Building and Evaluating a Community of Practice

Tracey Louise Collins
Eric N. Wiebe
North Carolina State University
Pamela Van Dyk
Evaluation Resources

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MISO Project Goals

- Campus-wide project meant to enhance the impact of existing NSF efforts around K-12 STEM outreach
- Focus in providing resources and support for existing NC State STEM outreach programs
  - Creating an innovative network of support and communication (CoP)
  - Providing longitudinal assessment of participant outcomes (survey instruments)
  - Fostering data-driven development and feedback of best practices through a professional learning community
  - Supporting seamless transitions across critical educational junctures

- 25 outreach program partners
- 13,500 student and teacher participants
Presentation Overview

How do you successfully measure a Community of Practice?

Wenger Model

Key findings

Next steps
Wenger model – project year 3

• The five cycles and evidence of achievement of each cycle were used to frame a set of questions to be posed to the outreach partners in this project.
• We are looking at perceived value of the MISO project by partners, dissemination of knowledge and ideas, changes in project performance, and expansion of project impact beyond the immediate key stakeholders.
Wenger Model

**Cycle 1: Immediate Value**
- Immediate value was evident among all interviewees
- Use of tools (website, student and teacher surveys)
- Attended at least one of the workshops and found the content to be useful
- Sense of “value” of the project among all interviewees regardless of status (pilot year, year 2, etc.)

**Cycle 2: Potential Value**
- New skills (more prevalent among participants who did not have a strong evaluation structure in place prior to MISO)
- Writing MISO into evaluation component of grant proposals (3)
- Balancing evaluation efforts
- Ability to learn from other projects

**Cycle 3: Applied Value**
- More data oriented
- Using for professional development
- Using logic model to redefine project outcomes
- Evolving efforts with logistics

**Cycle 4: Realized Value**
- Now able to reflect on program using data from MISO
- Learning how to build a quality community of practice
- Structural components are in place and partners are ready to build on those

**Cycle 5: Reframing**
Methodology – Data collection strategies

Key Stakeholder Interviews

• Primary data collection method used by external evaluator in spring of 2013 (phone and email)
• Honest and confidential feedback on the MISO project with respect to their own participation and interests
• Interviews were semi-structured around the Wenger indicators
• Interviewees were asked to reflect on the five different stages of development in a “community of practice”
Methodology – Data collection strategies

Additional Data Collection Methods

- Document reviews (meeting notes, presentations) and direct observations of meetings and workshops
- Survey participant numbers
- The evaluator participated in and was a presenter at the December 2012 workshop and participated in PI meetings and advisory meetings
Immediate value is defined as the early activities and interactions of the group. This also includes significant events that have taken place within the scope of the project.

Project Scope

- Participation in conferences for the purposes of knowledge dissemination
- Team meetings to for the purposes of project improvement
- Testing and refining data collection procedures (e.g. adding a mobile iPad unit for programs that don’t have easy access to computer labs)
- Ongoing technical assistance for existing outreach partners
- Meetings with new partners to provide technical assistance and training on the use of the tools and logistics of data collection
- “Recruitment” meetings, phone calls, and correspondence with potential partners
- Networking with other organizations outside of the university
Key findings – CoP Level One

Level of Participation, Activity, and Engagement

- Workshops
- Website
- PI meetings

Quality of Interactions, Perceived Value, and Networking and Collaboration

- New partnerships within STEM outreach community/MISO partners
- Using S-STEM and T-STEM surveys
Key findings – CoP Level Two: Potential Value: Knowledge Capital

Potential value is defined as the idea that activities and interactions can produce “knowledge capital” whose value lies in its potential to be realized later.

New Skills, Change in Perspective, Quality of Output

- Level of self-evaluation skill advancement among some of the participants
- Available resources and logistical awareness and involvement of planning
- Relationships and connections (social capital)
Key findings – CoP Level Three: Applied Value: Changes in practice

Applied value is defined as the ability to leverage capital by adapting and applying it to a specific situation.

Implementation of Solutions, Innovations in Practice, and Use of Tools to Inform Practice

- Interviews indicated that most outreach partners were able to articulate the value of the survey instruments, know how to interpret the data and understand how the data can potentially inform what they do.

Re-Use of Products, Use of Social Connections, and Transfer of Learning Practices

- Over 250 researchers, nationally and internationally, had accessed the S-STEM survey and the T-STEM survey for their own research.
- Partners using/redefining their logic models they developed in first year of project.
Key findings – CoP Level Four: Realized Value: Performance improvement

Realized value is defined as the ability to reflect on what effects the application of knowledge capital is having on the achievement of what matters to stakeholders, including members who apply a new practice.

New ideas to practice, or use of resources resulting in performance improvement

• Outreach partners are beginning to use the S-STEM and T-STEM survey instruments with their own partners outside of the university
• At least three outreach partners had written the survey use and analysis process into evaluation sections of grant proposals
**Future strategies—CoP Level Five:**

**Reframing Value: Redefining success**

Reframing value is defined as when learning causes a reconsideration of how success is defined.

Reframing strategies, goals, as well as values

- Help project partners *use* the data that the surveys generate and put it into action to help improve and focus their outreach activities.
- Connect survey outcome data to interventions that can be infused throughout the CoP.
- Hire a new MISO staff member who is working with the partners to figure out how they plan to use the data, and what changes they might implement based on the data.

*It is important to note that activities/accomplishments of this model do not have to necessary occur in order, to be considered successful. Additionally, a community can still be successful if it doesn’t complete all 5 cycles.*
Conclusion

Ultimately, the measure of the full development of a learning community will be to ask and affirmatively answer, “if MISO were to go away, would the learning community carry on the work of networking, data-gathering, and information sharing?”

• Findings from the MISO project evaluation using the Wenger model indicate growth over many of the cycles of a CoP, with stronger evidence found in the earlier cycles, but considerable promise of future growth
• The continued development of a CoP and its value to the MISO project goals is evident in the project outcomes and the interviews thus far
• We will continue to use the Wenger model in a more in-depth evaluation and report in 2015
Thank you!
Questions?

www.miso.ncsu.edu

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