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Working Together: The Role of Collaborations in Promoting the Use of Academic Technologies in Higher Education

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WORKING TOGETHER: THE ROLE OF COLLABORATIONS IN

PROMOTING THE USE OF ACADEMIC TECHNOLOGIES

IN HIGHER EDUCATION

A Dissertation Presented

by

KATE HUDSON

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DEDICATION

To the memory of Katherine "Koko" Hudson, who gave so much to so many of us.

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As with any project of this magnitude, there are many people to thank for their many and various contributions without which this dissertation would never have been completed. My committee was made up of a dream team of faculty members, all of whom excel at uniting scholarship with the ability to apply their experience to the real world. From the first day of my graduate program, my advisor, Joe Berger, has provided constant intellectual challenge. He offered support when my spirits were flagging and administered kicks to move the process forward when they were warranted. Mary Deane Sorcinelli's ability to combine teaching, scholarship and administration is an inspiration. She was among the first to encourage me to embark on this doctoral program. Richard Rogers understands the frustrations inherent in trying to integrate academic technologies into our institutions of higher education; his optimism and willingness to follow his vision and tackle projects others might view as impossible are a tremendous asset to UMass Amherst. Working with him to help create the Learning Commons was an incredible learning experience for me.

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I would like to thank the many talented individuals who took the time to speak with me about their work. I hope that I have effectively captured their passion in my writing. I found much to admire at all the institutions represented in the study.

ABSTRACT

WORKING TOGETHER: THE ROLE OF COLLABORATIONS IN PROMOTING

THE USE OF ACADEMIC TECHNOLOGIES IN HIGHER EDUCATION

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Through the centuries, institutions of higher education, and the people who labor in those institutions, have helped countless millions to learn—to stretch their boundaries, to think creatively, to find joy in discovery, and to create new knowledge that benefits the world in a myriad of ways. Yet while the knowledge produced through our educational process has transformed the world, the process of teaching and learning within these institutions has remained largely unexplored and unchanged over the centuries (Bass, 2009; Duderstadt, Atkins, & Van Houweling, 2002; Woolsey, 2008). In recent years, the advent and rapid development of information technology has provided us with a previously unimaginable opportunity to rethink how teaching and learning take place in higher education.

In order to make the most of potential gains in teaching and learning, academic technology initiatives require both technological and pedagogical expertise. However, while the need for effective collaborations between the groups responsible for these two areas, the Offices of Academic Computing and Centers for Teaching at institutions of

higher education has been articulated (Albright & Nworie, 2008; Allison & DeBlois, 2008; Woolsey, 2008), the mechanisms for developing and maintaining such collaborations are not clearly understood (Albright & Nworie, 2008; Ives & Steinbrenner, 2005). In an effort to fill this gap in knowledge, this study focuses on generating a portrait of successful collaborative efforts between academic technology professionals and pedagogical specialists. Using multiple case studies as a methodological approach, this study examines the characteristics of collaboration at three universities, including their history; factors that lead to the successful establishment of collaborations; challenges and barriers and how these are approached; and whether there is evidence that collaborations result in better outcomes in the implementation of academic technology.

The study is particularly timely given that information technology is playing an increasingly central role in every aspect of higher education. A better understanding of the characteristics of inter-group collaborations around academic technology, including the barriers to creating effective collaborative relationships, will help institutions respond to the challenge of harnessing technology's potential to positively transform the process of teaching and learning in contemporary higher education.

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CHAPTER 1

INTRODUCTION

<u>Introduction</u>

Through the centuries, institutions of higher education, and the people who labor in those institutions, have helped countless millions to learn—to stretch their boundaries, to think creatively, to find joy in discovery, and to create new knowledge that benefits the world in a myriad of ways. Yet while the knowledge produced through our educational process has transformed the world, the process of teaching and learning within these institutions has remained largely unchanged over the centuries (Bass, 2009; Duderstadt, Atkins, & Van Houweling, 2002; Woolsey, 2008). In recent years, the advent and rapid development of information technology (IT) has provided us with a previously unimaginable opportunity to rethink and restructure how teaching and learning take place in higher education.

Information technology as applied to higher education can create a new context for teaching and learning in two ways. The most obvious of these is through the integration of the tools of IT into the learning process, including new communication tools—email, blogs, wikis, discussion boards to name a few—that promote the exchange of ideas and knowledge, databases combined with Web-based searches that allow scholars and students almost instantaneous access to a wealth of primary and secondary sources, and software that can perform complex computations in a fraction of a second. However, changes in IT offer an extremely important opportunity to reexamine the pedagogical assumptions embedded in higher education. Teaching and learning have the potential to be transformed in ways that create a more inspired experience for students for

years to come as the result of more concentrated attention to the learning process, especially given the new possibilities offered by a range of technologies, combined with a willingness to make fundamental changes to centuries of tradition. However, taking full advantage of these opportunities will require substantive changes to the structures and traditions of higher education; a prospect that offers numerous challenges to the instructors, administrators, and IT professionals working within higher education.

Information technology, which in recent years has rapidly transformed so many arenas in society (including business, government and entertainment), has the potential to play a significant role in meeting many of the most significant challenges facing contemporary higher education (Abel, 2007; Daniel, 1997). These challenges include: improving access to a more diverse group of students (Altbach, 1999; Arabasz, Pirani & Fawcett, 2003; Duderstadt, et al., 2002; Green, 2006; Zusman, 1999); finding new sources of funding as monies traditionally provided by state and federal governments become less available (Altbach, 1999; Skolnik, 1998; Zusman, 1999); training workers who will be able to fill the labor demands of a changing economy (Bates, 2000; Geiger, 1999, Moore, Fowler & Watson, 2007); responding to societal demands that higher education become more productive, cost-effective, and accountable (Altbach, 1999; Berdahl & McConnell, 1999; Green, 2006; Massy & Zemsky, 1994; Zusman, 1999); and adapting to the learning styles of the new generation of millennial students (Duderstadt, et al., 2002; Hartman, Dzuiban, & Brophy-Ellison, 2007; Sweeney, 2007).

However, in order to take full advantage of the potential of IT, higher education institutions must be able to take IT processes that have been developed in contexts outside of higher education, and adapt them to the very different environment of

academia. Too often innovations in technology have fallen short of their potential to enhance institutional functioning, in part because campus IT organizations that are staffed by professionals who have excellent technical skills, but lack an understanding of the unique needs and long-standing customs of academic culture (McCredie, 2006). This approach has tended to lead to a proliferation of administrative applications that have had little relation to one another. In fact, "each application helped to build the silos of higher education administration" (Katz, et al., 2004, p. 22).

In order to achieve optimal integration of IT into higher education institutions, strong collaborative relationships between groups specializing in IT and those representing other functional areas—such as academic affairs—are crucial (Albright & Nworie, 2008; Ives & Steinbrenner, 2005). However, significant barriers exist to the development and maintenance of effective collaborations on university campuses (Ives & Steinbrenner, 2005), a situation that can prove deleterious for the creation of information technology systems that support the particular needs of higher education institutions or, ideally, enhance their functioning.

Statement of the Problem

Over the past several decades, the information technology revolution has profoundly affected virtually every aspect of life at institutions of higher education from administrative processes to research activities to approaches to teaching and learning (Katz, et al., 2004; Owen & Demb, 2004). The speed of changes in information technology has been especially challenging, since it is at odds with the slower pace at which higher education has traditionally evolved (Gumport & Chun, 1999; Lineman, 2007; Schuster & Finkelstein, 2006); adapting to the speed and extensive scope of

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change, as well as its ongoing nature, causes stress to institutions as a whole and to the individuals within those institutions (Owen & Demb, 2004). Clearly, developing a stronger understanding of the role of IT within higher education is crucial as IT profoundly effects the daily lives of all and additionally continues to demand a larger share of institutional budgets.

In order to make the most of the increasingly substantial investments in IT, institutional leaders need to do a better job of integrating the perspectives of both IT professionals and academics into the design and implementation of IT projects. Otherwise, institutions can make significant expenditures without achieving the goal of more efficient and/or effective functioning, a problem that has been particularly evident in the area of academic technologies contribution to improvements in teaching and learning. In fact, one of the disappointments of the "IT revolution" as it has played out in higher education has been the limited effect of technology developments on teaching and learning (Bass, 2008; Hartman, 2008; Moser, 2007; Perry, 2004; Trinkle, 2005; Woolsey, 2008).

In the following section I discuss the key factors that research suggests have limited higher education's capacity to more fully, and more creatively, incorporate academic technologies into their central mission of teaching and learning. These include: making sense of technological change, especially the speed with which it occurs; the cultural divide between IT professionals and traditional academic culture and how this affects IT integration; and the barriers that exist to effective collaboration between IT professionals and faculty. I will also reflect on what effective collaborations between IT professionals and academic affairs might offer.

The Marginal Impact of Academic Technologies

Historically, administrative applications of information technology have been the primary focus of higher education IT organizations (Allison & DeBlois, 2008; Chester, 2006; Ives & Steinbrenner, 2005; Penrod, Dolence, & Douglas, 1990); in recent years, however, academic technology has come increasingly to the forefront (Camp & DeBlois, 2007; Hartman, et al., 2007), bringing new and different challenges to IT leadership in higher education. While schools have invested heavily in academic technologies, including Learning Management Systems (LMS) such as Blackboard or WebCT, and there is tremendous potential for academic technologies to transform teaching and learning, thus far the profound changes that many had predicted have failed to materialize (Gumport & Chun, 1999; Moore, et al., 2007; Moser, 2007; Perry, 2004).

Gumport and Chun (1999) write that "some new technologies have effected essentially first-order changes, making such traditional teaching and learning activities more efficient or expedient without altering the basic premises. Technology thus changes the medium of information exchange without significantly changing the content" (Gumport & Chun, p. 379). Leaders in academic technology in the coming years will be challenged to take the examples of a handful of innovative teachers and discover the means to offer programs and support that will encourage widespread adoption of technologies that move beyond merely tinkering around the edges with the same approaches to teaching and learning that have been dominant for generations of instructors and students.

The Speed of Technological Change and Altered Work Processes

Institutions of higher education are struggling to make sense of their technology

strategies and priorities, including creating organizational structures that support effective

uses of IT (Duderstadt, et al., 2002). Planning around technological change is difficult

due to the speed with which change is occurring, the unpredictable nature of the change

and the fact that these changes are recurrent, creating an environment that is continually

in flux. While different functions, offices and roles at institutions have traditionally been

only loosely coupled, this is increasingly no longer the case as information is maintained

in integrated databases that create work processes that are interdependent. Weick (1990)

uses the term "continuous processes" to denote the increasing interdependence of

different elements of an organization due to the development and deployment of

information technologies. Because new technologies combine "complex structures and

tight coupling," (Weick, p. 12) there is increasingly less flexibility in how tasks are

accomplished, and individuals within the system may feel that their autonomy is being

undermined.

Barriers for Faculty Adoption of Academic Technologies

In order to make better use of the possibilities offered by information technology

in academia, it is important that we recognize the barriers for faculty adoption. Schuster

& Finkelstein (2006) describe the speed with which technology is being integrated into

higher education: "in a matter of six years, email and Internet resources catapulted from a

curiosity in one of ten courses in 1994 to a dominant instrument in the majority of

courses by 2000, *an utterly unprecedented rate of change"* (p. 110). While faculty

adoption of email, course Web sites and other forms of academic technology has been

increasing rapidly, overall instructors are hesitant to introduce new technologies into their

teaching unless they are confident that they will work flawlessly and that someone will be

there to help solve problems when they occur (Schuster & Finkelstein, 2006).

Unfortunately, resources to support faculty in their use of academic technologies

have not kept pace with the phenomenal growth in faculty utilization. Increased support

needs have come at a time of extremely tight budgets, especially for public higher

education, which has suffered significant reductions in state allocations (Baker & Katz,

2003). As a result, campus IT organizations have had to design "sustainable and scalable

teaching and learning support" (Campbell & Oblinger, 2007, p. 21). This involves

making "faculty more and more self-sufficient because we are never going to have

enough staff to support them in great depth" (Baker & Katz, p. 60). This strategy only

adds to the overloaded plate of faculty roles and responsibilities.

Nonetheless, faculty are using an ever-increasing number of technology-based

tools, from presenting lecture notes in PowerPoint, to producing podcasts of those

lectures for students to download and listen to, submitting grant proposals online, writing

blogs, and sharing resources through del.icio.us, and flikr (Diaz, et al., 2009; Schuster &

Finkelstein, 2006). While a few faculty, known as "early adopters," have always been

willing to devote countless hours to exploring the latest technological offerings,

mainstream faculty now want to take advantage of such technologies but do not want to

spend every spare hour tweaking beta versions of software applications that almost work

(Schuster & Finkelstein, 2006).

Providing adequate support (e.g. training, time, and funds) so faculty can feel

confident and competent in their use of technology is important since the quality of

support is a key determinant of faculty satisfaction with and adoption of technology. For example, a 2002 EDUCAUSE Center for Applied Research (ECAR) study on faculty use of LMS (also known as Course Management Systems, or CMS) found that nearly a third of respondents "cited training in CMS [Course Management System] use as an important factor in their initial adoption or expanded use of a CMS" (Morgan, 2003, p. 16.)

Many developments in academic technology have been tremendously useful to faculty in their roles as scholars, including expanded access to research materials through the Web and extensive online databases of academic journals; ubiquitous word processing that has transformed the writing and editing process; and communication tools, including email, that allow faculty to easily communicate with both students and colleagues around the world (Schuster & Finkelstein, 2006). However, expectations for research productivity and quality have also complicated faculty engagement with teaching technologies. Restructuring courses in order to integrate new forms of technology takes considerable time and energy; in the current academic climate faculty will often choose to direct this energy towards pursuing ever more elusive grant money, conducting research, and writing for publication, activities they know will be rewarded when they come up for tenure or promotion (Gappa, et al., 2005; Hartman, et al., 2007; Schuster & Finkelstein). In sum, faculty hesitance to take risks by adopting potentially pedagogically transformative technologies is exacerbated by the speed at which changes in technology are occurring, a lack of support in terms of resources and people, and the absence of rewards for innovative uses of technology in their teaching.

Importance of Collaborations Involving IT

In order to be successful, integration of information technology into the workings of institutions of higher education increasingly requires collaboration across different groups. If the perspectives of both IT professionals and faculty (as well as administrators representing other functional areas) are incorporated into the development process for IT projects, the results will be more likely to lead to enhanced institutional functioning. Collaborations around academic technologies are particularly crucial to encourage as the lines between the roles of the library, teaching centers, continuing education and other groups continue to become more blurred as both their missions and the tools they use to achieve those missions become more similar. Rentfrow (2007) writes that "collaboration is, without doubt, the keyword that summarizes recent trends in libraries and information technology, especially in the world of academe," (Rentfrow, p. 8) a sentiment echoed by Katz, et al., (2004) and Trinkle (2005), among others. This is particularly true of academic technology, whose "natural campus partners" (Albright & Nworie, 2008, p. 21) are not within IT.

Despite a recognized need for cross-group collaborations around academic technology, the difficulties surrounding the establishment of such collaborations may be one of the factors slowing progress towards the integration of academic technologies with new forms of pedagogy. This study builds on the assumption that promoting the establishment and maintenance of effective collaborations between the groups responsible for supporting academic technology on campuses could be a means of overcoming these problems. One potential linkage that merits attention is the one between faculty developers/teaching consultants and IT professionals.

Strengthening the collaborations between groups involved in developing academic technology programs and those whose focus is pedagogy, improving teaching and the assessing learning outcomes, is an important avenue for strengthening the effectiveness of academic technology. However, collaborations between different groups within institutions of higher education can be problematic due to several factors: organizations are not structured in a way that is supportive of on-going collaborative ventures (Ives & Steinbrenner, 2005; Kezar, 2006); leaders are loathe to give up control of the resources they have been granted, and any sort of collaboration implies some loss of control (Kanter, 1994); and rewards are not structured to recognize collaborative behavior, but rather to identify the accomplishments of individuals (Haskins, et al., 1998).

Purpose of the Study

Therefore, the purpose of this study is to examine collaborations involving academic technology at public research extensive universities and determine the characteristics that make these collaborations more likely to be successful. The study seeks to identify best practices, common challenges, and the characteristics of successful collaborations, including the role of leadership, organizational structure, budgetary support, and relationships, both formal and informal, between academic technologies staff and their counterparts at teaching and learning centers across campus.

Principle Research Questions

The main research questions guiding this study are: what are the characteristics of successful collaborations between academic technologies units and teaching and learning

centers? What are the most important factors contributing to the development of collaborations?

<div align="center">**<u>Significance of the Study</u>**</div>

Institutions of higher education are spending increasingly large amounts of money on academic technology; however, reports on the impact those investments have had on teaching and learning indicate that changes have not been transformational in nature (Bass & Eynon, 2009; Duderstadt, et al., 2002; Gumport & Chun, 1999; Hartman, 2008; Moore, Fowler & Watson, 2007; Moser, 2007; Perry, 2004). Despite an assumption that collaboration is an important tool for helping move academic technology in this direction (Albright & Nworie, 2008; Rentfrow, 2007; Trinkle, 2005), there has been little research that focuses on the conditions that promote and enhance effective collaborations (Kezar, 2006), and little if any of that which does exist targets the realm of IT organizations within higher education. A study focused on identifying the characteristics of effective collaborations involving academic technology will allow for a more nuanced understanding of best practices for organizing these ventures and provide a baseline for further research. A broader goal for this research is the hope that improved collaborations around academic technologies, especially between offices of academic computing and teaching and learning centers, can contribute to the development and dispersal of more innovative and creative uses of academic technologies throughout institutions of higher education. Beyond the scope of academic technologies, it is hoped that the results of the study will produce a model for collaboration that can be applied to other areas of higher education. More specifically, such a model would provide insight on how organizations can take the many challenges that interfere with the development and implementation of

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collaborative relationships and shape them into opportunities for creating more effective

and enduring collaborations.

<u>Assumptions</u>

There are several key assumptions underlying this study. First is that the

importance of academic technology within higher education will continue to expand in

the coming years. Secondly, that expanding and strengthening collaborations between IT

staff responsible for academic technologies and the staff at teaching and learning centers

will enhance the creative use of academic technologies. Having more groups with

different areas of expertise coordinating their efforts related to academic technology will

improve the ability of institutions of higher education to use academic technology in

innovative ways for teaching and learning; of great importance is the ability to design

programs and applications that encourage spread these innovations beyond a few

enthusiastic instructors to include a large percentage of the faculty. Finally, it is assumed

that the relationship between IT professionals and other groups on campus, including

faculty, can be strained due to differences in the climates they inhabit within the

academy, and that a better understanding of how to overcome these barriers will be of

benefit.

<u>Definitions</u>

Academic technology is defined by the Association for Educational

Communications and Technology as "the study and ethical practice of facilitating

learning and improving performance by creating, using, and managing appropriate

technological processes and resources." (AECT, 2004). More specifically, I use the term

academic technology to refer to the range of technological tools currently being used in

teaching and learning by instructors and students as well as those that may be used in the future. These include, but are not limited to: course Web sites; Learning Management Systems (LMS) such as WebCT or Blackboard; slide shows made with PowerPoint or other presentation software and used during lectures to summarize lecture points and present multimedia material including graphics, video, and audio; Web resources used for academic research; communication tools such as email and instant messaging; software applications, especially word-processing, spreadsheets, databases, statistical analysis packages such as SPSS or SAS, computer-aided design applications such as AutoCAD, and graphics programs; Personal Response Systems (PRS), also known as "clickers", which allow faculty teaching large classes to have students submit individual answers to problems or poll questions; blogs, wikis, and other interactive forms of content sharing; and podcasts or digital video used to capture and present course content such as lectures. For the purposes of this paper, the terms academic technology, instructional technology and educational technology will be considered interchangeable.

Collaboration is described by Mattessich, Murray-Close, and Monsey (2001) as "a mutually beneficial and well-defined relationship entered into by two or more organizations. The relationship includes a commitment to mutual relationships and goals; a jointly developed structure and shared responsibility; mutual authority and accountability for success; and a sharing of resources and rewards" (Mattessich, et al., p. 5). True collaboration moves beyond a mere negotiated exchange of goods and services between two groups; Kanter (1994) sees the difference between these two as "creating new value together" versus "getting something back for what you put in" (p. 97). Similarly, Haskins, Liedtka & Rosenblum, (1998) make a useful distinction between

transactional and relational collaboration. They see transactional collaboration as "primarily episodic and task or project focused" (Haskins, et al., p. 35) that is more in keeping with traditional concepts of teamwork. Relational collaboration, on the other hand, represents a "higher order level of working together" which "becomes embedded as an aspect of the firm's culture and lives beyond a single event or engagement. It establishes an infrastructure for working together that transcends specific teams and specific projects" (Haskins, et al., p. 35). Philpot & Strange (2003) sees collaboration as existing on a continuum between "cultural pluralism" and "cultural blending" (Philpott & Strange, p. 92). Cultural pluralism "ensues when two autonomous units attempt to sustain separate sources of motivation and creativity for the benefit of both firms" (Philpott & Strange, p. 92) while cultural blending "occurs when two equal organizations attempt to blend or assimilate the strengths of each unit into one source of creativity" (Philpot & Strange, p. 92). For the purposes of this study, I will use Mattessich, et al.'s definition of collaboration, but will additionally draw upon Philpott's concept of collaborations occurring on a continuum between cultural pluralism and cultural blending. It is important to emphasize that collaboration is not a panacea. Just because a collaborative approach is adopted does not mean that the collaboration will be successful. In addition, not every project or challenge demands a collaborative approach; there needs to be a reason behind the choice to pursue a collaboration rather than just collaboration for its own sake.

While there are many meanings ascribed to the word *culture*, for the purpose of this paper I use it to refer to the shared sense of meaning and purpose group members use to structure their understanding of the organization or institution in which they work and

live. Peterson and Spencer (1990) describe culture as focusing "on the deeply embedded patterns of organizational behavior and the shared values, assumptions, beliefs, or ideologies that members have about their organization or its work" (Peterson & Spencer, p. 4). Faculty, staff and students within institutions of higher education share a sense of the culture they inhabit. Within the relatively unified context of higher education culture there are also divisions and differences based on a variety of factors, including role or discipline; these groupings are generally referred to as subcultures (Kuh & Whitt, 1988). Subcultures within an organization can have quite different structures, beliefs and social norms, to the extent that there is more shared meaning within the subgroup than exists across the institution as a whole. This paper focuses on the interactions of two of subcultures within higher education, those of faculty and IT staff.

This study will focus on the interactions of two offices, one focusing on academic technology from a more technical standpoint, and one focusing on helping faculty reflect on and develop their pedagogical approaches to teaching and learning. The first of these will be referred to generically as the *Office of Academic Technology (OAT)*, although it is called by a wide variety of names at different institutions (e.g. Educational Technologies, Academic Technology Services, Teaching and Learning Technologies Center, or Faculty Instructional Technology Center.) This office has primary responsibility for supporting faculty in their use of technology in the curriculum. The latter office, which will be referred to as the *Teaching & Learning Center (TLC)*, is also identified by many terms, including among others, Center for Teaching Excellence, Center for Teaching and Learning, University Teaching Center, Office of Instructional Consultation, Center for Excellence in Teaching and Learning, and the Office of Instructional Development. This

office provides expertise around pedagogical issues, including curriculum design, applying learning theories to the practice of teaching, assessment of learning outcomes, and diagnostic and development assistance for instructors (Sorcinelli, et al., 2006).

Overview

It is clear that significant resources are being spent on information technology initiatives throughout higher education. Communicating by email, carrying out research through online databases, and accomplishing administrative tasks such as course registration via Web-based applications, have changed the daily lives of faculty, students, and staff. Despite these successes, technology offers tremendous challenges to higher education as well: the unpredictable nature of technological change and its unprecedented pace make planning difficult; the on-going nature of the change which adds stress to the lives of faculty and staff; faculty reward structures that do not prize teaching; and difficulties associated with funding technology during a time when budgets are already severely strained. One major challenge that is as yet unmet is in using academic technology as a lever for transforming the process of teaching and learning. One means for encouraging the integration of technology and pedagogy is through the development of ongoing collaborative relationships between groups responsible for implementing academic technology and for promoting teaching excellence.

Chapter 2 explores the literature related to the integration of academic technology into teaching and learning in higher education. In order to fully understand the need for more effective cross-group collaborations around academic technology issues, we need to have a clear picture of how academic technology is being used for teaching and learning; the extent to which pedagogy has been impacted by technology; and how faculty and

others in higher education view the potential of technology to influence teaching and learning both positively and negatively. The chapter also describes shifts in faculty roles in contemporary higher education, as well as the changing needs of millennial students. There is also a discussion of the barriers that inhibit the integration of academic technology into higher education. Successful academic technology initiatives require cooperation among many disparate groups within an institution, including IT professionals, faculty, librarians, faculty development and pedagogical specialists, media centers, and more. The final section of Chapter 2 examines the factors contributing to effective collaborations, including organizational and individual characteristics, the importance of valuing and nurturing relationships amongst collaborators, and the role of organizational structures. The final section looks at the role played by the existence of cultural differences between subgroups within higher education, especially between IT professionals and faculty, in making successful collaborations difficult to establish and sustain.

Chapter 3 then discusses the methodological design for the study, including the conceptual framework and research questions guiding the study. This is followed by a more detailed look at the research design, plans for data analysis, and the limitations of the study. Chapter 4 provides a brief descriptive overview of each of the three cases included in the study, while Chapter 5 presents the findings. The final chapter discusses the implications of the findings, placing them within a larger context, and offers suggestions as to how they can be applied to policy and practice.

CHAPTER 2

LITERATURE REVIEW

Introduction

Although the process of teaching and learning has remained remarkably stable over the years, information technology, and more specifically academic technology, offers the opportunity to radically reimagine the roles of teachers and students in the learning process (Daniel, 1997), improving learning outcomes and responding to the challenges facing higher education today. However, as noted in Chapter One, the organizational structure of many higher education institutions, with different functional areas isolated from one another, has reinforced the divide between those in IT who are largely responsible for the implementation of academic technology initiatives and the faculty and others in academic affairs who are most directly connected to teaching. The lack of integration has adversely affected the development of academic technology from its current status as a tool that primarily supports existing methods of teaching (Gumport & Chun, 1999; Jafari, McGee, Carmean, 2006; Woolsey, 2008) to one that provides a springboard for transforming the learning process for both teachers and students (Hartman, 2008; National Research Council, 2002; Newman, Couturier, Scurry, 2004).

Building strong collaborative relationships between IT and academic affairs offers opportunities to establish more creative initiatives for supporting the use of academic technologies in the context of higher education. The first section of this chapter provides a summary of the existing literature on academic technology, including how technology is currently being used in academia; the effect of technological changes on both individuals and institutions and more specifically how the role of faculty is impacted; and

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the shifting needs of millennial students. This section also describes the barriers that exist

for integrating technology more fully into the realm of teaching and learning. The

following section focuses on collaboration including its potential benefits as well as the

barriers that inhibit the development of effective collaborative relationships. The final

section of the chapter examines cultural differences between faculty and administrators,

including those in IT, and looks at how a lack of understanding of these differences, as

well as an inability to bridge the divide between the two groups, has had a negative

impact on the development of academic technologies.

Academic Technologies

The Effect of the Rate and Scope of Change

Innovations in information technology are reshaping our society, and indeed the

world, at dizzying speed. From the way corporations function or governments operate to

the way we communicate with each other, access information about our world and enjoy

entertainment, virtually every sector of society has been impacted. The pace and the

scope of this change are unique compared to other periods of rapid innovation

surrounding the introduction of other new technologies that have also had a profound

effect on our society such as "the steam engine, railroad, telephone, and automobile"

(National Research Council, 2002, p. 5). Computers are increasingly powerful and more

affordable than ever; access to the Internet is nearly ubiquitous, and the availability of

greater bandwidth allows for the development and distribution of a wide variety

multimedia, including audio, video and complex virtual realities; and mobile

communications are rapidly merging with more "traditional" forms of technology (Pirani

& Sheehan, 2009). Experts believe that "the extraordinary pace of information

technology evolution is likely not only to continue for the next several decades but could well accelerate" (National Research Council, p. 2). Both individuals and the societal institutions they create are being forced to respond to these transforming technologies, although these responses inevitably lag somewhat behind the technological changes as humans require time to adapt to new realities.

In contrast to the lightning speeds at which technology is evolving (and the somewhat slower pace at which society as a whole, including business, government, and the entertainment industries is adapting to these changes) higher education has been slow to incorporate information technology into its institutional structures (Camp & DeBlois, 2007; Gumport & Chun, 1999; Lineman, 2007; Schuster & Finkelstein, 2006). The 2002 National Research Council report detailing the impact of information technology at research universities summarizes the paradoxical nature of the integration of information technology into higher education: "information technology is fundamentally changing the relationship between people and knowledge. Yet ironically, at the most knowledge-based entities of all—our colleges and universities—the pace of transformation has been relatively modest" (National Research Council, p. 5). This is especially true in terms of how information technology has been applied to teaching and learning, which Hartman (2008) terms "one of our most conspicuous pieces of unfinished business" (Hartman, p. 24). The basic framework for teaching in higher education has been remarkably resistant to change over the course of decades or even centuries (Woolsey, 2008). A lecture class held today would look familiar to and be easily recognizable by students who attended a university centuries ago (Perry, 2004). Even as the environment outside the academy shifted, and despite the fact that "learners changed, the skills demanded in the workplace

changed, and educational options outside the ivory towers grew in number…for the most part, higher education held on, held out, and 'stayed the course'" (Jafari, et al., 2006, p. 60).

Sooner or later, however, the information technology revolution will inevitably inspire (or require) a transformation in how teaching and learning occurs in institutions of higher education which will result in "fundamental changes in how universities are structured" (Newman, et al., 2004, p. 24). The National Research Council (2002) predicts that "the most dramatic impacts on university education are yet to come—when learning experiences are reconceptualized to capture the power of information technology" (National Research Council, p. 26). A decade or so ago, Peter Drucker, in an interview with *Forbes*, made the prediction that "thirty years from now the big university campuses will be relics. Universities won't survive. It's as large a change as when we first got the printed book" (Lenzer & Johnson, 1997, p. 127). While it is difficult to predict exactly what form the new directions for higher education will take, and whether the outcome will be as revolutionary (or dire, depending on your perspective) as Drucker predicted, there is little doubt that dramatic change in the structure of the learning process is on the horizon. The National Research Council (2002) presented a vision for universities to follow in order to become 'learning organizations,' a process that would include "systematically studying the learning process and re-examining [the university's] role in the digital age" (National Research Council, p. 24). They encouraged educators within these institutions to experiment "with new paradigms…by harvesting the best ideas, implementing them on a sufficient scale to assess their impacts, and disseminating their fruitful results" (National Research Council, p. 24). By encouraging creative, cross-

disciplinary collaborations around the learning opportunities made possible by developing technologies, higher education institutions can be a strong force in shaping the future of learning. However, questions remain about how those within universities will respond to the challenges technology brings and make changes that will help higher education realize its potential in this dynamic technologically-oriented environment.

How Is Technology Being Used in Higher Education?

While higher education may not yet have achieved the transformative change that many have predicted is possible (Bass & Eynon, 2009; Gumport & Chun, 1999; Moore, Fowler, & Watson, 2007; Moser, 2007; Perry, 2004), the daily lives of faculty, as well as students and staff, have been significantly affected by the introduction and dissemination of information technology (Schuster & Finkelstein, 2006), and this change has come quickly. Channels for faculty/student communications have been expanded through email and other tools. Online resources, including full-text versions of journals, e-books and primary sources, have greatly simplified the process of conducting research for faculty and graduate students, and made introducing original research projects into the undergraduate curriculum infinitely more doable (Newman, et al., 2004). Access to projection equipment in classrooms is increasing, which further reduces barriers to incorporating presentation software such as PowerPoint that is already widely used in lecture classes. Course Web sites, whether stand-alone or as part of a Learning Management System, (LMS) provide a central portal to course materials, as well as to discussion and collaborative learning tools. The management of students, particularly in large classes, has been streamlined through online enrollment, the ability to automatically

download course rosters, centralized locations to collect and store student work, and online grade management (Lane, 2008).

Overall, however, it appears that technological advances have been primarily used to support or enhance traditional teaching forms, including increasing instructor efficiency in performing administrative tasks, rather than being used as a force for more radical change that could improve the effectiveness of learning processes (Moser, 2007; Perry, 2004). Moore, et al. (2007) report that

> a variety of discipline-specific pedagogical strategies that require students' active engagement and that develop their problem-solving and problem-posing skills in the context of technology-enabled learning environments should be standard practice in academe at this point; yet in large measure, such is not the case. Although most departments likely have an innovative teacher or two, widespread pedagogical and curricular innovation is not the norm. (p. 51)

Significant resources are being invested in information technology at higher education institutions (Albright & Nworie, 2008; Goldstein, 2005; Goldstein & Caruso, 2004; Hartman, 2008; Smallen & Leach, 2002), yet they seem to be having a limited impact on improving teaching and learning (Albright & Nworie, 2008; Bass, 2008; Hartman, 2008; Woolsey, 2008). Some critics go even further and argue that "technology has actually hurt teaching and learning in many courses" (Trinkle, 2005, p. 18) both because of poor implementation (Young, 2004), and the use of technologies that are restrictive in terms of how they allow teachers and learners to interact with each other and the content of the course (Lane, 2008). While information technologies are being widely used in the classroom, there is the hope that the future will bring more innovative, effective, and creative uses of technology to supporting learning for students.

The Changing Role of Faculty

Technological changes are also causing faculty roles to shift significantly, and this is an additional source of stress as faculty (and those that work with them) try to respond to these new realities (Schuster & Finkelstein, 2006). Hartman, Dzuiban & Brophy Ellison (2007) observe that "most faculty members did not seek careers in the academy because of a strong love of technology or a propensity for adapting to rapid change" (Hartman, et al., p. 62), yet they now find themselves in precisely that situation. The daily lives of faculty have been significantly affected by the introduction and dissemination of information technology, and this change has come quickly: "some important tools now commonly used by faculty members were not on the horizon a decade, even a half-decade ago" (Schuster & Finkelstein, p. 14).

There is little doubt that the daily lives of faculty have been altered dramatically by technological changes. Email and other forms of electronic communications between students and faculty have made office hours virtually unused, at least by undergraduates; instead faculty report that they spend hours each week responding to an overwhelming and unending stream of emails from students (Arabasz, Pirani, & Fawcett, 2003; Hartman, et al., 2007; Weiss & Hanson-Baldauf, 2008). Many also spend significant time building and updating course Web sites that allow them to distribute syllabi, assignments, and course readings (Schuster & Finkelstein, 2006). As a result, faculty are working more hours and have less down time than in the past (Hartman, et al., 2007).

Beyond new demands in the realm of teaching, the expectations for faculty are being ratcheted up in terms of the quality and quantity of research and publications faculty are expected to produce in order to succeed in the tenure and promotion process

(Altbach, 1999; Gappa, Austin, & Trice, 2007; Schuster & Finkelstein, 2006). So, at the same time that faculty are asked to be more productive in the traditional academic sense, they also are pressed to devote significant time to "learn[ing] new technologies and instrumentalities…and revis[ing] course content more often" (Schuster & Finkelstein, p. 107). And faculty can expect to do this with only minimal support from IT professionals who are themselves overwhelmed by the scale of support they are expected to provide (Baker & Katz, 2003; Hartman, et al., 2007). These challenges have a negative impact on the ability of faculty to use technology to enhance learning in their classrooms. The National Research Council (2002) writes that "with competing demands on their time, even tenured faculty members may not have sufficient incentive to devote time to utilizing information technology in creative ways" (National Research Council, p. 28).

Increasing use of technology can also bring the traditional role of faculty member as expert into question. Faculty are accustomed to being recognized as the authorities in their classrooms, however they may have difficulty adjusting to their novice status when it comes to using technology (Perry, 2004). The stress of shedding their role as experts is exacerbated by their perception of students as being more adept in the same arena where they are experiencing discomfort (Hartman, et al., 2007). In addition, for the first time faculty are being asked to teach in ways that differ substantially from their own experiences as students (Hartman, et al., 2007) which also brings familiar faculty roles into question. There are a number of factor's contributing to the shifting roles of faculty including: the time demanded for learning new technologies; rising expectations for research and publication productivity; and the need to adapt familiar teaching styles to respond to the new possibilities offered by developing technologies.

Sensemaking

Technology has already brought fundamental changes to higher education, and there is the potential for significantly more far-reaching but largely undefined disruptions to the structure of teaching and learning. In such an environment, where institutional functioning as well as the role of faculty in a new type of organization, is in flux, the activity of sensemaking comes to the fore. Sensemaking is the process of fashioning "frames of reference that enable people to comprehend, explain, and interpret events in organizational life" (Bess & Dee, 2008, p. 154). Meaning is not fixed, but is instead shaped over time through the social interactions of members of an organization. Sensemaking is a particularly crucial activity when the organizational environment is unstable because it is a means of alleviating the discomfort associated with 'ambiguous stimuli' that can have several possible interpretations (Bess & Dee, 2008; Birnbaum, 1988). Weick (1990) uses the word 'equivoque' in this context and describes new technologies as "require[ing] ongoing structuring and sensemaking if they are to be managed" (Weick, p. 2). Due to differences in "background, training, experiences, and roles" (Birnbaum, p. 64), not everyone within an organization will interpret new events in the same way, and this can cause further stress to organizations.

Both faculty and staff are faced with the consequences of rapid, extensive, and continual change (Owen & Demb, 2004) and must devote significant energy to the process of framing the challenges and opportunities technology provides. Weick (1990) writes that uncertainties associated with developing technology are now a "permanent rather than transient" (Weick, p. 9) feature in our institutions. The tools being used by faculty and staff, and the knowledge and skills needed to harness those tools, are

constantly changing. No sooner does one grow accustomed to using a particular tool to accomplish a task, whether posting a syllabus online or getting students registered for a class, than another upgrade comes along which renders the previous process obsolete. Relatively simple tasks can become imbued with uncertainty and even panic, especially when tight deadlines are involved. Weick labels these "stochastic environments" which "change faster than people can accumulate knowledge about them" (Weick, p. 9). Learning in the academic environment can take considerably longer than in the corporate world since many tasks for which faculty use technology are accessed only intermittently, such as uploading grades at the end of the semester. Uncertainty around technology represents a barrier for the adoption of technological tools (Haymes, 2008). Faculty, whose time is increasingly precious, are unlikely to invest in academic technologies when they are convinced that even if they master one set of tools, six months later their knowledge will be obsolete. As a result, the integration of information technology into higher education institutions is viewed with suspicion. Pollack (2007) writes that "nothing provokes more anxiety, enthusiasm, or derision in faculty" (Pollack, p. 1) than discussions of technology and its impact.

Discussions of technology in higher education are frequently dichotomized, with technological boosters promising the realization of a utopian vision of education (Bonk, 2009) while detractors see it as heralding the arrival of a dystopian Brave New World in higher education (Bosquet, 2008). Proponents believe that technology will increase the accessibility of higher education, provide learning opportunities that are responsive to multiple learning styles, allow students to create their own learning environments (Skolnik, 1998), and significantly reduce the cost of providing post-secondary education

(Twigg, 2005). Others see technology as encouraging an assembly line approach to education where faculty would be dispossessed, replaced by a few "super professors" and instructional designers, while armies of poorly trained and ill-paid instructors would deliver pre-packaged and pre-digested content to the masses (Giroux & Giroux, 2004; Ives & Steinbrenner, 2005; Noble, 1998; Skolnik, 1998). Faculty can be suspicious of the goals of the groups responsible for implementing IT on campuses, seeing their work as supporting administrative goals of reducing both faculty autonomy and the overall numbers of tenure track faculty. To them, "IT seems complicit in the promotion of 'factory' models of education where innovation and exploration are sacrificed to automation, efficiency, and the codification of standardized businesses processes" (Fernandez, 2008, p. 8). These concerns are echoed in the National Research Council's report (2002) which describes changes ahead in how courses are designed and taught—albeit from a more positive stance—stating that "higher education as a cottage industry, in which individual courses are made to order by individual faculty, may not be able to compete much longer in either cost or quality with commodity educational products" (National Research Council, p. 36).

The structure of Learning Management Systems (LMSs) themselves can exacerbate faculty questions about limitations imposed by technology since "as products marketed to institutions to help them integrate resources, they are designed along the lines of inventory control or commercial enterprise applications" (Lane, 2008, p. 5). While the effects of technology on higher education as a whole are unlikely to be either purely positive or overwhelmingly negative, changes are widespread and rapid, and making sense of their impact is a cause of stress to those who work in academia. Finally,

even the learners who sit in university classrooms and use the variety of aforementioned technologies, are substantially different than their peers of just a few years ago.

The Changing Needs of Millennial Students

Today's students are entering universities having grown up in a digital world, and this impacts how they engage in the classroom. Institutions, and the faculty and staff that work within them, are being required to adapt to the learning styles of this new generation of millennial students (Duderstadt, Atkins, & Van Houwling, 2002; Hartman, et al., 2007; Sweeney, 2007). These students "bring with them expectations and understandings of technology, as well as life and learning styles, very different from those of students in the not-too-distant past" (Camp & DeBlois, 2007, p. 22). Hilton (2006) describes the existence of a "digital divide between the faculty and students— between the way students approach technology, assignments, and how they get those things done and the way faculty members approach those same issues" (Hilton, p. 62).

Millennial learners differ from earlier generations of student in a number of ways. They are accustomed to group learning experiences where sharing with others is seen as an accepted learning strategy rather than cheating. They tend to be more visually literate, having grown up with interactive media; and perhaps not unrelated to their embrace of multimedia, there has also been a decrease in comfort levels with writing (Hartman, et al., 2007). These students have high expectations for their instructors to use "interactive learning environments and to have a working familiarity with the growing number of Web-based instructional resources" (Hartman, et al., 2007, p. 68). However, the very familiarity of millennial students with a wide variety of technologies that their faculty may be only vaguely aware of "may lead students to overestimate their competence in

searching for and evaluating information" (Perry, 2004, p. 29). In order to help students from this new generation learn effectively, faculty need to understand the areas in which students' immersion in a technological environment can hide a need for guidance.

Barriers to Integrating Technology into Teaching and Learning

If academic institutions are to find ways to use technology in creative, more productive ways that further their mission of teaching and learning, an important first step is to understand the barriers to a more fruitful integration of technology into a critical arena. These barriers include the reality of fiscal constraints; the time and expense required to rethink and revamp a course in light of changing technologies; institutional silos that prevent effective communication between IT organizations within an institution and their counterparts in academic affairs; rewards systems that are not structured to recognize innovations in teaching; and frustrations with technologies that are still relatively immature. These barriers can all be viewed through the activity of sensemaking, and more specifically how academic leaders, faculty and staff express their cultural values during a time of change brought about by technological innovations. Setting priorities for the expenditure of scarce resources, whether the resources are fiscal or the limited time available to any single individual, is inevitably tied to how individuals make sense of their world.

For academic leaders, the struggle is how to make sense of their technology strategies, including the value of technology to an institution, how to prioritize funding technological innovations without jeopardizing more traditional expenditures, and how to justify those decisions to those who might prefer the limited funds available be spent in other ways, such as hiring additional faculty (Birnbaum, 1988; Duderstadt, et al., 2002).

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Technology demands an increasingly large percentage of higher education budgets at a time when funding increases are limited or non-existent (Allison & DeBlois, 2008; Altbach, 1999; Camp & DeBlois, 2007; Goldstein, 2005; Goldstein & Caruso, 2004; Little & Page, 2009; Smallen & Leach, 2002). Within this context, rapidly growing IT expenditures are especially taxing to institutions. These financial challenges have profound implications since technology now represents the third largest cost category behind compensation and facilities-related costs (Goldstein, 2005), and spending on IT in higher education has been increasing at a faster rate than the general operating budget (Smallen & Leach, 2002). In 1989-90, IT represented just 2.22% of overall budgets (Ringle, 2001), while by 2005 spending on IT accounted for 7 to 8% of the overall budget (Goldstein, 2005). Despite these increases, IT leaders, especially at public institutions, report that available funding is insufficient to achieve their strategic objectives, particularly in the area of academic computing (Goldstein & Caruso, 2004).

Woolsey (2008) argues that of the billions of dollars being spent on technology in higher education "only a very small percentage of this resource is directed at enhancing teaching and learning…Administrative infrastructures are hungry for resources, security is critical, basic operations require attention, and professors are busy" (Woolsey, p. 212). This perception that other IT issues take priority over the application of information technology to teaching and learning is reflected in the EDUCAUSE list of the Top 10 IT Issues for 2008. The first eight are: (1) Security; (2) Administrative/ERP/information systems; (3) Funding IT; (4) Infrastructure; (5) Identity/access management; (6) Disaster recovery / business continuity; (7) Governance, organization, and leadership; and (8) Change management. It is not until the ninth position on the list that "e-learning /

distributed teaching and learning" appears, the first mention of a topic that pertains to the use of technology for pedagogical purposes (Allison & DeBlois, 2008). Resources, both in terms of staff time and purchasing power, are limited, and IT leaders have to stretch them to cover many different projects, which materially affects the progress towards more effective uses of technology in teaching. IT leaders are overwhelmed with competing priorities, including large-scale administrative computing implementations, infrastructure needs, security issues and the like, and as a result are unable to act as the primary champion for academic technology.

Like their leaders, IT personnel are also affected by the challenges posed by mission-critical infrastructure needs can leave them can leave little time to concentrate on potentially helpful, but time consuming and resource intensive, implementations of learning technologies. A serious security breach or the release of a fast-spreading virus can wreak havoc on faculty, staff, and IT professionals alike. Priorities for IT staff can change in an instant. In the aftermath of the shooting at Virginia Tech in April 2007, IT organizations throughout higher education were tasked with almost immediate development and implementation of emergency notification systems (Foster, 2007). In addition, IT staff are faced with new releases of software that come at random times from an industry that is totally unaware of the rhythms of the academic calendar. Thus, Service Pack 2, a major upgrade to the Windows XP operating system, was released by Microsoft in August 2004 just prior to the start of the academic year, throwing IT departments in higher education into complete panic (Kiernan, 2004). The many competing priorities for campus IT dollars and staff resources, whether planned or unplanned, make it challenging to bring academic technologies along (Camp & DeBlois, 2007).

There is a tremendous difference between a technology that has potential for having an impact on learning and developing that potential into reality (Allison & DeBlois, 2008; Hartman, et al., 2007). This is even more challenging without supportive leadership and dedicated resources (both in dollars and staff time); insufficient investment of these resources decreases the likelihood that higher education will realize potential benefits of technology in the classroom. It is possible that existing resources could be used more effectively or additional resources could be found and directed specifically towards this priority if IT staff were able to work more closely with those in academic affairs. However, encouraging the growth of these cross-group collaborations between IT organizations and academic affairs will require reorienting organizational structures based on silos towards the development of horizontal connections across reporting lines (Ives & Steinbrenner, 2005).

On many campuses responsibility for academic technology is spread out over several offices, from the central IT organization, to the library, media centers and centers for teaching (Albright & Nworie, 2008). Ideally involvement by multiple groups would represent a strength, with separate offices working together to combine resources and expertise to create a seamless integration of academic technology services for an institution. However, because of the difficulty of working across reporting lines, diffusion of responsibility leads to fractured leadership, a lack of a single cohesive voice for academic technology, duplicative services, and confusion as to where faculty should go for support (Albright & Nworie, 2008). Different campus organizations see themselves as in competition with each other rather than as working together to accomplish common goals (Ives & Steinbrenner, 2005). Optimal use of academic technologies requires both

technological expertise and a deep understanding of how to promote effective learning; if organizational structures are not modified to allow IT and academic affairs professionals to work together more easily, progress will continue to be stymied.

Given that higher education has limited resources to invest in technology, the need to make decisions as to which technologies to pursue provides an additional challenge (Camp & DeBlois, 2008). Careful planning, involving the technical, financial and organizational realities of the institution, is crucial as "a defense against squandered resources, budget surprises and black-hole projects that suck all the money that isn't nailed down" (Savarese, 2004, p. 1). However, this can be extremely difficult since new technologies are "hard to measure because people disagree about what constitutes effective performance" (Weick, 1990, p. 9). A database designer may believe that a technology works since the back-end database is properly designed; the end users may declare the same product implementation a complete disaster since the process they must go through to accomplish a task has a steep learning curve, is unwieldy, or is significantly more complicated than the system it replaced. Meaningful assessment of learning technologies is a difficult, time-consuming and expensive in itself (Camp & DeBlois, 2007). In order to evaluate relative success or failure, institutions need to develop well-defined metrics that will demonstrate the effectiveness of their academic technology programs, not necessarily an easy task.

In business and industry, IT programs can be evaluated in terms of increased efficiencies or effectiveness as measured by greater productivity of employees and/or a positive effect on the bottom line. However, these concepts are not easily adaptable to the context of education. Grush (2004) writes that "education is a complex process around

which meaningful outcome measures are very hard to develop. How can we measure precisely how we have helped someone learn to learn?" (Grush, p. 3). Documenting improvements over the learning outcomes of current pedagogy is also difficult since higher education has not been particularly successful in looking critically at their performance in the classroom. In higher education, inertia "is routinely overcoming the instinct to try to improve, in a system that has few established metrics that might identify a need for improvement in the learning enterprise" (Woolsey, 2008, p. 216). Again, combining expertise between centers for teaching and IT organizations has the potential to strengthen the overall institutional capacity for assessing the effectiveness of different learning technologies. Assessment of courses and teaching effectiveness is one of the areas that teaching and learning centers traditionally focus on (Sorcinelli, et al., 2006); working together with IT staff can insure that criteria for success are properly conceptualized and operationalized, data are collected, analyzed, and used as the basis for decision making about the future directions of academic technology programs. Being able to demonstrate a positive effect on learning outcomes can also be an important tool in persuading faculty who are dubious about the value of integrating academic technologies into their teaching.

Compared to technologies that faculty and students are accustomed to using in their daily lives outside of the university, such as sophisticated video games, social networking sites, or Web-based vendors such as Amazon.com, learning technologies used in higher education are still relatively underdeveloped (Jafari, et al., 2006). Faculty and students expect the learning technologies they use to be similarly smart, responsive, easy to use, and flexible in accommodating creativity. They want "systems that know the

individual better and that behave 'more like Amazon' in remembering who they are, what

they like, and where they left off their work" (Jafari, et al., 2006, p. 54). Instead, they are

presented with clunky and inelegant user interfaces that seem primitive and confining in

comparison to what they experience in the 'real world' (Lane, 2008). Faculty are "still

wary as to whether the technology is simple and reliable enough to use for more

sophisticated learning tasks" (Newman, et al., 2004, p. 22) and they worry about the

availability of 'anytime' support if the systems prove problematic (Jafari, et al., 2006).

These frustrations have a negative impact on faculty perceptions of the usefulness of

technology for enhancing learning, and consequently their desire to devote the time and

energy required to integrate technology into their courses (Moser, 2007).

Encouraging faculty to adopt new teaching methods reflecting developments in

technology can be a difficult task. Because being innovative in the classroom is only

minimally rewarded in higher education, and because graduate education does not focus

on providing training in different approaches to pedagogy, especially as it relates to

technology use (Golde & Dore, 2001), most faculty essentially teach the same way that

they were taught (Buckley, 2002). Like the institutions with which they are affiliated, the

culture and traditions that govern faculty expectations and behavior evolve only slowly;

faculty attitudes towards teaching change at a correspondingly slow pace. This poses a

challenge to institutions that can no longer afford to adopt the tactic of "simply wait[ing]

for a generation of professors to retire" (National Research Council, 2002, p. 37) in order

to make substantial changes in pedagogy. Instead, institutions must look for "effective

ways to reskill the faculty members whose careers are far from over" (National Research

Council, p. 37). The implication being that institutions must discover ways to create

incentives for faculty to experiment with new forms of teaching, provide adequate

support during the process of redesigning courses, and reward those who engage in

innovative teaching.

Unfortunately, higher education does not excel in this area. Bass and Eynon

(2009) comment that

> when it comes to innovations in teaching and learning, higher education seems to
> be the last to know and the slowest to respond. In every other way, we push at the
> frontiers of knowledge, ask critical questions, take risks. In all other realms of
> research, practices of peer review, dialogue, accountability, and replication
> engender innovation. Why is it the opposite for teaching and learning? (para. 1)

There has been a major theoretical shift that has occurred in recent years in

approaches to teaching and learning in higher education, namely the move from a

teaching-centered paradigm to a learning-centered one (Barr & Tagg, 1995). Learning-

centered pedagogy deemphasizes the role of the teacher as purveyor of knowledge and

students as passive receivers of that knowledge. Instead, it celebrates the "value of active,

constructivist learning; the potential differences in learning styles among individuals; and

the importance of assessment to determine if learning outcomes have been achieved"

(Perry, 2004, p. 30). Used creatively, academic technology has the potential to play a

major supporting role in the shift towards a learning paradigm by providing a context for

faculty and students to work together to define the learning environment as well as a

structure for supporting active learning and collaborative work (Buckley, 2002; Hartman,

et al., 2007; Moore, et al., 2007). Newman, et al. (2004) believe that

> the opportunity ahead lies in the capacity to use information and communication
> technology to transform learning in ways that capitalize on what we have known
> for a long time about powerful pedagogy: that students learn more, learn more
> profoundly, and remember over a far longer period when they are actively
> engaged in a self-driven learning activity rather than when they are engaged only
> passively, sitting and listening. (p. 21)

However, in higher education "the pedagogical potential of instructional technology is mismatched with current faculty practice, and institutions must implement profoundly different ways of doing business" (Buckley, 2002, p. 38). It is possible that stronger and more effective collaborations between IT professionals in Academic Computing and specialists in pedagogy and assessment located in Centers for Teaching will provide an impetus for developing the potential of instructional technology to create a structure for learner-centered teaching to become more firmly entrenched in students' learning experiences in higher education.

Learning Management Systems (LMS), which are also referred to as Course Management Systems (CMS), are one of the most heavily used learning technologies in higher education today and are now considered a "mission critical enterprise system" (Camp & DeBlois, 2007). LMSs offer faculty a relatively simple method of integrating a wide array of instructional technology tools into the curriculum. A LMS is a Web-based environment that offers an integrated set of course tools including information distribution, communication, student assessment, and class management. Harrington, Gordon & Schibik (2004) describe the core components as including "tools for synchronous and asynchronous communication, content storage and delivery, online quiz and survey tools, gradebooks, whiteboards, digital drop-boxes, and email communications" (p. 3). Because of the relative ease of use, a LMS can encourage faculty to experiment with integrating technology into their curriculum (Baker & Katz, 2003). A LMS can be used to teach either distance education courses or to enrich a more traditionally structured residential course. Some of the biggest names in LMS vendors are Blackboard, WebCT (now owned by Blackboard), Angel (also now owned by

Blackboard), Desire2Learn, and eCollege. Open source solutions such as Moodle or Sakai are also growing in popularity.

While LMSs do offer a quick and easy way to get course materials online, they still take time to learn and have also been criticized as hampering pedagogical creativity. Ironically, some argue that instructional technology as it now is used in higher education can actually be more restrictive in terms of pedagogical choices than no use of technology. "The preset organization [of LMSs] encourages novice instructors to 'plug in' their content under the appropriate category instead of effectively translating their individual teaching styles into an online environment" (Lane, 2008, p. 5). Developers have primarily conceptualized LMSs as products used to manage resources (e.g. student enrollment, grades, content) and replicate current pedagogies than facilitate the creation of new learning environments (Jafari, et al., 2006) and as a result, "instructors coming from a less traditional, more innovative approach…face immediate and frustrating limits" (Lane, 2008, p. 6).

Faculty Support for Technology Use

Faculty need support for their efforts to incorporate and use technology; this is particularly critical given the stresses brought on by rapidly evolving technologies, changing faculty roles, and the needs of millennial students. Recognizing the discomfort that cultural change can bring and the consequent increased necessity for sensemaking activities when these cultural transitions are occurring is crucial (Weick, 1990). Faculty support must include not only help with the purely technical aspects of using new technologies, but also provide context for addressing the larger issues of determining one's place and one's values in a shifting world (Moore, et al., 2007). Well-designed

faculty development programs can play a crucial role in encouraging faculty to rethink traditional pedagogy to incorporate technologies that support learning in the classroom. Trinkle (2005) clearly articulates the importance of strong support mechanisms if technology is to achieve its potential, saying "a poorly supported technology is actually worse than no technology at all" (Trinkle, p. 21).

Unfortunately, resources to support faculty have not kept pace with the phenomenal growth in faculty utilization. Increased support needs have come at a time of extremely tight budgets for public institutions, with significant reductions in state allocations for public higher education (Baker & Katz, 2003; Camp & DeBlois, 2007). A survey of IT administrators at higher education institutions released by ECAR found that CIOs and other IT administrators at 70% of institutions reported that the "growth of instructor's support demands will outpace their institutions ability to provide the needed support" (Baker & Katz, 2003, p. 9). The same study found that across all Carnegie classifications and all sizes of colleges and universities, survey respondents identified "faculty development support and training as one of the top 10 issues most important to resolve for the institution's strategic success" (Baker & Katz, 2003, p. 5). In addition, many faculty believe that the budget for course and faculty development is insufficient (Morgan, 2003). Even access to current hardware and software remains a serious challenge at many institutions (Goldstein & Caruso, 2004; Ringle, 2001).

As a result of changing technology and increased use of instructional technology, support programs for faculty using instructional technology are changing quickly. Just a few years ago the focus was on encouraging sometimes dubious faculty to participate at all. When technology was more of a novelty used by only a few of the more tech savvy

instructors, elaborate projects were designed and faculty were given intensive one-on-one technical assistance in their implementation. Quinnipiac University's support program was typical of these early years of academic technology adoption. Buckley (2002), Director of Instructional Technology at Quinnipiac, described their approach to support as finding motivated faculty and then "bestow[ing] the care required to make them successful…Participants were supported to such a lavish standard that they were guaranteed an intellectual adventure" (Buckley, p. 35). Similarly, Tomlinson-Keasey (2002) describes how at Pennsylvania State University "faculty members are paired with an instructional designer who becomes familiar with the course, the professor's desires, and style of instruction, and then organizes a team to help deliver a course" (Tomlinson-Keasey, p. 136). These approaches seem quaint and unimaginable today even for well-funded institutions. Instead, "after an innovation passes from the early adopters to the early and late majorities, the size of the population that must be supported increases dramatically" (Hartman, et al., 2007, p. 70). As a result, campus IT organizations have had to design "sustainable and scalable teaching and learning support" (Campbell & Oblinger, 2007, p. 21). This involves making "faculty more and more self-sufficient because we are never going to have enough staff to support them in great depth" (Baker & Katz, 2003, p. 60). Institutions need to find ways to design scalable IT support programs as well as to adequately fund those programs.

In addition, making the most of the potential of technologies to support the transition to learner-centered pedagogies will also require shifts in faculty development practices. Buckley (2002) observes that "instructional technology has been touted as a tool to improve education" and that "the broad integration of technology is a major goal

of most colleges and universities" (Buckley, p. 32) However, he also contends that "much of the current faculty development with technology is not transformational and does not alter practice in a lasting way" (Buckley, p. 32). Programs will need to move beyond one-shot evangelistic experiences to provide instructors with on-going opportunities to reflect on their teaching, refine their approaches to learner-centered pedagogies, and experiment with effective uses of technology to support these goals. Effective collaborations between Offices of Academic Computing and Centers for Teaching can encourage the growth of faculty development programs that have a balanced approach between emphasizing pedagogy and technology, and can offer programs that have a lasting impact on teaching practices.

The above section has addressed the literature related to academic technologies in higher education, including how the speed of developments in information technology puts strain upon institutions that historically evolved only slowly. While the IT revolution has many tools that have proved their usefulness in higher education, pedagogy and the structure teaching and learning remains remarkably unchanged. Faculty are being asked to adapt their ways of teaching, devoting increasing time to learning and implementing new technologies at the same time that they are under pressure to increase their scholarly output, including bringing in more grant money and producing greater numbers of publications. Thus far the barriers to using technology in creative ways to improve teaching and learning have proved stronger than the impetus for change. A unified approach to implementation could significantly improve the effectiveness of technology use; such an approach would need to be informed by technological expertise, a commitment to new approaches to pedagogy, and a thorough understanding of faculty

lives and the organizational structures of institutions of higher education. Faculty and staff with diverse skills and perspectives would need to work together to make this approach a reality.

<div style="text-align:center">**<u>Collaboration</u>**</div>

Effective collaborations between a variety of groups on campus, including Offices of Academic Computing, Centers for Teaching, and libraries, are increasingly important for the successful integration of teaching and learning technologies into the fabric of university culture (Albright & Nworie, 2008; Katz, et al., 2004; Rentfrow, 2007; Trinkle, 2005). As such, it is important to understand what collaboration entails, as well as the factors that contribute to its success. Collaboration involves two or more organizations working together to achieve a mutually beneficial goal with the organizations sharing resources, responsibility for the success of the venture, and recognition of their achievements (Mattessich, Murray-Close, & Monsey, 2001).

Successful collaborations offer organizations a number of benefits, most importantly the ability to achieve results that would not possible if the collaborative relationship did not exist. Haskins, Liedka & Rosenblum (1998) terms this an "ethic of collaboration" which they found increases "the probability of and pleasure in getting results not likely to be achieved when people are merely working in a coordinated, side-by-side fashion" (Haskins, et al., p. 36). Creative approaches to problem solving are enhanced in organizations using collaborative structures (Haskins, et al., 1998; Weiss & Hughes, 2005), and solutions are likely to be more carefully crafted due to the "increased complexity of decision making" (Kanter, 1994, p. 805). Increasing the diversity of viewpoints and expanding the pool of available expertise when responding to a

challenging situation also contributes to improved outcomes (Mattessich, et al., 2001).

Increased efficiency (Kezar, 2006; Mattessich, et al., 2001) and reduced costs (Weiss &

Hughes, 2005) are also cited as benefits to collaborative enterprises, although Mattessich,

et al. (2001) do warn that collaboration can sometimes actually lead to increased costs.

Of the many studies looking at one aspect of collaboration or another, four

studies, two carried out in business, two in the context of higher education, stand out

because they each highlight a different approach to examining collaboration. Haskins, et

al. (1998), focus on the intersection of both organizational and individual characteristics

in creating what they have termed an "ethic of collaboration". Kanter's work (1994) is

focused on the importance of relationships and relationship building by organizations in

order to reap the benefits of the "collaborative advantage". Relationships are not

completely ignored in Kezar's (2006) collaborative framework, but she highlights the

role organizational structures play in supporting effective collaboration. Philpott and

Strange's (2003) study emphasizes the role of culture, and especially how different

values and perspectives amongst subcultures can have a significant impact on the

ultimate success or failure of collaborative initiatives.

Individual and Organizational Factors Supporting Collaboration

Haskins, et al. (1998), conducted a four-year study that examined highly

successful professional service organizations working in the fields of health care, law,

and investment banking. Their research "aimed at understanding the source of [these

companies'] success and the foundations of their collaboration" (Haskins, et al., p. 34).

Based on their interviews with professionals working in the firms, the authors developed

a conceptual model for collaboration that they have termed an "ethic of collaboration." In

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this model they identified factors supportive of successful collaborations, differentiating between those that exist on the organizational level, and those that are present in individuals.

The important elements at the company level include coherent intent, a clearly articulated mission, widely known to all employees, that provides an overarching guide to company values and the direction the company wishes to head; congruent systems, so that decision making, rewards, and organizational processes reflect and support a collaborative ethic; and capital invested in both professional development for staff and relationship building among colleagues. On the individual level, the attributes that are most crucial for collaboration to flourish are a caring attitude; conscientious stewardship; a calling for one's work; and creative energy (Haskins, et al., 1998). Taken together these organizational and individual characteristics provide a mutually reinforcing context for collaboration. The strength of this model is that it provides a richer context for examining collaborations because it incorporates the contributions of individuals rather than emphasizing only the organizational structure.

The Centrality of Relationships

As a result of Kanter's (1994) study of thirty-seven companies involved in collaborations around the world, she coined the term "collaborative advantage" to capture the benefits that can accrue to firms who excel in this area. She writes "in the global economy, a well-developed ability to create and sustain fruitful collaborations gives companies a significant competitive leg up" (Kanter, p. 96). Her study emphasizes the key role that the development of strong personal relationships at every level throughout the organization, plays in producing successful, productive, and enduring collaborations.

She likens the process of developing these business relationships to a romantic or familial relationship. She believes that North American businesses are much less skilled at appreciating the importance of human interactions than their counterparts in other areas of the world, often taking a "narrow, opportunistic view of relationships, evaluating them strictly in financial terms or seeing them as barely tolerable alternatives to outright acquisition" (Kanter, p. 97). Kanter writes that organizations wishing to reap the benefits of the collaborative advantage that she observed in the companies in her study must "first acknowledge, and then effectively manage, the human aspects of their alliances" (Kanter, p. 97-98).

Organizational Structure and Processes

Unlike Kanter (1994) whose work focuses on the relational aspects of collaboration, Kezar (2006), while not ignoring the role of relationships, chose to emphasize the role of organizational structures in creating a context in which collaborations can be developed and maintained. She sees organizational restructuring as a prerequisite for being able to move beyond isolated examples of collaborative projects to institutionalizing successfully widespread collaboration at institutions of higher education. Kezar's research involved case studies conducted at four highly collaborative campuses. She found eight features that were key facilitators of collaborative ventures: mission/philosophy; campus networks; integrating structures; rewards; a sense of priority from people in senior positions; external pressures; values; and learning. Some of these map closely to the model developed by Haskins, et al. (1998). Coherent intent, for example, is related to Kezar's ideas of mission/philosophy and values, while congruent systems reflect Kezar's categories of integrating structures and rewards. Finally, learning

and campus networks is encapsulated in Haskins, et al.'s "capital for relationship building and learning" (p. 37). Ultimately Kezar concluded that while higher education institutions can certainly make changes to their organizational structures that support the ability to work collaboratively, she believes that attempting to establish a truly collaborative culture at an institution "may be too destabilizing and may threaten institutional survival and operations" (Kezar, p. 831).

A Collision of Cultures

Collaborations between groups within institutions of higher education can be adversely impacted by the cultural differences between those involved in the collaboration. While faculty, staff, and administrators all work under the larger umbrella of academia, the diverse roles played by each are reflected by significant differences in the structures, traditions, and values amongst them. Birnbaum (1988) articulates the divide that exists between faculty and administrators in general when he observes that "faculty and administrators fill different roles, encounter and are influenced by different aspects of the environment, and have different backgrounds" (Birnbaum, p. 7). Faculty are accustomed to a tremendous degree of autonomy in their work lives; their positions give them considerable control over how they structure their work lives, including what they do, and how and when they do it (Altbach, 1999). From their first day of graduate school, faculty are socialized to their role as researchers and teachers who are largely self-directed, and are not required to live in a hierarchical world (Rosser, Johnsrud, & Heck, 2000). Faculty are "fiercely idiosyncratic and independent in their daily behavior…the nature of their work engenders a special pride in not being responsive to institutional rules and regulations…chain-of-command mentality is an object of faculty

scorn" (Rosser, et al., p. 8). While faculty may view their role with complacency, a former faculty member turned administrator sums up the faculty/administrator divide thus:

> I used to see administrators as adversaries who had the power to give and take but whose work lacked substance and intellectual interest. Now I think that what professors do is quaint and nice and should continue to go on, but basically they live a life that is infantilizing; administrators are grown-ups. (Fish, 2004, p. C2)

Compared to their faculty brethren who live in an individualistic world with significant autonomy in their professional lives, IT staff in higher education occupy a very different milieu, one that by necessity emphasizes efficiency, standardization, and considerably less individual control over the work environment. IT staff come from different backgrounds than faculty, one that accustoms them to working within the context of a large, interdependent organization. For them, standardization of equipment, software, and procedures, rather than representing a threat to individual autonomy, is the only possible option that will allow them to fulfill their mission of supporting thousands of users with the limited resources available to them. From their perspective, technologies need to be scalable, and cannot be tailored to fit the idiosyncratic choices of individual faculty users (Carnavale, 2007a; Fernandez, 2008). Given the differing cultures of faculty and IT staff, including the varied priorities, goals and reward structures of each, it is perhaps unsurprising that the two groups also have different perspectives on technologies and their implementation. If the needs of both groups are not taken into consideration, it is unlikely that higher education will be able to take full advantage of the potential of IT to enhance both learning opportunities and outcomes.

One result of the cultural differences between faculty and staff is that different groups on campus may not understand or appreciate the roles played by other groups on

campus, and they may feel that their own roles are underappreciated. Rentfrow (2007) writes:

> Faculty scholars do not understand the 'real work' performed by librarians. Librarians chafe at being relegated to a 'service' position and resent the attention given to technology. Technologists feel limited by the perception that they are capable only of contributing to conversations about databases and design. (p. 9)

Church (2000) found similar frustrations in his study of the "Talking Toward Techno-Pedagogy" project which brought together teams of students, faculty, librarians and IT professionals to look at collaborative approaches to teaching and learning using information technologies.

Philpott and Strange's (2003) case study of a collaboration between academic affairs and student affairs is a portrait of how clashes between two very different sub-cultures within higher education can lead to frustration and less than optimal results, but also why collaboration can offer benefits by bringing groups together. The authors' observe that the relationship between these two groups is

> characterized by infrequent contact, a lack of knowledge and interest on the part of each about the purposes and functions of the other, and frustration over what appears to be skewed priorities in the distribution of institutional resources. Although these two groups work at the same institutions with the same students, they sometimes act as if they were in different worlds. (p. 78)

This study found that the cultural divide between faculty and student affairs professionals had a profound effect throughout the duration of the project. Student affairs professionals were frustrated by the faculty, whom they viewed as impractical and "far removed from the day-to-day experiences of students" (Philpott & Strange, p. 85); they believed that faculty saw themselves as the providing the vision while relegating the student affairs staff to merely implementing the numerous nitty gritty details connected with establishing a living/learning residential college. In addition to the problems

emanating from the gulf between the two professional cultures, the project was also

hampered by the physical isolation of the participants and the lack of time available to

interact. Ultimately, the authors believed that the final result was best described by the

term "cultural pluralism" as opposed to "cultural blending." The former "ensues when

two autonomous units attempt to sustain separate sources of motivation and creativity for

the benefit of both firms" (Philpott & Strange, p. 92) while cultural blending "occurs

when two equal organizations attempt to blend or assimilate the strengths of each unit

into one source of creativity" (Philpott & Strange p. 92). Philpott and Strange's study and

its emphasis on how the values and perspectives of different sub-cultures within higher

education can affect collaboration is useful when looking at the influences of IT and

faculty cultures on collaborations between those two groups.

<u>**Factors Contributing to Successful Collaborations**</u>

The authors of the four studies reviewed in the previous sections each examined

the subject of collaboration using a different framework. Haskins, et al.'s (1998) study

emphasized the interplay of the attributes of individuals with organizational structures

and processes. Kanter's (1994) work focused on the important role of strong relationships

at all levels of the collaboration, while Kezar (2006) identified the need for institutional

restructuring in order to support collaborative activities. The results of Philpott and

Strange's (2003) case study looking at a collaborative initiative between student affairs

and academic affairs show the sometimes problematic influence of different cultural

perspectives on the development and implementation of the project. Despite these

varying emphases, there is considerable overlap amongst researchers as to individual

factors that contribute to the success of collaborations. This includes: a sense of mission

and shared values; an emphasis on the centrality of developing and maintaining relationships; the importance of communication, both formal and informal, in facilitating collaboration; the role leadership plays in instigating and sustaining collaboration; and developing organizational structures and processes that support collaborative efforts. The following section focuses on the commonalities found in the literature on factors that contribute to establishing and sustaining effective collaborations.

Sense of Mission, Shared Values and a Clear Purpose

Having a clearly articulated institutional mission plays a key role in developing and sustaining collaborative projects (Haskins, et al., 1998; Kezar, 2006; Mattessich, et al., 2001). Haskins, et al. (1998) term this "coherent intent" and describe it as providing "an internalizable, understandable, personally valid beacon of clarity as to purpose that helps galvanize action, preempts the extraneous, and focuses energies. A coherent intent cements individual tasks, at every level, to the institution's central focus" (Haskins, et al., p. 43). This mission does not necessarily need to directly mention or endorse collaboration but by providing a set of shared values and explicitly aligning those to the goals of collaborative initiatives, it encourages success. Within the context of higher education, Kezar (2006) found that certain institutions that had adopted a 'collaborative philosophy of learning' (Kezar, p. 817) into their mission, and that this, along with values such as "being student centered, innovative, and egalitarian" (Kezar, p. 826) promoted the successful development of collaborations across campus.

A focus on mission and values needs to exist on a number of different levels within an organizational system. In addition to the mission of the institution as a whole, the collaborating partners also must develop their own shared vision of what they hope to

accomplish through their work together (Mattessich, et al., 2001), and this vision should

be used as a framework for laying out "concrete, attainable goals and objectives"

(Mattessich, et al., p. 25). On the individual level, mission or vision is expressed as a

"sense of calling" (Haskins, et al., 1998) that provides a personal foundation for the belief

in what that individual is trying to achieve through collaboration. Establishing a clear

mission provides fuel for "getting reengaged during the naturally occurring, not-

particularly-pleasant times that arise in one's work" (Haskins, et al., p. 39).

Centrality of Relationships

Collaborations flourish based on the development of strong relationships over

time between the partners at all levels of the collaboration (Haskins, et al., 1998; Kanter,

1994; Kezar, 2006; Mattessich, et al., 2001). Individuals who subscribe to a collaborative

ethic have an "active desire for, a commitment to, and a continual engagement in

relationship-centered collaboration" which creates bonds among individuals, among

organizational units, and between individuals and their organizations" (Haskins, et al., p.

35). These relationships move beyond those that traditionally defined colleagues with a

professional connection. Kanter (1994) describes them as

> more familylike and less rational. Obligations are more diffuse, the scope for
> collaboration is more open, understanding grows between specific individuals,
> communication is frequent and intensive, and the interpersonal context is rich.
> The best intercompany relationships are frequently messy and emotional,
> involving feelings like chemistry or trust (p. 100).

One of the challenges for organizations is that these sorts of relationships are not easily

defined by the formal structure of organizational charts, and they require a certain

informality that defies the rational control that managers often crave (Kanter, 1994).

While the circumvention of hierarchical and bureaucratic channels of communication can

be threatening to those who desire control, there are manifest advantages, most

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importantly the opportunity for frank and open conversations about potential challenges between those who have developed a close interpersonal connection (Haskins, et al., 1998; Mattessich, et al., 2001; Weiss & Hughes, 2005).

Close bonds among collaborative partners do not usually just spontaneously emerge but require time and effort to nurture. Philpott and Strange (2003) documented the less than ideal results that can be the consequence of inadequate time devoted to the development of interpersonal relationships between collaborators. This begins with the connection between the leaders of the groups involved. Successful collaborative initiatives "nearly always depend on the creation and maintenance of a comfortable personal relationship between the senior executives" (Kanter, 1994, p. 99). Leaders can play a positive role in encouraging relationship building by modeling the behaviors they wish to see in those who are most closely connected to the projects (Kezar, 2006). The participants themselves need to set aside time throughout the project not only to develop a shared vision and clear project goals, but also nurture and strengthen the bonds between group members. This may include setting aside time purely for socializing without any agenda beyond deepening their personal sense of connection (Mattessich, et al., 2001). Efforts in this direction can pay off beyond the scope of a single collaborative project since the ongoing existence of social networks across reporting lines can help move an institution from a series of unconnected collaborations to the establishment of a collaborative culture (Kezar, 2006).

The Role of Leadership in Collaborations

Leadership plays an important role throughout the collaboration process. By signaling their interest in and ongoing support for the goals of a project, leaders can give

energy and resources to get others invested in an initiative and later act as cheerleader and referee if enthusiasm flags or conflict between the collaborative partners becomes problematic (Ives & Steinbrenner, 2005; Kanter, 1994; Kezar, 2006). If groups have an established history of operating independently within their own sphere, leaders indicating that working together is a priority provides impetus to approach the work process in a new way. Philpott and Strange (2003), for example, found that collaboration between academic and students affairs on their campus "began only following a specific charge from senior level administrators who had experiential and professional understanding of both academic and student affairs" (Philpott & Strange, p. 82).

As mentioned above, a close relationship between the leaders of the collaborative partners enhances the success of collaborations, especially if leaders are seen to be modeling collaborative behaviors (Kezar, 2006). In addition, a strong connection between leaders can give them a chance to identify issues between the partners as they emerge, allowing them to defuse unproductive bickering before it becomes an impediment to progress, increasing the likelihood that " the companies will evolve in complementary rather than conflicting directions" (Kanter, 1994, p. 105). Since conflict between individuals and the groups they represent will inevitably crop up during the course of the collaborative process, leaders can play an important role by embracing the potential for effectively managed conflict to strengthen the final results of a project (Weiss & Hughes, 2005). Above all, having leaders who are "sensitive to political, cultural, organizational, and human issues" (Kanter, 1994, p. 108) can play key role in helping the collaborative partners to accomplish their goals.

The four studies described above highlight different conceptual approaches to examining collaborative endeavors. The model from Haskins, et al. (1998) emphasizes the intersection of individual and organizational characteristics in producing successful collaborations. The centrality of developing enduring relationships that cross the boundaries of professional and personal at all levels of an organization is the focus of Kanter's (1994) work. The results from Kezar's (2006) study, on the other hand, highlights how organizational and structural processes influence the creation of effective collaborations. Finally, a lack of understanding of the impact of cultural differences between groups within higher education institutions can hamper the success of a collaborative venture, as illustrated by Philpott and Strange's 2003 study. Each of these approaches offer an effective way of conceptualizing the benefits and challenges of sub-groups within an organization working together to try to achieve a common goal.

Conclusion

This chapter has examined the literature regarding academic technology and collaboration. Higher education institutions are being challenged to respond and adapt to the promise and realities of integrating information technologies into their organizational structures. Faculty, too, are experiencing significant shifts in their roles both as a result of new technologies and the racheting up of expectations for research and publications. Many of their daily tasks have been dramatically altered, including how they conduct and present their research, how and when they interact with students and colleagues, and how they accomplish the myriad of administrative details associated with their professional responsibilities. Obviously the emergence of information technology has changed the process of teaching, as well. However those changes seem to be less profound than the

potential for academic technology might indicate. There are a number of challenges that have contributed to an imperfect integration of academic technology into campus life. In the context of this study, key among these are that IT leadership on campuses, including the CIO, have tended to focus more on administrative computing as opposed to more purely academic applications of IT; long-standing difficulties in the relationships between faculty and administrators generally, and IT administrators in particular; and the difficulties of creating successful collaborations between the various groups involved with implementing academic technologies. Research focused on examining the nature of effective collaborations between Offices of Academic Computing and Centers for Teaching will offer organizational models for supporting the teaching mission of our universities by promoting the effective and creative application of academic technologies.

CHAPTER 3

METHODOLOGY

Introduction

As discussed above, in order to make the most of potential gains in teaching and learning, academic technology initiatives require both technological and pedagogical expertise. However, while the need for effective collaborations between the groups responsible for these two areas, the offices of academic technologies and teaching and learning centers at institutions of higher education has been articulated (Albright & Nworie, 2008; Allison & DeBlois, 2008; Woolsey, 2008), the mechanisms for developing and maintaining such collaborations are not clearly understood (Albright & Nworie, 2008; Ives & Steinbrenner, 2005).

In an effort to fill this gap in knowledge, this study focuses on generating a portrait of successful collaborative efforts between academic technology professionals and pedagogical specialists. Using multiple case studies as a methodological approach, this study examines the characteristics of collaboration at three universities, including their history; factors that lead to the successful establishment of collaborations; challenges and barriers and how these are approached; and whether there is evidence that collaborations result in better outcomes in the implementation of academic technology. This chapter first describes the conceptual framework for the overall study and then presents the research questions guiding the study, followed by a more detailed look at research design, plans for data analysis, and limitations of the study.

Conceptual Framework

Although there is virtually no empirically-based knowledge about the nature of collaborations between academic technologies units and teaching and learning centers, this study draws primarily from three related models as an initial framework. These theoretical models are: Weick's (1990) work on sensemaking, particularly in the context of technological change; Peterson and Spencer's (1990) examination of academic culture and climate; and Kezar's (2006) model of effective collaborative relationships in higher education. Weick's work is particularly appropriate given that this study focuses on the impact of technological change on higher education institutions. His model provides a means for focusing on the challenges faced by organizations, as well as by the people who inhabit them, with regard to making sense of the on-going changes in work processes brought about by technological developments. Weick terms these changes an "equivoque", which he defines as "something that admits of several possible or plausible interpretations and therefore can be esoteric, subject to misunderstanding, uncertain, complex, and recondite…Because new technologies are equivocal, they require ongoing structuring and sensemaking if they are to be managed" (p. 2).

Historically the different elements that comprise organizational structure of higher education have been only loosely coupled which clashes with the very different emerging, tighter structure that IT imposes (Birnbaum, 1988; Camp & DeBlois, 2007; Weick, 1990). Weick uses the term "continuous processes" to denote the increasing interdependence of different elements of an organization due to the development and deployment of information technologies. Because new technologies combine "complex structures and tight coupling," (Weick, p. 12) as opposed to loosely coupled structure of

higher education, it can be inferred that understanding the elements successful collaborations across formal reporting lines is growing dramatically in importance.

Peterson and Spencer (1990) use the concepts of culture and climate as lenses through which life in an institution is interpreted and understood. They write that "culture and climate provide members with and reflect their understanding of the purpose or meaning of their organization and their work" (Peterson and Spencer, p. 4). Because we make sense of our world based on the way that we have been socialized, it is not surprising that institutions of higher education are experiencing stress as they seek to integrate the new and very different technological sub-culture into the established and deeply entrenched academic culture as a whole. IT personnel and academic staff, either faculty or those who are closely identified with academic affairs, represent two separate sub-cultures within academia; these two groups would have different ways of viewing the disruptions to work processes caused by changing technology. These differences can cause significant challenges when the decisions within one sub-culture reverberate and cause disruptions to the work processes of another group, the faculty. Previously, the work of one faculty member may not have been that tightly coupled to another transaction in another area of campus, but now "new technologies knit separate actors, transactions, and locations together into a continuous process" (Weick, 1990, p. 12). The faculty member, used to working independently, sitting alone in an office, is now significantly more likely to encounter situations when the system is not able to accommodate their traditional work processes.

Collaborations among groups representing different academic sub-cultures can provide a powerful means for creating opportunities for enhanced understanding and

alleviating the impact of administrative silos. Kezar's (2006) work on the factors that affect the success of collaborations in higher education offers a useful starting place for examining the collaborations at the institutions included in this study. Her research indentified eight features that were related to the development of successful collaborative relationships on four college campuses. These are: "mission/philosophy, campus networks, integrating structures, rewards, a sense of priority from people in senior positions, external pressure, values, and learning" (Kezar, p. 816). Also useful in this context are Mattessich, Murray-Close and Monsey's (2001) six factors that influence the success of a collaboration: environment, membership characteristics, process and structure, communication, purpose, and resources.

Taken together, these three models provide a framework for conceptualizing cross-departmental collaborations around the topic of academic technology. The activity of sensemaking increases in importance during a time of rapid technological change when long held views of the world and one's place in it can be called into question (Weick, 1990). The collaborative process requires members of different sub-cultures within higher education to work together effectively; this process can be disrupted by conflicts between how the two groups interpret the world around them and the values that are not always compatible (Peterson & Spencer, 1990). An understanding of the differences in sensemaking is key in order to consider how to best conceptualize the application of factors that contribute to successful collaborations in a particular situation. For example, values, whether stated or tacit, between IT professionals and faculty may not be compatible, and the concept of meaningful rewards may differ substantially (Kezar, 2006).

Collaborations between offices of academic technologies and teaching and learning centers can provide a platform for creating greater integration and understanding between two fundamental parts of the organizational structure of higher education institutions. Effective use of information technology is crucial for the functioning of institutions of higher education in the twenty-first century, yet the struggle to come to terms with the changes brought about by technological innovations offers ongoing challenges. This study builds on the assumption that this cross-group collaborative relationship acts as a mediating force between the two, explaining faculty and their needs to the techies across campus, as well as helping faculty make sense of the changes necessitated by developing technology to the deeply rooted and firmly entrenched faculty experience. Also present, however, is the possibility that rather than a bridge, if the relationship is problematic, it will present a barrier that either continues or even heightens the estrangement between faculty and IT. By focusing on the relationship between offices of academic technologies and teaching and learning centers, it is hoped that this study will help provide a framework for effective collaborations, a necessity if higher education is to fully integrate IT into its organizational functioning and take advantage of the opportunities offered by technology to improve teaching and learning (Albright & Nworie, 2008; Allison & DeBlois, 2008; Woolsey, 2008).

Research Questions

The main research questions guiding this study are: what are the characteristics of successful collaborations between academic technologies units and teaching and learning centers? What are the most important factors contributing to the development of successful collaborations between these groups?

Supporting sub-questions will include:

1. What are the challenges related to establishing and maintaining collaborations? Do these change over time?

2. How does organizational structure help, or hinder, the development of effective collaborations?

3. How does the presence, or absence, of strong social networks between staff in academic technologies units and teaching and learning centers affect the success, and longevity of collaborations?

4. How does the existence of different sub-cultures (e.g. faculty and technical) within higher education institutions affect the development and effectiveness of collaborations?

5. What is the role of leaders in encouraging and supporting collaborative relationships?

6. What is the impact of incentives, recognition, and rewards, financial or otherwise, in maintaining effective collaborations?

Research Design

The research design for this study is a multiple case study; the study will examine the relationship between the Office of Academic Computing and the Center for Teaching at three separate institutions. Yin (2003) suggests that case studies are an appropriate methodology under the following circumstances: "when 'how' or 'why' questions are being posed, when the investigator has little control over events, and when the focus is on a contemporary phenomenon within some real-life context" (p. 1), circumstances that are

certainly applicable to this study. The research questions guiding my work are process-oriented, focused on examining how and why collaborative relationships are formed and maintained rather than trying to manipulate or quantify a particular variable that has already been identified as a part of an earlier study. As an outside observer, there will be little if any opportunity to shape the relationship being studied; instead, the primary task associated with this study is to provide an in depth description of a pre-existing set of relationships using the conceptual framework outlined above. There has been little if any previously conducted empirical research that focuses on collaborations between the groups who specialize on the one hand in the technical implications of academic technologies and on the other in improving pedagogical approaches at an institution, and a case study will provide the best means for exploring and describing the complexity of these relationships as they exist in a real-life context within contemporary higher education.

Case study methodology is particularly appropriate for this study given its descriptive nature, a feature that Merriam (1998) emphasizes as one of the defining characteristics of case studies. Merriam describes case studies as the "intensive, holistic description and analysis of a single instance, phenomenon, or social unit" (Merriam, p. 27). Merriam also stresses the importance of having a unit of study that is clearly bounded; without distinct boundaries, data collection could continue almost infinitely. The unit of analysis in this study will be based at the institutional level, although it is more specifically centered around the relationship that exists between two groups on an individual campus. In any case, the cases in this study clearly meet the test of having clear boundaries by focusing on a single phenomenon—the collaborative relationship—

based in a particular moment of time (Merriam, 1998). The limits of the boundaries in this particular study will be more fully discussed in the section on data collection that follows.

While the process of data collection may be bounded, the potential variables involved in a study looking at the factors which promote successful collaborations are significant, including the role of organizational structure, leadership, social networks, cultural differences and incentives for participation. This strategy is consistent with Yin's (2003) assertion that the choice of a case study is helpful when "there will be many more variables of interest than data points" (Yin, p. 13). Case studies are a suitable methodological choice when there is a "desire to understand complex phenomena [because]…the case study method allows investigators to retain the holistic and meaningful characteristics of real-life events" (Yin, p. 2). Merriam (1998) writes that distinguishing characteristics of a qualitative case studies include its being "particularistic, descriptive, and heuristic" (Merriam, p. 29), each of which is applicable to this study. As mentioned above, the *descriptive* component "illustrates the complexities of a situation—the fact that not one but many factors contributed to it" (Merriam, p. 30). A case study is *particularistic* in that while it looks at "a specific instance" it also "illuminate[s] a general problem" (Merriam, p. 30); by looking at the experience of the relationship between academic technologies units and centers for teaching and learning at a particular institution this study will endeavor to provide a more universal portrait of how a successful collaboration can promote the implementation of academic technology at an institution. This study aims to examine the factors contributing to an effective collaboration, which corresponds to Merriam's concept of a

heuristic study that seeks to *"explain why an innovation worked or failed to work"* (Merriam, p. 31).

Given the complexity of the phenomenon being studied, incorporating multiple cases into the study provides the opportunity to collect a richer data set that in turn can inform the analysis of data and strengthen the conclusions drawn from the study (Miles & Huberman, 1994). Yin (2003) writes that "analytic conclusions independently arising from two cases, as with two experiments, will be more powerful than those coming from a single case alone. Second, the contexts of the two cases are likely to differ to some extent" (Yin, p. 53). By having more than one case, the data collected will be richer, and the results can also be more nuanced. In addition, replication over several cases can strengthen the external validity (or generalizability) of the study (Miles & Huberman, 1994). Yin warns that when conducting multiple case studies, each case must be carefully selected "so that it either (a) predicts similar results (a literal replication) or (b) predicts contrasting results but for predictable reasons (a theoretical replication)" (Yin, p. 47).

This study will include both a literal replication and a theoretical replication. Two of the cases will be drawn from institutions with similar organizational structures, i.e. the Office of Academic Technologies and the Teaching and Learning Center are administratively separate entities; these cases will represent a "literal replication." Based on research gathered online during the course of site selection, having separate offices for these two groups appears to be the dominant organizational format, however, there are institutions where the both functions are subsumed under one administrative roof. The third case corresponds to Yin's "theoretical replication" since the institution has adopted a different organizational approach where the technical and pedagogical staff are merged

into a single organization under unified leadership. Having both represented in the study will give a perspective of how organizational structure can influence the experience of collaboration and whether the successes and barriers shift in response to a structural shift. Given the nature of the research questions, the phenomena being studied, and the contemporaneous nature of the study, a case study is an appropriate methodological choice. Having multiple sites included as part of the study will enhance the richness of the data, will allow for more nuanced analysis, and strengthen the conclusions that can be drawn from the data.

<u>Site Selection</u>

In his discussion of case study methodology, Yin (2003) stresses the importance of carefully choosing which case or cases to include as part of a study. I will focus exclusively on academic technology collaborations at research universities with very high research activity (RU/VH) under the Carnegie Foundation's 2005 classification system (Carnegie Foundation for the Advancement of Teaching, 2005). The scale and scope of technology services and resources at these institutions mean that they are likely to be considerably more impacted by the challenges and opportunities of academic technology than would peers at other types of postsecondary institutions (Arabasz, Pirani, & Fawcett, 2003). Their larger size, both in terms of numbers of faculty and their budgets also make it more likely that there will be well-developed and discrete offices for academic technologies units and teaching and learning centers, making the need for collaborations between these groups more pressing. By limiting the sample selection to one type of institution, it is hoped that the results from the three case studies will be more directly comparable, although since this study encompasses only three case studies clearly

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generalizability beyond the cases offered will be limited. However, the study is primarily designed to generate potentially transferrable knowledge.

The 2005 Carnegie Classification system allows researchers to further differentiate institutions beyond the basic classification by criteria such as size and setting, control (e.g. public, private not-for-profit, private for-profit), and geographical location, among others; any of these criteria could provide meaningful distinctions for the purpose of this study. In an effort to keep the scope of this project manageable, I have chosen to further limit the pool of potential institutions to those that are identified as public because there are substantial differences between institutions that are public and those that are privately funded including history, resources and organizational structure (Levy, 1986). According to the Carnegie 2005 classifications there are 96 institutions which match the criteria for RU/VH and of these, 63 are public institutions (Carnegie Foundation for the Advancement of Teaching, 2005). These 63 represent the initial pool from which I will select my sample.

Process for Further Narrowing Sample

In order to examine factors that contribute to successful collaborations, I was ultimately looking for institutions that already have established collaborations between their offices of academic technologies and teaching and learning centers. Using the list of 63 RU/VH public institutions, I visited the Web sites available for these schools, looking for evidence of collaborations between their Offices of Academic Technologies and Teaching and Learning Centers. Most useful was visiting the Web sites of the two units and looking at pages described as "About Us", "Mission", or "History". Some units specifically identified collaboration as a cornerstone to how they approach the challenges

of instructional technology. One Web site, for example, stated that "collaboration across institutions, units, and disciplines is the most effective way to address the challenges and opportunities created by information technology." At other institutions, however, collaboration with other groups was not specifically identified as a focus of their approach to academic technology. Next I examined the online resources of several national professional organizations and lists of award recipients in both IT in higher education and faculty development for teaching and learning. These included EDUCAUSE, the New Media Consortium, and the Hesburgh Award winners for excellence in faculty development.

Combining the information I gathered from the Web sites of the 63 RU/VH public institutions with the data gleaned from professional organizations, I identified a preliminary list of twelve institutions that warranted further investigation. These included a number of institutions that had received awards for innovations in teaching and learning or whose staff had earned recognition for their leadership in information technology. Several promising examples of collaborations emerged out of this examination of Web sites. They can be divided into two categories: first, institutions where the Office of Academic Technologies and the Teaching and Learning Center are separate organizations, but work collaboratively, and second, schools where the two groups have been merged into a single organization.

Narrowing of Choices

This initial sorting of institutions yielded nine schools that fall into the first category (collaborative but separate groups), and three schools in the second group (a merged organization). Because the primary focus of this study is best practices for

collaborative relationships, ultimately I am aiming to choose two institutions from the first group to examine in greater detail through a full case study. However, because there are a number of schools that have merged their organizations, also including an example from this group in the study will give additional insight into the effectiveness of an alternative organizational model. For the final stage of site selection, I chose the five most promising schools from the first group, and the two most promising from the second group and then ranked them. My criteria included: outside recognition of the programs; how strongly collaboration was featured on program Web sites; and the longevity of the collaborations. In addition, several institutions were eliminated based on conversations with professionals knowledgeable in field who were aware that the programs at these institutions were undergoing severe stress either because of budget cuts or retirements or other personnel transitions. I then contacted the directors of the Offices of Academic Technologies and the Teaching and Learning Centers at the top two institutions in the first group and the top institution in the second group to ask if they would be willing to be involved in the study; all three of my top choices agreed to participate. Two of the universities were located in the mid-West, and the third was in the northeastern part of the U.S.

Data Collection

In the course of developing a protocol for data collection, Yin (2003) recommends developing two levels of questions. The questions are intended as reminders to the researcher "regarding the information that needs to be collected and why" (Yin, p. 74). He further recommends associating each of these questions with potential sources of data that would assist in answering that question. One is a set of questions that the data

from an individual case should answer; this level of questions is helpful throughout the duration of the study. Formulating the questions themselves helps to define the boundaries of the case, as well as provide focus for the design of the actual questions to be asked during the interviews. During data collection, the case-level questions act as prompts to keep the researcher on track, and finally, they offer a starting place for the within-case portion of data analysis. The second level includes questions that will actually be asked during the course of interviews with study participants. Obviously, both sets of questions are derived from the research questions that are guiding the study as a whole. However, because this study is using a multi-case methodological approach, I will be important to go beyond Yin's recommendations and incorporate an additional level of questions that represent the cross-case portion of the analysis process. The over-arching research questions presented earlier in this chapter correspond to the cross-case level of questions.

Questions To Be Answered By Each Case

- What factors have been most important in the development of a collaborative approach to implementation of academic technology on the campus?

- How did this collaboration develop? What is the history of the collaboration? What stages has the collaboration gone through (e.g establishing or sustaining the collaboration)? How has the relationship changed over time?

- What have been the most significant challenges related to establishing and maintaining this collaboration? Have the specific challenges changed over the duration of the collaborative relationship?

- Where in the organizational structure are the academic technologies unit and the teaching and learning center located? How has this organizational structure influenced the development of the collaboration?

- Who have been the most important players in the development and maintenance of the collaboration?

- What role have leaders (in the individual offices and/or in higher administration) played in the development of the collaboration?

- How do the groups approach challenges or conflict within the collaboration?

- Are the relationships between participants primarily professional in nature? Are there opportunities for participants to engage in more informal ways? What sort of social relationships exist between members of the collaboration?

- How do the participants describe the successes and challenges of the collaboration?

- How has the collaboration affected the development of academic technology programs at the institution?

- What evidence is there that collaborations result in better outcomes in the implementation of academic technology?

Questions to be Answered by Interviews with Study Participants

Please note that these are not how the questions would be worded in an interview (for those please see the Appendix), but rather topics that should be covered during the course of an interview.

- What is your professional background?

- What is the history of the collaboration between the Office of Academic Technologies and the Teaching and Learning Center on this campus? How did the emphasis on collaboration begin?

- How long have you been involved in the collaboration? What role have you played in the collaboration?

- What motivated you to become involved with this project? What have been the most satisfying aspects of the collaboration for you?

- Who are the other participants who have played important roles in this collaboration?

- What have been the greatest successes of the collaboration?

- What have been the biggest challenges? What were the barriers to achieving a successful collaboration?

- Are most of your interactions in the context of meetings or do you have more informal relationships (e.g. coffee, lunches, drinks, dinner) with staff (both within your group and in the other group)? Who do you have the closest relationships with? Are these professional relationships or personal as well?

- What role (positive or negative) have upper level administrators played in encouraging the two groups to work together?

- What sort of rewards or incentives—either on the individual or group level—have there been for making the collaboration successful? Have you received public recognition for your participation in this collaboration?

- How has the overall implementation of academic technology at your institution been affected by the emphasis on collaboration between the Office of Academic Computing and the Center for Teaching?

I travelled to each of the three institutions included in the study for three days, and most of the data collection was concentrated during these site visits, although I also followed up later with interview participants via email. Given the nature of this study and the questions being posed, the vast majority of data was obtained through conducting ethnographic interviews with staff and faculty who have been deeply involved in collaborative efforts between the academic technologies unit and the teaching and learning center at each individual institution. Interview subjects were selected from three different categories based on their roles related to the collaborative relationship. They included:

- Directors of the Offices of Academic Technologies and Teaching and Learning Centers, or their equivalents based on the organizational structure at the institution;
- Staff members in those offices who played central roles in the implementation and day-to-day maintenance of the collaboration;
- Administrators either in OIT or Academic Affairs, such as Vice Presidents or Vice Provosts;
- Faculty or administrators who were closely involved either in the collaboration itself or more generally in academic technologies initiatives on campus. These individuals offered a different perspective as they are located outside the offices themselves, but understand the issues.

Seven to nine individuals were interviewed at each institution, representing a mix of academic technologies staff, teaching and learning specialists, faculty and administrators. Appropriate interview subjects were identified through my own online research (e.g. finding out who the Directors of the Offices of Academic Technologies and Teaching and Learning Centers were.) I then worked with the Directors to identify staff in their offices as well as faculty and administrators who would contribute the most given my research topic. Altogether the study included semi-structured interviews with twelve academic technologies staff, seven teaching and learning development specialists, four faculty, and three administrators. Most of the interviews were scheduled ahead of time, but at all three institutions at least one additional interview subject was identified through snowball sampling (Merriam, 1998).

Interviews were semi-structured which offered a balance between ensuring that similar data were collected across interviews but allowed space for the conversation to open up and offer perspectives that the researcher could not anticipate (Merriam, 1998). The audio from all interviews was recorded (after the researcher was granted permission to do so by the participant) and later transcribed by the researcher. It is important to note that while the process of transcription was time-consuming and at times tedious, doing one's own transcriptions allowed complete immersion in the data (Yin, 2003) which provided a significant head start when moving to the coding and analysis stages.

The participants were given copies of the transcriptions and asked to review them for accuracy in order to enhance trustworthiness (Merriam, 1998), and several offered additional comments at this stage. In addition to the interview recordings, the researcher took notes during and immediately following the interviews in order to provide additional

context such as non-verbal body language or impressions that might not have been captured if relying solely on the recordings. If questions emerged or clarification was needed from participants after the initial interviews, the researcher followed up via phone or email.

As part of data collection process, a significant effort was made to locate as many documents that were relevant to the study as possible, including organizational charts, planning documents, mission statements, and annual reports. Having documents in addition to the interviews allowed for data triangulation, which strengthens the internal validity of the research findings of the study (Merriam, 1998).

Coding and Analysis

The preceding section detailed the method for data collection, including conducting interviews and identifying relevant documents. This section focuses on the process of transforming a large collection of raw data into more generalized themes that allow us to view the phenomenon being studied in more abstract yet structured ways. As described in an earlier section, the conceptual framework for this study is based on the concept of sensemaking, more specifically the process through which faculty and staff in higher education are creating meaning in the face of technological changes (Weick, 1990). The choice of sensemaking as an organizing concept has implications for the analysis stage of the study, namely that the analysis strategies should parallel the conceptual framework by focusing on explicating cultural meaning as envisioned by the participants in the study. For this reason, ethnographic analysis is a suitable choice since it is designed to help the researcher understand and describe the culture being studied from the perspective of the participants themselves (Spradley, 1979). Spradley defines

ethnographic analysis as "the search for the parts of a culture and their relationships *as conceptualized by informants"* (Spradley, p. 93). In ethnographic analysis the researcher engages with the data by asking the question "what are the cultural meanings people are using to organize their behavior and interpret their experience?" (Spradley, p. 93).

It is tempting to think that the process of data collection, coding and analysis occurs in a strictly linear fashion, with one following the other in orderly succession. In fact, data collection and analysis are intermingled temporally, so it can be difficult to draw a clear boundary between the two activities. Merriam (1998) emphasizes that "the right way to analyze data in a qualitative study is to do it *simultaneously* with data collection" (Merriam, p. 162), in order to avoid having data that are "unfocused, repetitious, and overwhelming in the sheer volume of material that needs to be processed. Data that have been analyzed while being collected are both parsimonious and illuminating" (Merriam, p. 162). By engaging in preliminary analysis of the data as it is being collected, the experience and insights gained can be used by the researcher to inform the collection of data in the later stages of the study (Miles and Huberman, 1994; Spradley, 1979).

In this study, several strategies were adopted to make the most of what effective preliminary analysis can offer. Miles and Huberman (1994) describe the importance of summarizing the "main concepts themes, issues and questions" coming out of a single interview in the field; writing these summaries both helped to capture reactions to the interviews when they were most fresh and help to shape subsequent interviews. Throughout the duration of the research, Merriam (1998) suggests composing memos that depict ongoing thoughts about the progress of study and creating rough visual

representations of what the researcher observes. Yin (2003) recommends writing narratives that are "open-ended answers to the questions in the case study protocol" (p. 103) as an appropriate format for the early stages of analysis. These strategies were especially beneficial for providing insight after a visit to one institution while preparing for the next and allowed the researcher to make slight adjustments in approach based on the experience at the previous locale.

The activity of coding the data associated with the study provides a bridge between the stages of data collection and analysis. Coding allows the researcher to transform raw data into meaningful results. Strauss and Corbin (1998) describe two stages in the coding process: open coding and axial coding. Open coding is the process of breaking the data down into small, distinct pieces, then comparing the pieces to one another looking for similarities. When conceptual similarities are discovered, they are "grouped under more abstract concepts termed 'categories'" (Strauss & Corbin, p. 102). Axial coding seeks to "reassemble" the pieces created during the open coding process by looking to discover "the nature of relationships among the various categories and their subcategories" (Strauss & Corbin, p. 103) "to form more precise and complete explanations about phenomena" (Strauss & Corbin, p. 124). Both were used in the context of this study through a process of immersion in the interview transcripts.

While open and axial coding provides a basic framework, it important to remember that the process of creating the codes for organizing data happens along a continuum. On one end of the scale is the practice of developing preliminary codes prior to data collection (Miles & Huberman, 1994); on the other end of the spectrum is the practice of assigning codes through intense immersion in the data such as with Strauss

and Corbin's (1998) inductive approach to coding. Each approach has its advantages. Miles and Huberman's suggestion of creating a priori codes based on "the conceptual framework, list of research questions, hypotheses, problem areas, and/or key variables" before fieldwork can give initial structure to the data which can help the researcher avoid becoming mired in staggering quantities of data. Inductive coding, on the other hand, allows the researcher to be "more open-minded and more context-specific" (Miles & Huberman, p. 58) in assigning codes and forming conceptual categories for the data.

This study adopted an approach that is located between these two extremes, by "using a general accounting scheme that is not content specific, but points to the general domains in which codes can be developed inductively" (Miles & Huberman, p. 61). Bogdan and Biklen (1994) have developed a useful example of these general domains which includes: setting/context, definition of the situation, perspectives, ways of thinking about people and objects, process, activities, events, strategies, and relationships and social structure (Bogdan & Biklen, p. 167-171). An advantage of such a two-level scheme for coding is that it combines "a more general, etic, level" with "a more specific emic level, close to participant's categories, but nested in the etic codes" (Miles and Huberman, p. 61). The a priori/etic codes used were based on previous literature on collaboration and included cultural differences, the importance of relationships in supporting collaborations, and the roles of individual attributes and organizational characteristics. Emic codes were identified through careful study of the data that were related to the etic framework, but came out of the experiences of the study participants; for example, within the etic code of relationships, emic codes of mutual respect and role clarity were identified.

The transcript of each interview was read several times, and key phrases were highlighted. In the next step of coding, short descriptive phrases that summarized the overall theme of the quote were added. Examples of these descriptive phrases include: "top down mandate," "budget concerns, efficiency," "faculty-driven," and "financial drivers/grants." After this process had been completed for several interviews from one case, the highlighted quotes were grouped together using the short descriptors as a sorting mechanism. I then searched for a larger category that would encompass all of the descriptive phrases, in this case, "impetus for collaboration." At this stage I revisited the transcripts that had already been reviewed to see if there were additional insights into how the study participants conceptualized the experience of that particular category, in this case the impetus for a collaborative project. I also frequently created quickly sketched diagrams as a means to conceptualize the relationships between various categories of data in multiple ways. Through this process, eventually, "impetus for collaboration" was grouped under the "phases of collaboration."

Once data have been coded and categories developed, more detailed analysis is possible. Spradley's (1979) method of ethnographic analysis provides a structured approach to the process by looking at the data at four different levels: domain analysis, semantic analysis, taxonomic analysis, and componential analysis. This process culminates in the development of cultural themes, "any cognitive principle, tacit or explicit, recurrent in a number of domains and serving as a relationship among subsystems of cultural meaning" (Spradley, p. 186).

Adopting Spradley's (1979) method requires understanding his specialized use of terms. He defines a category is "an array of distinct things that we treat as if they were

equivalent" (Spradley, p. 98) and uses the terms "category, symbol and folk term interchangeably" (Spradley, p. 98). A domain is an over-arching grouping used when several categories are identified that share at least one feature of meaning. A cover term is the name of the domain, and all domains have two or more included terms (for the domain tree, included terms are elm, oak, and pine) (Spradley, 1979). Because ethnographic analysis is rooted in understanding a phenomenon from the perspective of the informant, it is crucial to resist "the temptation is to create order out of other cultures by imposing your own categories" (Spradley, p. 103) and instead work to ensure that the development of domains are reflect the cultural milieu of the study participants rather than the researcher.

The next stage of analysis seeks to illuminate the relationships between different categories. Folk terms do not usually exist in isolation from one another; instead, people usually "carefully select two or more and place them in a well-planned relationship to each other" (Spradley, p. 108) in what is termed a semantic relationship. There are a surprisingly limited set of semantic relationships, including many that are universal regardless of cultural context. These include:

- strict inclusion (x is a kind of y)
- spatial (x is a place in y, x is a part of y)
- cause-effect (x is a result of y, x is a cause of y)
- rationale (x is a reason for doing y)
- location for action (x is a place used for doing y)
- function (x is used for y)
- means-end (x is a way to do y)
- sequence (x is a step (stage) in y)
- attribution (x is an attribute (characteristic) of y)

Once a researcher has uncovered the domains inherent in the data and then the semantic relationships that describe the connections between them, the next stage of ethnographic analysis is to choose a limited number of domains to explore in greater detail, a process Spradley (1979) terms taxonomic analysis. Making a decision about which of many domains to focus on more intensively can be accomplished in a variety of ways; one of these, "strategic ethnography," (Spradley, p. 136) is likely to be appropriate for this study. Strategic ethnography narrows the focus by concentrating on ways a study can be used "in the service of human needs" (Spradley, p. 136), perhaps a somewhat grandiose term, but nonetheless in keeping with the goal of indentifying ways that institutions of higher education can come together to improve teaching and learning through the use of technology. A taxonomy is similar to a domain except that it can describe different levels of relationships within a domain and it is more exhaustive in scope in that it "shows the relationships among *all* the folk terms in a domain" (Spradley, p. 137).

The fourth form of analysis is componential analysis, which is the "systematic search for the attributes associated with cultural symbols" (Spradley, 1979, p. 174). Unlike earlier stages of analysis that focused on identifying similarities between categories, this stage seeks to answer the question 'how do the members of a category differ from one another?' and in so doing detail a more complex set of attributes of the category (or symbol) and the multiple semantic relationships that it includes. This is accomplished through the creation of a paradigm, "a schematic representation of the attributes that distinguish the members of a contrast set" (Spradley, p. 176). A series of folk terms that are related through a single semantic relationship form the contrast set.

Once the contrast set has been selected, dimensions of contrast, or attributes that distinguish one folk term from another, are explored and arrayed in a matrix. Componential analysis allows for the development and visual representation of more complex relationships than the single semantic relationships identified earlier in the analysis process. As with taxonomic analysis, the researcher will choose a limited number of domains to explore more fully in the componential analysis stage.

Once in depth analysis focusing on exploring the data in specific detailed ways is complete, the researcher steps back to look at the larger picture, using the results to identify cultural themes. Spradley (1979) defines cultural themes as "any cognitive principle, tacit or explicit, recurrent in a number of domains and serving as a relationship among subsystems of cultural meaning" (Spradley, p. 186). Taken in its entirety, Spradley's framework provides a useful framework for more detailed data analysis; however, ultimately, slavish adherence to his process can be overly prescriptive in its approach. Developing the concept of collaborative contexts provides an example from this study of how the framework was used. While the details will be explained in greater depth in Chapter Five, early analysis identified different "categories" or "folk terms" such as committees, work teams, communities of practice and joint activities; the cover term chosen for this domain was "collaborative contexts," and the semantic relationship was a "location for action." During taxonomic analysis collaborative contexts, along with phases and characteristics of collaboration, were chosen as the domains most suitable for more intensive focus during the next stages of analysis. The stage of componential analysis included identifying the dimensions along which the categories differ from one another. These include: size, composition, membership, formality of interaction, and

purpose. Finally, uncovering the most important cultural themes governing the collaborative relationships between information technology professionals and teaching and learning specialists is a crucial step in transforming the large quantities of discrete data gathered into a coherent narrative that offers the opportunity to generalize from the specific cases studied, and this is explored in the final chapter of this study.

<u>**Trustworthiness & Authenticity**</u>

A key aspect of any research design is delineating the strategies that will be used to ensure that the data collected has been rigorously collected and analyzed. A qualitative study is certainly no exception to this, although of necessity the terms are conceptualized differently than for traditional quantitative studies and are sometimes referred to as trustworthiness and authenticity as a result (Merriam, 1998). As was discussed in the preceding section on data collection, by including available documents in addition to ethnographic interviews allowed for data triangulation, which strengthens the trustworthiness of the research findings that emerge during the course of the study (Merriam, 1998). Additionally, having similar results across multiple cases gives greater assurance that findings are not anomalous to one particular instance. In addition to data triangulation, there were several other strategies that were used to strengthen the trustworthiness of the study, including member checks and the use of a 'critical friend' (Merriam, 1998). Member checks involved sharing transcripts of all interviews with study participants in order to confirm that the data included is accurate and complete. In addition, some initial findings were shared with participants in order to gather their reactions and feedback. This study also incorporated the use of critical friends throughout the duration of the study; having colleagues who are experienced researchers but are not

directly involved in this particular project examine the process of data collection as well as the subsequent coding and analysis stages (Merriam, 1998) allows both researcher and reader to have trust in the research.

"Authenticity of the evidence" (Krathwohl, 1998) refers to whether the data being collected is dependable, or "whether the results are consistent with the data collected" (Merriam, p. 206). Data triangulation is useful from this perspective, as well. By interviewing a number of people within a single case but with different perspectives on what constitutes 'reality' we can have greater confidence in the reliability of the data. It is also important to have confidence that the data being collected does in fact reflect participants lived experience and is not being clouded by either socially desirably answers during interviews or misinterpretations of the data by the researcher based on cultural differences. My years of experience working in both an Office of Academic Technologies and a Teaching and Learning Center stood me in good stead, as I am familiar with the cultural milieu of the study participants and will be able to make informed decisions about whether the data are in fact reflective of actual experience.

Limitations

This study is intended to be exploratory and descriptive in nature, as is appropriate given the dearth of research focused on the topic of collaborative efforts between representatives of IT and academic affairs around academic technologies. For this reason, generating explanatory theory was not the intended outcome. The advantage of the case study approach in this instance is that it allowed a relatively in-depth, holistic look at a limited number of institutions, something that would not have been possible if a larger number of schools were included in the study. One of the goals of an exploratory

study is to generate hypotheses identifying more specific areas of interest that can then be tested in subsequent studies that include larger samples. However, the fact that the current study looks at only a limited number of cases can be considered a limitation.

There are also clear limitations to the generalizability of the study based on the sample from which schools for the cases were selected. Institutions were selected from the pool of public, research universities with very high research activity (RU/VH) because the scale of such institutions makes it more likely that they have implemented large-scale academic technology initiatives that are the focus of this study. Smaller liberal arts colleges, for example, may have a very different approach to academic technology, may be impacted in ways that are different than at large institutions, and may have different challenges associated with implementation. Further studies will be needed to determine the similarities and differences between institutional types. Despite these limitations, this study provides a valuable portrait of the characteristics of cross-departmental collaborations around the topic of academic technology. Based on both its limitations and its findings it suggests topics for further research. It has also generated suggestions for policy and practice that could have an immediate and direct impact. The implications of the study for policy and practice as well as suggestions for further research will be explored in more depth in Chapter Six.

Conclusion

The purpose of this study was to present a holistic depiction of collaborative relationships between academic technologies units and teaching and learning centers in relation to the implementation of academic technologies. Given the context of the study and research questions being posed, a case study design was particularly appropriate as it

will allowed for an in depth description of "a contemporary phenomenon within its real-life context" (Yin, 2003, p. 13). Using multiple cases gave added richness and nuance to the findings. The conceptual framework for the study focused on the need for sensemaking in an institutional environment that is shifting significantly in response to technological developments (Weick, 1990). Using ethnographic interviews as the primary vehicle for data collection allowed the researcher to understand the process of sensemaking from the perspective of the study participants themselves. The study is particularly timely given that information technology is playing an increasingly central role in every aspect of higher education. A better understanding of the characteristics of inter-group collaborations around academic technology, including the barriers to creating effective collaborative relationships, will help institutions respond to the challenge of harnessing technology's potential to transform positively the process of teaching and learning in contemporary higher education.

CHAPTER 4

OVERVIEW OF THE CASES

Introduction

This chapter provides a brief overview of the cases in this study, including background information on the institutions, the history of the academic technologies unit and the teaching and learning center at each university, and the collaborations around academic technologies that the two groups have engaged in. In this chapter, as well as following chapters, all institutions and individuals are referred to by pseudonyms, and identifying details have been altered. In most cases I refer to the two units that are the focus of the study as the Office of Academic Technologies (OAT) and Teaching and Learning Center (TLC), although there are some slight variations reflective of different organizational structures.

University of the Mid West

General Campus Information and Demographics

The University of the Mid West (UMW) is a large, public university, the flagship institution of a strong state university system located in the Mid-West region of the United States. The campus enrolls approximately 50,000 students, and employs over 2,500 full-time faculty on its payroll. Already regarded as one of the top public research institutions in the country, the President announced an ambitious plan five years ago aimed at improving the ranking of the institution among public research universities nationally and internationally. In recent years UMW has devoted hundreds of millions of dollars to new academic initiatives, including launching programs to support undergraduate learning, opening interdisciplinary research institutes and building new

labs and buildings to support both the research and teaching missions of the university. However, like most other state-funded institutions across the country, UMW is currently experiencing tough economic times, with significant budget cuts in the past two years, with further cuts expected in 2010.

Structure, History and Culture of Academic Technologies

The Office of Academic Technologies (OAT) at UMW had its inception in the mid-1990s, when the four IT units that eventually formed the centralized IT organization on campus were contemplating a merger. They banded together to conduct a customer satisfaction survey of faculty, students, and staff. Jessica Lane, who is now the director of OAT and helped to conduct a series of focus groups as part of the process of surveying stakeholder needs, says that "a clear message was that faculty wanted a central place that would help them understand how to use technology for teaching and learning." At about the same time a national foundation was offering grants to universities who were interested in establishing faculty support centers for learning technologies, and UMW was awarded some limited funding to support the establishment of OAT. Lane was hired as the first director of OAT, a half-time position with a half-time staff person on soft funding. From the start collaboration was integral to the survival and subsequent thriving of OAT. One of her staff describes the early days as "[Jessica] began small which means you have to partner or you're not going to get anything done. So from the beginning she was interested deeply in engaging as many partners as she could is working together." The fledgling organization benefited from Lane's academic background which included a focus on the role of technology in promoting the development of collaborative relationships focused on writing and research.

Over the course of fifteen years, OAT has grown to include around thirty staff representing five separate areas, including a group focused on faculty development programs, an evaluation and assessment group and an emerging technologies group. They focus on the interconnection of technology and pedagogy, subscribing to the view that technology is a tool that can be used to support teaching and learning goals. While both technology and pedagogy were always considered part their work, over the years the balance between the two has shifted. Fred Bergman, the manager of faculty support programs, describes the change as the difference between "click here, click there" training and "talking about why you would want to click anywhere." The group continues to stress the importance of developing "collaborative, interdisciplinary partnerships" in order to achieve their goal of the thoughtful application of technology to improve learning outcomes. OAT staff work on projects with a wide variety of faculty, academic technology professionals in UMW's schools and colleges, and librarians as well as staff from the Center for Teaching. They also have increasingly emphasized evidence-driven and scholarly methods for determining the value of particular technologies, as demonstrated by the creation of a group within OAT devoted to assessment. According to Jeff Hughes, the manager of the assessment and evaluation group, "there's been an increasing call in the last five years for systematic investigation of the effects [of technology] which is really good I think. I mean, what is all this technology, how is it changing the learning environments for students and for faculty members? So we needed a systematic way of approaching those questions…and now we actually have three people working full-time on research and evaluation."

Structure, Culture & History of TLC

About the same time that the Office of Academic Technologies was being
created, several training and development units were being brought together to form the
Teaching and Learning Center (TLC) at UMW. Helen Barnes, the Vice President to
whom the Center still reports, was integral in providing the initial vision and support for
the TLC. She also was a crucial member of the team who wrote the proposal that
established the Office of Academic Technologies, and from the start encouraged the two
offices to work together. The TLC does not report to Academic Affairs, however since
the founding director of the TLC retired four or five years ago there is now a dotted line
report to the Provost's Office, as well as to the Vice President. Brian Huddleston, who
was brought in from outside UMW as the new director, has brought a new focus to the
role of director of the TLC; he is now spending more of his time on campus-wide
initiatives working on committees and relinquishing much of the day-to-day management
of staff and projects.

In the fifteen years since they were founded the TLC has grown to include twenty
staff. They sponsor a number of programs that target helping faculty across the span of
their careers, from programming for graduate students who are preparing to become
faculty, to those who are early in their careers, to support for mid-career women faculty,
and finally a program to provide senior faculty with a venue to share the knowledge they
have gained during the course of their teaching careers. The TLC also has extensive
programming aimed at helping non-native English speakers, including TAs, instructors
and faculty, to hone their pronunciation and language skills in order to be successful in
the classroom. The Teaching and Learning Center has a deep and long-term commitment

to improving the effectiveness of teaching and the quality of student learning on campus, and they have numerous partnerships with other offices and academic units on campus, including the Office of Academic Technologies.

History of Collaborations Between OAT & TLC

Almost since the inceptions of their respective units, the Office of Academic Technologies and the Teaching and Learning Center have worked together. The director of OAT, Jessica Lane, describes a relatively informal and intermittent relationship between the two groups in the early days, "Sarah and I never really worked together that much, but every summer they always have a couple of weeks of workshops, so she did call me up have some events about online discussions groups or creating HTML pages…so we would collaborate in that way." The relationship between the offices deepened when the Vice Provost for Instructional Technology decided to fund several positions that would be split between the two offices, with the hope that this would promote the relationship between the OAT and the TLC. While the concept of having dual reports proved problematic in the long run, having staff who split their time between the two offices "did enable us to develop really effective personal relationships across our units team member to team member which is part of the strength of our collaboration with them."

Some years later Helen Barnes, the Vice President who was active in the establishment of both the TLC and the OAT, brought the directors of the two groups together to write what was eventually a successful proposal to a national foundation for a grant that was focused on bringing together innovative strategies for using technology to enhance student learning. The grant, which spanned several iterations over six years,

provided the resources for OAT and TLC staff to engage with one another and with faculty on a sustained basis. In addition to the providing monetary resources, the grant provided structure which insured that the groups interacted almost constantly. Fred Bergman of OAT somewhat ruefully described it as "the meeting grant," although he continued saying that he thought the ongoing meetings were needed to manage a grant of considerable complexity were generally productive and "one of the keys to success." OAT and TLC staff worked together in a variety of contexts. In addition to the meetings that brought together a number of staff from each group, course teams were also established that consisted of a faculty member whose project was the focus of the work, a student, and a learning technologies staff person and an evaluation and assessment specialist, the latter two of these included a representative of OAT and a representative of TLC. A number of factors including a close relationship between the leaders of the two groups, constant contact between the staff of the two offices while engaged in working on a well-defined project with ample resources contributed to the success of this collaborative venture.

As the grant project wound down, the collaboration experienced some challenges. As mentioned above, the founding director of the TLC retired and a new director came in who struggled to succeed in the leadership position, and this put a strain on the relationship. Fred Bergman says that "with Brian's presence it's just been difficult to have a sustained and fruitful partnership." Nonetheless, after a lull, although never a complete cessation of joint activities, the groups are in the process of submitting another joint grant proposal and are also collaborating on project focused on helping faculty use new technology enhanced classrooms designed to support active learning.

University of the East Coast

General Campus Information and Demographics

The University of the East Coast (UEC) is a public research university located on the Eastern seaboard. It is categorized as having "very high research activities" (as defined by the 2005 Carnegie Classification of Institutions of Higher Education) and enrolls 35,000 students, including both undergraduate and graduate students. The institution was founded well into the 20th century and is particularly well known for its science and engineering programs. In recent years, UEC, like most of its peers among public research universities, has been hit by significant reductions in state allocations, in UEC's case totaling some $55 million. Both the Chancellor and the Provost are relatively new in their positions, and both come from strong backgrounds in research and the hard sciences.

Background on the Center for Teaching and Technology

The Center for Teaching and Technology (CTT) is a much younger organization than those at the other institutions included in this study. It was created three years ago by bringing together three existing technology groups (Classroom/AV support, computer labs and help services) along with reinventing the moribund Teaching and Learning Center (TLC) in order to provide a greater emphasis on pedagogical support in addition to the focus on technology. Prior to the merger, all three groups had separate homes within the organizational structure of UEC. Classroom/AV support is responsible for loaning out classroom equipment such as data projectors, laptop computers or DVD players, designing equipment installations for new classrooms, training faculty to use those systems, and even providing instructors with access to more mundane and old-

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fashioned technologies such as chalk and dry erase markers. The Classroom/AV support

group has been shuffled around extensively over the years. In his twenty-two years with

the organization, Frank Johnson, the director of Classroom/AV support, has reported to

no fewer than twelve different bosses, including the Director of the Office of

Undergraduate Academic Affairs, the Dean of Engineering, a joint report that had the

Dean of Arts and Sciences managing their budget and the Dean of Engineering managing

personnel, a faculty committee, the dean of the libraries, and, most recently, the Provost.

While the Classroom/AV support group reported to the Provost, the Computer

Lab Support (CLS) group which is responsible for building and maintaining the computer

labs and their suite of software reported to the CIO, a situation that Frank Johnson

described as "a bit of a wall, and although Greta Scott and I worked well together, there

was not one consistent concept." One of the instigators of the integration of the different

groups responsible for academic technology support on campus was Greta's decision to

retire four years prior to this study. Greta had spent decades at UEC, was widely

respected by the faculty, and her departure acted as an impetus for reexamining how

services to faculty were provided. Frank Johnson says "when Greta retired, the decision

was to bring in a new executive director and combine them all in the CIOs office with a

dual report to the Provost's Office." Like CLS, the Help Services (HS) group also

reported to the CIO under the previous organizational structure. They are responsible for

technical support for faculty and students, including supporting Blackboard, the LMS

used at the University of the North East.

In conjunction with Greta Scott's retirement, the institution began a strategic

planning process in order to chart the future direction of academic technology support on

campus. A wide spectrum of stakeholders were included in the planning process including the Provost, CIO, academic technology staff, the academic technology faculty/staff advisory board and the faculty senate technology committee. The report that emerged as a result of the strategic planning process highlighted the importance of creating a single organization responsible for supporting academic technology use on campus. The recommendations included merging the groups described above under the direction of an executive director of Teaching and Technology who would report to both the CIO and the Provost in order to "create one-stop-shopping" for faculty and "optimize resources and create synergism." Also high on the list of recommendations was the recreation of the Teaching and Learning Center (TLC) as one facet of this larger merged organization.

The TLC at the University of the East Coast has existed in a number of iterations over the past several decades. These initiatives were faculty-driven and grant funded, with faculty providing all the staffing on a part-time basis rather than having full-time staff dedicated to running the center. Most recently, Dr. John Trower, a distinguished professor in sociology, directed the TLC for five years ending in 2005. He excelled at writing and administering grants as well as providing an exciting vision for what a teaching and learning center could be, and the TLC flourished under his leadership. Toward the end of his tenure his research interests went in another direction, and he informed the Provost that he would no longer be writing the grants that made the functioning of the TLC possible and asked him to take on funding the Center on a more permanent basis, a request that was declined. The current director of the Center for Teaching and Technology described this period succinctly, the "organization was funded

through soft money, and the people who were strong grant getters moved on to other things and the money dried up and the leadership dried up and it basically collapsed."

The Creation of the Center for Teaching and Technology

In response to the 2007 strategic plan, a new executive director was brought in to oversee the integration of the three existing academic technologies groups (Classroom/AV Support, Help Services and Computer Lab Support.) Adam McDonald's academic background included a robust research career in his field of cognitive psychology. In addition, he "became a professor right about the time the Internet was hitting the scene" and was an early and enthusiastic adopter of academic technology. That enthusiasm, combined with a vision of the potential for online education, led him away from a pure research focus to several positions in distance education, academic technology, and faculty support culminating in the directorship for academic technology for a large multi-campus state system. When he came to UEC, Adam McDonald was charged with the task of bringing the existing academic technology groups together into a single, unified organization. In addition, Adam "noticed that the pedagogical piece was missing." So he committed to bringing back the TLC in order to broaden the scope of the academic technology organization to include a more specific focus on teaching and learning that extended beyond the purely technological. In addition, he wanted to position the TLC as "the front door to the organization" because "you can bring all this together as a political organization to be synergistic, but if it's big and intimidating to the faculty it's not going to work." He wanted a "small, intimate doorway" through which faculty could access the support that they needed to successfully integrate technology into their classes.

Adam was aided in achieving his goals of integration and expansion of the Center

of Teaching and Learning by having a significant budget with which to work. He says he

was

> extremely lucky when I first came here. I had a war chest of millions of unspent
> dollars to launch and do things and make changes…it's sort of a dream position in
> many ways to have all that. I've been able to hire and grow the organization
> probably by about 33% since coming here.

Although the institution's budget woes of the last several years have had a negative effect

on the recent availability of funds, they have been buffered from the economic downturn

to a certain extent because the UEC assesses a student technology fee which is used to

support technology costs related to undergraduate education. The CTT receives the "vast

majority of the student technology fee" and this has allowed the CTT to continue to

pursue further growth and integration in their organization.

The Center for Teaching and Technology Today

When Adam first came to UEC he brought in a director for the Teaching and

Learning Center who then hired an instructional designer, an assessment specialist, and

an office manager. Unfortunately the director proved to be a bad fit for the institution and

just as the TLC was getting up and running in earnest, he left the institution leaving the

remaining staff to "cobble together what they could to make it work." Finally a year later

a new director, Alice Carpenter has just arrived and a grand opening for the TLC,

complete with an appearance by the newly installed President, is scheduled for a month

after my visit. The four groups that make up the CTT are learning to work together under

the unifying leadership of Adam McDonald. Much of the work of the first three years

focused internally, including setting up work processes that were consistent across the

groups, such as the recent implementation of an online project management system, all of

which were aimed at providing the structure for efficient and effective communication among the entire staff of the CTT. The still relatively young organization is "really maturing and coming together now," and they are preparing to draft a new strategic plan to address their goals for the next three years.

Northern State University

General Campus Information and Demographics

Like the other two institutions included in this study, Northern State University (NSU) is a public research university categorized as having "very high research activities" (as defined by the 2005 Carnegie Classification of Institutions of Higher Education.) NSU is the flagship institution for a robust state system of public education and enrolls approximately 25,000 undergraduates, 8,000 graduate students and almost 3,000 students in its well-regarded professional schools. The institution is consistently ranked in the top tier of research universities in terms of total yearly research expenditures. NSU has recently completed an ambitious strategic planning process that sought to include all stakeholders in a reexamination of what higher education, and public higher education more specifically, has to offer within the context of our current national and global societies. The chancellor has outlined a series of strategic priorities for the institution in the coming years including a focus on undergraduate education and an exploration of the role that technology could play in transforming the undergraduate learning experience.

Structure, History and Culture of Academic Technologies

The Office of Academic Technologies (OAT) is part of the central IT organization that comprises some 550 full-time staff. Overall, IT support at NSU is quite

decentralized with two-thirds of campus IT staff located in units outside the central IT organization. OAT has existed in some form or other for the past 25 years, gradually growing in size and taking on new areas of responsibility. Overall the group has over 50 full- and part-time staff representing four different areas of responsibility, including a group that offers support for the institution's LMS as well as its library systems, a more technically oriented unit that provides programming expertise for academically oriented projects, a section that designs and delivers technical training for university staff on administrative applications and an area with thirteen full-time staff that works most directly with faculty on issues around teaching, learning and technology. This latter group provides consultations with individual instructors, organizes workshops, provides professional development opportunities for faculty and other academic staff, and sponsors fellowship programs providing financial, pedagogical, and technical support to instructors who are working to address a variety of teaching challenges such as bringing active learning to large classes.

In order to address some of the challenges associated with a decentralized approach to IT support in general, and academic technologies support in particular, five years ago staff members from different organizations across the institution began working to create a campus-wide community of practice for professionals who focus on supporting academic technologies. Since many of those who are tasked with supporting faculty around teaching and technology issues work in offices comprising only one or two staff members and have little opportunity to connect with their colleagues who are scattered across campus. One current member of the steering committee for the Community for Academic Technologies Staff (CATS) said that the idea of the group was

"let's get these people talking to each other. Let's get them out of their offices and kind of give them a place where they can talk about teaching and technology, both from the technical standpoint and from how can we position ourselves more in a place where faculty won't just ask for technical help, but they'll also ask for pedagogical advice." The group includes staff from the central IT organization, primarily from OAT, librarians, and academic technologies staff from different schools and colleges across the institution.

The organization that has emerged from the initial efforts to create connections between staff with similar duties and interests is quite remarkable, organizing professional development events, providing opportunities for socializing to professionals from all over campus, and venue for building on shared expertise and technical needs. It is an all-volunteer organization with no budget that essentially exists outside the formal campus hierarchy. Nonetheless, the group was recently asked by the campus CIO to take an active role is the development of the campus-wide IT strategic plan.

Support for Teaching and Learning

Unlike most of its peer institutions or the other universities in this study, NSU does not have a teaching center with a director and other full-time staff. One of the staff members at OAT explains "there was that period when centers for teaching were developed at universities, and apparently we were doing something else at the time." Instead there is a more grassroots organization called the Faculty Institute, which is comprised of faculty and instructional staff from across the university who come together to promote excellence in teaching and learning at NSU. They had their beginnings some twenty years ago when the Faculty Senate established the group as a means of recognizing excellence in teaching. Over the years it has moved beyond its beginnings as

a more symbolic organization to offering teaching development workshops, pulling together interested parties to investigate and write white papers on a variety topics associated with teaching and learning at NSU, and staging the event that is now their signature, a two-week intensive summer teaching institute. The Faculty Institute reports to the Vice Provost for Academic Affairs and receives modest budgetary support from the Provost's Office which allows them to run a small administrative office staffed by a graduate student. The Faculty Institute has developed a close connection to the Office of Academic Technologies, with one of OAT's managers serving on the executive committee. In addition, OAT provides some budgetary support for their programs, which is especially appreciated because unlike the regular funds they receive from the Provost's Office, OAT's contributions can be used to provide food and refreshments for participants in their programs.

There are also a number of other groups on campus that provide support to faculty and academic staff around issues of teaching and learning. These centers are primarily based within a specific college or discipline rather than offering services to the institution as a whole and many of them are in the STEM fields. The localized nature of these endeavors may be due in part to the funding structure at NSU, where the deans have significant influence over budgetary priorities. A dean is more likely to provide funding for a center within their own school or college where they retain a modicum of control over expenditures, rather than being willing to provide funding support to a centralized initiative.

Another important player in providing leadership around teaching and learning initiatives on campus, including those where academic technologies play a part, is Paul

Cartwright in his role as the Vice Provost for Academic Affairs. The VP position is a rotating position filled by faculty, and Paul is three years into a projected five-year term. Although Paul has been deeply committed to issues around teaching and learning throughout his twenty-five year career as a faculty member, prior to beginning his term as Vice Provost he described himself as "never having thought much about technology as a force around teaching and learning." However he now "thinks about it a lot," and he credits the close relationship that has developed between himself and Ann Thompson, the Director of OAT, as well as others on her staff, for his new understanding of the contributions academic technologies can make in the broader field of teaching and learning. Paul is an eloquent voice in support of the benefits of collaborative projects that promote teaching and learning initiatives on campus, however he and OAT's director Ann Thompson worry that his successor may not share the same passion or have the same skills at bringing diverse groups together.

Collaborative Ventures to Support Teaching, Learning and Technology

Academic technology ventures at NSU thrive because of close connections between the Office of Academic Technologies, the Vice Provost for Academic Affairs, the Faculty Institute and CATS. The structures of both the Teaching Academy and CATS are built upon cross-group collaborations, and their ongoing effectiveness is dependent upon the abilities of the members of their executive committees to inspire participation across a broad group of faculty and staff with interest in teaching, learning, and technology issues.

Of the three institutions in this study, NSU has more fluid boundaries between the people and organizations who support teaching, learning and academic technologies. This

is perhaps an example of making a virtue of necessity. OAT has a relatively large number of professionals on its staff, budget to match, and is anxious to connect with other entities on campus. The other major players lack either the staff or the funding that would make it possible to achieve major goals without drawing on the enthusiastic support and participation of other groups on campus. The Vice Provost for Academic Affairs controls substantial funding for teaching, learning and technology grants, but does not have a staff of his own to help with implementation of his initiatives. The Faculty Institute has a limited budget, reports to the Vice Provost, and draws upon OAT for budgetary support, representation on their executive committee and programming for their events. CATS has a membership of 250 across campus, and has members who are connected to both OAT and the Faculty Institute but have no budget at all and have no place in the formal institutional hierarchy.

Two concrete examples of how the connections between these groups come together to provide support for teaching, learning and academic technologies on campus are the Virtual Teaching and Learning Center (V-TLC) Web site and the annual Teaching Symposium. The V-TLC Web site is billed as a collaborative space where faculty, staff, graduate students and others interested in teaching and learning can share "ideas, challenges, and solutions." Ann Thompson says that "in absence of a teaching and learning center on our campus, a physical location, this was a virtual representation of a teaching and learning center…a community of people sharing ideas and discussing and sharing knowledge really. I think that's one of our most successful partnerships." The Teaching and Learning Symposium is held annually and features two days of speakers, workshops and opportunities for instructors to share their teaching innovations. It is co-

sponsored by the Vice Provost for Academic Affairs, the Faculty Institute, and the Office of Academic Technologies. Beginning last year all the materials associated with the Symposium are being uploaded to V-TLC Web site, making the content available to an even wider audience than those able to attend the actual event and hopefully continuing to further the goal of the V-TLC Web site as a means for building community across the institution around issues of teaching and learning.

Conclusion

Chapter Four has provided a brief description of the University of the Mid West, University of the North East, and Northern State University, with a particular focus on the history of the academic technologies units, the teaching and learning centers, and the collaborations between the two groups. The next chapter offers more detailed results from the study, including cross-case analysis of how the data within each case compares to that from the other institutions included in the study.

CHAPTER 5

ANALYSIS

<u>**Introduction**</u>

The previous chapter offered a brief overview of the individual cases included in this study. This chapter presents the analysis of the results of the data collected in this study. Since this is a multi case study, these results include both within case analysis and across case analysis. The first three sections examine the collaborative process from three angles: phases of collaboration, contexts for collaboration, and characteristics of collaboration. The final section explores the role of the Office of Academic Technologies within the larger context of institution in which it is situated.

During the course of data analysis, two different forms of collaboration emerged. For the purpose of the discussion in this chapter, it is important to clarify the difference between a *collaborative project*, which is of limited duration and has a specific goal, and a *collaborative relationship*, which transcends the relatively defined boundaries of a single project and is characterized by continuing engagement between the collaborative partners. Haskins, Liedtka & Rosenblum (1998) differentiate between "transactional collaboration" which they term as "primarily episodic and task or project focused" and "relational collaboration" which "establishes infrastructure for working together that transcends specific teams and specific projects" (p. 35). Collaborative projects and collaborative relationship have some similarities transactional and relational collaboration, except that collaborative projects continue to be of importance even after a collaborative relationship is established. The data from this study indicate that a collaborative relationship can be viewed as a possible, and desirable, outcome of a

successful collaborative project or series of projects. Looking at both is crucial, since an examination of the more limited framework of a collaborative project gives insight into the relationship. Although the development of an ongoing collaborative relationship may in fact be a larger goal, collaborative relationships are unlikely to thrive in a vacuum, but instead evolve in the context of work on specific projects that are driven by substance. Vague and undefined hopes for collaboration that are not grounded in real, focused work to be accomplished by the collaborative partners are unlikely to grow into robust and productive collaborative relationships.

<u>**Phases of Collaboration**</u>

Introduction

The life cycle of collaborative projects can be divided into four major phases. The initial impetus for the collaboration sets the stage for launching the collaborative project, which is then followed by the working phase. An evaluation phase leads to a decision as to whether the collaborative relationship will continue, either in relatively unchanged or in a reconfigured format, or that the relationship will be brought to a close. Ideally the project moves through each phase in a reasonably predictable fashion, but there are also interruptions to the cycle that can cause a project to revert, if only temporarily, to an earlier stage.

The data from the institutions included in this study point to there being three elements in each phase of the life cycle of the collaborative project; these elements are attending to the relationships embedded in the collaborative project, ongoing attention to designing and monitoring group process, and accomplishing the tasks associated with project outcomes. The relational element involves the ongoing development and

nurturance of the connections between the group members; process includes ongoing negotiations around issues of how the group will structure their work together, including issues such as how meetings will be run or decisions made; the task element is degree to which progress is being made on the project around which the collaboration is based. The ratio of time and attention that needs to be devoted to each of these will vary greatly throughout the project depending upon the phase. For example, during the launching phase, relational and process aspects are most important, during the productive phase, task should take precedence and in the evaluation and disposition stage, relational and process themes will again predominate. All three of these elements must be attended to, and if the balance between the three is off, the group may be less effective at accomplishing its goals. For example, while it may appear more efficient to focus primarily on the tasks that need to be accomplished, ignoring or short-changing relational or process issues can eventually slow the progress of the collaboration. Similarly, undue emphasis on the relational aspect of the collaboration at the expense of energy devoted to task can limit the ability of the group to achieve the goals of the collaboration.

This section begins with a discussion of the phases that make up the life cycle of a collaborative project, followed by a more detailed look at the complex set of interactions that need to be taken into account when examining the development and evolution of a collaboration. It is important to note that how each phase builds upon the previous one, and each later phase is influenced by the events of the previous one.

Initial Impetus for Collaboration

While perhaps not strictly a phase, the origin of the collaboration will have a significant impact on the development of either a collaborative project or relationship.

While a project that has its beginnings as a mandate handed down from the upper reaches

of an institution's hierarchy should be seen as neither doomed to failure nor destined for

success, those beginnings will undoubtedly influence the course of the collaboration. The

data from the institutions in the study revealed several different scenarios that acted as

sparks for collaborations, including: top-down mandates, budget concerns, financial

drivers, grassroots beginnings, and a balanced approach.

<u>Top-down Mandates</u>

The data from the study show that a common impetus for collaborative projects is

an administrative mandate delivered from up the administrative hierarchy to those who

are expected to carry out the work. These "institutional imperatives" could be endeavors

that reflect a special interest of the Chancellor or Provost, a decision by the legislature to

create a program (such as one related to distance education at UMW) or a project that

stems directly from the strategic plan of the institution. These top-down initiatives have

the potential to be problematic when they are done within a vacuum, without a larger

understanding of the projects the collaborative partners are already involved in. Jessica

Lane described her struggle for the group she directs to respond when unexpected

projects crop up. She said,

> We keep a balance of collaborations with our colleges, with other central units,
> and with whatever the vice provosts, vice presidents want to do. So as a leader of
> a unit like this, my biggest challenge is I always have to do what the vice provosts
> and vice presidents want and I have to do it when they want it, whether we have
> the resources or not.

In addition to causing difficulties for collaborative partners due to unexpected

projects coming their way, perhaps with unrealistic deadlines attached, if overused, or

used in ways that seem to emphasize political machinations over thoughtful approaches

to academic technologies issues, top-down mandates can inspire cynicism rather than

enthusiasm in those who are expected to implement the collaborative projects. One OAT

staff member at UMW mused that

> at least in the last couple of years since OIT has been reorganized…there's been a lot of emphasis on partnering with people and in my opinion this is not driven by anything which has to do with the substance of our work at all but is driven entirely by political calculation.

One of his colleagues described another project as "a very awkward marriage. That was

top down, they wanted us to partner together. [And they had] good reasons, it just didn't

work very well." However, even projects that are viewed primarily as top-down initiative

can still inspire enthusiasm from participants. A Teaching and Learning Center staff

member described a current collaborative project aimed at creating physical classroom

spaces that accommodate the use of active learning techniques. He said "from what I've

heard, it's very important to the president that this [project] succeeds. So, that's coming

straight from the top down and looking at TLC and OAT as natural collaborators."

Despite the fact that this project was dropped in the laps of staff in the TLC and OAT at

the last minute and they had a very tight turnaround time to complete the first stage of the

project, staff in both offices were excited to be participating and had high hopes for the

long-term potential of the project and the opportunity for their groups to collaborate

around issues of how most effectively harness the potential for pedagogical and academic

technologies innovations in the spaces.

Budget Concerns

Budget concerns were voiced by virtually everyone that I spoke with, including

worries about the ability of collaborative partners to accomplish their missions with

reduced levels of staffing and funding plus the threat of more cuts to come. One of the

VPs spoke about the need for greater efficiency being a driver for the expansion of

collaboration across groups on campus. "Now I'm asking everyone to rethink yet

again…okay, we had a 10% budget cut for this fiscal year, we lost 55 positions, and the

future is...there's a phrase we use around here 'the new normal.'…This type of constantly

needing to be more efficient and effective will demand greater levels of partnering."

Jessica Lane, the Director of OAT at UMW, echoes this belief that tight budgetary times

create a environment in which collaborations can flourish. She believes that

"collaboration and partnerships are being positively affected, because I think at a time of

decreased money people realize that if you work together you can sometimes get what

you want when you can't by yourself." In contrast to these optimistic words coming from

staff at the VP and Director level, other staff do not tout efficiency as one of the benefits

of collaboration. "I don't think anyone who's actually been involved in these projects

really believes that you get very much in the way of efficiencies." His colleague is

equally direct saying "what it does is enrich the product, I think, and it strengthens the

organization, but it doesn't make it easier or cheaper or faster or anything else like that."

Another way in which budget concerns can drive collaboration with others on

campus is a desire on the part of managers and directors to make sure that their

contributions to the institution are widely known, and their ability to work with others to

forward initiatives of value to upper level administrators is acknowledged. One way to

achieve this is to pursue collaborations with a wide variety of stakeholders across the

institution who in times of need can then attest to the invaluableness of the contributions

of the group to institutional priorities. Jeff Hughes in OAT remarked on this trend:

> I think some of it is tight budgetary times and realizing that at some point budget
> cuts are going to come down the pipe and some Provost is going to look around
> for something to cut and a unit wants to, if you want to preserve your territory,
> than you need to have allies and friends and connections and folks that will speak

up in the faculty meetings, the meetings of the whatever committee and say "oh, we did a great project with him, it was really cool."

However, directors and managers are aware that they walk a narrow line. There is a tension between needing to emphasize the strength of a group's ability to collaborate with others across campus. However, if you are too successful at collaboration there may be a temptation for administrative consolidation during tight budgetary times, which makes it vital to show that others on campus know you, value the contributions that you make, and recognize the uniqueness of your program's contributions.

<u>Financial Drivers</u>

Whether during relatively flush times or when budgets are tight, financial incentives for collaborations are a significant force bringing groups together. When foundations such as one that supported a multi-year collaborative project at UMW announce funding opportunities for teaching, learning and academic technologies initiatives, campus groups come together with proposals that reflect the priorities of the funding institution. In addition to influencing the topics around which collaborations are organized, foundations and other funding agencies also are increasingly likely to require evidence of collaboration in the projects they fund, thus acting as a driver for collaboration on campuses (Kezar, 2006). In recent years the Office of Academic Technologies and the Teaching and Learning Center at UMW have been the recipients of two long-term grants from a national foundation to concentrate on course redesign. The financial resources that flowed in during the years of the grant-funded projects had a sizeable impact on the ability of the groups to concentrate on collaborative activities. The promise of access to significant resources is obviously an encouragement to groups to design projects that will appeal to the priorities of the funding agencies. Ideally, the goals

of the foundation and the skills and interests of the collaborative group are well-matched, and the funds give staff in the contributing groups the luxury of focusing in-depth on a particular project, but it can mean that certain aspects of planning are rushed in an effort to meet grant deadlines. The sustainability of collaborative relationships built on outside grant funding can also be an issue at the end of the collaborative project. The loss of financial resources that allow staff the time to devote to a collaboration can lead to units stepping back from the collaborative relationship.

Grassroots Beginnings for Projects

In addition to collaborations that begin due to outside pressures of one sort or another, whether in response to the priorities of administrative mandates, worries about budget woes or the potential for outside funding, grassroots efforts are also a significant source for collaborative projects. These may be inspired by a faculty member coming in with a specific idea of a teaching, learning and academic technologies project that they want to pursue, or staff from several different offices may enjoy working together and so search for a project that would allow them to collaborate.

Balanced Approach

An institution embraces a balanced approach when the origins of collaborative projects and relationships are a healthy mixture of the types, neither predominately top-down, nor driven by budgetary concerns, nor a mish mash of individual staff and faculty interests. One staff member summed this up as being "on the one-hand sort of intentional and directed from above and on the other hand sort of organic and growing out of the interests and inclinations of individual people who work here." All of the reasons discussed above can be legitimate reasons to embark upon a collaborative venture; by

avoiding relying too heavily on only one or two drivers, institutions can harness the power of having collaborative projects that support the larger strategic initiatives of the institution and benefit from the energy produced by grassroots projects inspired by the passions of individual faculty or staff. Strong communication links between different levels of the hierarchy can also ameliorate the disadvantages of administrative mandates that are handed down without reasonable consultation with those that will be implementing the projects.

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Launching the Collaboration

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Once a new collaborative project is identified, the collaborative partners begin the process of launching the collaboration. While the undertaking may initially inspire excitement, often this launching phase is marked by slow and awkward start as the collaborators seek to define their relationships to each other, the procedures that will guide the group's process during the course of the project, and the goals and outline of the project itself. An academic technologies staff member described the slow progress one project saying "we got bugger all done in the first six months...a lot of halting efforts to think of things to do. It really took off after a year." Another academic technologies professional highlighted the frustrations inherent in this launching phase: "you've got your real lows before you can congeal as a group and discover some of the highs." During this time the group is building trust among group members, as well as learning to bridge any cultural differences between group members, "you take the whole first semester to build collegiality and trust and a shared set of resources and vocabulary." Establishing how the group will function is also a focus during this phase, a process that

can also be time-consuming. The Director of OAT, Jessica Lane described this aspect of

the launching phase:

> So whenever you have new collaborations there's a lot of just procedures, tasks
> you have to get done and again each culture will bring very different ways and I
> find in some collaborations you spend endless amounts of time just on
> procedures.

Finally, the group needs to agree on the goals of the project, a realistic timeframe for

accomplishing the necessary tasks, and a plan for moving forward into the productive

phase of the project.

Working Phase

After focusing on establishing trust amongst collaborative partners members and

agreeing on group procedures, the collaborative project moves into the productive phase.

During this phase work should be humming along, and the primary focus is on

accomplishing tasks associated with the project. Once a relationship is established,

collaborators understand how their colleagues work, tasks can be accomplished relatively

quickly through an informal shorthand that develops, and each collaborator has

confidence that the tasks undertaken by their colleagues will be accomplished

competently and in a timely fashion. Jessica Lane described her relationship with the

director of the TLC,

> We worked really well together…We could really get down to very respectful
> exchange of ideas bringing our different knowledge, our different networks…We
> were really comfortable that when we delegated tasks we would get it done…We
> could do those quick emails that were two sentences long and just know what to
> do next.

Although few are likely to admit that they love going to meetings, having regular

times for collaborators to check in and make sure that the group is staying on track with a

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clear of the roles and tasks of each collaborator is necessary during this stage. Fred

Bergman of OAT recalled:

> We were always saying I can't believe I have to go to another grant meeting, but there was always an agenda. Part of it was, whoever was in charge of it of that meeting, there was an agenda, and it was well-managed. But the meetings were always an occasion to get together and do a bit of belly aching about the fact that we're meeting again but also there was real work, it was a very complex project. So there was a lot of work that had to be done on a regular basis and those meetings were generally very productive.

The key, of course, to the success of these meetings in moving the collaboration forward

is that they are well-run and productive. The experience at UMW clearly indicates that

particularly complex projects may require many more meetings than those that are less

involved or have fewer participants whose activities need to be coordinated.

Having time for collaborators to devote to the project must be a priority or little

will be accomplished. Travel to conferences, perhaps to present jointly on topics related

to the project, can give collaborators time to dig into productive work in an environment

that is both less formal and more intense. Fred Bergman talked about getting into a

productive zone at with his collaborators one evening at a conference:

> We co-authored what I regard as one of the best papers-one of the easiest papers-I've ever written. Both best and easy, which is remarkable. And we wrote it in a day, in an evening while having beers after presenting our poster…Really that paper came out of a bar napkin in 15 minutes. We wrote it in about a week. I mean it was just a remarkable collaborative process.

Finally, during the productive phase, staff and managers involved in the project

need to stay aware of potential interruptions that could affect the functioning of the

collaboration, including being aware of personal conflicts that might develop and

addressing them quickly. Directors at both UMW and UNE described situations where

escalating conflicts between individual staff members of different units had the potential

to derail the project, but by being proactive in addressing the issues they were able to turn

the situation around. Other interruptions, such as having a pivotal staff member leave

during the middle of the project, are less predictable, but nonetheless can have a major

impact on progress, as was the case at two of the institutions.

Interruptions and Transitions

Any number of things can happen that will cause an interruption in the

development of the collaborative project and relationship, including leadership

transitions, changes in staffing, institutional reorganizations, or changes in organizational

priorities. Often an unexpected event cause the collaboration to revert back to an earlier

stage, requiring the group to revisit issues of trust, group processes or even the goals for

the project.

Recognizing and Handling Conflict

There are several kinds of conflict that can be part of a collaborative project.

Substantive conflict, or disagreements about the content of the collaboration or the means

of addressing a challenge, can, if addressed in a context of mutual respect, promote

growth and creativity. Personal conflict between collaborators, on the other hand, is not

uncommon and can have a detrimental effect on the progression of a project. Several

managers and directors spoke about the difficulties that can be caused when personal

conflict flares up to the extent that it interferes with the ability of the collaborative

partners to work together effectively. In some cases staff need to be reassigned, in other

cases they are counseled in how to respond to others in a manner that is less likely to

result in an antagonistic interaction. Angela James, a manager in academic technologies

at NSU, emphasized that participants need to recognize, and sometimes their managers

need to remind them, that collaborative relationships are still professional interactions:

"[This] is not a place for therapy, and it's not a place to hash out anything you're angry about."

Leadership Transitions

Leadership transitions, when an incumbent director or upper level administrator in an established collaboration leaves, are almost always disruptive, and there were examples of such transitions at all three institutions in the study. A UMW, Sarah Littlefield, the director of the TLC, abruptly retired at the beginning of the second iteration of a large grant project, an event which was disruptive to the maintaining progress on the collaborative project and the functioning of the collaborative relationship. She was replaced by a new director who struggled to understand to the complexity of the project and the relationships he inherited. One of the managers who worked with him commented that the change in leadership

> required reconfiguring the relationship between the directors…I think we suffered a bit of a setback there just by virtue of that kind of change. Going back to square one with a new partner who had a very difficult challenge of trying to figure out this very large and complex institution and so it's very difficult to coordinate a partnership.

Leadership changes, while inherently disruptive in the short term, can have a positive effect in the longer-term. At NSU, for example, a new Vice Provost for Academic Affairs smoothed relationships between the Provost's Office and the Office of Academic Technologies, opening the door for more productive collaborations with all the groups on campus focused on teaching, learning and academic technologies issues.

Despite interruptions, and the fact that phases of a collaboration do not necessarily unfold neatly, projects can regain momentum after delays caused by changes in collaborative environment. At all three institutions there were examples of forward momentum being recovered after setbacks. At UMW, for example, after significant

challenges and a slow period, OAT staff are hopeful that the collaborations between OAT and TLC will continue. After discussing recent struggles, Fred Bergman says "I feel like right now we're getting much more traction and we're kind of ramping up again in ways that are really exciting."

<center>**Evaluation and Resolution**</center>

The final two phases of the collaborative project are evaluation and resolution, which involves assessing the successes and failures of the collaborative project, identifying what could be improved in future collaborations, and then making a decision as to the future trajectory of the collaborative relationship. There are two aspects of the collaboration that are equally important to assess. The first is programmatic and is aimed at ascertaining the quality of the project outcomes; to what extent were the goals of the collaborative project achieved, and what can be learned from the experience that can be applied to future projects. These sorts of evaluations are relatively standard, and although they may not always be carried out in a rigorous fashion, funding agencies routinely require grant recipients to include a program evaluation as a condition of funding.

An assessment of the collaborative process itself is much rarer. As a director at NSU said, "oh, so evaluating the collaboration itself. We haven't done that." While staff, managers and directors usually have an informal sense of how successfully the collaboration is functioning, any impressions are usually only shared within a specific group rather than between the collaborative partners. There seem to be two major barriers to engaging in meaningful evaluations of the collaborative process. The first, of course, is a matter of taking the time out of busy schedules, which can be difficult to do, "because it means you have to stop, hit the pause button." Instead, "we just keep moving on the next

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thing. And I don't know what to do about that." The other barrier, which is more complex to overcome, is that there is no clear framework for evaluating the collaborative process. Brian Huddleston wondered what that would look like, "on the level of putting a rubric together and putting five questions down and putting x's in 4, 3, 2 or 1, I'm not sure what that would look like…That would be pretty interesting to see how we would do that. And of course you'd want to have some congruence between how both of us are seeing the relationship." The VP at UMW says that "we need simple and smart ways to do that so that…the assessment of that process should be expected, should be part of the roadmap whatever the project is." Regardless of the type of evaluation activities that are conducted, whatever information is available regarding the collaborative project is used when moving into the final stage, the resolving the future direction of the project and the relationship itself.

There are many possibilities for what can happen during this final stage. It is important to remember, however, that it does not represent an ending, but rather moving into the beginning of a new cycle. Barring an almost unimaginable failure of both the collaborative project and relationship, it is likely that pieces of some or both of these will continue on in a new form. This next section outlines a few of the many different directions this stage can take, including: a decision to make changes to the structure of the project, one group taking on responsibility for a project that began as a collaboration, phasing out the project, coping with the impact of a loss of resources, and finally, making a decision about the future of the collaborative relationship itself.

Reconfiguring the Structure of the Project

At the end of a project, the collaborative partners may want to continue working together and feel that the basic outlines of the project are sound, but based on their experience they have recommendations for how to improve the project during the next cycle. After the first iteration of the a large grant project at UMW, the collaborative group looked at the structure, successes and challenges of the project and made recommendations that were adopted during the second iteration of the grant. "So the second three years we went to a more course redesign team methodology really emphasizing assessment. We really emphasized collaboration and assessment and then the pedagogy. It went much better the last three years."

Joint Start-up, Then One Group Carries the Project Forward

The decision to end of the collaborative element of a project does not necessarily indicate a failure of either the project or the relationship. It may just mean that the expertise that one partner brought is no longer necessary as the project moves forward. "That was a program which was created as a joint partnership between TLC, the libraries and OIT. But then we kind of amicably parted ways…We went forward with the…program, acknowledging the contributions TLC had made historically but they weren't actively involved any more." In describing a different project an academic technologies staff member said that while the collaborative relationship had not survived the end of the project, or was at the least in a period of hiatus, the course transformation program that had been the focus has been successfully adopted by one of the larger colleges on campus and while not involving all the same participants, the structure of the program continues in a different context.

"Sunsetting" the Project

Eleanor Francis, the VP who oversees Academic Technologies at the University of the Mid West, argues against the tendency she has observed in organizations that seem to struggle with ending collaborative projects that have come to the end of their useful life. She says "there's nothing wrong with sunsetting a project, and honoring it, and celebrating, and then saying, okay we're going to use what we've learned in this project here and here and here."

The Impact of a Loss of Resources

Both the collaborative project and the collaborative relationship may have been relatively successful, but if resources that supported the project are no longer available, the project and the relationship can be difficult to sustain.

> I do think that the grant evolved and I do think they learned a lot. Unfortunately, I don't think we capitalized on the gains at the end of it. I kind of feel like it just ended. I think that's a very common experience with these grant programs.

The Future of the Collaborative Relationship

In addition to making decisions about the future growth of a collaborative project, the partners need to decide whether they are going to reinvest in the collaborative relationship; groups may also decide to take a step back in their work together, although a symbolic collaborative relationship may continue even if the groups no longer work together as closely. Ideally, the successful completion of one project inspires reinvesting in the collaborative relationship. One of the directors expressed this succinctly: "when we're done with project x with folks it builds that feeling for wanting to do project y with them because we completed something of value." However, sustaining a collaborative relationship, especially in the absence of significant resources such as from a grant, or if there were underlying stresses in the relationship, can be challenging. Asked about the

ongoing relationship after the conclusion of the six years of working together on the grant, one OAT staff member said "I know a couple of people in TLC socially but professionally we don't do that much any more, not since the demise of the grant." A colleague of his echoed these sentiments "once that was over, there's been a gap for a couple of years." But even this group is finding that the gap is closing and that after an extended hiatus that more collaborative projects are on the horizon.

Discussion of Phases

The relative duration of each of these phases is dependent on the complexity of the project being undertaken and the state of the collaborative relationship. One lesson to be learned is the importance of building an appropriate timeframe based on the actual circumstances surrounding the project and the collaborative relationship. A complex project that may be possible to accomplish in the course of a year with a cohesive group may be a complete failure with participants who have never worked together and whose leaders have a history of antagonistic relations. For example, given a relatively complex project involving people who have not already worked together extensively, the launching phase could be extended considerably. Or if the impetus for the collaboration comes from an administrative mandate and the goals of the project have not been fully embraced by the collaborative partners, building trust between the partners may require a lengthy period.

Maximizing the chances for success for a particular project entails planning that takes these many variables, and their complex interactions, into account. The groups making up the Center for Teaching and Technology at UNE, for example, were in the early stages of bringing three existing organizations plus a newly established Teaching

and Learning Center, together to form a single integrated organization responsible for providing both pedagogical and technological support for faculty. This was a large and complex project involving a large number of staff, located in a number of different physical locations and not all of whom were enthusiastic about the changes to their organizations. Building trust between the different parts of the organization and establishing processes and procedures for their work together were dominant themes at all levels of the organization. One of the staff at the TLC described the process of pulling together staff from across the groups to bring a consistent approach to the many workshops offered by different parts of the organization: "We're trying to team it up. And I'll tell you that there are people who are very territorial, but little by little we're breaking it down." Later in the interview she returned to the same theme, "And right now that [trust's] not there. It's happening, it's starting to happen." Another staff member emphasized the importance of starting small, with projects that were relatively low stakes, and then building from there: "So I help them with their survey design, also their internship programs. So through that kind of working relationship we kind of build up trust and friendship."

On the other side of the spectrum, if the participants have already worked with another frequently and group procedures and norms already well established, the group should be able to enter the working phase much more quickly. A well-established collaborative relationship can allow the majority of the group's time and energy to be focused on productive activities. At NSU, the links between the Vice Provost for Academic Affairs, the Office of Academic Technologies, the Faculty Institute and CATS had been able to develop over a period of several years, and when the CIO called on the

groups to work together to flesh out aspects of the new strategic plan that focused on issues of teaching, learning and academic technologies, they were able to get down to work quickly.

Conclusion

The series of phases that define collaborative projects are: launching, working, evaluation and resolution. Understanding the unique challenges inherent in each phase and setting aside the time and resources to address those challenges promotes the success of collaborative projects, and ultimately, allows collaborative relationships to flourish. However, even under the best of circumstances, there may be interruptions to the forward progression of a collaboration: a key administrator may retire, resources may unexpectedly be pulled back, or conflicts may arise between two individuals participating in the project. Ideally, though, at the conclusion of a collaborative project the partners will have overcome those interruptions and will be inspired to continue the collaborative relationship. And even without a new project in the immediate offing, there are a variety of other contexts through which collaborative relationships can develop and deepen before the next opportunity to engage in a significant project emerges.

<u>Contexts for Collaboration</u>

Introduction

Collaborative contexts provide the professional and social space where personal interactions can develop in a way that contributes to the growth of larger, sustained collaborative relationships. As discussed in the previous section, the ways in which the phases of a collaborative project unfold has a lasting impact on the development of larger collaborative relationships. Examining the contexts in which the collaborative partners

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intersect offers another perspective on the richness of a collaborative relationship. The data from the three cases suggest that having a range of collaborative activities through which the collaborative partners engage with one another supports both the development and sustainability of ongoing collaborative relationships. Contexts are social spaces in which partners can interact, either in groups or one-on-one; examples of contexts include committees, work groups, communities of practice, co-teaching, campus-wide events such as teaching and learning symposia that are co-sponsored by collaborative partners, informal social gatherings or joint attendance at professional conferences. Contexts can be defined along a series of dimensions, such as their size, composition, locus of control, degree of formality, and purpose.

This section first describes the most important dimensions, followed by a more detailed look at the contexts that supported the collaborative relationships at the three institutions in the study. Contexts as described in this section should not be viewed as inherently collaborative in nature, because while they all encompass cross-group interactions, these interactions may or may not rise to the threshold of collaboration. However, even when particular contexts are not truly collaborative in nature, the presence of a variety of contexts where academic technologies professionals, teaching specialists, administrators, faculty, and others can interact on a regular basis supports the potential for more intense collaborations down the road. Where collaborative relationships are already well-established, the richness of the contexts in which these collaborations exist can sustain and even deepen those relationships.

Dimensions of Collaborative Contexts

Each particular context can be described along six dimensions, and the characteristics of the context will vary depending on which dimensions are reflected. The dimensions are:

- Group size

- Group composition

- Group initiator

- Group membership

- Formality of interaction

- Group purpose

Group Size

The first dimension is the size of the group. At the larger end of the scale is a community of practice group for academic technologies staff from across NSU that had membership of 250; UMW has an academic technologies advisory committee of nearly seventy representatives. On the other end of the spectrum are cross-group work teams of consisting of four or five staff members and faculty, or opportunities for staff from different groups to co-teach a class together. There are several advantages to these larger groups, including being able to involve representatives from many diverse groups, which is especially helpful on campuses where academic technologies support is extremely decentralized and a smaller group may not be aware of what is occurring in every area of campus.

Well-established communities of practice for academic computing professionals at both UMW and NSU were effective in bringing together staff from the central IT

group and one- or two-person IT support groups located in departments across camps.

Larger groups such as these or academic technology advisory groups also potentially

have many more members to draw on when work needs to be done. Drawbacks include

having so many members that it is difficult to meet more than occasionally, or meeting

more often but having inconsistent attendance so that the same group never meets twice,

which was particularly seen in the communities of practice groups when last minute

crises would keep members from being present at gatherings they otherwise would have

attended. The scale of the group can also make managing the information flow to and

from members unwieldy so that the gains from having wide representation are lost.

Smaller groups, on the other hand, are more limited in scope and offer fewer hands for

accomplishing tasks, but they also allow for a more intimate connection between

collaborators and greater depth in terms of the work that is accomplished.

<u>Group Composition</u>

In addition to their size, collaborative contexts can also be distinguished by the

degree to which group membership is drawn from different constituencies. These can

include faculty, librarians, and professional staff from the center for teaching, Provost's

Office, academic technologies, or even staff from groups such as the Writing Center.

Including representation from a greater variety of groups can encourage the growth of

collaborative projects beyond an initial more narrow conceptualization, such as UNE's

ePortfolio project that expanded to include participation by the staff from the Career

Center. As with the size of a group, however, there are tradeoffs, and a group that

includes too many different constituencies, each with different perspectives and goals,

can be unwieldy to manage effectively. Agenda topics that are of interest to everyone can

be difficult to find, and if the content of meetings is too vague, participants may lose the motivation to actively participate.

Group Initiator

Another dimension for categorizing collaborative contexts is the question of who is responsible for convening the group. The central IT organization at all three institutions included in this study have standing advisory committees focused on academic technologies. These groups meet under the auspices of IT, the members are selected by the IT administrators, and the agenda is largely driven by the challenges, interests and concerns of that organization. Fred Bergman at UMW differentiates between a committee of this sort and "genuine partnerships," when he describes how the purpose for the group "is for IT to help disseminate information and to get feedback…on the direction IT should go. So it's not really a partnership, although they are invited…to be part of that process." In addition to academic technology committees that were convened by the central IT organization, at least two of the institutions also had committees focused on academic technologies that were sponsored by the Provost's Office, and at least two had committees associated with the Faculty Senate. While it was beyond the scope of this study to examine in detail the differences in perspectives between the IT, Provost and Faculty Senate committees, it is not unreasonable to conjuncture that they would have different points of view about the role academic technologies should play in higher education, and how those technologies should be chosen, implemented and supported.

Group Membership

How participation in cross-group committees, groups or activities is determined is also an important dimension to consider when looking at the contexts of collaboration.

Based on an analysis of the data collected in this study there are three primary means for determining who is eligible to participate: members can be appointed by administrators who are higher up in the organizational hierarchy, membership can be determined by one's position in the hierarchy (e.g., a senior management team at UNE that included all the managers of the academic technologies units that comprised the Center for Teaching and Technology) or it can be open to interested volunteers. Within the context of this study, the first two of these methods of determining who should participate in a group or activity were the most common methods used to determine group membership; these methods ensure that staff with the appropriate skills and knowledge of the institution are included. Volunteer organizations were less common, with particularly vibrant examples at two of the three institutions, but are structured to allow participants who are particularly passionate about an activity or topic to self-select. An academic technologies staff member at NSU pointed out the advantages of this sort of selection process and what they might lose by shifting to a different model:

> Well in part, everyone who is a part of [CATS] does it because they want to and sees value in it. So we might be dragging people into meetings and then also I'd worry that those participants would be less motivated to contribute in a meaningful way."

At NSU, a less experienced academic technologies staff member who might not have been selected to participate on official institutional committees seemed particularly excited about the possibility of making real contributions in the context of a community of practice. The institution benefitted in several ways. The voices of these (usually younger) staff were heard by upper level administrators such as the CIO and the Vice Provost for Academic Affairs and they were given an opportunity to contribute to the larger conversations going on about academic technologies such as through the strategic

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planning process. While listening to younger staff may be beneficial in many contexts, within academic technologies they are often more deeply involved in cutting edge uses of technologies for teaching and learning and their experiences can help a larger IT organization respond more creatively to new opportunities and challenges. Participation can also give younger staff a chance to grow as leaders and develop the leadership capacity of the institution overall.

<u>Group Formality</u>

The degree of formality is another dimension to consider when examining a cross-group activity. On the more formal end of the scale might be a meeting of a Faculty Senate committee with a defined agenda and strict protocols for running a meeting, while an impromptu conversation while standing in line at a coffee shop might represent the most informal end of the spectrum. A pre-work breakfast gathering of managers within an organizational unit that combines social aspects with an opportunity to meet and have less formal review of a recent meeting called by the director could characterize the middle of the continuum, and a bit towards the informal would be a casual post-work get-together for a couple of beers by staff from several offices that have worked together on a project previously, but are now just catching each other up on the latest happening in their offices and lives. While it is impossible to imagine a institution of higher education existing without a plentiful supply of meetings on the more formal side of the continuum, the data show that more informal gatherings that allow collaborative partners, or potential partners, to establish a deeper relationship can have a positive impact on the overall success of cross-group collaborations.

<u>**Group Purpose**</u>

Finally, the function of the group or activity affects the overall context of the interaction. Data from the three institutions offered a number of different functions for groups or activities including: providing professional development opportunities for staff, allowing information and initiatives to be shared across institutional boundaries, work teams organized around the implementation of specific projects, committees charged with strategic planning, or informal socializing. Many groups or activities in fact had multiple purposes, although one can often be identified as the primary function. In the example mentioned above, the managers of the Center for Teaching and Technology at UNE met monthly for breakfast in a relatively informal context in order to discuss departmental issues with one another without their Director also being there. Frank Johnson, one of the managers, describes it as "half social, half work" and "a great opportunity." He continues:

> A conversation could start as simply as what the heck did [the Director] mean by that. And as we talk it out we come up with a solution among ourselves to achieve his goal...And the social aspect is also good. You don't want a situation where the only time two managers get together is when there's a problem.

While the most important aspect of these meetings was the chance to clarify what had been discussed in earlier meetings with the Director as well as to problem solve, the chance to "talk about the kids and the new pool" also plays an role in promoting effective collaboration among the units that make up the Center for Teaching and Technology.

Contexts

Understanding the dimensions of the most important cross-group contexts at an institution can allow staff and administrators to identify whether they have an appropriate mix of contexts to support the development and maintenance of collaborative

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relationships. The next section will describe collaborative contexts in more detail,

focusing on how they fit into the structure of cross-group interactions at the institutions

included in this study. The contexts that were most prevalent across the institutions

included in this study were: one-on-one interactions, committees, cross-group work

teams, communities of practice, joint activities, and social interactions.

One on One Interactions

Connections between individual staff members are an important context in which

cross-group interactions occur, and those interactions can support the development of

closer collaborations among the larger units. These one-on-one interactions take a wide

variety of forms. At MWU, the directors of the Office of Academic Technologies and the

Teaching and Learning Center began having lunch together regularly as a way to stay

connected on the ongoing developments in the complex grant project on which they were

co-PIs. Jessica Lane, the director of OAT, saw these lunches as a marker of an

increasingly closer relationship between their units. Two staff members from their units,

one from OAT and one from TLC, have an on-going professional relationship that helps

draw the two groups together. One of them describes the many activities that they share:

> We have a lot in common...We co-teach a course every year together in the
> preparing future faculty program...We co-authored an article...we're co-authoring
> a book chapter right now, and we've done other sort of scholarly work like that.
> We presented at conferences a couple times.

The assessment specialist at UNE provides another example of how a one-to-one

relationship first develops and then can contribute to the development of a more effective

collaborative relationship. Jia Wu discovered that the university already had a site license

for survey software, and she encouraged faculty to use it for their assessment projects.

Her enthusiasm and friendliness was infectious, and she developed a good relationship with the survey software administrator who suggested

> maybe we should do a workshop together…So I say sure, that's a wonderful idea. So we co-teach a workshop together and the turnout is really good. And now if they ever want to purchase, or add features to that program she will ask me for my input.

When staff in different units have the chance to connect more closely one-on-one, the overall collaborative environment can be enhanced, whether it is the directors of two units taking the opportunity to share a cup of coffee or staff from different groups presenting at a conference together.

Committees

The data from the three institutions show that committees play an important role in providing a structure for cross-group interactions. As might be expected given that this study looks at higher education institutions, there are in fact a plethora of committees that are charged with looking at various aspects of teaching and learning and the role of academic technologies. Committees tend to have regularly scheduled meetings with relatively consistent membership and exist over an extended period of time. The IT organizations at all three institutions had long-standing academic technologies advisory committees composed of faculty and staff from across the university. While at some institutions that might imply a largely ceremonial role, that did not appear to be the case at the institutions included this study. They committees were used by "IT to help disseminate information and to get feedback…on the direction IT should go." The advisory committee at UNE played an important role in developing the strategic plan that led to the merger of existing units into a single organization. They also were active in the

search process that brought Adam MacDonald to campus as the first Director of the merged Center for Teaching and Technology.

UMW had a large advisory committee comprised of close to 70 members. Despite its potentially cumbersome size, it was described as a "working committee with real effects." It began with a mission that was specifically focused on the UMW's Learning Management System and during that period

> What went on there mattered quite a lot. I mean there was debate and there were proposals and there was voting. Letters were written to provosts and presidents asking for real money to put behind the CMS. So they've had effects, absolutely.

In the last year or two the committee has been tasked with overseeing the implementation process for new academic technologies, including most recently the adoption of an open source survey tool. Having the input of the advisory committee with broad representation from faculty, academic staff and technical experts significantly improved the usability and usefulness of the final product.

However, there were also less successful examples of cross-group committees. There was another committee, also at UMW, that included many of the same participants as the academic technologies committee. This one was led by the Director of the Teaching and Learning Center and it had unclear goals, became bogged down in campus politics, and was hampered by poor communication to the members of the committee on the part of the TLC Director. Successful committees require a clear focus, leadership that provides enough structure for the group to flourish and at the same time enough space for diverse voices to be heard. Having committees of this sort ensures that there is a structure in place to ensure regular conversations with a variety of stakeholders builds trust among the participants and encourages open communication about academic technologies initiatives across the institution.

Cross-group Work Teams

Compared to committees as described above, cross-group work teams tend to be more limited in size, and are often created specifically to forward the goals of a particular collaborative project and as such have a more limited scope. Committee members are likely to concentrate on larger scale issues and focus on their roles as decision makers or advisors on policy, strategy, planning or coordination. Based on analysis of the data from all three institutions, work teams tend to have a specific focus with limited membership—most of the work teams at the institutions in this study ranged in size from three to six, a size that allows staff an opportunity to develop a relatively informal working relationship.

The course development teams that were part of the large grant project at UMW were made up of two academic technologies consultants from the Office of Academic Technologies and two staff members from the Teaching and Learning Center; two staff were paired up with each of a dozen faculty participating in the three year course development project. Not only were the course teams extremely successful in accomplishing the goals of the grant project, the intensity of their work together also encouraged the development of a lasting relationship between the staff from the two offices. One member of the team said of the experience "we collaborated so well together. I think we developed a very real friendship. We travelled a lot and we presented a lot on this project." At UNE, where the Center for Teaching and Technology is still in the early stages of being part of a merged organization, the newly arrived Director of the TLC described her plans to organize a similar cross-group team to allow staff from the different groups to connect regularly over their work with faculty.

Communities of Practice

Communities of practice are formed to provide professional staff with an interest in academic technologies a place network with like-minded colleagues, share information about challenges and solutions to common problems or report on projects that are being carried out in distant corners of an institution, create a context for professional development, and have an opportunity to socialize with others who share at the very least professional pursuits and perhaps personal interests as well. Fred Bergman of UMW describes the purposes the Community of Practice for Academic Technologies (COPAT) serves, and how he sees it as promoting collaborations around academic technologies:

> You can nurture the interpersonal relationships that are critical to the success of putting people together on projects…It's where you can have idea formation happening on a regular basis…If you're working in silos you may just be right next to each other on the tracks and not know it. So having some sort of mechanism for that knowledge sharing and awareness where you see opportunities to forge partnerships.

Interacting in the context of a community of practice can spark new ideas and solutions through sharing of common experiences, build personal relationships that can lead to or support effective working relationships, and share information in order to eliminate the redundancy or duplication of efforts that occurs when units work in silos. At NSU, the Community for Academic Technologies Staff (CATS) pulls in staff from across their very decentralized academic technologies support structure. One of the CATS steering committee members described their goal of providing a framework for diverse staff to come together.

> The thing about NSU is that we're really, really distributed for IT. There's our central IT unit, but then we've got all these different IT units out in departments across campus. Some are big, some are just one person in their office...And the idea of [CATS] was, let's get these people talking to each other. Let's get them out of their offices and kind of give them a place where they can talk about teaching and technology.

The communities of practice at UMW and NSU are both relatively informal in terms of their organizational structure and members are all volunteers. While CATS has a Executive Committee that is responsible for planning events, it does not have a place in the official hierarchy which gives them significant freedom to discuss potentially contentious issues in an open and frank atmosphere. One of the members of the Executive Committee remarked that "there's lots of disagreements, and that's one of the strengths. We get to air those disagreements and figure out what's a compromise position." Communities of practice can play an important role in promoting the development of collaborations on a campus.

Joint Activities

Staff at all of the institutions in the study were engaged in activities that were co-sponsored by the multiple units responsible for supporting academic technologies and teaching development. These not only offered a chance for groups to work together on a defined project, but also gave the partners an opportunity to define teaching, learning and academic technologies issues for a larger campus audience. At least two of the institutions have annual conferences or symposia focused on teaching and learning that are jointly organized. At the NSU, the Vice Provost for Academic Affairs as well as staff from the Office of Academic Technologies and faculty from the Faculty Institute and organize a two day symposium that includes three keynote addresses, an extensive schedule of workshops and presentations by faculty and staff, and opportunities to socialize. Ann Thompson, the Director of OAT, was quick to identify the ongoing collaboration around producing the symposium as an important focal event that "brings us together." At UNE, the Center for Teaching and Technology staff are planning their

second annual institution-wide symposium that offers a chance to highlight the offerings of the recently integrated academic technologies units including the newly opened Teaching and Learning Center.

Other joint activities include a newsletter at the UMW that is a joint publication of the TLC and OAT and offers articles written by staff and instructors concerning the scholarship of teaching and learning. The newsletter also offers an integrated calendar featuring campus workshops and events related to teaching and learning offered by the TLC, OAT, and other units such as the Writing Center and the Libraries. At NSU, which is without a center for teaching, collaborators "all kind of got in a room and said, well, we don't have a teaching and learning center, [but] what would a virtual center look like?" The result of that initial brainstorming session is now an extensive Virtual Teaching and Learning Center (V-TLC) Web site that is clearly branded as a collaboration between OAT, the Faculty Institute and the Vice Provost of Academic Affairs and offers a virtual "collaborative meeting place" for faculty, staff, and graduate students to share their thoughts about teaching, ask for help from the community with the challenges they face, and connect with existing campus resources that can help improve their teaching.

<u>Social Interactions</u>

Opportunities for groups to get together socially can also strengthen professional collaborative relationships. Spending time together outside of work can help strengthen professional relationships within a single unit, but for staff who are working with colleagues in other units who are not physically proximate it takes on added importance. At UNE, where coming together as a single organization is still a work in progress, several staff in different parts of the organization stressed the importance of building in

time for staff to connect on a more informal level. Kathy Wilkins described the efforts of the Director of the Center for Teaching and Technology to create occasions for gathering for non-work related activities:

> [Adam] also has made the effort…We have a bowling night, we go on a retreat, everybody complains, but I'm going to tell you that's what keeps us from being in silos. Because they were in silos before. He really knocks that down.

In addition to the more purely social outings to bowl or play volleyball, Adam also schedules semi-annual retreats that transcended purely professionally oriented encounters. The retreats feature interdisciplinary teams "working together and collaborating on projects, building towers out of straw or spaghetti and tape or whatever" which Adam hopes will help build meaningful connections across the groups.

While there was widespread agreement among the staff I interviewed about the positive impact spending time outside of work can have in creating stronger professional relationships, it was not always easy to make it a reality. At NSU, staff recognize the importance of interacting with colleagues from different units outside of the job, but they have struggled to find ways to make it happen.

> We tried to have social events...we tried holding weekly events where people could get together and just talk, and they just don't go very far often. Every once and a while, but…apparently there isn't a need to get together and just unwind with colleagues.

There was also agreement that one of the primary advantages of having staff from different units attend conferences together was the opportunity to spend time together in an informal setting.

Conclusion

There are a wide range of contexts in which different units and individuals that belong to those units can engage in collaborative activities, from large and formally

designated committees to informal one-on-one chats shared by individual staff members from different groups. Any single activity may not indicate a fully developed collaborative relationship, but the existence of many different kinds of cross-group activities strengthens the potential of the institution as a whole to engage in effective collaborations. The data from this study indicate that the number and variety of different contexts in which cross-group relationships flourish has a positive impact on the development of strong collaborative relationships and the ongoing maintenance of those already developed. The number and variety of contexts in which the collaborative partners interact as well as the intensity with which the partners engage one another are indicative of the overall health of the collaborative relationship. When the totality of collaborative activities encompass the breadth of the continuum of dimensions, including groups of different sizes, connections at different hierarchical levels (e.g. directors, managers and staff), representation of a variety institutional stakeholders, and with diverse purposes, the chance for ongoing effective collaborations is enhanced. Collaborative relationships are built on and strengthened by the quantity, quality, and diversity of contextualized interactions over a sustained period of time at an institution; the greater the number and variety of cross-group interactions, the stronger, and longer lasting, the collaboration will be.

Characteristics of Effective Collaborations

Introduction

This next section focuses on the characteristics that support the development and maintenance of effective collaborations, as well the associated shadow side--factors that act as barriers to successful collaborations. Despite the fact that all three institutions

included in this study demonstrated significant successes in their collaborative endeavors between academic technologies professionals and teaching and learning specialists, each of them also encountered roadblocks which constrained the abilities of the groups to achieve what might have otherwise been possible. There are three categories of characteristics, those that are: (1) expressed on the level of *individual staff*, (2) part of the *institutional structure*, and (3) features of the *collaborative relationship* themselves.

On the individual level, most notable was the importance of having individuals who were particularly committed to collaborative ways of working; these individuals were gifted in creating environments where collaboration flourishes and in inspiring others to value the collaborative process as well. At the institutional level, having financial and staff resources available to commit to collaborative activities was crucial for success. Not surprisingly, these were prevalent when a strong connection was made between the strategic priorities of the institution and the goals of the collaborative projects themselves. Organizational proximity between the collaborative partners, such as when a close relationship between leaders of the different units reduces the negative effects of organizational silos, also supports the ability of the partners to work together effectively. Barriers at the institutional level include a lack of physical proximity, and a lack of integrated business processes such as differences in how budgets and accounts are handled in different units.

Finally, characteristics of collaborative relationships that support the development of successful partnerships include the importance of the collaboration being driven by substance rather than a vague desire to work together, a shared vision of what the goals for the collaboration are, mutual respect between the partners, and both horizontal and

vertical alignment across the organization in terms of the goals of the project and the

means for accomplishing it. Collaborative relationships were sometimes hampered when

cultural differences between the groups caused friction, such as different attitudes

towards the ideal pace for change or how risk averse the groups were whether in

contemplating the adoption of new technologies or creating a new structure for

accomplishing a goal.

Individual Characteristics

The commitment of individual staff members to collaboration as a preferred

method for utilizing the varied perspectives and skills found in different units plays a

significant role in promoting the success of collaborations between academic

technologies units and teaching and learning centers. While the data from all three

institutions support the idea that individuals with a disposition towards collaboration and

the skills to make it happen make a tremendous difference in the success of those

collaborative activities, this was particularly obvious at UWM. Fred Bergman at the

Office of Academic Technologies believes that the core of their commitment as a unit to

collaborative processes emanates from the leadership of Jessica Lane, the Director of

OAT, but it has emanated outward from there.

> I think it comes first from Jessica as the director of the DMC. She has a real
> passion for this. She began the DMC as a half-time FTE director with a half-time
> staff person. So she began small, which means you have to partner or you're not
> going to get anything done. So from the beginning she was interested deeply in
> engaging as many partners as she could is working together. So she has that
> orientation. So that's one tremendous force of the collaborative nature of our
> organization.

Jessica herself describes her commitment to collaboration:

> I just feel very strongly that the best work gets done via collaboration. Inter-
> disciplinary collaboration. So I've set up a very team-based environment here, and

when we interview people we explicitly state that if you don't enjoy teamwork, you will not enjoy working here. Nor will you succeed.

And Fred Bergman says that the focus on collaboration within OAT and the larger organization of the Office of Information Technologies "been even more pronounced since Eleanor Francis assum[ed] the position of Associate CIO. Partnership is central to her perspective on everything. And if you don't have a partner you're not doing it right." Bergman describes how he himself has discovered a love of collaboration that he had been unaware of until he left his tenure track teaching job and joined OAT "Philosophy is a very lone pursuit and I like to collaborate, which I didn't really know until I came here. I just really enjoy collaborating and I enjoy helping faculty think about teaching."

Beyond the talents of his colleagues within OIT, Bergman believes that the collaborative skills of Les Hill, his counterpart at the TLC, were crucial in the success of the complex three-year grant project they worked on. "Paul is by nature an extraordinary collaborator, so one of the things that really helped was the fact that he was leading this." Bergman provides an eloquent description of the collaborative skills of Les's talents for encouraging collaboration, painting a picture of a colleague that anyone would treasure.

> "I think [Les] is extremely creative himself, but he's really receptive to input from others. He just has a way of playing off of other people's ideas in ways that are...what's the word...just generally positive. He also is really good at process, he's really good at communicating, really good at creating opportunities for people to feel like they are empowered in the process and not just some lackey…He invites a lot of ideas, he is a really effective communicator and pulls people into the process in ways that give them an opportunity to be invested personally in whatever they're doing and he also is politically sophisticated. So he's able to help people understand the need to manage up and to think about the implications of the ideas that they have in ways that are helpful. But he also is so evidently committed to the mission of the institution and to the work that we do that it's hard not to feel like you're part of a good cause. That makes you feel like you're all together in something.

In addition to a commitment to collaboration, and a gift for helping others appreciate the benefits of this approach, a willingness to facilitate making personal connections between individuals in different groups is also a key factor in helping promote successful collaborations. Kathy Wilkins at the Teaching and Learning Center at UNE makes a conscious and concerted effort to reach out to colleagues in other units, which she sees as particularly important given that the groups are physically separated from one another and do not necessarily run into one another during the course of a normal day.

> I made an attempt to just go and talk to people, because...you know it's you people over there, and then Frank's group over there, and they were forced to come together...I basically go over there a lot and have lunch with them over there. Frank and Joan and I will go out maybe once a month to dinner. With Marta I'll go, hey, are you guys going to a show...Just something, some like interest or just hey what are you doing, do you want to go out, have a beer or want to go get some coffee or whatever.

While Kathy excels at bringing people together socially, Ann Francis, the VP at UMW emphasizes the importance of understanding the institution, the politics that are behind the relationships between potential collaborators, and the extent to which they are ready to collaborate with one another. Particularly at the VP and Director level, recognition of the politics of a situation can help identify opportunities and challenges early on, while at the staff level, an ability to make personal connections, as Kathy Wilkins demonstrates, is a tremendous asset to promoting successful collaborations. Individual capabilities will always play a role in the success or failure of any organizational venture; however, based on the data in this study, it appears that institutional collaborations are particularly dependent on the passion and aptitude of individual staff members rather than having institutionalized capacity. Brian Huddleston, the Director of the TLC at UMW, articulates

this recognition of how much the success of collaborative relationships is based on the luck of the draw in terms of having someone in place who has these skills.

> Too often partnerships or other sort of ways of working with others are subject to the personal capabilities of the individuals versus a recognition that there are some ways we can learn from an academic sense of how one could carry out better partnerships.

Jessica Lane, clearly one of the most highly collaborative individuals identified in this study, understands the importance of having colleagues who both value collaboration and possess the "soft skills" necessary for collaborative relationships to thrive. She says that her success in assessing people's collaborative skills as part of the hiring process is

> one thing that I'm proud of as a manager. I think I've done a good job there. I've had a couple missteps, but overall...we've got some good interview questions and we really look for that type of activity in their previous work and if they can use that language of collaboration about roles and responsibilities and things like that. I think we've done a good job here.

In order to enhance the collaborative capacities of institutions, leaders, directors and managers could benefit from a more nuanced understanding of the benefits of having highly skilled collaborators, which will require hiring processes that allow managers to more effectively identify what proficiency in collaboration looks like.

Institutional Characteristics

Based on analysis of the data across the cases in this study, there are a number of characteristics at the institutional level that influence, either positively or negatively, the success of collaborative projects. These include: the availability of resources to support collaborative projects, the degree of organizational and physical proximity, the alignment of institutional processes such as budgeting and finance between units, and the presence of suitable rewards and recognition for units and individuals who engage in collaborations that support the strategic priorities of the institution.

Availability of Resources

The availability of additional resources to support the project is one of the factors promoting the success of collaborative projects and ultimately the collaborative relationships behind them. As discussed earlier in the section on collaborative phases, the pursuit of resources can even act as an impetus for embarking on collaboration, such as when collaborative partners, or potential partners, pursue grants or other outside funding in order to support their academic technologies initiatives. Whether or not the sole impetus for a project was the possibility of grant funding, the availability of additional resources covered numerous expenditures including staff time, faculty incentives for participation, travel to conferences, and equipment. Les Hill described how having those resources freed staff to concentrate on the content of the project.

> The grant was sort of a surplus of resources. That gave us a…common mission and some resources...all those questions already resolved…So we had this cohort and it was just a matter of working with those faculty together, but it was the additional grant money that allowed that to happen. And when the grant money goes away, well...

When Adam MacDonald was hired to be the Director of the Center for Teaching and Technology at UNE, he was charged with integrating three existing units and a new Teaching and Learning Center into a single organization. The fact that he had significant resources to accomplish this task made the integration palatable to staff who were dubious about the necessity of changing the organizational structure of their units. MacDonald says

> So I was extremely lucky when I first came here. I had a war chest of millions of unspent dollars to launch and do things and make changes. All the resources, all the money I needed, it's sort of a dream position in many ways to have all that. I've been able to hire and grow the organization probably by about 33% since coming here.

However, the current budget woes facing all three institutions impacts the availability of resources to devote to collaborative projects. Fred Bergman describes the effect of dwindling resources on the ability of the Office of Academic Technologies to pursue collaborations:

> [Collaborations] kind of ebb and flow depending on staff resources and priorities within the units. The last couple of years I think everyone's been challenged because we're all working with fewer resources, partnership takes time and resources, those are hard to come by these days. So it's been more difficult, though the need to partner is greater, the ability to do it is strained.

The negative impact on collaborations during tight budgetary times goes beyond merely the loss of financial resources devoted to specific projects. It also can affect the perspective of those involved in the collaboration towards the relationship itself because of a perception that sharing credit for accomplishments with another unit can be risky when cuts are likely. Fred Bergman says that "especially with limited resources people start to get very...they want to hoard their resources and they want to demonstrate their value as over and above anyone else's."

The relationship between scarcity and an unwillingness to commit to collaborative relationships is not clear cut, however. For others in the study, the opposite was true. Jessica Lane believes that "collaboration and partnerships are being positively affected, because I think at a time of decreased money people realize that if you work together you can sometimes get what you want when you can't by yourself." It is unclear which perspective dominates. More research is needed to better understand how and why individuals at institutions with long-standing and robust collaborative relationships are more likely to respond to budgetary challenges by working more closely with their collaborative partners to achieve institutional goals rather than pushing away from them

in order to emphasize their indispensability to upper level administrators wielding the budgetary axe.

Organizational Proximity

The ability for groups or individuals to collaborate effectively is made more difficult when different functional areas of an institution are separated by silos that are largely defined along organizational reporting lines. One of the UNE staff members in the Teaching and Learning Center commented: "Everybody has their own little silo. And I don't know why we do it, but we do it. It's worse in academics. What it takes two weeks to do in industry, academe could take two years, if then." Territorialism, rigid enforcement of hierarchy, an unwillingness to share resources across groups, and requiring potential partners to "jump through hoops" in order to get permission to move forward with a project can stymie the growth and development of initiatives involving several groups. One staff member at UMW complains that even at an institution where collaboration is encouraged to a great extent,

> There's just such an elaborate number of hoops that you need to jump through in order to begin anything or to make things happen. So you really have to, not so much in doing the actual work itself, it's getting the opportunity to do the work."

Organizational proximity, on the other hand, is marked by transparency, open lines of communication, and a shared sense of mission, all of which enhance the ability of groups to work together. A staff member in the Office of Academic Technologies at NSU acknowledges the challenges, but believes that they strive to overcome them:

> It's a very complicated structure that we have here at the university. And we really do our best to bring a kind of transparency and openness to this work and always be, you can't always catch it, you don't always know when other people are trying to achieve some of the same goals that you are.

While there is not a single solution to the problem of silos at higher education institutions, there were a number of strategies used to enhance organizational proximity between academic technologies units and groups responsible for teaching development at the universities included in this study.

Most notably, and perhaps most drastically, was UNE's integration of three academic technologies units and the Teaching and Learning Center into a single organization. The manager of one of those units described the situation prior to the merger: "I reported to the provost. And we had an instructional computing group that reported to the CIO…It was a bit of a wall, and although Nancy and I worked well together, there was not one consistent concept." When the Director of the TLC was interviewing for her position, Adam MacDonald described what he was hoping to accomplish by bringing the groups together: "This is a unique model, most campuses are siloed, they're not working together, they're very splintered, it's decentralized…" MacDonald himself said that "when they are all separate groups, you're constantly fighting battles to bring people along." Later in the same interview he discusses the advantages to a merged organization:

> If you've got three separate organizations, say facilities, faculty development and support and technology. Then each of them have their own priorities, their own strategic plans. And in some cases they may overlap and you get productive interactions between the three. In cases where they don't then there's a lot of work in convincing the others to provide support because it's not my top priority to do that. The difference here is having all three or four organizations under one roof is that we come to a consensus agreement beforehand on what the priorities are. So we're all working together.

Short of merging into a single group in order to promote organizational unity, there were several other less drastic strategies used to increase organizational proximity, including having dual reports at the director level, as at UNE, dual reports at the staff

level, as at UMW and NSU, or close professional relationships between upper level

administrators in different reporting lines as at NSU and UMW. At UNE, Adam

MacDonald, the Director of the Center for Teaching and Technology, reports both to the

CIO and to the Provost, representing both IT on campus and Academic Affairs. While

many would view having two separate bosses in different areas of the administration as a

trial to be endured rather than an advantage, MacDonald is sanguine about his position,

which he describes as "a neat role [in] that I dual report to the Provost and the CIO."

When questioned as to whether he considered having two bosses really a benefit to his

position he replied:

> I love it because I'm bridging two sides of an institution. I'm an information
> conduit between both, I have expertise and know people on both sides so I'm in
> demand in that respect, and I have two great bosses, and I tell them what to do. A
> little facetiously, but in all honesty they brought me in for my expertise. I'm
> driving a very strong agenda, and usually pushing them rather than them pushing
> me.

Having a senior administrator who can withstand the ambiguity of reporting to two

bosses is probably not easy to institutionalize—it works in this case because of congruity

between Adam MacDonald's personality and those of his bosses the CIO and Provost.

But when it works it does provide a significant benefit to the institution and its ability to

create meaningful connections between the technological and pedagogical areas of the

institution.

Less formalized but still strong relationships between the upper level

administrators responsible for academic technologies and faculty teaching development is

an alternative to having an official dual reporting structure are. At UMW, the Director of

OAT and the VP to whom the Teaching and Learning Center reports were co-PIs on a

major grant. That experience helped create a connection between the two units. NSU

provides a particularly strong example of the benefits of close working relationships between senior level IT administrators and the Provost's Office. Paul Cartwright, the current Vice Provost for Academic Affairs, has developed a close and mutually rewarding relationship with both the CIO and Ann Thompson, the Director of the Office of Academic Technologies. Ann Thompson believes that without a strong connection her office is hampered in their work. "I don't think we can do our work…advancing teaching and learning through the use of technology without a very close relationship to the Provost's Office and the Vice Provost for teaching and learning. It's absolutely key." And she contrasts her experience with Paul Cartwright and the previous Vice Provost.

> Early on when Paul took the role we talked and you said I've got a lot to learn, and we said, great, if you're willing to learn, we're willing to work with you, however you want. The previous one…we tried and tried, but frankly…I don't think we made any big campus any real progress on campus because we just never really got together on looking at what we could do, and actually digging into things working on it…We'd start things and we'd go a little ways and it just didn't work.

Paul and Ann worry about what will happen when the next person comes in to fill the Vice Provost position when Paul's five-year term is complete. Ann suggests "some more official recognition of the connection" to the Provost's Office, but Paul reminds her of the unpredictability inherent personal relationships: "And then if…you get the next person in, maybe you wouldn't even want that connection, 'cause then you're stuck with whoever's there." Paul is particularly skilled at connecting with staff outside of academic affairs, but those relationships are dependent on his particular relationship-building skills and the connection is vulnerable when the leadership transition occurs.

Another strategy used to improve organizational proximity—with varying degrees of success—are dual appointments for staff. At UMW about ten years ago Eleanor Francis, who is now the assistant CIO, was serving as a Vice Provost with support for

distance education in her portfolio. She was interested in encouraging the Office of

Academic Technologies and the Teaching and Learning Center to work together more

closely, so she funded two positions as joint hires between the two units. After a search

Les Hill and Robert Rector were hired to work half-time at each office. After several

years both decided to move to the TLC full-time because "being in both camps for a long

time is really hard," but although the experiment was not lasting, it did achieve the

original goal of strengthening the connections between the two offices. Fred Bergman

describes the experience

> So one way in which Linda and the director of CTL at the time tried to cement
> their partnership was through joint positions, which are a bad idea. Those don't
> work, but they did enable us to develop really effective personal relationships
> across our units, team member to team member, which is part of the strength of
> our collaboration with them.

The connections remained strong between Les, Robert, and the staff in both groups, and

some years later Les moved back to OAT full-time.

Joint appointments at NSU have perhaps endured longer because they are

structured slightly differently. Unlike at UMW where the dual-appointment staff literally

split their time between the two offices, including attending two sets of staff meetings, at

NSU staff with joint appointments spend their time at a single office. Ben Lieberman said

"my job is a single job, but I just happen to have two groups and it gives me some

flexibility." Lieberman, who has appointment with OAT but works in a discipline-based

teaching center, believes it is a model that can contribute to more effective

communication across reporting lines as well as promoting creative approaches to

teaching and technology.

> So I think [co-appointment] has worked really well for me...It does two things, it
> requires that you communicate with both groups, you can't say, I'm not going to
> talk to you, which can happen if you're in one group or another. And the other

thing it does is it gives that person just a little bit of wiggle room to try different things. So there's room for innovation, 'cause there's always just this slip, there's a fault line between the two where you can slide back and forth and try new things that would be hard to do in either one of the organizations.

Dual-reporting structures can certainly be challenging to both staff and managers, but the positive experiences at all three institutions in this study indicate that they can be an effective strategy for encouraging closer working relationships. The data in this study suggest that reducing the detrimental effects of silos and strengthening organizational proximity between academic technology units and teaching centers strengthens the ability of higher education institutions to promote academic technologies initiatives.

Physical Proximity

In addition to having the organization structured to more easily promote interactions between units in different reporting lines, physical proximity, or more specifically the lack thereof, is a major challenge to building and maintaining on-going collaborative relationships. Solving the problem of physical separation, which hinders the ability of colleagues from different units to engage in frequent and informal interactions, was by far the most consistent suggestion from staff at all three institutions of how to improve the capacity of groups to work collaboratively. At UMW, the TLC has recently moved to the outskirts of campus, and their distance from the main part of campus where OAT is housed is problematic. Les Hill described the impact of the move:

> So I have to make appointments if I'm going to see my old colleagues, because we're fifteen minutes apart. So during the grant we'd go to meetings and we made sure that half of them were at TLC and half of them at OAT. But we'd just walk about half a block across the street. And that makes a huge difference because you can drop in. Proximity is a lot. So, that would be a big...it's unfortunate that CTL has been put on the periphery. And I think they would all think that too.

At UNE, the units that have been brought together to create a single combined organization, are still largely separated physically, which makes the reality of integration,

buoyed by frequent interactions between the staff in the different units, more difficult. Kathy Wilkins, who makes such an effort to go and have lunch or otherwise engage with her colleagues in other buildings, expressed her desire to have the groups in closer physical proximity:

> Within our department, something that I could change, physically we need to be all in the same [location]. [They] should not be over there and us over here. But that's the way it has to be. We need to be closer in proximity.

Her boss, the Director of the TLC, sees the challenges that physical separation imposes on their goal of presenting a single, cohesive organization to the faculty: "So how do you present this as a unified group to the faculty when it appears somewhat fractured at least in a physical sense?" Unfortunately, given that space is at a premium at many institutions, making significant changes to the physical environment, such as moving faculty support services to a single central location, is unfeasible, particularly in these difficult budgetary times. Still, institutions should consider steps that would allow greater physical proximity to units that have missions that overlap in order to promote greater collaboration between those groups.

Alignment of Organizational Processes

How business processes, such as budgeting, project management or billing for staff time, are structured across organizational units can impact collaborative success. While different ways of working may not make collaboration impossible, they can make it more difficult. At UMW, Jessica Lane was particularly frustrated by the differences in how budgets were handled between OAT and the TLC, an issue that had occupied a considerable amount of her attention during the six years of managing a large scale grant for which the directors of the two groups were co-PIs. She said: "their budget people worked differently than mine...Because it was on the academic affairs side, I had to learn

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to work with their budget person to get it transferred to our budget and they had different processes." At NSU, the very decentralized system for funding IT projects means that most IT projects need to be charged back to a client's account. The need for IT staff to be able to account for their hours and enter a billing code next to those hours creates a challenge when going outside the IT organization. Although staff in the Office of Academic Technologies are given more latitude in terms of being able to spend time interacting with other groups on campus, for other IT staff it can be a disincentive for getting out and connecting with people on campus, which in turn contributes to a perception by those outside of IT that they are isolated and do not make the effort to understand the needs of faculty, staff and students. Daniel Shaw of OAT sees long-term and on-going implications of the billing system despite attempts from leaders in IT to encourage more interaction with the campus as a whole.

> There's been a push from [the CIO] to connect more with the campus. He sees us and OAT as really having a leadership role in that because we've already done it. But I think it's going to be difficult with that structure in place to make that happen, so it's going to have to be a pretty big shift to get people out there.

Academic technologies groups sometimes struggle to integrate their ways of working within their own parent organizations, the centralized campus technology groups. For example, at NSU the Office of Information Technologies adopted a project management process that was structured around the needs of a more traditional IT organization rather than to the needs of academic technologies or higher education. Ann Thompson described the planning process being used as "very IT focused." She continued "[it] makes no sense to us, but we spend hours on [it]…[the process is] totally focused on planning for technology. We don't really need to plan for technology and so…they don't even know what to do with the work we do." Similar challenges were

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found at UMW and UNE where processes were structured around the needs of the more

highly technical parts of the organization. This topic will be discussed in greater detail in

the section that focuses on the mission and role of academic technologies units within the

larger context of higher education institutions.

<u>Rewards and Recognition</u>

The need to learn more effective ways of judging collaborative skills during the

hiring process was discussed earlier in this section. Similarly, if university leaders want

to build institutional capacity for engaging in successful collaborative projects, it is

important to provide rewards and recognition to those who are skilled in encouraging the

development of collaborative projects and relationships. During interviews when asked

whether collaborative skills were rewarded during annual reviews, the most common

response was that those sorts of behaviors were expected rather than singled out for

specific reward. At UMW, Jessica Lane has specifically included collaboration as a part

of the performance reviews for her staff for some time; recently OIT as a whole have

adopted similar approach. Eleanor Francis, the Assistant CIO, said that we have designed

"a new…performance evaluation within our Office of Information Technology and it

specifically calls out collaboration and teamwork." A number of participants in the study

identified being asked to serve on committees of strategic importance as evidence of their

contributions being recognized by either their superiors or by those in other parts of

campus.

By far the most commonly mentioned reward for participating in successful

collaborations was being given the opportunity to travel to conferences, especially when

co-presenting with collaborative partners. Of course, one of the benefits of sending

collaborative partners to conferences together is that it can act not only as a reward for

past performance, but it can also spark further collaboration. Jeff Hughes described his

and his colleagues experience with a large grant project that they worked on:

> It was certainly a good project, and we got recognition for doing it, we got a number of publications and presentations out of it, we got to do some travelling, some conferences and things like that. So to that degree we were definitely rewarded for doing it.

Several study participants wished that the benefits of this sort of travel were more readily

recognized and supported by administrators. One instructional designer said "I'd spend

the money…and jointly send them to Blackboard conferences…to EDUCAUSE

together." A bit later in the interview she returned to the same theme.

> "You know what happens at conferences. It's just a good environment to relax, learn and share and network with other schools. And it sparks just a ton of creativity…Usually you come back if you've just gone by yourself and say hey, I saw this great idea, and people go, they look at you like, get out of here. But, if you send representatives from each area, the techies, the teaching professionals, the faculty, send them all, they go, bing! We could do that!

Ultimately, however, the professionals in this study were most motivated by the less

tangible rewards of collaboration. Fred Bergman perhaps expressed this feeling most

eloquently:

> For us the rewards are intrinsic to the nature of collaboration, being able to develop that kind of good working relationship with someone outside the unit, doing good work, that you recognize is going to be better because of the collaboration than without it.

This sort of intrinsic reward will always be an important element at a mission-driven

institution such as a university. However, the evidence shows that recognition and

rewards reinforces the value leaders place on collaboration and has a positive impact on

the continued expansion of collaborative projects at an institution.

Characteristics of the Collaborative Relationship

In addition to collaborative skills displayed by individuals and institutional structures that support or discourage the development of collaborations, there are characteristics of the collaborations themselves that indicate a likelihood of success. These include:

- The importance of the collaboration being driven by substantive reasons for working together;

- Finding a balance between a better end product and the efficient use of resources;

- Having the benefit of strong connections both horizontally and vertically across the organizational hierarchy;

- Having an appreciation of the cultural differences between the more technically and the more pedagogically oriented groups in the collaboration;

- Having clear definitions of the roles of the collaborative partners where there is overlap;

- Having a shared vision for the role of academic technologies in promoting teaching and learning in higher education; and

- Mutual respect between the collaborative partners.

Substance-Driven

Successful collaborations are the result of meaningful projects that spark the interest of and draw on the expertise and skills of all partners. The data from this study clearly indicates the importance of having a clear framework within which the collaboration functions. Les Hill from UMW articulated this by saying "common projects

really create the structure for you to work together." His colleague Fred Bergman

concurred: "I think project-focused collaborations are where it's at." He continued:

> Trying to get collaboration in the abstract going isn't really very useful…So things like the grant [project]. Finding priority programs that you want to staff across units because it makes sense to do that. Not for the sake of the collaboration but because you put the program together in such a way that it really calls on the best talents of both units. That's where it's at.

On the other hand, a lack of substance can create a sense of unease, even when the

partners are enthusiastic about the theory of collaboration. In cases such as these, the

framework around which a collaboration is organized is so vague as to leave the

collaborative partners unsure of their roles. Ann Thompson at NSU illustrated this

struggle in describing their relationship with the library:

> The director of the library has said…let's work as partners, and we go, hmm...I wonder what that means…He keeps saying...our future is our partnership, and we're going, what's that mean, what's that mean? We're constantly trying to figure it out, we love it, but we're not exactly sure what it means.

Worse is when there is a "mandatory partnership" where you are "commanded to

partner" with another unit and as a result you "end up having a lot of meetings and not

really doing anything because there's not enough substance to ground the collaboration."

Shared Vision and Sense of Mission

Having a common vision of the fundamental role of academic support

professionals, whether they are primarily focused on technology or pedagogy, contributes

to successful collaborations. Participants across the cases included in the study agreed

that a shared commitment to furthering the mission of the institution through assisting

faculty to improve instruction. This commitment encompassed a client-centered

orientation, as well as an understanding that without connecting technology to a

pedagogical base academic technologies would never be able to transform the

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educational process. Robert Rector at the TLC at UMW described sharing a belief in the

importance of grounding technology in pedagogy with his colleagues at OAT:

> I think one of the things that makes it successful is this sort of shared pedagogical
> vision. I mean, we are all on the same page…in terms of the importance of
> pedagogy and good design practices, you know, technology being a tool, but not
> being the thing that should lead any kind of an effort, right? Looking at
> technology with some healthy skepticism and making sure that you're really
> thinking about what the learning outcomes are before you dive into something. I
> mean, we absolutely shared that, and so, I mean, it made working there really
> easy. I think if…that vision wasn't shared, it would be really hard.

A staff person in the TLC at UNE echoed the belief that a broad commitment to

improving teaching and learning was crucial and if the technology staff have the attitude

that

> My job is install certain software no matter whether you want to use it or not…I
> don't need to figure out how you use it for teaching and learning. Then it's not
> possible for us to collaborate because we don't have the same vision for using
> technology for teaching and learning.

One of her colleagues in academic technologies, who was initially relatively

dubious about the need to merge the different groups at UNE into a single organization,

was eventually convinced because he realized that the staff in all the groups were

committed to going above and beyond to provide services to instructors, and even though

those services varied from group to group, by integrating they would be able to give

better service to their clients.

The data suggest that the degree to which staff in both groups were able to

articulate a link between the academic technologies initiatives that they were working on

to the broader mission and vision of the institution, had an impact on the commitment to,

and the eventual success of, the collaboration. A shared vision allowed the collaborative

partners to overcome cultural differences in order to achieve something that was of

importance to the institution as a whole. At NSU, the Vice Provost for Academic Affairs

was particularly successful at making a tangible link between the more local technology

initiatives and the larger institutional objectives. Derek Swanson of OAT said that the

Vice Provost would come to the meetings of CATS, their community of practice for

academic technology staff.

> We talked about his visions for teaching and learning, he saw that there was this
> greater agreement with what we were trying to do and what he was trying to do.
> And now he's one of our biggest advocates… he'll talk about what his visions for
> teaching and learning are and how they align with what kinds of initiatives are
> happening with technology.

At UNE where the Center for Teaching and Technology unites several academic

technologies units and the faculty center under one organizational roof, the Executive

Director believes that an advantage of the organizational structure that they have adopted

is that it will be easier to establish a consistent vision between units.

> The best way to describe the processes would be, if you've got three separate
> organizations, say facilities, faculty development and support and technology.
> Then each of them have their own priorities, their own strategic plans, and in
> some cases they may overlap and you get productive interactions between the
> three. In cases where they don't then there's a lot of work in convincing the others
> to provide support because it's not the top of my priority to do that. The difference
> here is having all three or four organizations under one [roof] is that we come to a
> consensus agreement beforehand on what the priorities are. So we're all working
> together.

Quality-Efficiency Balance

As discussed earlier in the section on the phases of collaboration, at times,

particularly during periods of budgetary retrenchment, making efficient use of resources

can be an impetus for engaging in collaborative work. However, efficiency was not

generally cited by study participants as a primary reason to engage in collaborative

projects. Instead, there was a belief that collaboration improved outcomes rather than

increasing efficiency. Fred Bergman described the benefits of collaboration: "what it does

is enrich the product and it strengthens the organization, but it doesn't make it easier or

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cheaper or faster or anything else like that." A good example of the struggle to maintain a balance between the quality of the final product and efficiency with which a solution is arrived at was in evidence at UMW when the advisory committee for academic technologies considered the best course for implementing an online survey tool that could be used by UMW faculty, staff and students. In the committee's annual report there was acknowledgement of the frustration that some committee members felt with the pace at which decisions were made. However, overall, even those who were frustrated during the process itself appreciated that the ultimate outcome of the project was superior to what would have been produced with a less inclusive process.

Horizontal-Vertical Alignment

Organizational alignment both within and across groups is crucial in order to create an environment in which collaborations can flourish. Within groups, there needs to be agreement between upper level administrators, directors/managers and staff as to the importance of a collaborative approach, the goals for the collaborative project, and understanding of the appropriate roles for each level within the hierarchy. Jessica Lane described how she sees her role as a director: "So I'm more of a process person and kind of the big goal and vision and then I hope the consultants are saying I'm pretty hands off. I don't try to get down to the details." She was there to assist when there were occasional conflicts between individual staff members, but generally she saw her role as helping staff define the project and provide a perspective on how the project fit in with the goals of the larger organization. At the same time, she expected her supervisor, the Assistant CIO, to help locate the resources necessary for OAT to thrive, offer advice on political relationships outside of OIT, and provide strategic vision. Problems were created when

administrators at the vice presidential level designed projects without seeking the

expertise of others in their group. Les Hill expressed his frustration with the first year of

their big grant project: "There was no input from those of us who were actually going to

be the people doing the work. So that first year, we were just putting fingers in the dam

the whole time." Alignment within a unit assumes good communication between the

different layers of an organization, transparency in terms of how decisions are made, and

agreement of the roles that each level within the organization play.

The data suggest that strong relationships across groups at a variety of levels is

particularly important in encouraging and sustaining collaborations. Horizontal alignment

across groups includes regular interactions at the level of Vice President or Vice Provost,

between directors or managers, and staff. For example, a senior management team that

meets regularly to discuss strategic issues around teaching and learning can have a

significant impact on the development of an integrated approach to academic

technologies at an institution. All three institutions in the study had examples of ongoing,

high-level discussions between senior administrative staff representing IT, the library and

academic affairs, and these interactions allowed the groups to align their strategic

planning priorities, a process that worked particularly well at UMW. On the other hand,

strained relations between leaders can create barriers. Alice Carpenter, the Director of the

TLC at UNE recalled an experience at an institution where she previously worked where

she and her colleagues made a collaboration work despite a lack of support from the

senior level administrators of their groups:

> My dean and the TLT dean didn't particularly care for each other. There was a lot
> of turf wars going on, and because he was responsible for the distance learning
> academic programming, she was responsible for the distance learning technology,
> and they didn't always play well together. [Which made it hard] for formalized

partnerships. So really what it took was staff just sitting down and saying we need to work this out. Let's get beyond the politics. We won't formalize anything, we won't talk about it, we'll just do it. The deans knew we were doing it, but as long as we didn't have a big hug-fest, then they were okay with that. It was just, do what you need to do, but we don't want to be involved.

Successful strategic initiatives around academic technologies were more easily established with the support and coordinated efforts of upper level administrators. However, close relationships at the director and manager level were also extremely important for the development of collaborative relationships between groups responsible for supporting academic technologies and faculty development around teaching and learning. The managers at UNE, for example, found that working to strengthen their connections, both professional and social, was crucial for the success of the ambitious program to bring together their separate groups into one integrated organization.

At UMW, the connections between staff members from the Office of Academic Technologies and the Teaching and Learning Center on the course redesign teams was an important factor in the ongoing development of the collaborative relationship between those two groups. The staff not only worked closely together professionally on course teams related to the grant project, they also socialized after work, sharing drinks and food at one or another of the excellent local microbreweries located in their city. In addition to connections that were organized around bringing together staff who were from different groups but at the same hierarchical level, there were also groups that had a mix of administrative levels, including staff, managers, directors, and upper level administrators. Vertically blending can provide a healthy mix of the strategic approach to and the practical applications of academic technologies, allowing each to be exposed to the perspective of the other as to the challenges and benefits of academic technologies for all levels of an institution.

<u>Creative Tensions</u>

There are differences in the professional lives of technical staff and how the work compared to their colleagues in teaching and learning centers, and the interactions between the two can both provide positive creative tensions, or sometimes can just lead to conflict. Fred Bergman talked about the "different cultural streams" that the two groups come from:

> You're coming from different domains with different priorities, different values systems really, that play out in this way...those can be really productive tensions, because that's where you can work towards a really interesting shared understanding of what matters to your institution across your units.

Les Hill, who has worked in both OAT and the TCL, said that there are "Very different ethoses in both places. One felt newer, the other felt older." A staff member from the Teaching and Learning Center at UMW described their differences in terms of how closely aligned to faculty vs. administrative culture the two groups are: "My feeling is that we're more like faculty in terms of our working environment and the kinds of stuff that we do than they are, right? They're more like an administrative unit."

Fred Bergman who works in academic technologies would agree that the teaching and learning specialists have roles that are closer to those of faculty in an important aspect: their commitment to scholarship. While the Office of Academic Technologies at the UMW is committed to conducting research on academic technologies and their impact on teaching and learning, Bergman believes they are unusual in the amount of resources their group devotes to this topic compared to similar groups at other institutions.

> Another element that is a difference the marks the two organizations is the degree to which they are scholarly. We are an exception in IT, being extremely committed to scholarship, but I see other IT units and [TLC] units at other institutions trying to collaborate and failing because IT doesn't get the

scholarship. They're not interested in that, they just want to play with new toys, so there's a mismatch there that creates tension that can be productive, but often is a barrier to really successful collaboration.

Bergman's colleague Jeff Hughes heads up the research and evaluation section of the Office of Academic Technologies at UMW. He agrees that their group has increased their focus on scholarship related to technology and teaching and learning, which he believes increases their credibility with the faculty that they work with.

> There's been an increasing call in the last five years for systematic investigation of the effects which is really good I think. I mean what is all this technology, how is it changing the learning environments for students and for faculty members. So we needed a systematic way of approaching those questions.

Further research will be needed to determine whether a focus on scholarly research related to technology and teaching and learning is being adopted more broadly by academic technology units on campuses or whether it is still relatively rare. While teaching and learning specialists may have a greater focus on scholarly work, IT specialists, on the other hand, tend to make greater use of metrics to measure their productive output. Because it is relatively easy to automatically measure how IT services are accessed and used, IT staff are accustomed to collecting and analyzing data of that kind, and they may not understand the hesitation of teaching center staff to collect the same detailed information about their client base for reasons of confidentiality. Fred Bergman commented on the prevalence of metrics in IT organizations:

> Metrics is another area. In IT because you can get a lot of metrics through systems and it matters to your leaders how much information is being consumed, what kind of information, where's it coming from, where's it going, what kind of resources.

One of the dissimilarities between cultures that can impact the ease with which collaborations take shape is attitude towards risk. IT groups are structured to be able to accept greater risk in adopting new technologies that may or may not ultimately pan out

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and accept that change needs to happen relatively quickly. Fred Bergman described the

differences between IT culture and the more faculty-centric teaching center experience:

> So how risk averse are you? What's your relationship to risk? What kind of speed
> do you work at? IT folks tend...and again we're talking generalizations...IT
> generally moves very quickly, is very risk favorable in certain respects,
> experimentation, change, failure are OK in lots of domains.

Jessica Lane found that the timeframe for decision-making with other groups in academia

was significantly different than what she was used to working in IT, but that the

intersection of two groups who had different comfort zones in terms of making decisions

and moving forward ended up being a positive experience.

> The other thing I noticed was a culture of consensus for decision making and
> discussing things in great depth, and the IT people, where we've got time lines to
> get it done, you get the best people in the room, you talk, you make a decision,
> you move. And that was a big difference…But it worked out…It got some of us
> to slow down a little bit and others had to get a little more comfortable with
> moving ahead a little bit faster.

Ideally the two groups working are able to make use of the creative tensions that emerge

through the intersection of the two cultural streams that they are immersed in.

Role Clarity

While addressing cultural differences in the context of collaboration can be both a

challenge and a strength, another significant challenge that was consistently cited by

nearly all participants in the study was the question of how the groups manage the

overlaps in their roles. While the academic technologies professionals and the

pedagogical specialists may have different approaches to their work with faculty, there

are inevitably areas of ambiguity around subjects where they share expertise. What, for

example, is the boundary between helping an instructor master an aspect of a

technological tool and addressing the pedagogical implications of that tool? An academic

technologies staff member addressed this issue: "I think that there has always been a

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concern…within both units. We've been concerned not to step on anyone's toes and to try to define what is our primary role and try to find opportunities to partner." At UNE where they were in the midst of merging groups into one organization, concerns about "stepping on toes" was particularly acute. One of the staff members at the Teaching and Learning Center described the tensions as the groups were learning to work together:

> When we initially opened this faculty center most people in CTT don't really understand why we need another unit to bring faculty members over. They don't see why it's necessary to build this new office and hire new people to come over…They want to know more about you, they want to know whether you have overlap with their own job. They don't want to feel the threat like you come over to replace me or something.

Her colleague had a similar experience working with staff members in the academic technologies group: "We're trying to team it up. And I'll tell you that there are people who are very territorial, and it's…but little by little we're breaking it down." The data suggest that conflicts over overlapping responsibilities is most intense during the period when groups are getting to know one another and are building trust. Successfully bridging the potential challenge of overlaps requires addressing the issue directly: "you cannot do this unless you define the roles and define the overlaps and create the models." Jessica Lane believes the time for organizations to find more creative solutions to the question of what is the purvue of technology professionals, and what that of pedagogical specialists.

> It think this dichotomy that you're either a learning specialist or a technology specialist is so 1988. They coexist now, and organizations are figuring that out. So organizations that came about because there used to be that dichotomy and so now when it's really mixed how do organizationally create that?

While recognizing the importance of collaborative partners addressing issues such as overlapping areas of expertise and defining the roles of each group, higher education institutions need find a way to approach this issue with greater flexibility. A later section

in this chapter will address the organizational responses to the question of overlapping

areas of expertise between the two groups, including the changing role and mission of

academic technologies units.

Mutual Respect

Beyond the somewhat abstract notion of shared vision, another characteristic of

successful collaborations that was evident from the data in this study was a sense of

mutual respect between the collaborative partners. A clear example of this is the

appreciation expressed for each other by two colleagues, Jeff Hughes of OAT and Les

Hill from the TLC. Jeff Hughes remarked:

> I was lucky enough to be on these teams with Les, so he was my collaborator
> from TLC on all of these teams, and I think Les is great and I thought he was
> really smart and insightful and it was really useful, especially in the early stages
> of the grant to have both of us there trying to have the faculty members think
> through what they wanted to do with technology.

For his part, Les Hill described working with Jeff Hughes in equally glowing terms:

> I felt like I learned a lot from Jeff and I think he got some from me, too. It was
> great to have someone else on a team like this, because we could triangulate. We
> were able to be good cop/bad cop with faculty and change up the roles. And when
> there were things I couldn't figure out, Jeff had his finger on it, and there were
> things that he would be puzzled about and I was glad to have something to do to
> figure it out. I think it was a very productive relationship.

The comments from another colleague from the TLC, Robert Rector, extended

appreciation beyond the relationship between two individual collaborators to the group as

a whole when describing the contributions of OAT to a recent collaborative project:

> They probably are national leaders in this stuff…Without them it would have
> been a really challenging project…I think we brought a lot too in terms of just
> familiarity with cooperative and collaborative learning…and also models of
> faculty development, which they do as well, but it's always good to have different
> perspectives.

On the other hand, there can be problems when the groups "don't see the value in what each other does." In particular, the academic technologies professionals expressed frustration that they were put in a "technology box." Jessica Lane, who expressed some frustration that her group was seen as technology experts who primarily would be called on to "teach the tools," nonetheless persevered and proved to their colleagues in the TLC that their perspectives extended beyond mere technical expertise.

> I will say that I think a little bit I was still put kinda Jessica knows the technology and maybe not the pedagogy. I was asked to do budgets and things like that. But that was okay because you just do your work and then they see what you can do.

Overall, a sense of mutual respect for the abilities and contributions of individual colleagues in other groups as well as what the unit as a whole offers to a collaborative partnership is crucial for being able to sustain an on-going collaboration.

In addition to appreciating the talents that collaborative partners bring to the table, another important characteristic of the collaborative relationship is a sense that the work is being shared equally, and that one unit is not shirking their responsibilities. One of the reasons that Robert Rector enjoys collaborating with colleagues in OAT, is that "they're hard workers over there too, like we are. And they pull their weight so it's really nice to work with them." On the other hand, if it is difficult to be confident that the other group will be able to follow through on their responsibilities, a director may draw back from relationship. While the individual staff in the TLC and OAT at UMW had full confidence in one another, such was not the case between the directors. Jeff Hughes described the situation: "Jessica has been very hesitant to partner with TLC since the grant because she feels like the current manager of TLC really sloughed off all the responsibilities off on her and was a terrible communicator." Jessica Lane herself expressed some frustration about the situation:

> [It was] more work for me. I had to really pick things up…I had to do a lot more management of our particular programs on this campus. And he just wasn't as organized as I'd hoped, so I was having to pick up the ball a little bit on things."

According to the data it was less important that work be distributed exactly evenly than that expectations were clear between the groups and collaborative partners were thoughtful of the impact of the required work load on their colleagues in the other group. At UNE, staff in the newly formed Teaching and Learning Center were conscious about the fact that the outreach that they were doing with faculty through the TLC could well create significantly more work for their colleagues in the other units of the CTT. They were also careful to avoid creating the impression with their new collaborative partners that they would be expecting the partners to do the real work that the faculty needed done. Jia Wu said that it was important that it was

> Not just us going out to bring work to them, we should also share their work. Otherwise they will say you guys just make more work for us and what do you do, just go and talk with people, and say hey, you do the job. You get all the credit, all the recognition, I will be the person doing the job. So they have to need each other. We should also provide some kind of value to the technical people.

David Thayer, one of the leaders of the Faculty Institute, worried that they did not contribute enough in their collaboration with OAT.

> To be perfectly honest, and I've told Angela this, it feels like the Faculty Institute is just getting a tremendous boost from OAT and we're not really repaying it. Because they're a resource not only for funds, but for ideas and people, running workshops and things like that, and what do we do? Well, we have folks like me who serve on some of their committees…And we use Teaching Academy events as a way to poll faculty about teaching and learning challenges...And that's kind of about it. And they think it's wonderful. I mean they're thrilled because they're getting much more response and feedback from a broader population, and I think it's nothing, but I love it.

In order to sustain a long-term relationship, collaborative partners need to be cognizant of the relative balance of contributions made by each to the success of the collaboration.

Conclusion

The previous section discussed the three categories of characteristics of successful collaborations. These are: characteristics displayed by individuals involved in a collaboration, organizational characteristics that support collaboration, and characteristics of the collaboration itself. Having individuals who were committed to collaboration as a way of working and skilled at bringing diverse groups together had a significant impact on the development of collaborations between Offices of Academic Technologies and Teaching and Learning Centers. At the organizational level, availability of resources to support collaboration, organizational proximity, an alignment of institutional processes between different groups, and the existence of appropriate rewards and recognition for successful collaborative outcomes were all important factors in supporting collaboration. On the other hand, a lack of physical proximity between collaborative partners was an impediment to the development of ongoing collaborative relationships. Finally, the significant characteristics for collaborations were: the importance of the collaboration being grounded in a substantive project; the need to balance improved results through collaboration with efficient use of resources; alignment within and between collaborative partners; an understanding of how cultural differences between the groups impact the collaborative process; addressing potential overlaps in terms of responsibilities and expertise between the collaborative groups, having a common vision for the role of academic technologies in higher education, mutual respect between the partners, and a sense that contributions of the respective units involved in the collaboration are balanced. An awareness of these characteristics and how they impact the development and sustainability of collaborative relationships on the part of institutional leaders, directors,

managers and the others involved in collaborations could help to maximize the success of the collaborative projects as well as the larger collaborative relationships. The final chapter will discuss some possible strategies that can be used to increase the likelihood of success in collaborations.

The Mission and Role of the Office of Academic Technologies

Introduction

The final section of this chapter addresses role of the Office of Academic Technologies (OAT) within the context of the larger institution. In particular, this section focuses on how OAT functions as a bridge between the larger information technologies organization, the Office of Information Technologies (OIT) and the faculty and the academic side of the university. I begin by offering a look at the gradual shift in focus in terms of services provided by OAT, including a transition from offering technical training (often termed "click here" support by the participants in this study) to a broader focus on pedagogy issues as they relate to technology ("we want to talk about why you would click anywhere.") In addition, there has also been an increasing commitment to assessment and scholarship, and a decrease in using resources to help faculty one on one, instead attention is paid to larger strategic issues that can have a larger impact. This section will also look at how OAT is perceived on the one hand by faculty as being too technically oriented, and on the other hand from within OIT as not technical enough. Perhaps as a result of not quite being seen to belong in either camp, OAT finds itself increasingly being asked to play the role of bridge between the two cultures, academic and IT. Finally, I will discuss the position of academic technologies within the larger organizational structure of the institution, and more specifically whether OAT should be

housed within the IT reporting structure, within academic affairs, or some hybrid of the two.

A Shift in Mission and Approach

There was remarkable consistency across the institutions in this study when looking at the metamorphosis of the Office of Information Technologies from a primarily technical group to one that was much more focused on larger pedagogical issues. At NSU Derek Swanson said of OAT's work in previous years, "it used to be troubleshoot your computer kind of thing" or helping an individual instructor learn how to make an image for a course Web site. For his part, Jeff Hughes at UMW described what his daily work consisted of when he began at OAT:

> So I started off doing things that were much more technical as the whole OAT did. We were initially doing a lot of work with faculty members and staff helping them with using academic technology but much closer to the ground. How do I get this to work in my CMS? How do I set up a Web page?...So OAT's mission had changed since I got here and certainly since it began and has become less technical and more the academic outreach part of things.

Jessica Lane and others on the staff of OAT at UMW believe that a turning point was when they introduced course redesign methodology which gave faculty a framework to think about their instructional needs beyond the confines of what a specific technology could offer.

Changes in one of the faculty development programs at NSU offers a more specific example of a similar shift from a focus on how a particular technological tool could be applied in an instructional context to focusing on addressing larger teaching challenges. Several years ago the fellowship program was organized around the topic of iPods, and how they could be used in the classroom. Faculty submitted applications describing how they would use iPods, and then spent the year implementing their

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proposal. Last year, by contrast, the fellowship program was organized around a theme of the challenges of incorporating group work into a class, especially focusing on ways to address students' distaste for engaging in groups projects. Technology, including wikis and Google docs, was incorporated into the program, but it occupied a different place in the structure of the year-long program. The decision at UNE to put the TLC at the front and center of their ambitious plan to integrate academic technologies units into a single organization provides another example of moving away from "click here" technical training to a broader conceptualization of the role academic technologies can play in addressing larger instructional needs. Kathy Wilkins described her approach to working with faculty:

> Basically I don't even [talk about technology]...I just ask what's the problem or what do you want to do, what do we need to accomplish, and I listen and listen and listen. And if technology fits into it, fine, but it's around their need and their skill and their teaching preference.

Derek Swanson is pleased with the direction that OAT at NSU is moving:

> We continue to push ourselves in terms of talking about teaching and learning and what's really interesting is that you now we talk about teaching and learning more during the course of a day than we really do about technology. And how many other groups on campus can say that, that they have that kind of a consistent conversation about teaching and learning.

Faculty, however, are not always enthusiastic about the shift. Derek continued

> So, within our group, and this is true for anybody who works in academic technology…you have to walk this fine line between, you have to feel out the person you're working with. How much can I talk about teaching and learning with you? And how much are you just seeing me as your tech support?

Moving to a More Strategic Approach

In parallel to the shift to a greater emphasis on pedagogy is a new emphasis on the role OAT can play in influencing the strategic directions of technology implementations at an institution. And in most cases, given the scarcity of resources on campuses,

academic technologies units must make choices about how to use their resources, which

means stepping away from intensive one on one support in favor of "a more strategic and

impactful way of working." Taking an active role in IT strategic planning, devoting more

staff resources to improving the usability of the campus LMS, or influencing the

development of the institution's technical infrastructure so that it reflects the real needs of

instructors are all examples of an increasing emphasis on the bigger picture. The

unquestioned advantage of this approach is that it allows a group to target the use of

limited resources in ways that will have substantial impact. However, the loss of some

hands-on technical support can also leave individual instructors without the support that

they need to make the most of academic technologies in their classes.

> My sense is given the resource strain that OAT wants to put more into programs
> and into course transformation and those kinds of things rather than single, this is
> how you make an image. I think that's a strategic move and it makes sense,
> although it may be taking a couple too many rungs of the ladder for a new user to
> become an advanced user…Whether or not people are going to be resourceful
> enough to figure that out on their own, I don't know.

While there are advantages to focusing on the larger issues surrounding the use of

academic technologies at an institution, including being able to reach a greater number of

instructors and students overall, institutions need to continue to evaluating the impact of

this approach on the ability of instructors to use academic technologies effectively in

their teaching. The need for assessment in this area has luckily been accompanied by a

parallel increase in evaluation capacities of academic technologies units, although it is

unclear the extent to which they are focused on the effectiveness of support programs.

Evaluation and Scholarship

Another trend that was observed across these three institutions was an increasing

emphasis on integrating evaluation of the impact of academic technologies into the

process of working with faculty on integrating technologies into their instruction.

Associated with this trend was expanded use of scholarship on examining the

effectiveness of academic technologies in improving teaching and learning outcomes and

an increase in the production of scholarship based on the collaborations between faculty

and academic technologies staff. Jeff Hughes commented that

> There's been an increasing call in the last five years for systematic investigation of the effects which is really good, I think. I mean what is all this technology, how is it changing the learning environments for students and for faculty members.

One tangible expression of the importance that OAT directors placed on improving their

unit's capacity to produce scholarship related to their work was the fact all Offices of

Academic Technologies hired staff whose expertise was in evaluation and assessment

and for whom that was the primary focus of their jobs, and one university had a group of

three who worked on evaluation and research in OAT. Jessica Lane, the Director of OAT

at UMW, was emphatic in her belief that incorporating scholarship into their work was of

tremendous importance:

> The only other final comment that I'll make that's been important to me as the OAT has grown is this notion of scholarship. That gets to presentations and publications...I've been very adamant that we are going to produce scholarship. We're not going to just do the service. I want us to be thoughtful about it, have questions, write it up, critique it, present it.

Her final comment on the subject summed up her thoughts of the necessary ingredients

for a successful academic technologies unit: "I think scholarship and collaboration are

two key things that you need in a learning technology area."

The increased emphasis on scholarship gave academic technologies staff

credibility when working with faculty who were already immersed in a culture of

scholarship within their disciplines, and who transferred that experience to their

investigations of academic technologies. Jeff Hughes commented that their commitment

to bring data driven evidence rather than just anecdotal stories about the effectiveness of

academic technologies in improving teaching and learning outcomes:

> Both Les and I noticed that at least for certain of the course teams and especially the faculty members within them, research mattered a lot to them in the sense of being consumers of it. So a lot of them really wanted to be convinced by hard data. And some of them were not narrowly focused on quantitative stuff but they wanted to see something systematic. They wanted to see systematic investigation, not just people making stuff up…

Faculty fellowship programs often included a requirement for dissemination of results or

sharing expertise by faculty who participate in development programs, however, it has

not always been easy to get faculty to follow through on this aspect of a program. In

addition to using scholarship to encourage faculty to commit to engaging in projects

involving integrating academic technologies into their teaching, academic technologies

staff have also found that encouraging faculty to produce their own scholarship is an

effective way to tap into a cultural value because it "speaks to the rewards system that

they're familiar with..." David Thayer from NSU commented that especially for faculty at

research institutions publications have value even if they relate to the scholarship of

teaching and learning rather than one's discipline:

> And this is the way we sell it to the R1 faculty, because it's research you can get it published, and maybe it doesn't count as much as research in your field, but it is research, and really the way you should approach your teaching is the same way you should approach your research.

> Finally, having the capacity to perform rigorous evaluation of academic

technologies initiatives can help support the shift of academic technologies groups from

acting primarily as technical training groups to providing strategic support about how to

best approach the integration of academic technologies into the institutional structures of

higher education.

Still Viewed as "Techies" by Faculty

Despite the increased commitment to pedagogy and a decreased emphasis on

technology for technology's sake, academic technologies groups still struggle with the

perception by faculty, academic affairs administrators and even their colleagues in

Teaching and Learning Centers, that they are still primarily focused on technology at the

expense of having a broader perspective on teaching and learning. Fred Bergman from

UMW commented that "one of the things we struggle with is the faculty perception of us

as techies," a complaint that was echoed by academic technologies professionals at every

institution and at every organizational level. The Vice Provost of Academic Affairs at

NSU admitted that "when I first took the job…I really had never thought about

technology stuff. So I assumed that they were doing it poorly." And to him "doing it

poorly" meant that he believed that OAT's approach was very technology driven.

Looking back he realizes that he did not recognize that Ann Thompson, the Director of

OAT, was much further along in a commitment to teaching and learning over and above

technological solutions than he had imagined.

> So my initial conversations were, is there some way that your people can be
> teaching and learning consultants who happen to have a background in
> technology, rather than the other way around? And she, and this is where I think
> she was more generous, she treated me as if, what a great idea! Now I realize
> they'd been trying to do this all along, but they didn't have someone in my
> position to help with that. So a lot of our work has been that, how to position their
> work right, what's the role of the teaching academy to help in that process, and
> stuff like that.

Ann Thompson and Paul Cartwright the Vice Provost have built a strong relationship

through the willingness of each to reach out and work on building connections between

OAT and academic affairs, but Ann still recognizes that there is more work to be done to

change the perception that OAT is primarily a technology-driven unit: "because we're a

part of the IT organization we're perceived as being technology focused and technology experts and...like technology is where we start."

The Perception of the Office of Academic Technologies from within OIT

Ironically, for a group that was seen as too technical by the faculty and academic affairs, from within their own organization, they were dismissed as not technical enough. Jessica Lane discussed the contrast of how OAT is viewed within OIT compared to from outside the organization: "But then over here we were kind of seen as the group that didn't really know anything about technology because we weren't programmers and we didn't know the back ends and we just knew about teaching and learning." Her colleague Jeff Hughes expanded on this theme:

> The administrative stuff is the meat and potatoes and the academic stuff is still perceived by a lot of people in OIT as sort of frills. It's all very nice to have, but…they think what we do is kind of frivolous, make it look pretty kind of things.

The sentiment that academic technologies staff feel that their role is not understood or appreciated by their colleagues within the information technology organization was remarkably consistent across all institutions in the study. Nonetheless, they also believe that they have a unique role to play within OIT, which is to remind the IT specialists of the larger mission of the institution. Ann Thompson at NSU sees their task as

> Try[ing] to see that the large IT organization continually recognizes that it's part of a university with an academic mission. Because it's really easy to get stuck in administrative systems and technology infrastructure and sort of forget what it's for.

Similarly, her counterpart at UMW sees her role as providing a link within OIT to the teaching culture "which is less apparent and maybe less valued in other areas of OIT." Ben Lieberman at NSU argues that OIT staff need to cultivate a more well-rounded

understanding of higher education in general and the institution in which they work in particular:

> We've been trying to push to make sure that people inside of DoIT aren't so insular. Because there are certainly plenty of them who have never talked with anyone outside of DoIT. Or almost never, and if they did it was somebody they happened to meet someplace else probably.

Because the focus of the Office of Academic Technologies is not as technical as the rest of the larger IT organization, academic technologies staff often feel as if their presence in the organization is viewed with a degree of puzzlement, if not actual suspicion.

A Bridge Between IT and the Campus

In spite of the fact that staff within OAT often feel misunderstood by both the IT and academic sides of their institutions, or perhaps because of it, they also see themselves as occupying a unique position, functioning as a bridge between IT and the campus. Staff from all three institutions described an almost identical view of their roles using a variety of different words: "translators" "bridge" "liaison" "interface" "feedback loop" "front door to the [IT] organization" "front face of the organization to the faculty" "liaison between OIT and the campus" and "we're the ones who…negotiate between OIT and the faculty." Sometimes playing the role of translator can be exhausting, although the staff are able to keep a sense of humor about their position:

> They [academics and IT staff] don't speak the same language. So that's a little bit of why things get a little whacko and why the coordination and collaboration piece can be touchy…You're trying to please the folks from campus, and you're trying to make it easy for the folks in other OIT services to provide services for the campus. So, you know, there's days where it's a big bucket full of crazy.

In at least two of the cases, providing a connection between faculty and IT was a motivating factor in the establishment of the Office of Academic Technologies. Adam MacDonald, the Executive Director for the Center for Teaching and Technology at UNE,

wants the faculty to be able to have a single point of entry into what can seem like a

complex and confusing organization to outsiders:

> I'm structuring the organization, from a faculty point of view. One of the issues in
> big organizations—we have close to forty staff—is intimidation by size and
> complexity. A faculty member comes to this organization and says well who the
> hell am I supposed to talk to? Where do I start? I'm positioning the faculty center,
> from the faculty point of view, as the front door to the organization.

Similarly, Jessica Lane described her former boss, the VP at UMW at the time OAT was

established, as a

> Visionary. He understood. He wanted people in his organization who know how
> to work with faculty. And he also knew if he had a part of his organization that
> could work well with faculty that would make it easier for the rest of the
> organization. So when there were bumps in the infrastructure, the faculty wouldn't
> be perhaps as harsh or critical.

In addition to explaining to the faculty how the IT organization works, OAT is also in the

position of explaining faculty needs to OIT, which can have a positive impact on the

development and implementation of IT initiatives. Jeff Hughes explained the role of OAT

in a recent roll out:

> We had a huge influence on which program was chosen, our unit did some
> systematic work on it, and found all sorts of serious problems with its usability,
> many of which we were actually able to correct, just in terms of the language it
> used that confused people…So that was good.

When OAT staff are able to create a personal connection with the more technical

individuals in the organization and gain their trust, the "techies" are more likely to solicit

the opinion of academic technologies professionals in their role as proxies for faculty. Jia

Wu at NSU describes the results of the relationship that she has built with a member of

the technical side of CTT:

> And now if they ever want to purchase, or add features to that program she will
> ask me for my input. Like do you think faculty will like this? Do you think it's
> useful? So it's not just hey, this is really cool gadgets, and let's get it...instead of

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that they come to me and say, hey, what's your experience with survey design, do you think it's useful, worthwhile, so they want to get my feedback on that.

One strategy used in Offices of Academic Technologies for encouraging closer connections between faculty and academic technologies staff is the practice of hiring staff who have earned Ph.D.s, have expertise in an academic discipline and experience teaching at a college or university, sometimes in a tenure-track position. Jessica Lane at the UMW is committed to hiring staff who are deeply immersed in academic culture. She explained:

> My experience had been I hired a couple people who were pretty traditional [in terms of using] instructional design process and language. And from my observations it was a different language and methodology than the academic faculty is used to. So I shifted hiring to people who were on a tenure track and decided they don't want that tenure track for whatever reason.

One of the members of her group reflected on the background of the OAT staff:

> We were all humanities grads. I would say that none of us had a big technology bent when we got into this. We were all teaching centered, but then we all sort of learned the technology. And I think because we had a common ethic, and values, and I think all of us believed in the land grant mission of the university...that I think really helped. Jeff and Fred are both philosophy guys and Robert and I were both in the English department. It just kind of made sense.

Ann Thompson at NSU described her staff in similar terms: "Biology, communications. We don't have any technology people." At all three institutions most of the staff in OAT either held doctorates or were actively pursuing them, and as a result "are committed to scholarship and see faculty as peers and that's not true of most IT organizations." There is a recognition on the part of academic technologies staff that faculty are able to more easily connect with technologies staff with whom they have a shared background in academia and common experiences of life in the classroom. As Jeff Hughes commented about working with faculty, "if we were twenty-five years old with a master's in something technical" and wanted to discuss teaching and learning issues they would

likely respond "who are you to advise me on my class, what do you know about this?" Jia Wu, another academic technologies professional, said instead that "because I have that kind of teaching experience, I know their frustration, their needs, so it's better for me to communicate with them when I have that kind of experience."

Finding the Right Fit: Academic Technologies Units

Within the Organizational Structure

Having staff within academic technologies units who are well-versed in academic culture contributes to the ability of the unit as a whole to play a mediating role between the larger IT organization and the academic side of campus. Where the Office of Academic Technologies is positioned within the organizational structure of the institution also plays a role in how effectively they are able to navigate between the two cultures, academic and IT. Analysis of the data collected during the course of this study clearly indicates that both the leadership and the staff in academic technologies units have thought extensively about whether the unit should belong to the larger IT organization, or be more closely tied to academic affairs. Lisa McCormick at NSU described the ongoing debate within their office:

> There's usually once or twice a year where [the director] and I look at each other and we go, what would it be like to have this office out of the office of the provost, because we'll hit some huge barrier with the perception that we're central IT or within our own organization.

But, later in the interview she explained that the benefits of being part of the IT "family" outweigh other considerations because "[IT] can be hard to crack if you're not sort of part of them."

> We always end up saying that there's more advantages even though we working more closely with the library and the provost's office and other academics, we always come back to, it would be so hard to have the doors open in the technical areas if we weren't part of this organization.

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Despite questions about whether being part of the Office of Information Technologies is the right fit, all ultimately agreed that without that affiliation, the academic technologies unit would be less successful in carrying out their mission, and that OIT would also be weaker. Nonetheless, there was also widespread agreement on the importance of also having a strong connection to academic affairs. At NSU a close partnership that has developed between the Director of OAT and the current Vice Provost for Academic Affairs has significantly strengthened the interplay between faculty and IT on the campus. However, it is an informal relationship based on collegiality rather than one that is institutionalized, and there are worries that when the Vice Provost returns to the faculty in the next couple of years those gains will be lost. The Director of OAT, Ann Thompson, reflected:

> I guess my hope would be that there would be some slightly more structured way of connecting academic technologies to the Provost's Office. And I don't think that moving the unit there, that won't happen on this campus. I think leaving it organizationally where it is, but having some joint appointment, or some bit more official recognition of the connection through that Provost piece, whatever the appropriate way to get there would be.

At UNE there is a formal relationship between the Center for Teaching and Technology and the Provost's Office, in the form of a dual reporting structure that has Adam MacDonald, the Executive Director of CTT, reporting to both the CIO and the Provost. Adam admits that it is a situation that might not work under every circumstance, but that in his case he is very satisfied with the relationship he has with both his bosses, and believes that the opportunity to be part of the senior leadership team in both the Provost's Office and OIT is beneficial to both and to promoting excellence in teaching and learning at the institution.

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Aside the question of whether academic technologies units should be located in the academic affairs or IT reporting lines, there is the question of how the functions of the Office of Academic Technologies and the Teaching Learning Center should be structured within the institution. All three institutions had very different ways of approaching the organization of the units. These differences primarily stem from the unique cultures and histories of the institutions, which were described in some detail in Chapter Four.

At UMW, the Office of Academic Technologies is located within IT, and the Teaching and Learning Center has a dual report to the Provost and another Vice President. Both are fully developed, long-standing entities. Although there is some overlap between OAT and the TLC, the TLC provides significant support to the campus for instructional development outside of the technology arena. Fred Bergman from OAT described the range of TLC activities:

> The TLC in many ways has a much broader mission. They're working with international TAs on language development, they're working on syllabus constructions, basic classroom behavior and course management. So there's a lot that's within their purvue that we just don't go anywhere near. And by same token, there's a lot going on in our unit as it has been reconfigured that they don't touch.

At NSU, again, OAT reports through the CIO, however there is no centralized Teaching and Learning Center. As a result, OAT has tended to be more of a driver for faculty development around teaching and learning than was seen at the other institutions. At UNE, the Teaching and Learning Center was almost completely moribund until it was revitalized as part of the integration of other academic technologies units. In fact, although it is called a Teaching and Learning Center, the role it plays is closer to that of OAT on other campuses; they have a consistent focus on pedagogy, but because two of the three full time staff have backgrounds in academic technologies, they have a strong bent towards technology.

There is significant variety in organizational structure across the institutions included in this study, based on the historical and cultural environments of their campuses, and this variety has an impact on how support for academic technologies is implemented. The data show clearly that there is no "one size fits all" solution to how academic technologies units and teaching centers should be configured. However, the data also show the importance of academic technologies units having strong connections to both the IT organization and academic affairs within an institution in order to maximize the potential that academic technologies offer to address the teaching and learning challenges of today's instructors. Institutional leaders need to be intentional in creating strong connections between academic technologies units and academic affairs, although it is equally important the structure at any individual institution is contextualized to reflect local needs, history and culture.

In recent years the focus of the Office of Academic Technologies has shifted from being primarily about providing technical training to an increasing concentration on pedagogical challenges and how they can be addressed through the use of academic technologies. This shift has also included an increasing focus on evaluation of the impact of academic technologies and producing scholarship that contributes to the larger conversation around teaching, learning and academic technologies. Being actively involved in scholarly endeavors also helps cement the credibility of academic technologies staff in the eyes of the faculty with whom they work. All of this contributes to one of the most important roles of Offices of Academic Computing, which is to act as a bridge between two very different cultures, that of IT and academic affairs.

Conclusion

This chapter presented findings based on the analysis of the data from this study of collaborations between academic technologies units and teaching and learning specialists. The first section examined the phases of a collaborative project, which include: the initial impetus for the project, launching, working, evaluation and resolution. In the launching phase participants are focused on building trust, outlining goals of the project, and defining processes. During the working phase collaborative partners spend the bulk of their energy on accomplishing the goals of the project. After the conclusion of the project, participants evaluate the successes and challenges of the collaborative project. Ideally this phase would include evaluation not only of project itself, but also of the collaborative process, but data showed that this rarely if ever occurs. Finally, in the resolution phase, the collaborative partners decide how to proceed in the future both in terms of the project and the relationship.

The second section explored contexts of collaboration, which are the spaces in which individuals and groups have the opportunity to engage in cross-group interactions. These cross-group interactions do not necessarily reach the threshold of collaboration in and of themselves, but taken together provide an environment which supports the development of collaboration and its sustainability over time. The characteristics of collaboration were described in the third section. These are the characteristics of individuals, institutions and the collaboration itself that support the development and

success of collaborations. The final section looked at the changing mission of academic

technologies units and identified the role of these units as a bridge between information

technologies organizations and academic affairs. The final chapter will discuss the

implications of these findings for both theory and practice.

CHAPTER 6

DISCUSSION AND IMPLICATIONS

<u>**Introduction**</u>

This study examined the characteristics of collaborations between two units at institutions of higher education: academic computing groups and teaching and learning centers. The findings from this study offer contributions to the study of higher education in two arenas. The first is a contribution to existing knowledge about collaboration, and more specifically, collaboration in higher education, as the means for providing another perspective on how successful collaborations work within higher education institutions. Secondly, and more uniquely, this study adds to our knowledge about how collaboration works within the specific context of two groups involved in integrating academic technologies into the fabric of teaching and learning in higher education. This topic is of importance because effective collaborations have been identified as a crucial factor in successfully integrating academic technologies into the teaching and learning enterprise of higher education (Albright & Nworie, 2008; Katz, et al., 2004; Rentfrow, 2007; Trinkle, 2005). Previous research on collaboration focused either on the business and corporate worlds (Haskins, Liedtka, Rosenblum, 1998; Kanter, 2000) or within higher education, most frequently in collaborations between academic affairs and student affairs (Philpott & Strange, 2003). In addition, the findings suggest the importance of the role that Offices of Academic Technologies can play in acting as a bridge between IT organizations and the campus as a whole.

As might be expected, the findings correlate closely with earlier work that has been written on the topic of collaboration, including: the importance of relationships

(Kanter, 2000); the 'ethic of collaboration' that emphasizes the interplay between the individual and the organization (Haskins, Liedtka & Rosenblum, 1998); the challenges presented by cultural differences between groups trying to work in collaboration (Philpott & Strange, 2003); and the organizational features that support collaboration (Kezar, 2006). However, there were some differences from earlier research that were identified during the course of data collection and analysis. This chapter will revisit the research questions that guided the study and place the findings in the larger context of literature on the topic. There will also be discussion of the implications of the findings for policy and practice, and suggestions for future avenues of research.

Characteristics of Collaboration

The primary research questions asked: what are the characteristics of successful collaborations between academic technologies units and teaching and learning centers? It is important to note that this is not a simple subject. Pinpointing the characteristics that create a successful collaboration is a complex topic that involves the intersection of many different variables; all of the variables do not need to be present in order to have a successful collaborative project, but the more that are present, the more likely collaborations will be more frequent, endure longer and have better outcomes. It is important to reiterate that the complexity inherent in these collaborative projects and relationships means that there is no "one size fits all" answer to the question of what form the ideal collaboration should take, or what characteristics are most important for assuring a successful outcome. The unique nature of the organizational context in which the collaboration takes place will always need to be considered in order to plan for and implement collaborations. Analysis of the data from the study indicates that there are

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three levels of collaborative characteristics: those displayed by individuals, institutional

policies and structures that support collaboration, and features of the collaborative

relationships themselves.

Previous research (Haskins, Liedtka & Rosenblum, 1998; Kezar, 2006) identified

both individual and organizational characteristics that promote successful collaborations;

the features of the collaborations themselves, however, have not received the same

attention. Based on the findings from this study these include: the importance of

collaborations being driven by substance rather than a vague belief that a group effort is

valuable; finding a balance between improved results and decreased efficiency; role

clarity; mutual respect between the collaborating partners, and the ability to transform

cultural differences into productive creative tension.

Challenges to Collaboration

Kezar (2006) highlighted the fact that most research on collaboration has been

focused on obstacles to collaboration rather than what factors help collaborations

flourish. While one of the research questions for the study specifically referred to the

challenges related to developing and maintaining collaborations, the intention of this

study was to focus on the positive side of collaborations, rather than on the barriers that

can impede success. Selection criteria for the institutions included in the study were

specifically oriented towards identifying instances where collaboration was valued and

was being done well, all the while realizing that it is difficult to make completely

accurate judgments from the outside. Nonetheless, while the institutions were chosen in

the hope that they would provide positive examples of how to establish effective

collaborations between IT and academic affairs, not surprisingly, in each case there were significant challenges to the abilities of the partners to collaborate successfully.

Although not an original observation, it bears repeating that challenges are the flip side to the characteristics that promote successful collaborations. In addition, it is important to emphasize that challenges and facilitators of collaboration are not an either/or, but rather exist along a continuum. Resources are not either abundant or nonexistent, but instead can be placed within a range. The challenges identified in the study, including insufficient resources, the dominance of organizational silos within an institution, or a rewards structure that is not organized to recognize collaborative behaviors, did have an impact on the development and maintenance of collaborations in the study. However, it is perhaps both more interesting and more useful to focus research on what it was in these cases that allowed the collaborative partners to transcend the barriers and establish meaningful collaborations despite the inevitable obstacles that arise. Successful collaborative relationships do not emerge due to the existence of a single positive factor, for example, the director of a unit who promotes collaborative work, but instead is the result of a constellation of characteristics that come together to make collaboration viable. Every positive attribute does not need to be present at an institution in order for collaborative relationships to thrive; but a preponderance of factors need to lie on the supportive end of the continuum rather than on the obstructive end.

Many, but not all, challenges to long-term collaborations can be addressed through strategic change at an institution, including creating a structurally more flexible organization. However, despite the best efforts of institutional leaders, managers, and staff, there will inevitably be challenges, such as the stress to a collaboration when the

director and long-term champion of a collaboration retires. Nonetheless, the effects of these unavoidable stresses are alleviated when there are numerous other strengths supporting the collaborative relationship as it responds to change.

The on-going availability of sufficient resources, both money and staff, to support the development and maintenance of collaborations was key to successful collaborations in the cases included in this study; the importance of adequate resources is in line with the findings of other studies on collaboration (Haskins, Liedtka, & Rosenblum, 1998; Kezar, 2006.) There are three aspects related to the adequacy of resources in this particular study that bear further note. First, grants and special one-time funding made many of the collaborative projects around academic technologies possible. However, it was challenging for the partners to sustain the energy and focus of the collaboration beyond the expiration of the funding. Second, the ability of the collaborative partners to encourage faculty participation in teaching and learning with academic technologies initiatives was particularly susceptible to changes in resource availability. The research expectations for faculty at R1 institutions such as the one's included in this study are high, and teaching expertise is less valued in the current tenure and rewards system. As a result, if significant incentives to participate in academic technologies projects are not available they will not prioritize those activities as they allocate their time.

Finally, Haskins, et. al (1998) found that a key organizational factor in promoting collaboration was "a willingness to invest in learning and colleagueship" on the part of institutional leaders. Given that their study examined highly successful companies in the fields of health care, law, and investment banking, there were significant resources available for this purpose. Higher education institutions, alas, are less likely to have

access to similar levels of resources to devote to developing colleagueship, but the point

is nonetheless significant. Higher education will need to find ways to accomplish similar

objectives with fewer resources.

<h2 align="center"><u>Changes Over Time</u></h2>

One of the areas addressed by the research questions in this study was whether

(and how) the challenges of establishing and maintaining collaborations change over

time. Looking at how collaborations evolve clearly emerged as an important aspect in this

study, however, my initial research question was written with too narrow a focus on the

challenges of collaborations rather than the larger question of how the collaborative

projects and relationships developed over time. During the analysis phase, I broadened

the focus, which developed into a description of the phases of a collaborative project.

The data clearly showed that the focus of a collaboration changes depending on

the phase. In the launching phase, the collaborative partners are learning to trust one

another, defining procedures, and planning for the project. The productive phase is about

actually getting the work done and being able to respond effectively when interruptions

or transitions happen (e.g., conflict between two collaborators in different groups.)

During the evaluation phase, the focus is on assessing the successes and failures of a

project, including being able to be honest about the successes and failures of the

collaborative process and relationship. The resolution phase marks the end of a specific

project, and leads to a new cycle of collaboration.

As the collaborative relationship matures, the project phases shift. In an

established collaborative relationship, the launching phase of the collaboration will be

shortened since trust building will not be as intense; instead, most of the focus will be on

<p align="center">195</p>

defining the particular project, allowing the partners to move on to the productive phase more quickly. Identifying the phases of a collaborative project is important because an awareness of the phases and sensitivity to the changing needs of the collaboration can allow institutional leaders and the collaborative partners to respond in ways that will effectively support the ongoing growth and development of the collaboration.

Philpott & Strange (2003) also discussed the existence of different phases in their study, breaking the focus of the collaboration into a planning and an implementation phase. The planning phase roughly correlates with the launching phase, however at the very least the terminology hints at a greater emphasis on project related planning rather than relationship-building and establishing group processes. It is possible that the less than completely successful outcome of the project described by Philpott & Strange can be ascribed at least in part to lack of attention to these aspects of the launching phase. The implementation phase is similar to the productive phase.

Left out of Philpott & Strange's account of the collaborative project is a sense of an evaluation phase or a determination phase. Without a strong focus on evaluation, a collaborative project is likely to fit Haskins, et al.'s (1998) model of transactional collaboration, which is episodic and focused on a particular project or task. The evaluation allows the collaborative partners to reflect, learn from their experiences and hopefully, in the determination phase, lead to other collaborative projects and the building of a collaborative relationship. Unfortunately, the data from this study indicate that the lack of a robust evaluation phase, particularly as it relates to the process and the relationship between the collaborative partners, is not uncommon, and it hinders the

ability of institutions to benefit fully from the experience gained from a specific

collaborative project.

<u>Organizational Structure</u>

Understanding the role of organizational structure in supporting or hindering the

development of collaborations between academic technologies units and teaching and

learning centers was also highlighted in the research questions for this study. At the

institutional level, organizational proximity plays an important role in supporting

collaborative initiatives; the characteristics of organizational proximity include:

transparency, open lines of communication, a shared sense of mission, and significant

opportunities for staff across reporting lines to interact. Higher education institutions

often have had "siloed" organizational structures that have discouraged the development

of meaningful cross-group collaborations, however, there are ways that the ill effects of

silos can be reduced. Horizontal alignment across groups in the organizational structure

was one way that organizational proximity was enhanced at the institutions in the study.

Strong relationships that transcend the merely formal between staff at multiple levels in

the hierarchy are important for encouraging collaboration. These include relationships

between senior level administrators (vice provosts and vice presidents), mid-level

directors and managers, and staff. This finding is consistent with Kanter's (2000)

depiction of the centrality of relationships in establishing a collaborative advantage.

There was also some evidence that the possibility of developing meaningful relationships

that transcended the vertical and horizontal hierarchy contributed to successful

collaborations. Allowing staff members at different organizational levels and across

different groups the opportunity to interact regularly created a web of connections which

acted as an antidote to the problems created by siloed organizations. However, further research will be needed to explore this phenomenon in more detail.

Organizational proximity takes on a more specific meaning when applied to the case of academic technologies units. Creating a close connection between the academic technologies unit and Provost's Office at an institution is important in several ways. Academic affairs can provide additional support for the teaching and learning mission of the Office of Academic Technologies, which may not be fully understood within the larger IT organization. In addition, a strong relationship with academic affairs can both improve access to and boost the credibility of OAT with deans, department heads, and faculty. There is not a prescriptive answer as to how that connection should be structured; indeed, it needs to be accomplished in a way that fits with the culture of each institution, but this study offers several possible scenarios. A dual report for the Director of OAT to both the CIO and the Provost is one possibility that was successfully implemented at one institution; at UNE, the Director was delighted with his relationship with both of his supervisors. Nonetheless, it is not difficult to imagine situations in which this would not be ideal, such as when the two supervisors have a contentious relationship. Further research is needed to determine whether dual reports can be effective across a number of different instances, or whether its success in this instance is an anomaly.

The advantage of a formal dual report is that the relationship is institutionalized, and when there is a change of personnel, whether it is a new Provost, CIO, or Director, there is an expectation that the relationship with continue. Less formal relationships can also be successful; at NSU the rapport that existed between the Vice Provost for Academic Affairs and the Director of OAT made a tremendous difference in how

teaching and learning with academic technologies initiatives were approached. However, a new academic affairs administrator may have considerably less interest in academic technologies and a leadership transition can mean an almost total loss of previous successes.

Finally, organizational proximity between academic technologies units and teaching and learning centers can be promoted through the merger of the two units into a single organization. One of the institutions in this study is in the early stages of the merger process, and many of the personnel involved speak of the advantages of such a move. Although, in this case the Teaching and Learning Center was essentially being rebuilt from the ground up, so it is not an example of a robust teaching and learning center joining with an academic technologies unit. Anecdotally, mergers between these units are occurring, or at least are being considered, with increasing frequency, perhaps inspired by grim budgetary times. The concern on the part of teaching and learning center staff appears to be that their unique characteristics will be subsumed in the academic technologies culture. Again, further research is needed to determine how frequently mergers between academic technologies and teaching and learning centers are actually occurring, what the advantages and disadvantages are, and what the long term results are not only in terms of academic technologies initiatives, but also broader support of teaching and learning development on a campus.

<u>**Contexts for Collaboration**</u>

The research question I initially posed referred to the presence of strong social networks between staff in academic technologies and teaching and learning centers and how these affected the success and longevity of collaborations. I was interested in seeing

whether opportunities to socialize, i.e., make more informal social connections with colleagues in other groups, contributed to the success of collaborations. What I found was that it was not exclusively social interactions that were important; rather, there was a wide spectrum of types of contacts that played a role in supporting the development and maintenance of collaborations. I termed these collaborative contexts, and they ranged from large groups to small, formal to informal; the purposes for the groups varied, as did the criteria for membership. The variety, quality and quantity of opportunities to interact with colleagues in other organizational groups contributed to the development and maintenance of successful collaborative relationships.

The concept of "collaborative contexts" overlaps with Kezar's (2006) "campus networks" which she defined as a "coalition, alliance, or complex set of relationships among a group of people that are useful to accomplish a present or future goal" (p. 818). Kezar includes individuals who reach out to others across campus as well as committees people serve on as mechanisms for network development. While she credits the contributions of individuals, her focus still seems to be on how relationships can be useful in accomplishing organizational goals and how they fit into formal organizational structures rather than on the dimensions of the relationships in and of themselves. On the other hand, Kanter's (2000) emphasis on relationships as a vehicle for collaboration stresses that they cannot be completely defined by "formal structures" but rather "require a dense web of interpersonal connections" (p. 97).

Kezar's (2006) "campus networks" are defined in fairly broad and vague terms (not surprising since this was pioneering work in the field of collaboration in higher education), and Kanter (2000) focused more strictly on relationships whereas this study

provides a more nuanced delineation of the types of collaborative contexts, not just in isolation, but in relation to the phases and characteristics of collaboration. The data from this study indicate that a more holistic outlook on what constitutes the contexts that support collaborative relationships is warranted, and institutional leaders, directors and staff all have roles to play in supporting the development of a wide variety of collaborative contexts. As a final note it is worth mentioning that even for collaborations that are focused around technology use, it is still the personal and social connections that remain of paramount importance. In many cases technology can play a supporting role in the development and maintenance of collaborative relationships, but it is still necessary to devote time and resources to nurturing the relationships between all the collaborative partners: institutional leaders, directors and managers, staff, and faculty.

Cultural Differences

The existence of different sub-cultures within academia (Birnbaum, 1988; Peterson & Spencer, 1990), and the challenges the cultural differences between them present for the success of collaborative ventures (Church, 2000; Philpott & Strange, 2003; Rentfrew, 2007; Rosser, Johnsrud & Heck, 2000), was included as part of the conceptual framework for this study. In addition, one of the research questions asked how cultural differences between the collaborative partners affected the development, and overall effectiveness, of the collaborations being studied. While there is clear evidence that cultural differences between faculty and technical staff exist, and that these differences can negatively impact the ability of the two groups to work together, the staff in the academic technologies units are to a great extent bi-cultural, and play the role of

cultural bridge between the larger IT organization and the campus as a whole, particularly faculty.

Philpott & Strange's (2003) study of a collaboration between faculty and student affairs professionals highlighted the cultural divide between two groups, a gulf that was never quite bridged in the course of the project. The groups did not have to travel as far to bridge the cultural differences between them; the academic technology professionals were already highly acculturated in academia (many of them having earned Ph.D.s and some of whom who had previously served in tenure track positions) and the teaching and learning specialists were knowledgeable about the role of academic technologies. In addition, the mission and goals of the collaborative partners were much more similar than in the academic affairs/student affairs collaboration. Both groups promoted teaching and learning through the use of academic technologies although they come from different cultural streams. While coming from slightly different scholarly perspectives, staff in the two groups had an overlapping knowledge base and shared a common vocabulary around the language of teaching and learning. The commonalities between the two units exceeded merely having the experience of reading a few of the same articles on a particular topic. As a result, it was much easier to harness the power of the creative tensions that emerged from the intersection of the cultures of the two groups without becoming derailed by too much difference.

Staff in both the academic technologies units and the teaching and learning centers were immersed in the literature of the scholarship of teaching and learning and were committed to engaging in their own research and writing; many also taught courses at their own institution or another nearby campus. These behaviors allowed them to

connect more closely to the faculty with whom they were working, and promoted the success of academic technologies initiatives on their campuses.

The importance of staff at teaching and learning centers holding doctorates and often faculty appointments as well has been well recognized (Sorcinelli, Austin, Eddy & Beach, 2006). Sorcinelli, et al. (2006) comments that "those with faculty status as well as an administrative title may be perceived as more credible on issues of teaching and learning because of their direct involvement in the classroom" (Sorcinelli, et al., p. 32). Because of their similar roles, holding doctorates if not having faculty status would seem to be equally important to academic technologies staff as to their colleagues in teaching and learning centers. Katz & Sallaway (2004) found that the rate of IT professionals holding doctorates is actually declining; this trend could have implications for future relationships between faculty and IT professionals. However, that study did not examine doctoral rates or faculty status of academic technologies staff, but rather lumped all IT staff together. More research is needed to determine whether academic technologies staff are more likely to have earned doctorates or hold faculty appointments compared to the rest of their colleagues in IT. In addition, it will be important to examine whether having academic credentials is of greater importance at larger research intensive universities such as were included in this study as opposed to other categories of higher education institutions. Finally, further examination of the extent to which academic technologies units do in fact act as cultural bridges, and the mechanisms through which this occurs, will be of interest.

Leadership

Previous research has indicated that leaders play a significant role in supporting the development of collaborations (Kanter, 2000; Kezar, 2006; Philpott & Strange, 2003), and one of the research questions for this study asked about the role of leaders in encouraging collaborative relationships. In keeping with previous findings (Kanter, 2000), this study confirmed that close relationships between leaders in a collaboration was a positive factor in the success of the collaboration. Additionally, having leaders who conveyed support for the collaborative projects being undertaken was important, results that were similar to those found in previous studies (Kezar, 2006; Philpott & Strange, 2003). However, more interesting issues concerning leadership and its role in promoting successful collaborations became apparent during the study. These include: the ability of collaborative partners to share responsibility for leadership across organizational lines; reciprocal engagement between "leaders" and "staff" where each play an important leadership role; and the adoption of a more flexible approach to hierarchy that deemphasizes traditional vertical power structures. It became clear that "collaborative leadership" is an area that, while beyond the scope of this present study, offers fertile ground for further analysis and study.

Rewards and Recognition

Rewards and recognition for engaging in collaborative activities were previously identified as positive factors in encouraging collaborative activities (Haskins, Liedtka, & Rosenblum, 1998; Kanter, 2006). Although study participants rewards reported that informal rewards, such as being allowed to travel to conferences to present about the collaborative project, were available, by and large, formal rewards structures for

collaborative excellence were absent. Instead, study participants emphasized the importance of intrinsic rewards for participating in these collaborative projects and relationships; collaborators were appreciative of being given the opportunity to travel to conferences, and did not seem overly concerned about the lack of rewards.

This finding was in contrast to Kezar's findings that participants in her study were "bitter" about failed attempts to realign rewards structures. She reported that some institutions had had some success in restructuring their tenure and promotion process to give greater incentives for participation in collaborative activities. These changes, of course, would only affect faculty, and not the university staff who were the focus of this study.

Despite the apparent equanimity with which participants in this study accepted the lack of formal rewards for their efforts at creating successful collaborations, institutional leaders would do well to examine the findings of Haskins, et al. (1998) that emphasized the importance of offering rewards that reflect an organizational valuing of collaboration. Given that his study was carried out in industries such as investment banking, these organizations would be expected to have considerably more flexibility in dispensing generous rewards to staff members who have exemplary collaboration skills. Nonetheless higher education institutions would do well to reexamine and reconfigure their rewards structures to reflect the value that successful collaboration brings to the institution.

Implications for Policy and Practice

One of the measures of the value of research in a field that is based in practice is the contribution that a study can make in terms of policy and practice. This study has a number of implications for how higher education institutions might best approach

collaborations between academic technologies units and teaching and learning centers. Moreover, the findings from this study provide insights regarding how to bolster academic technologies units as a bridge between the IT organization and academic affairs.

Phases of Collaboration

A thorough understanding the phases of collaborative projects allows the participants to place appropriate emphasis on the most important tasks at each stage. In the early stages of planning a collaborative project, upper level administrators and directors should focus on the necessity of paying attention to the context in which the project is going to be carried out. Are the collaborative partners new to working together? Did past projects unfold smoothly, or have there been challenges to working together? Is the new project significantly more involved that past projects carried out by the partners? Being able to assess accurately both the complexity of the project and the stage of collaborative relationship facilitates more realistic planning around relationship building and process development for the collaborative group. Conversely, failure to consider these important aspects can result in poor estimates of project schedules and the resources needed to successfully complete the project, often resulting in disappointing outcomes.

All the collaborative partners, including upper level administrators, directors and staff need to recognize the importance of relationship building early in the collaboration and be willing to invest the necessary time and resources to build trust among the participants. Early on, groups should devote time to discussions of project goals and how the group will function. Finally, the outcomes of these discussions must written down and

circulated for all to see and comment upon. When different groups come together with different priorities and cultures, these records can be invaluable down the road.

A significant weakness identified during the course of the study in the collaborative process was inadequate attention paid to the latter stages of the collaboration, namely the evaluation and resolution phases. Collaborative partners need to strengthen the evaluation phase, especially in terms of the attention paid to the assessment of the collaborative process and relationship, rather than focusing primarily on the outcomes of the project. Adding honest discussion of the strengths and weaknesses of the collaborative process and relationship will then allow partners to be more intentional about the resolution phase, when they need to make decisions about whether projects or relationships should be continued, reconfigured, or ended. Finally, it is recommended that upper level administrators and others involved in designing projects should begin with smaller projects when a collaborative relationship is new and untested; and then build upon successes by moving towards more complex ventures.

Contexts for Collaboration

Practitioners at institutions should do everything they can to ensure that there are many opportunities for staff across groups to interact in a wide variety of contexts, including committees, small work groups, joint activities and social activities. Administrators should consider investing in building cross-group relationships by funding regular staff retreats that include staff from both the academic technologies unit and the teaching and learning center, and perhaps other collaborative partners as well. Uninterrupted time together to spend getting to know each other, brainstorming about strategic initiatives or collaborative projects, setting collective goals, or sharing in

professional development opportunities can pay significant dividends later. Communities of practice played a powerful role in providing a context for academic technologies staff across institutions to engage with one another. Institutional leaders should consider what steps on their parts would enable similar groups to flourish on their campuses. Both joint staff retreats and participation in communities of practice provide opportunities for academic technologies specialists and teaching and learning professionals to develop a shared scholarly vocabulary by becoming familiar with a broad base of literature related to teaching and learning and academic technologies.

Physical Proximity

When I asked participants "if there was one thing you could change in order to enhance the effectiveness of the collaborations your group engages in, what would it be?" the most common response was to reduce the physical separation of the collaborative partners. Institutions should consider ways to increase the physical proximity of the groups involved in collaborations around academic technologies, including academic technologies units, teaching and learning centers, the libraries, and perhaps others depending upon the institutional context. Obviously space is almost always at a premium on campuses, and this may be a long-term institutional challenge, but it should still be seriously considered. If space is impossible to reorganize, consider the possibility of a "teaching commons" where multiple support groups can share common space and interact with faculty. Institutions can also consider shared virtual spaces such as the Virtual Teaching and Learning Center at NSU as a way to promote regular interactions between teaching and learning support groups and faculty as well.

Hiring For and Rewarding Collaborative Skills

At both the institutional and the unit levels, leaders should focus on developing search procedures that are effective in identifying individuals who are skilled collaborators. Collaborations between academic technologies units and teaching and learning centers succeed or fail based not merely on the technical skills participants bring to the table, but to a great extent on whether they are able collaborators. Focusing less rigidly on technical requirements and emphasizing collaborative skills during the hiring process allowed supervisors in this study to hire talented staff who had the ability to work with a broad variety of people within the context of academic culture. In addition to focusing on collaborative skills during the hiring process, institutions should also establish staff development programs that focus on developing and enhancing collaborative skills in their existing staff. Finally, as discussed earlier in this chapter, institutional leaders should consider how to recognize and reward staff members who display excellence in collaborative skills and in helping move collaborative initiatives forward. Including collaborative skills and behaviors in the annual review process, and compensating for excellence in that area, will help align institutional values and rewards. By doing more to identify, recognize and reward collaborative skills (in addition to, for example, technical skills) institutions will be able to build their capacities to engage in successful collaborative projects that allow them to achieve their institutional priorities.

Enhancing the Role of Academic Technologies Units as Cultural Bridges

Academic technologies units can make a significant contribution to their institutions through their role as cultural bridges between IT organizations and the campus as a whole. Leaders should seek ways to institutionalize that particular function;

one strategy that can be used is to enhance the connection between the Office of Academic Technologies and the Provost's Office, perhaps through a dual reporting structure. In addition, directors of academic technologies units should prioritize hiring academic technologies professionals who have a strong grounding in academic culture. Higher education institutions are in a position to be able to take advantage of the glut of Ph.D.s on the market and a dearth of tenure track faculty positions to hire well-qualified staff members who have a background in both teaching and research and can use those experiences in their roles as academic technologies professionals. Staff members should be encouraged (or expected) to produce research on teaching and learning with academic technologies and the effectiveness of different faculty support methodologies. Having such a focus both helps build credibility with faculty and helps move the profession along in terms of a rigorous approach to examining how academic technologies can contribute to better teaching and learning outcomes.

Further Research

This study is largely exploratory in nature, and as a result the findings suggest numerous avenues for further research that would allow scholars to investigate more fully the issues raised in this study. The following section provides a number suggestions for future research, although the list is by no means exhaustive.

Phases of Collaboration

The phases of collaboration identified in this study delineated the four phases of a collaborative project, and suggested how repeated cycles of collaborative projects contributed to the development of collaborative relationships. Further research is needed to more fully explore the interplay between collaborative projects and collaborative

relationships over time. The data collected in this study were largely retrospective in nature as study participants were asked to recount past experiences. Research that followed collaborations from their inception over an extended period of time would offer a more nuanced understanding of both the phases of collaborative projects and how those projects contribute to the deepening of a collaborative relationship. As discussed in the previous section of this chapter, the evaluation phase was less robust compared to the other phases in the collaborative cycle, especially evaluation of the successes and challenges the collaborative relationship and the effectiveness of the group processes. Further research to identify mechanisms for assessing collaborative relationships could make a significant contribution to the both the theory and practice of collaborations in the context of higher education institutions.

Contexts

The data from this study indicate that the quality, variety, and quality of collaborative contexts affect the growth and development of collaboration at an institution. Additional study could investigate this topic in greater detail, including how an institution can best support the growth of a robust selection of collaborative contexts, what the most effective overall balance of activities is, and the role of professional vs. social activities in promoting the development of collaborative relationships.

Role of Academic Technologies Units

This study included examples of several organizational structures, including UMW where the Office of Academic Technologies and the Teaching and Learning Center were separate and reported to different Vice Presidents, and UNE where academic technologies and the teaching and learning center were merged. Anecdotal reports

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indicate that merging the two offices is becoming more common, perhaps as a result of the current budget woes facing higher education. Further research is needed to determine if merged organizational structures are indeed a growing trend, and, if so, how this affects the functioning of the unit and its collaborative activities.

Merging academic technologies units and teaching and learning centers could represent a strategy for enhancing the connections between academic technologies units and academic affairs, as at UNE where the executive director of the merged organization reported to both the CIO and the Provost. While there were several examples of dual reporting structures in this study, more research would need to be carried out in order to determine whether dual reports were generally successful, and if so, under what circumstances? What do dual reports achieve, and what are some of the challenges? Finally, additional studies could also address the question of what other strategies institutions use to forge strong connections between academic technologies units and academic affairs.

All three of the institutions included in this study had at least one staff member in the academic technologies unit who specialized in evaluation and assessment. In addition, the units also are placing a stronger emphasis than in the past on the production of original research and publishing within a scholarly context. It would be interesting to determine whether an increasing number of academic technologies units have adopted similar approaches. Are academic technologies units hiring personnel whose time is dedicated to evaluation in greater numbers? Have the expectations risen for academic technologies staff members' participation in formal research? And if so, what is the

impact? Does a staff member having more of a research background and publications increase credibility with faculty?

Additional Research Topics

This study was intended to paint a portrait of "successful" collaborations in higher education. Measures of what constitutes success in the realm of collaboration should be more fully developed. What qualifies as a successful collaboration? What are the different axes on which success can be measured? As mentioned earlier in this chapter, effective leaders play an important role in supporting the development of collaborations at their institutions. However, just as organizational structures need to be reconfigured in order to support fully collaborative behaviors at an institution, the role of the leader, and what leadership constitutes within the context of a collaborative environment, also needs to be reconceptualized. A study of collaborative leadership represents that fertile ground for future research. Other research that will need to be carried out in order to understand more fully collaborative relationships focused around academic technologies includes: expanding the current study to look at the role additional organizational units such as the libraries play in such collaborative relationships; a more detailed look at the role faculty play in these collaborations; and how the development of collaborative relationships takes place across different institutional types. Clearly there is much more research to be done related to academic technologies and collaborations.

Conclusion

This study offers new perspectives on collaborations within the context of institutions of higher education; more specifically, it describes collaborative phases, contexts, and characteristics. The study also provides insight into how collaborations

between academic technologies units and teaching and learning centers function, an important topic given the extent of academic technologies initiatives on campuses today, as well as the significant challenges posed by integrating academic technologies into a more traditional culture of teaching and learning. Implications for policy and practice from the study's findings were presented, including strategies for how institutional leaders can more fully support the development of effective collaborations on their campuses. Because this is an exploratory study, numerous suggestions for future research were also provided. An important finding is a more nuanced understanding of the role that academic technologies units can play in acting as a bridge between IT organizations and the larger campus, particularly academic affairs. As bi-cultural inhabitants of the world of academe, academic technologies professionals can help keep the larger IT organization focused on the institution's mission of teaching and learning, provide insight into faculty culture, and acts as IT's ambassadors to academic affairs. Ultimately, there is no one fail safe method of ensuring successful collaborations. Instead, the findings from this study emphasize the importance of engaging in a wide variety of strategies in support of collaboration, although it is important that the strategies adopted fit the unique cultural context of the specific institution. The greater the variety, quality, and quantity of collaborative activities related to academic technologies that are occurring at an institution, the greater the likelihood that the institution will be able to make significant advances in the integration of academic technologies in support of teaching and learning.

APPENDIX A

INFORMED CONSENT

My name is Kate Hudson. I am a doctoral student in the Education Policy and Leadership program at the University of Massachusetts Amherst. My dissertation research focuses on collaborative relationships between different campus organizations around the topic of teaching and learning technologies.

I am looking for staff and faculty who have been involved in a collaborative project involving teaching and learning technologies who are willing to participate in a semi-structured interview that should last approximately one hour.

- The information shared during these sessions will be kept confidential.
- Every effort will be made to maintain the anonymity of the participants. The institution where you work will not be identified by name; details that might make it easy to identify it will be changed. In addition I will use pseudonyms to refer to all participants, and characteristics that could be used to identify you will be altered.
- The interviews will be audio-taped; I will transcribe the interviews and you will be given an opportunity to review the transcripts.
- A summary of the results of the study will be available upon request.

Your participation in this project is completely voluntary, and you are free to discontinue or refuse participation at any time. You have the right to review the materials connected with your interview.

If you have any questions about my research or your participation in it, you are encouraged to contact me: Kate Hudson, khudson@educ.umass.edu, XXX-XXX-XXXX (cell).

Thank you for your time and your willingness to participate.

Kate Hudson

You have been given two copies of this informed consent. If you agree to participate, both should be signed. You may keep one copy for your records; I will keep the other copy on file.

Your signature indicates that you:

- Have read and understand the information provided.
- Willingly agree to participate in the study.
- Understand that you may withdraw from participation in the study at any time.

Name: _____   Date: _____

Signature: _____

APPENDIX B

SAMPLE INTERVIEW PROTOCOL

Note: Each interview was customized to some extent, based on the position of the person being interviewed (e.g. director, staff member, faculty, administrator.)

Begin with a very quick overview of the study. When you read about academic computing in EDUCAUSE and other places there is a real emphasis on the fact that as a field we have to be highly collaborative. But there's been no research done on what that looks like. What makes collaboration work? I'm particularly focused on the connections between offices of academic computing like yours and centers for teaching which seems to be a key relationship.

Go over informed consent.

1. Maybe to start you can tell me a bit about yourself.

   - What's your professional background?

   - How did you get into this field?

2. Can you tell me about a particularly satisfying experience you had collaborating with the Teaching and Learning Center?

3. It seems as if there is a real emphasis on collaborative relationships here.

   - Can you tell me a little bit about how your unit approaches these relationships?

   - How did the emphasis on collaboration begin?

4. What role have you played in these collaborations?

   - Who are the other participants who have played important roles in this collaboration? What roles did other participants fill?

5. Do you see these as an ongoing collaborative relationship that includes a variety of more specific projects as part of it, or is the collaboration more episodic?

6. How are the projects decided upon?

7. How do you come up with goals for the project?

8. How do you organize your work together?

9. How do evaluate the collaborative projects?

10. How do you assess the process itself?

11. What have been the biggest challenges or frustrations in working on the collaborative projects you've been involved in?

12. What role have upper level administrators played in encouraging the two groups to work together?

13. Do you have an opportunity to develop relationships with your collaborative partners?

- Are most of your interactions in the context of meetings or do you have more informal relationships (e.g. coffee, lunches, drinks, dinner) with staff (both within your group and in the other group)?

- Who do you have the closest relationships with? Are these professional relationships or personal as well?

14. Have you received recognition for your participation in this collaboration? What sort of incentives or rewards—either on the individual or group level—have there been for making the collaboration successful?

15. How has the overall implementation of academic technology at your institution been affected by the emphasis on collaboration between the Office of Academic Computing and the Center for Teaching?

16. How do you see these collaborations unfolding in the future? What do you hope to be able to accomplish?

17. If there was one thing you could change that you think would help promote the success of your collaborations what would it be?

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