Abstract

Multi-disciplinary, multi-institutional teams are becoming more prevalent in higher education although research has generally focused on teams formed in the same organizations and/or the same field. This ethnographic case study analyzed the experiences of ten faculty in a successful technology-intensive, agriculture-related project. The team's development mirrored Tuckman's four-stage model. Members reported differences in motivation, timeline pressure, variations in evaluation and rewards, the critical role of the leader, importance of cohesion, need for frequent interaction, and importance of developing trust. Contrary to previous research, the leader did not have higher status than members, and approached the role with empathy. Some members reported they lacked consideration in balancing project expectations with faculty assignments. It was concluded that these teams will continue to be hindered by similar obstacles if administrators do not acknowledge, evaluate and reward their efforts. Further research into the leader’s behaviors in successful multi-disciplinary, multi-institutional higher education teams is needed.
Introduction

For several decades social scientists have examined the intricacies of how small groups and teams function (Deutsch, 1949; Gross & Martin, 1952; Tuckman, 1965; Tuckman & Jensen, 1977; Gladstein, 1984; Katzenbach & Smith, 1993; Morgan, Salas & Glickman, 1993). Researchers have examined team development (Tuckman, 1965), team cohesion (Gammage, Carron & Estabrooks, 2001), team effectiveness (Janz, Colquitt & Noe, 1997), team building (Hart & McLeod, 2003) and numerous related topics. However, much of this research is based on teams of people that work in the same organization and/or the same field. There are comparatively few studies which explore the development of teams that are not only from different organizations, but also from different disciplines. This is especially true in higher education and particularly in Extension. Yet, multi-disciplinary teams from different institutions are increasingly becoming the norm in higher education (Brody, 1999), and more specifically in Extension (Leholm, Hamm, Suvedi, Gray & Poston, 1999; Seidl, 2003). Kezar (2000) adds another dimension to this by suggesting that team collaboration via the internet will be the next trend in higher education. Already, competitive federal grant programs are emphasizing multi-disciplinary collaboration in research and Extension (CSREES, 2003), as well as state-level Extension organizations (Leholm et al., 1999).

Purpose

As research and Extension shift toward collaborative efforts between different institutions and disciplines, faculty and administrators will need to have a better understanding of the dynamics of such groups. Therefore, it is imperative that responses and reactions of faculty in higher education toward multi-disciplinary, multi-institutional team projects be examined in order to gain insight into strategies for building the most effective teams. The purpose of this ethnographic case study was to describe and interpret faculty responses to their participation in a multi-disciplinary, multi-institutional Extension team project conducted primarily via the internet.

Method

In order to delve into the perceptions of faculty toward multi-disciplinary, multi-institutional teamwork, ethnographic case study methods were employed in the collection, analysis and interpretation of data (Merriam, 1988; Spradley, 1979). A case study is “…chosen precisely because researchers are interested in insight, discovery, and interpretation rather than hypothesis testing.” (Merriam, 1988, p.10). Ethnographic case studies are used to provide in-depth descriptions of the culture of the social group being studied (Wolcott, 1980). According to Merriam (1988), “Concern with the cultural context is what sets this type of study apart from other qualitative research (p.23).” An ethnographic case study approach requires that researchers collect data that is not only extensive, but intensive. Ethnographic research allows the members of the social group being studied to tell their stories (Van Maanen, 1988).

Consistent with case study design, researchers identified 10 faculty members engaged in an Extension team project as sources of data (Merriam, 1988). Data were collected over a
Results

The team in this study was comprised of faculty with Extension appointments from technical agricultural disciplines from three different universities. They were drawn together by the opportunity to work on a one-year, grant-funded project for the development of online educational resources for communities, students and other faculty. The grant was later extended for another year. Figure 1 depicts the team’s development by integrating Tuckman’s (1965) model with the team events, outcomes and reactions.

Motivation for participation.

All team members were thoroughly convinced that making the lessons accessible to students, communities and other faculty was not just helpful, but essential as the emphasis on distance learning continues to grow. One participant commented:

Do we really use the right tools or the right methods to teach these things on the Web? And these students, who are usually non-traditional students, how well can they relate to these units? We are used to teaching in the classroom. We look at the students’ eyes and can see whether they understand what we’re talking about. However, when you put things on the Web…it really makes us think about whether we can modify it to make it better.

Virtually all team members viewed the project not only as an opportunity to share information on the Web, but also to acquire the technical skills to design and maintain that information. One interviewee noted:

With my appointment being in Extension, trying to reach people out in the state…I have wanted to put a workshop on the Web and teach it as a Web course. I saw this as the opportunity to learn how those things are done on the Web.

Timeline.

Though the team members all expressed a desire to see a superior product at the end of their endeavors, as the project ensued and established deadlines were frequently unmet, many team members wondered if they would ever achieve their goal. One interviewee expressed her frustration, “My only concern is that I keep wondering if we’re going to get our lessons done in time. I’m just concerned if we’re going to be finished before we run out of time and money.”

During this time of distress, some team members began to question whether their goals were realistic and began to lower their expectations of the final product. At this point,
Figure 1. Integration of Tuckman's (1965) Model into One Team's Experience

**Motivation**

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**Events**
- Grant Funded
- Face to Face Meeting
- E-mail Interaction/Grant Extended
- Website Containing Lessons Completed

**Outcomes**
- Minimal acknowledgement by own department
- Roles and timelines clarified, trust built
- Recommitment to project, disclosure of individual progress concerns
- National Award

**Reactions**
- Feelings of excitement over utility of project for themselves and for others
- Fear over time commitment, doubts about own and others’ abilities to complete project, concerns over lack of reward system and support in home departments
- Renewed interest and energy dedicated to project due to persistence of facilitator, productivity increased, confusion related to communication emerges as a problem, and concerns over lack of support in home departments remain
- Satisfaction at a job well-done, looking for more opportunities to work collaboratively, still concerned over lack of support from home departments
one team member shared, “Even if we only manage to do a good job completing 80% of our objectives, I think it will be a successful outcome.”

Overall, each team member went through a period of questioning team objectives and capabilities. Though painful to endure, the anxiety expressed in their reactions was consistent with the reactions of other, similar teams (Younglove-Webb, Gray, Abdalla & Thurow, 1999).

**Evaluation and rewards.**

Another point of concern for team members that surfaced throughout the duration of the team was the lack of a concrete evaluation method that would give them credit for their roles in the project (Frost & Gillespie, 1998; Gladstein, 1984; May & Schwoerer, 1994; McKenzie & Lee, 1998; Wageman, 1999). Without an explicit reward system in place for participation in collaborative work, many team members felt a divided allegiance between their departmental roles and team roles. Most team members felt that while their departmental administrators encouraged multi-disciplinary, multi-institutional collaboration, they were unprepared to evaluate and reward such endeavors. One participant observed:

> I think the problem comes when colleagues and administrators have to evaluate your particular role in these multi-disciplinary projects. They have difficulty determining whether you are a big player or just a bit player taking the credit for work other people did. So while they promote it on the one hand, they have difficulty rewarding participation.

In addition, though their peers were not unsupportive, they were generally unaware of the collaborative endeavors in which the team members in their departments were participating. One interviewee quipped about her colleagues, “I’m not sure that they even know that I’m involved and I’m not sure that they would particularly care one way or the other.” This was due in part to the fact that the collaboration was occurring via distance (Armstrong & Cole, 1995; Kiesler & Cummings, 2002).

**Team leader.**

Critical to the team’s success was the existence of a facilitator who served as the driving force behind the completion of the work (Gersick, 1989; Burns, 1994; Proehl, 2000; Younglove-Webb et al., 1999). Since the team members were dispersed among three institutions in three states, their tendency was to focus on matters that were more ‘visible’ and ‘tangible’ (Armstrong & Cole, 1995; Kiesler & Cummings, 2002). One team member confessed, “It is difficult to fit this project into my workload as I am already very busy with my current teaching and research load.”

Without the constant reminding, cajoling and prodding of the facilitator, team members agree that the project would never have made progress. As one participant admitted:
I think the person in charge has done an excellent job. She’s got the right touch of encouragement and reminding you of the need to deliver on your promises. I’d say one of the reasons that this project worked is because of her leadership.

Cohesion.

An initial face-to-face meeting in which team members became acquainted with one another, clarified team objectives, defined team members’ roles, set ground rules for communication and established deadlines for the completion of modules was critical in achieving team cohesion (Katzenbach & Smith, 1993; Scholtes, 1991; Younglove-Webb et al., 1999). However, many team members still missed the personal interaction and synergy of regular, face-to-face meetings. According to one interviewee:

It would have been nice from the communication standpoint to have gotten together more often as a group. I think it will be twice during the course of the whole process that we have ever been together as a group.

Team members agreed that they evolved from a mere group of individuals working together into a synergistic entity whose whole was greater than the sum of its parts. One interviewee noted:

We talk as a group much more often now than in the initiation of the project and identify ideas that no one of us would come up with [independently]. I’d say many of the modules reflect the thinking of the entire group even though one person might be assigned as the author. I think the lessons are better than they would have been if they were developed by an individual.

Interaction.

In spite of frequent conference calls and e-mails, some group members still felt isolated from the others. One interviewee observed, “We’re all so far away, I think it made it harder for us to put this project on our platter as a real goal.”

Though communication problems are prevalent in teams that are collaborating via distance, they can be harmful to productivity and cohesion (Spargo & Kelsey, 1996; Kiesler & Cummings, 2002, Armstrong & Cole, 1995; Younglove-Webb et al., 1999). Several team members acknowledged that they would have produced more materials more quickly had there been more face-to-face interaction (Spargo & Kelsey, 1996; Armstrong & Cole, 1995). One interviewee recounted:

I wish we had more time that we could spend as a group rather than having to work individually and then occasionally talking on the phone and sending emails. It would be nice during the course of the year to have one or two get-togethers so we actually present and talk to each other face-to-face about what we’re doing.
Trust.

In spite of the miscommunications that occurred, the team members felt comfortable enough with one another to be honest about their thoughts and feelings. This open, honest dialogue was vital in bridging the physical and emotional space between the team members (Tan, Wei, Huang & Ng, 2000). One interviewee, reflecting on group discussions and the thread of communication between team members, noted:

If a team doesn’t talk very often, they begin to disintegrate as a team, so [the facilitator] made sure that didn’t happen and kept us in a dialogue. Of course, that also builds a sense of movement and progress in the group.

Most team members felt that the initial face-to-face meeting helped to forge a bond of trust and mutual accountability which helped them to face the difficulties of their project and achieve the high level of success that they did (Katzenbach & Smith, 1993). One interviewee expressed:

I think that the travel money we put in to bring people [together] has been very critical as far as getting the project to move forward. But also on a personal note, I like that kind of time because it feels more like a team; you’re not the lone rangers trying to conquer this project.

Miscellaneous findings.

A curious dynamic that emerged from the analysis of the data was the deep, abiding respect all team members held for the team leader. One team member shares his admiration of the team leader:

She’s been doing a great job pulling us all together! You have to keep in mind that in order to pull 10 or 15 scientists together, you’re going to have to have a lot of nerve and a lot of patience.

Respect for a team leader is not an unusual phenomenon in most functional teams, particularly when that leader is considered to be of a higher status than the other team members (Meyers, Meyers & Gelzheiser, 2001; Younglove-Webb et al., 1999). Past research on multi-disciplinary teams indicates that team members with the most status typically dominate group communication, are critical, aggressive and tend to expect deference from lower status members (Stuth, Scifres, Hamilton & Conner, 1991; Younglove-Webb et al., 1999; Meyers, Meyers & Gelzheiser, 2001; Farrell, Schmitt & Heinemann, 2001). In contrast to the literature, however, the team leader in this study had the least amount of status in the group, yet appeared to hold the respect and admiration of the other, higher status team members. This could be due to the technical expertise the team leader possessed. The other team members depended on her expertise in the creation of the web-based resources they were designing.
Another salient aspect of the team leader in this study was her ability to empathize with the other team members. One team member, enthusiastically describing her appreciation of the team leader, touches on the team leader’s ability to empathize with their struggles:

I can’t thank [the team leader] enough for her leadership, her ideas and continual positive attitude which I think makes a difference. I can call her at any time and she’ll help me through a glitch or any number of silly little things…she’s just always receptive to helping us improve our capabilities.

The ability to empathize with others has been identified as a component of effective leadership (Kellett, Humphrey & Sleeth, 2002). Empathy has also been shown to “...not only contribute to leadership emergence, but may also strengthen team member participation and engagement...” in self-managing teams (Wolff, Pescosolido & Druskat, 2002, p. 520).

Implications

Universities, as well as funding agencies, are emphasizing multi-disciplinary collaboration (Komives, 2003). This study sought to explore the perceptions of faculty involved in a multi-disciplinary, multi-institutional team project. As expected, the team’s development followed the four stages of team development described by Tuckman (1965): forming, storming, norming and performing (see Figure 1).

Many of the obstacles to this team’s success were due to external pressures from their respective institutions. As research in higher education and Extension continues shifting toward multi-disciplinary, multi-institutional teamwork, the hindrances confronting these endeavors will need to be addressed. Primarily, strategies for evaluating and rewarding faculty participation in these projects will need to be developed. Systems for rewarding individual members of a team have been developed and used in industrial settings (Kerrin & Oliver, 2002; Currie & Procter, 2003; Sarin & Mahajan, 2001). However, universities have been slow in creating a framework for rewarding faculty participation in multi-disciplinary, multi-institutional projects. Further research into strategies for evaluating and rewarding collaborative efforts in higher education has become imperative.

Until a framework for rewarding faculty for multi-disciplinary, multi-institutional collaboration is designed, faculty will remain torn between the need to participate in these projects for funding, and the need to fulfill departmental requirements which reward individual rather than collaborative efforts (Edwards, 1999; Frost & Gillespie, 1998; McKenzie & Lee, 1998). Part of the reason for the delay in designing appropriate measures for rewarding collaboration may be due to a system that hasn’t caught up with complex, technology-driven projects that are emerging (Edwards, 1999; Frost & Gillespie, 1998).

The lack of recognition for collaborative efforts among different disciplines and institutions can be remedied. A shift in academia’s attitude towards collaborative work will need to begin with departmental administrators. A clear first step is the acknowledgement of multi-disciplinary, multi-institutional projects as a viable component of the faculty workload. Departmental administrators must begin to recognize that though individual efforts are an
important measure of faculty productivity, mutual efforts are equally important. Even small steps, such as allowing faculty release time to participate in collaborative endeavors, are ways a department head can validate faculty involvement in joint efforts.

Additionally, departmental administrators could begin to view collaborative undertakings as a source of professional development for their faculty. Fostering multidisciplinary relationships would obviously be beneficial as the need for collaboration in academia continues to grow. This could be facilitated by the creation of an electronic platform in which faculty from all the different disciplines could not only search for potential collaborators from diverse academic backgrounds, but also begin networking and cultivating professional relationships. This kind of innovative undertaking would require a concerted effort on the part of administrators. Currently, however, most university systems and academic disciplines aren’t structured to facilitate collaboration of this magnitude.

In addition to the structural components of facilitating future collaborative endeavors across disciplines and institutions, will be research into the characteristics of successful leaders of these projects. The participants in this study felt the leadership of the project was a pivotal aspect in determining the success they achieved in not only exceeding the grant requirements, but also receiving national recognition for project excellence. Not all teams are able to realize the level of success that this team accomplished. This could be due in part to the type of leadership this team experienced. Profiling the skills utilized by successful multi-disciplinary team leaders could result in more collaborative successes and fewer failures.

Another area which begs further research is the role of empathy in the leadership of successful multi-disciplinary, multi-institutional teams. The participants in this study overwhelmingly pointed to the team leader as a determinant in their success as a team. The study of empathic leadership in multi-disciplinary teams has not been examined thus far. Further study of empathy as a variable in effective team leadership with a focus on multi-disciplinary teams will be critical future research that can inform practice.

The complexities of economic, social, human and environmental problems faced by today’s Extension clients have heightened the need to assemble Extension teams representing multiple disciplines, and in some cases, multiple institutions and multiple countries. However, if Extension teams are to be successful it is important that the results of this study and others form the basis for addressing obstacles to, and exploring the foundations of, team success.
References


