of design. **Table 1** traces the *precipitating issue* that sparked boundary object design challenge, describes the *capacity built* as a new design resource, and shares the *resulting challenge* that anticipated the next round of boundary object design.

Table 1: The Generative Design Process of Network Initiatives.

<i>Boundary Object</i>	<i>Precipitating Issue</i>	<i>Capacity Built</i>	<i>Resulting Challenge</i>
Network	Re-connecting university to local and state agencies and communities.	Organizational familiarity with external partner concerns, needs and goals.	How to build meaningful partnerships between internal and external communities?
Network Fellows	Providing graduate researchers with customized partnership experiences.	An accessible process for curated community-engaged research project development.	How could we bring faculty and staff into community-engaged research partnerships?
Grand Challenges	Motivating faculty and staff to move beyond familiar communities to risk interdisciplinary work.	Generative, multi-partner research projects that create liquid networks for innovation.	How to sustain the liquid networks for innovation in institutional culture?

The Network boundary objects were not designed as inert programs whose mere presence would create voluntary cross-community interaction. The Network team recognized the inherent flaws in the “we are here if you need us” or “if we build it they will come” programs that reproduce the routines of privilege for already connected actors. Network boundary objects invited members of siloed discourse communities to risk participation outside comfort zones. The Fellows, for example, curated connections after close listening to graduate and community partners. The coordinated student experiences in a typical graduate school might be entirely facilitated by faculty advisors who may have radically different expectations and connections to external communities. The Network team built strong relationships through interviews with individual graduate students and with external partners to design customized, mutually beneficial research–practice partnerships. The power of these partnerships helped many advisors to see the value of the Network through the experiences of their advisees. Similarly, the GC program was built on in-depth interviews to better understand the research aspirations of faculty and staff. The Network actively brokered connections with statewide partners to match faculty and staff interests in proposal development. Network boundary objects successfully motivated faculty, staff, and students across epistemological and methodological communities to participate in liquid networks for innovation. Collectively, the Network used a successive boundary objects design to “maintain a common identity across sites” with internal and external communities, while also remaining plastic enough to adapt to the “constraints of the several parties” addressed in each research–practice partnership (Star and Griesemer, 393).

Leadership for Innovation. Leaders establish the conditions that allow organizational members to engage in tasks that define the organizational mission. Successful leaders build and maintain structures that guide member activities into routines that come to shape organizational cultures (Spillane et al., 2004). The Network design narrative shows two levels of organizational leadership. First, Network leaders *engaged in organizational research* to facilitate the design of boundary objects that would enhance *leadership for relational equity*. Second, SoE and WI DPI leaders *opened spaces* and *provided resources* to legitimate Network activities for internal and external communities.

Engagement in Organizational Research. Network leaders were committed to learning about the interests and abilities of participants as a necessary condition for creating authentic pathways for collaboration. This user-centered design strategy grounds program development in a deep understanding of user needs, practices, and aspirations (see Chang, 2018). In the university context, many actors are already committed to ample agendas for research and practice. When soliciting external partners, research communities can tend to focus on communities that help further pre-defined research program needs. The Network team conducted organizational research to identify which problems of practice were valued by each community (c.f. Bryk, et. al. 2015). The Network strategy assumed that the best way to risk new partnerships would be to carefully study the aspirations of researcher and staff communities.

Through this kind of research, the Network team gained a nuanced understanding of the possible directions for research and program development and began to identify similar interests across disparate groups that might allow for brokering new connections. When the Network team

organized brokering events, the team could select actors from across sectors who had already expressed interest in related expectations. Careful documentation of the interviews and interactions from organizational research resulted in a valuable resource for the team to customize partnerships opportunities. The success of using this kind of local research to build early partnerships (such as the WEC Clinic and RERIC) gave the Network team confidence to expand knowledge collection into the ambitious program of interviews with all faculty and staff.

Conducting in-depth organizational research on the aspiration of internal and external community members allowed successive boundary object design. The Network team used its organizational research base to design a GC program that would reflect the SoE faculty and staff conditions (and aspirations) for engagement, and to match researchers with aligned external partners. Each GC competition provided new insights into how participants engaged in the process, which in turn led to a program redesign. Over time, the Network came to serve as a “change laboratory” (Cole & Engeström, 2006) for the SoE by using organizational research to “step into the messiness and uncertainty of problem-oriented work” to “share in the action and cognition of practitioners” (Penuel & Gutiérrez, 2014 p. 20).

Leading for Relational Equity. Network leaders designed boundary objects for *relational equity* to connect with participant communities that may have been excluded from prior initiatives outside and inside the SoE to advance relational equity. The organizational research strategy for innovation allowed the Network to design programs that could avoid the trap of rewarding groups and interests in the community whose programs had already received abundant support. DiGiacomo and Gutiérrez (2015) proposed the idea of relational equity to discuss how institutions can foster relations in which all participant’s sense-making is brought into joint activity in equally valued ways. By designing for relational equity, we intentionally scaffold inclusive activities that trouble the existing status quo and create spaces where participants’ interests are recognized and supported to craft new approaches for engagement (Penuel & DiGiacomo, 2018).

The Network was initially designed to identify and include the voices of participants from *outside* by the internal SoE communities. The Network team toured the state to better understand what local education communities wanted from research partnerships. These conversations, with organizations such as the state CESA network, Centro Hispano, the Wisconsin Response to Intervention Center, the Wisconsin Public Education Network, and the Wisconsin Rural School Alliance, helped the Network to design the Fellows program as a boundary object that allowed interests, knowledge, and skills to flow into new opportunities for interaction. The aggregation of Fellow connections, over time, created multi-dimensional relational networks that advanced inquiry while creating a greater awareness of available expertise across these diverse communities. This rich network of partnerships dramatically increased the range of potential partners who were willing to participate in the Grand Challenges. The Network designed improved relational equity by noticing the interests and needs of external communities and making explicit design choices and outreach efforts to scaffold participation in Fellows and Grand Challenges partnerships.

The Network facilitated relational equity *within* the SoE community as well. Historically, faculty and staff experienced wide disparities in ready access to research support grants based on disciplinary membership. Education psychology and kinesiology faculty, for example, often had research agendas aligned to the program priorities of the National Science Foundation, the U.S. Department of Education Institute for Education Sciences, and the National Institutes of Health. Faculty in the dance, art, and theatre departments, however, typically lacked direct access to these types of public funding opportunities. The imbalances in funding availability created an internal relational equity challenge of haves and have-nots across the SoE research communities. The Network team used organizational research to identify potential partners among disparate research communities. Qualitative, critical researchers interested in disparate consequences assigned for school-related behaviors for First Nation students, for example, were introduced to quantitative researchers interested in measuring the impact of behavioral interventions on family well-being and with schools interested in supporting this direction for inquiry. The Network team brokered these kinds of interest-based connections across communities throughout its operation.

At the boundary object level, the GC was designed to address internal relational equity. The Network team recognized that research meant different things across internal and external communities. These differences were felt even in the use of the word “research” to describe scholarly activity. The Network team designed the Engage call for proposals around a more social sciences-based understanding of a research program that would contain research questions, methods, plans for analysis, and dissemination. Subsequent interviews with arts, theatre, and dance faculty, staff, and students demonstrated that the Engage proposal reinforced internal relational equity challenges for scholarly communities who did not frame their scholarly work from a social science perspective. The Network worked closely with art, dance, and theatre faculty, staff, and students to craft language for subsequent proposals that fit into the world of production and representation. Inviting partner communities to collaboratively redesign the conditions for entry increased the sense of belonging and relational equity for many members of the arts community in the SoE.

Engage program evaluation data also revealed that the GC were not as attractive to the SoE faculty and staff of color. The Network team reached out to researchers who had not participated in the initial round of funding to better understand the program structures that could facilitate engagement. Some faculty of color observed that leaving the mission of GC open to be defined by individual research teams overlooked the shared SoE commitment to equity and inclusion. The Network team worked with leaders of color across the school and external communities to redesign the Transform and Seed requests for proposals and review processes to feature equity, access, and inclusion as key criteria for success. A commitment to relational equity was reflected in these efforts to integrate the voices of participants who may have been overlooked in prior programs, resulting in a more inclusive experience for the whole community.

The plasticity of the Network mission created a unique institutional capacity that could dynamically link the varied and continuously shifting priorities of partners through boundary objects that resulted in new patterns for interaction. The Network used organizational research to grow a robust social capital resource—not only to make new connections for existing partners,

but to design pathways for relational equity that could draw a wider range of diverse communities into meaningful research–practice partnerships. This design narrative shows how the Network experimented with a new model for how a vibrant higher education community could strategically design boundary objects that invited disparate community members into an inclusive liquid network for innovation.

Conclusion

The Wisconsin Collaborative Education Research Network, or the Network, was created to spark new forms of interaction and pathways for innovation in a higher education context. Inspired by the Wisconsin Idea, SoE leaders recognized that the school, with its considerable social and intellectual capital, could embrace a wider range of partners and communities in the search for knowledge and practices to improve the worlds of education, health, and the arts. The Network created boundary objects to engage in organizational research based on listening to external and internal community members; mobilized viable research–practice partners with graduate students, campus, and state partners; and brought faculty, staff, and communities together to develop a Grand Challenges grant program to support new research projects and programs. Over its 8-year history, the Network helped to position campus and community participants to consider new, adjacent possibles in the pursuit of liquid networks for innovation.

This design narrative explained how programs like the Network are developed and set loose in a complex higher education organization. Design narratives provide concrete examples of how design activity unfolds in real contexts. They highlight why design choices were made, explain which features of the context were seen as important to actors, and consider how choices influenced subsequent actions. Design narratives do not prove that one approach was better than others, or that the choices made would always result in the effects experienced in other contexts. This narrative might be complemented by a more traditional study that identified and correlated key input and output variables in the SoE context, such as comparing the resources invested in Network people and programs with research productivity or revenue produced, to better understand the effects of Network-like programs on the desired organizational outcomes. The fact that there are alternative ways to tell this story is not necessarily a limit of the design narrative method. Jerome Bruner (1987) contrasts narrative reasoning that relates intentions and outcomes in stories about experiences, with paradigmatic reasoning, which explores the underlying connections between discrete variables. For Bruner, a good narrative has verisimilitude, that is, it “rings true” to a similarly situated listener who can trace a distinctive, guiding signal through the contextual noise that characterizes all experience. The intended force of a design narrative is to retain enough of the context of action to make the pathway resonant to actors who are involved in similar situations. The desired outcome of this design narrative is to show how a motivated group of education leaders sought to redirect the flow of resources to create new patterns of interaction and innovation. The narrative will be successful if leaders who work in similar higher education contexts begin to think about possibilities in their own contexts of practice and to experiment with new designs for innovation.

Higher education institutions have historically been powerful sources of human and intellectual capital for social reform. In most cases, their capital is organized to serve the primary functions of research and teaching. Schools of education, for example, teach a wide range of professionals to lead schools, teach students, provide support services in and out of schools, and engage in a rich variety of research activities that span disciplinary boundaries. Higher education draws together researchers, funders, and practitioners into generative networks of ideas and resources that can help shape new forms of knowledge and practice. Initiatives like the Network, the Fellows, and the Grand Challenges can provide powerful examples of how to mobilize professional school capital to create more equitable and vibrant worlds. In *Talking to Strangers*, Danielle Allen (2004) explains how our lack of shared public trust results from our collective inability to interact with others outside our own communities. Higher education has an obligation to act as a powerful, well-positioned broker to bring together diverse communities who can define and address complex social problems. Talented and motivated students come to higher education to prepare for cutting-edge research and practice careers with well-funded faculty who have abundant social capital to learn new research and practice skills. In practice, though, higher education can serve as a primary site for institutional opportunity hoarding (Tilly, 1998; Lewis & Diamond, 2015). The innovative ideas and practices that emerge at selective universities can end up trapped in a self-defining discourse of faculty, staff, and students that concentrates, rather than distributes, viable opportunities for social engagement. As Derek Bok (1990) comments, universities “continue to do their least impressive work on the very subjects where society’s need for greater knowledge and better education is most acute” (122).

Allen invites higher education to “make its defining features of openness and free exchange...the basis for its interactions with other citizens” (181). She describes how “any discoveries [the university] might make about what...can convert distrust to trust, generate economic opportunity, and extend the impact of educational resources will count as valuable research around the world” (184). This insight, which reflects the essence of the Wisconsin Idea, lived at the heart of the Network’s mission to generate innovation through collaborative engagement. The goal of this design narrative is to tell how a capital-rich higher education institution invested in a social capital strategy to spark research–practice innovation. The Network made viable connections with campus, state, and local communities to build boundary objects to afford productive interaction. The Network’s commitment to relational equity identified and included voices who had not been prioritized in previous institutional initiatives. As a result, new forms of research–practice partnerships came to redefine the work of many faculty, staff, students, and communities. By describing how Network efforts unfolded through successive development of boundary objects that redirected the flow of educational resources toward collaborative inquiry, this design narrative makes the Network’s processes visible and available to higher education leaders anywhere.

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