

Professional Connections through the Technology Learning Community

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Have you heard? The new buzzword is “learning communities.” A learning community is a relatively old phenomenon that has resurfaced; it is making educators at institutions of higher education stand up and take notice. According to Angelo (1997), learning communities have produced significant gains in student involvement, learning, satisfaction, social connectedness, persistence, and retention, thus creating a more holistic and favorable educational experience. Grounded in collaborative and cooperative learning theories, learning communities have created environments in which student learning is the center of attention. Overtime, the acquisition of knowledge had come to be considered a highly social process in which construction occurs interdependently between students and teachers (Cross, 1998).

This social construction of knowledge and skills can be best supported in a learning community environment in which students have been given the opportunity to engage in activities that encompass a diverse set of perspectives from multiple sources. According to Matthews, Smith, MacGregor, and Gabelnick (1996), “learning communities juxtapose diverse perspectives and diverse disciplines, often creating rich social, cultural, and intellectual linkages” which ultimately have a positive and profound effect on the success of students (p. 6).

The Technology Learning Community (TLC), currently located in the Department of Agricultural and Biosystems Engineering (ABE) at Iowa State University (ISU), is an example of a program that fosters this type of learning environment connection. Through weekly seminars and team-based activities, the TLC enables student participants to actively construct their own knowledge base through the development of professional networks and relationships with faculty, staff, students, and industry professionals. This article examines the impact that the TLC has had on the educational experience of new and transfer students to the Department.

History of Learning Communities

The learning community concept was first introduced in the 1920s by Alexander

Meiklejohn at the University of Wisconsin, as the Meiklejohn Experimental College (Smith, 2001). Heavily based on the philosophies of John Dewey, the primary purpose for this endeavor was to establish and nurture a higher education community that connected both the living and learning environments of students.

Many types of learning communities surfaced in the subsequent years. Formulated to best meet the needs of the students which they were intended to serve, learning communities began to take on many different appearances, although the foundational elements remained the same. These foundational elements include diversity, a shared culture, internal communication, caring, trust, teamwork, maintenance processes, and governance structures that encourage participation and sharing of leadership tasks, personal and professional development, and links to the outside world (Lenning & Ebberts, 1999).

With the foundational elements in place, learning communities typically align with one of four basic models (Freeman, Field & Dyrenfurth, 2001). These models are collateral course-based, residential, freshman interest group, or student type. Choosing a particular model will depend both on the needs and characteristics of the student participants as well as the cultures of the department and university (Shapiro & Levine, 1999).

The TLC at ISU does not fit the mold of any of the above-mentioned learning community models, which is why three faculty members in the Department of Industrial Education and Technology—a department that has since merged with ABE—decided to create a nonresidential, noncollateral, noncourse based learning community model in 1999. This program, along with several others on the ISU campus demonstrated the new shift in pedagogy from the teaching-centered approach to higher education to a learning-centered one, and the increased emphasis on student satisfaction and a holistic educational experience (Huba, Ellertson, Cook, & Epperson, 2003). Initiated in the mid-1990s, the learning community concept has grown

substantially at ISU, from 23 learning communities serving 1,114 students in 1998 to 47 learning communities serving 2,275 students in 2003 (Huba et al., 2003). In 2007 there are more than 60 learning communities that serve nearly 2,500 students from various classifications.

With the goals and objectives of the university-wide commitment to student learning and the learning community initiative in mind, Drs. Steven Freeman, Dennis Field, and Michael Dyrenfurth developed a model that best met the needs of the nontraditional and diverse academic and social backgrounds of the Department's students. With varying levels of prior academic and social experiences, students new to the Department—predominantly transfers from other colleges on campus—needed a channel through which they could become acclimated to an environment, people, and a professional culture that was new to them.

In its eighth year of existence, the TLC is providing an opportunity to make personal connections as well as to develop and maintain professional networks and relationships with faculty, staff, industry professionals, and students. Participants are required to attend (and contribute to) a weekly seminar with the other learning community participants, weekly meetings with a peer mentor, and at least one social outing, industrial field trip, professional society meeting, and industrial mentor meeting. These learning teams last for one academic semester and require a minimum time commitment of two hours per week from the student mentees, including one hour spent attending a weekly seminar that focuses on the development of professional and career-building knowledge and skills, and one hour engaging in activities that further enhance their knowledge base and academic, professional, and social support systems under the guidance of an upperclassman peer mentor. Participants discuss seminar topics, real-world issues, and departmental coursework, and take part in activities that foster interpersonal communication and active learning. Participants also engage in conversations and workshop activities with an industrial mentor to strengthen their communication skills, while they build their industrial technology knowledge base and skills.

Purpose of Study

The purpose of this study was to determine how the TLC initiative affected students' development of professional networks and relationships

with technology faculty, staff, and industry professionals through weekly seminars and team-based activities. In addition, this research depicted the experiences, thoughts and feelings of TLC participants based on their perceptions and reality; ultimately this information could be used to develop grounded theories (see Taylor and Bogdan, 1998, p.137) or themes regarding TLC participation. A qualitative analysis of artifacts and a focus group yielded descriptive data from the TLC participants regarding their acclimation to the department and discipline of industrial technology. These data were then used to develop the grounded theories.

Participants

Nearly 500 students, and approximately 60 peer mentors, have participated in the TLC since fall semester 1999. Student participants (N = 163) from the fall 2002, spring 2003, fall 2003 and spring 2004 semesters and peer mentors (N = 7) from spring 2003 were used in this study.

The student population was predominantly composed of sophomores and juniors, (average age 20-21), who transferred from other departments within the ISU community, mainly the College of Engineering. Participants were generally Caucasian, predominantly male (94%), and previously had a less than favorable educational experience.

The peer mentor sample included upperclassmen industrial technology students who had successfully participated in the TLC and had shown substantial leadership and interpersonal skills. Each peer mentor had completed all freshmen and sophomore-level courses as well as an industrial internship. The seven peer mentors in the sample were Caucasian males (average age of 23).

Data Collection

Data were triangulated from two types of artifacts and a group discussion. The tools used in the collection of these data weekly summaries by students, the ISU Undergraduate Education Survey, and a peer mentor focus group. The primary tool, an artifact similar to a journal entry, was the weekly summary by students that were electronically collected via email and graded by the instructor of the seminar component of the TLC. These were filed in an electronic database for qualitative data, called QSR N5 NUD*IST (Richards, 2000), which enabled the researcher

to analyze the data and facilitate the development of the grounded theories.

A total of 14 weekly summaries per student per semester was expected, and they were worth a maximum of five points each. Students were not graded on quantity, but on quality and their ability to express their reflective thinking adequately. This data-collection tool was used primarily to gather the students' perceptions of their learning team and seminar activities. The main areas of inquiry were a summary of the previous seminar meeting, a summary of the learning team's activities during the previous week, the effectiveness or usefulness of the seminar and learning activities, and any concerns or issues regarding classes, advising, or learning environment.

A secondary tool used to corroborate the findings from the students' weekly summaries was an ISU Undergraduate Education Survey. The original survey included 67 generic questions designed to gauge the participants' feelings and opinions about the total learning community experience. It also documented their self-perception of personal knowledge and abilities, connections to other students and faculty, and average time spent on a weekly basis engaging in various activities. The survey was created and administered by the ISU Learning Community Organization. The survey was expanded by ten TLC-specific questions through the efforts of the TLC staff. The final survey contained both short-answer questions and Likert-scale questions.

Another secondary tool used in corroborating the findings from the students' weekly summaries was a focus group of the sample of peer mentors. This focus group was conducted by the ISU Research Institute for Studies in Education (RISE). RISE created an atmosphere that enabled the participants to openly and honestly express their opinions and concerns. For this group, nine questions were used to gather peer mentors' perceptions of their roles and the roles of the student participants in the TLC. Areas of interest that were important to the mentors in the learning community included mentoring activities, course objectives, lessons learned as peer mentors, and suggestions for improvement.

Findings

Fostering professional networks and relationships among TLC participants, faculty, staff,

and industry professionals was one of the primary themes that emerged from the analysis of data collected for this study. Through weekly seminars and learning team activities, TLC participants were able to spend time each week building and strengthening these networks. The importance of these networks and the successful role played by members of the learning community in support of these networks were highlighted by student responses to the Undergraduate Survey. Students were asked to rate their experience in the TLC on a scale of one to four (1 = excellent, 2 = good, 3 = fair, 4 = poor) in terms of making connections with faculty, other students, and industry professionals. Between 80-90% of students rated their TLC experience either excellent or good, whereas less than 10% rated it as poor, thus reiterating the importance of this learning community component.

The first type of network, formed between TLC participants and faculty, occurred both inside and outside the boundaries of the classroom. Chickering and Gamson (1987) concluded that "student-faculty contact in and out of class is the most important factor in student motivation and involvement" (p. 4). Simply knowing that instructors are there to help on a social and academic level gives students a greater sense of belonging and connection.

The following statements, which are representative of the majority of the thoughts and feelings of students, appeared in weekly summaries following a faculty "meet and greet" session, seem to support the idea that a lessening of traditional barriers between teacher and student is beneficial.

- Last Tuesday's class was very interesting and informational. I had no idea how useful the safety option was to the industry today and that there was a huge demand for it already. It was cool to hear from the electrical guy because I always thought electricity was a cool area of study and he made it seem even more interesting and something that would be of interest to me in the future. Without the speakers, I would have been lost in the I-Tec field, because I'm new and really still do not know what it all consists of, but because of the speakers I think it gave me a better feeling for where I'm at now in my college career.

- I really got a lot out of the presentations by the faculty. It let me know what I can expect from their classes and got me interested in their areas of research.
- I found that this last Tuesday's class was extremely helpful in meeting professors that I may have.

In each of these responses, TLC participants expressed their appreciation for the opportunity to meet future instructors in a setting other than the instructor's classroom where there is a formal structure and relationship between teacher and student. Referring to the meeting as "cool," "interesting," and "extremely helpful" displays the importance of making this connection in the eyes of the students. The second student's comment about receiving information on the research area of a particular faculty member opened up the opportunity for a professional network based on this research topic.

Creating these types of networking opportunities in learning communities enables students to find a greater coherence regarding what they are studying, and it allows them to experience increased intellectual interaction with faculty members and other students (Smith, 1991). The student's comment: "I would have been lost in the I-Tec field" and his expressed sense of being better prepared for what may lie ahead and what he was already experiencing are indicators of the value placed on these opportunities. The importance of faculty-student connections has been reinforced by Cross (1998), "Students who have frequent contact with faculty members in and out of class during their college years are more satisfied with their educational experiences, are less likely to drop out, and perceive themselves to have learned more than students who have less faculty contact" (p. 7).

The second type of network was developed between the TLC participants and TLC/departmental staff. This was evident in their interactions with both their peer mentors and the departmental academic advisor. Peer mentors were a strong component of the TLC initiative and were instrumental in providing a collaborative learning environment in which participants were able to make connections and build their professional networks, thus enhancing their knowledge base and skills. Peer mentors "help students make connections to the course material and familiarize them with the services of the

university during their first term when they are most in need of a sense of community and connection" (Matthews et al., 1996, p. 6). For example, when peer mentors were asked during the focus group why they felt building a sense of community was important and about their role in making it a success, they gave the following responses:

- I think you want to make things as a community. You got to get people knowing each other and people knowing other people in this department. Not only the students, but the teachers as well. If you get them in here as a freshmen and knowing more people and their professors right away, they will have a lot better time here and will progress better.
- At college it is really easy to get singled out and be left in the dust by yourself not knowing many people, especially when you are a freshman in huge classes. Within the learning community, you learn who has what classes and you can meet others in those huge classes.
- The class gives you all the stuff you need to go on. You get your resume and portfolio and you work together on all that stuff. And I try to get everybody as peers to critique each other too. And then every semester I see something on someone's resume that I want to put on mine, so I get something out of it too. I think the class is a good start that you carry through your whole college.

Fostering a sense of community that enables connections between the TLC students and departmental staff was instrumental in enabling participants to form networks, which in turn enhanced their overall educational experience by creating opportunities to learn from diverse perspectives. According to Matthews and colleagues (1996), "rich, rigorous learning environments, active participation on the part of students and faculty members, and a sense of community make a positive and often profound difference in fostering student success" (p. 4).

The final type of network was between TLC participants and industry professionals. The industry professionals served as industrial mentors and were members of the surrounding community, often ISU and departmental

graduates, who were generally practicing industrial technologists with an emphasis in either occupational safety or manufacturing. During an average semester, they met two or more times with an assigned learning team headed by a peer mentor. They discussed professional development topics, such as interviewing, resume and portfolio development, and industry expectations; visits to the industrial mentor's employment facility were common.

This particular TLC component is a unique attribute that is not being utilized by many learning communities throughout the ISU campus. This direct connection to the surrounding community enabled students to extend their knowledge beyond the confines of the traditional classroom and it went a step further than simply bringing in speakers. It opened participants up to a much larger and more diverse pool of information from which to build their own framework and make the often unforeseen connection between the classroom and industry. The value of TLC participants' interactions with their industrial mentors is evident from the following sample of representative comments taken from weekly summaries:

- They (industrial mentors) give real-life, experienced insight about what should be expected.
- I think the opportunity to be set up with somebody who is willing to help out is awesome.
- They (industrial mentors) guide us and give us advice.
- Actually seeing someone who has a job in the field I am going into really helps me get an idea of what I will be doing.

TLC participants clearly appreciated the opportunity to network with knowledgeable people outside their traditional educational environment. Industrial mentors validated students' goals of obtaining a degree and having a successful career in industrial technology.

Conclusion

The TLC is an example of a program that fosters the development of professional networks among student participants, faculty, staff, and industry professionals. The TLC enabled students to actively construct and strengthen

their knowledge from diverse perspectives within and outside their traditional classroom learning environment. Through learning team activities and seminar sessions students were able to make the connection between their academic and professional life, which enhanced their educational experience.

Through a qualitative look at students' perspectives, thoughts, and feelings regarding their learning community experience, this study produced substantial evidence supporting the importance of making connections to one's environment and the ability of the TLC to foster this connection. Learning communities are part of the wave of the future for institutions of higher education that are striving to make the pedagogical and philosophical transformation from teaching-centered to learning-centered environments. As a unique learning community that does not fit the mold of any of the traditional models, the TLC is paving the way for other nontraditional higher education environments that wish to enhance the educational experience of students.

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