CASE STUDY: MCIT

PIs Tom Pensabene, Kandace Miller and Bradley McPeak

www.midwestcenterforit.org

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EXECUTIVE SUMMARY

The Midwest Center for Information Technology (MCIT) was established in 2001 as a consortium of six previously disconnected community colleges in Nebraska, Iowa, and North and South Dakota with some partnership of four-year colleges and industry. It ran through 2015, bringing together regional colleges into a networked improvement community to provide professional development for faculty to prepare a local information technology workforce.

PURPOSE AND BACKGROUND

The Midwest Center for Information Technology (MCIT) was established in 2001 as a consortium of six previously disconnected community colleges in Nebraska, Iowa, and North and South Dakota with some partnership of four-year colleges and industry. The Center was initiated and hosted by the Applied Information Management (AIM) Institute, a non-profit organization based in Omaha, Nebraska focused on workforce development. Home to ConAgra, the region had significant demand for IT professionals. The Center was created to address the IT workforce and educational needs in this region by investing in the high school to career pipeline, primarily through faculty professional development. The AIM board was composed of a mix of educators and industry representatives, making the grant a natural fit to support this effort.

When the Center formed in 2001, the dot-com bubble had just burst, making it easy to meet the initial objective of increasing enrollment in community college IT programs by 50% and reducing the number of unfilled job openings in IT by 30%. With credit to the flexibility of NSF to allow for pivots in the approach, the group quickly focused more heavily on developing faculty at the 10 partner colleges to better meet the needs of the 50,000 students served annually across the MCIT institutions.

The Center had three rounds of funding before closing in 2015. During this time, the Center was able to bring together 10 colleges that had previously been highly isolated and six of which competed for the same state funds, to create a strong community with co-defined professional development, shared objectives, and

Working Connections

In the early 2000's, the Working Connections model emerged from AACC and the NSF-funded National Workforce Center for Emerging Technologies at Bellevue Community College in Bellevue, Washington. The Working Connections approach emphasized bringing together faculty and industry for a one-week working meeting that included an environmental scan, which led to the determination of training needs around cutting edge topics. ATE program officers encouraged regional centers to adopt this model as part of their proposals, and MCIT eagerly embraced the approach and held quarterly meetings and an annual summer gathering where the community addressed curriculum adaptation, faculty development, workforce development, articulation, and dissemination of best practices among the colleges and regional businesses. Faculty were encouraged to adapt and share curricula in an effort to improve institution-related practices. In 2011 a final renewal brought further cooperation between the colleges and outreach into K-12 institutions.

One of the MCIT objectives was to provide professional development for faculty to keep academic programs current, ultimately affecting student training to meet workforce demands. Much of this faculty PD occurred during the weeklong Working Connections Institute, which included faculty from the 10 institutions and beyond, IT professionals from business and industry, and secondary school IT teachers. This week-long meeting has been running for nearly 20 years and is shaped by pre-institute faculty survey (response rate ~ 90%) to identify specific training needs. Each year nearly 200 people attend. The program evaluation found that 100% of faculty that attend find the Working Connections Institute to be a valuable opportunity for

collaboration on subsequent grants. PI Tom Pensabene noted that before the grant "there were three schools that never had anything to do with each other and seven schools that only spoke to complain about the funding formula and how they didn't get their fair share of it. There was no collaboration, and collaboration as a word was never used." By the end of the grant, there were strong collaborative relationships that persist today.

PD and that "such training opportunities were not otherwise regionally available."[1] The evaluation also found that 100% of respondents found the informal sharing between faculty as important as the formal training sessions, with the interactions often concerning curricula and curriculum revisions.

EVOLUTION OF THE COMMUNITY

The consortium of 10 community colleges was a profound and ambitious goal. When the Center was formed it was unusual in that it was led by a non-profit organization rather than an institution of higher education. Given the highly competitive landscape in the area, the non-profit organization provided neutral leadership to organize the colleges and also provided the fiscal oversight, which was complex and beyond the capacity of any of the partner colleges. The financial support of the grant added an additional incentive for participation, and each college was offered the same amount for participation. The fact that the representatives from all the colleges were faculty members (except Metropolitan Community College, which sent a Dean in addition to a faculty member and the PI) helped circumvent the politics between institutions.
The faculty were relatively unburdened by the politics between the community colleges and eager to develop their network of colleagues.

Early in the grant process NSF program officer Gerhard Salinger strongly encouraged the community to stay "goal-focused." PI Miller reports that this advice proved to be invaluable. The early effort to establish consensus around goals and metrics mitigated any potential issues around ego and territory. The grant's external evaluator, Neal Grandgenett, served as a neutral party holding each partner accountable.

The first meeting of representatives from each of the colleges was highly successful, and participants decided these meetings needed to occur on a regular basis. Though travel hadn't been built into the grant, the group agreed to quarterly meetings hosted on a rotating basis among the institutions through the first year to promote awareness about each campus and its culture. Craig Peters, a site coordinator from Southeast Technical Institute (STI) said that faculty "sharpen their pencils" to keep costs down so they can go to these meetings.

The weeklong Working Connections institutes were hosted in the summer at Iowa Western Community College at no cost to the participants. The community co-defined the agenda, which ranged from learning Python, to bringing Problem-Based Learning pedagogy into courses, to bringing cloud computing to their campuses. The workshops leveraged the expertise of its members, or in some cases experts were engaged to offer the professional development. Early in the process a minority of centers sent grants managers, but within a few years it became apparent that these individuals had trouble representing IT faculty because they were unfamiliar with the content and, perhaps more importantly, were not opinion leaders among the IT faculty. In these cases, the colleges began to send faculty representatives instead, allowing them to more effectively champion the cause with other faculty from their home institutions. The evaluation found that many of the faculty had leadership and decision-making responsibilities within their institutions that depended on their knowledge of new technologies. In some cases, the summer institute was expanded to external participants, such as the PBL event in which high school teachers were included and provided a stipend. Site coordinators from each of the colleges ensured coordination and collaboration across institutions, and according to an evaluation, all coordinators agreed that "my relationships with other MCITE site coordinators resulted in new opportunities for sharing resources."

Kris Coan from Northeast Community College (NECC) reports that in addition to helping improve the curriculum in her college, the MCIT involvement was "the tipping point" for her college "entering the world of grants." The momentum at NECC has continued with recent certification as an NSA Center for Academic Excellence.

The summer workshops were supported by AIM board

Mr. Peters noted that the face-to-face component of the project was critical, and that without Working Connections, the advances STI was able

[1] Grandgenett, Neal; Ostler, Elliott; Applied Information Management Institute; and Surface, Jeanne L., "Evaluating a Four State Workforce Education Project: Questions of Investigative Interest and Impact" (2007). *Teacher Education Faculty Publications*. 30. https://digitalcommons.unomaha.edu/tedfacpub/30

members who would provide some of the faculty training. PI Miller noted that many of the board members are Chief Information Officers for local companies, and they became "better at volunteering" as a result of the grant, because they began to see the connections benefit of participating in advising curriculum, providing faculty training and helping develop programs. Rather than telling AIM what they should do, they're more likely to "roll up their sleeves" and "offer up staff to help."

to make would have "been delayed by years." In addition to demonstrating the importance of industry relevant curricula, the project forced faculty to "up their game," meaning that "when you spend time with top quality faculty you want to get to that level." He continues to work with a faculty member at an institution about an hour away, whom he had not worked with prior to participation in MCIT. Mr. Peters praises the project's affordability ("It's 20 cents on the dollar").

In the first phase of the grant, partner colleges were all funded as subawards, which brought a significant number of compliance challenges. "Everything had to be negotiated with each college to ensure grant compliance was met." PI Miller notes that although "shared vision you can get to, if organizations function differently, that is a barrier to get over."

In the second round, partner colleges switched to a consultant relationship. This meant that the partners were paid for deliverables, such as a curricular module, or faculty training. Although this increased the burden for AIM, and in some cases made the relationship feel more transactional, rather than a true partnership, it allowed the partners greater flexibility.

PROJECT CONTINUATION

The summer institute became so important that each of the 10 colleges agreed to pay the travel and registration costs for their faculty members to attend, and Western Iowa College agreed to host. PI Pensabene speculates that for some of the partners, the summer institute may have saved their programs. Several of the smaller schools had been seeing declining enrollment, and meeting the minimum number of credit hours and enrollment was a real threat to their departments. The professional development and currency of IT-related needs may have helped the departments stay vibrant. At this point, all the IT programs are thriving and well-aligned with industry needs.

A lasting component of the MCIT is the network. Ms. Coan reports that before MCIT, the colleges were "isolated if not adversarial," but are now highly collaborative, with bi-directional exchange of information to help each institution "fine tune the curriculum to align with jobs that are available." Ms. Coan affirms that the contacts and resources provided to her through MCIT were of great value. Importantly, the relationships between members has also been critical. She states, "where we had worked isolated in silos we were not part of a larger community." She adds that she stays in touch with numerous people she met through MCIT, and peers from other schools often contact her asking about new directions or resources. When interviewed, she commented that she

LESSONS LEARNED

The Center was led by a non-profit organization that spanned industry and academia with a goal of local workforce development. AIM had relationships with the individual institutions prior to the grant, but MCIT provided an opportunity to engage their partners more deeply and in a more focused manner. The neutrality of the organization and of the external evaluator alleviated potential turf issues. Additionally, AIM was sophisticated in grants management, whereas many of the participating colleges were new to NSF grant funding. Streamlining the financial responsibilities through AIM promoted trust and efficiency.

PIs Miller and Pensabene both discussed the importance of a shared vision and values, noting that the "product is the deliverable everyone can buy into. The process is making sure everyone has a sense of value for why they're involved." It was this philosophy and consistent communication that allowed the community to form productively. PI Miller reports that the clear goals and metrics for accountability provided a structure in which faculty were trusted entirely to "do their job" of providing high quality education on their home campuses. She noted that "one of the great things about higher education is they give faculty a lot of freedom to do their own thing. Once you get a trusting relationship with a faculty member, they'll figure it out and they'll be your champion. By the end, they were all in and up for the good of the group. Creating faculty champions will break down barriers."

A shared history also facilitates trust and develops relationships. The group had face-to-face meetings through Working Connections and external conferences (such as the first Synergy meeting hosted by the TNIT Exchange Center and ATE PI meetings). Building up a rapport through these connections allowed the group to work offline over the year. The community colleges involved tend to

was meeting two other MCIT colleagues from institutions two hours away for drinks on Friday, suggesting that beyond the professional network, the group became friends.

Prior to the MCIT grant, there was no regional approach to technical education. Each college worked in isolation. Though the PIs report it was "arbitrary" how they defined the region, it was focused around two major interstates: one that runs north-south and another east-west, allowing for relative ease of travel between campuses. This region still exists today as a defined network for both education and industry.

With its high density of IT support companies, Omaha has become the new "Silicon Prairie." The relationships formed between MCIT and industry have directly translated to training aligned with industry needs and increased employment for students.

AIM reports that due to philanthropic funding, the organization is again able to support the summer workshop. The next iteration will likely focus on high school teachers and college faculty. PI Miller reports, "There is a need. Technology changes and we have a lot to offer. This is core to our mission."

have very low faculty turnover, so individuals were involved for many years. PI Pensabene commented, "The intangible there was the networking. It was our 'brigadoon' we'd get together for a week" with both the formal agenda and informal time for socializing. Ms. Coan agrees with this assessment, reporting, "It's all about building a community of trust, and that takes working together over time." PI Miller reports that in addition to the professional networking, the group had social connections, citing many "family meals."

The value of the face-to-face meetings was emphasized by MCIT members. Ms. Coan reports, "Part of the longevity of MCIT was personal investment which drove collaboration. But collaboration would never occur without trust. You cannot share if you cannot let your guard down. Once you have trust, you're willing to share everything and work together on shared projects." Mr. Peters noted that meeting regularly was an important strategy that led to success. Among those who undertook other work, including a few TAACCT grants, the ones who met regularly (drawing from the MCIT model) were more successful than those who had fewer meetings.

NSF provided significant explicit and implicit support to the partners in the MCIT project. Early in the project, the program officer encouraged the Center to maintain a focus on the goals, and introduced the Working Connections model. The project also brought many of the site coordinators to the ATE PI meeting, which helped them to better understand the potential of ATE funding for the individual institutions. Many of the colleges had never received NSF funds prior to MCIT and have since created NSF-sponsored programs on their campuses through programs such as ATE and S-STEM.