The purpose of the Online Learning Consortium (OLC) is to help learning organizations continually improve the quality, scale, and breadth of online programs according to their own distinctive missions, so that education will become a part of everyday life, accessible and affordable for anyone, anywhere, at any time, in a wide variety of disciplines.

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Online Learning

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Introduction

On behalf of the Online Learning Consortium (OLC) and our Editorial Board I am pleased to invite you to enjoy the inaugural issue of *Online Learning*, the official journal of OLC. This issue marks the transition from our previous title, the Journal of Asynchronous Learning Networks, and highlights our intentions to build on the nearly two decades of insight and wisdom collected in JALN. With the launch of our new name we retain our goal of bringing the most important developments in online education to our readers. We believe that this first issue demonstrates our commitment toward continuous improvement with eight new articles investigating crucial and timely topics in the field.

Our first article by Fiona Hollands and Devayani Tirthali of Columbia University Teachers College is a much-needed investigation into the goals institutions of higher education have in offering Massive Open Online Courses. While the initial fervor of MOOCs may have abated the possibilities represented in free access to elite college education (even with current caveats) remain both intriguing and inspiring. Based on a review of the literature and interviews with more than 80 higher education representatives from a broad spectrum of roles and institutions, Hollands and Devayani provide the most comprehensive and detailed study of institutional adoption of MOOCs to date. The authors articulate six primary institutional goals, assess how and whether they are being met and provide useful advice to better achieve the large ambitions of MOOCs. This is essential reading for senior leaders, researchers, administrative staff overseeing efforts and faculty involved in MOOCs delivery.

The next article in this issue by Claire Wladis, Katherine Wladis, Katherine Conway, and Alyse Hachey at CUNY investigates the challenge of uneven community college student persistence in online courses and programs. A considerable body of previous research (e.g. Smith-Jaggars & Xu, 2010) indicates that online community college learners frequently struggle to succeed and experience poor outcomes relative to classroom-only peers. Wladis et. al. add to our understanding of online student retention through a different lens. Using a large community college sample the authors document that course characteristics and student intentions account for some of the variance in dropout from online courses. The authors conclude that certain course types and contexts seem to amplify the risk for dropout and suggest that more focused student support for these kinds of courses can help mitigate poorer online outcomes. This well-designed study will be of great interest to those working in online student success units, researchers of college retention (e.g. the PAR project) and faculty and staff supporting online community college students.

Our third article by Fei Gao of Bowling Green University takes on another well-documented and crucial challenge for online education, how can we improve the quality of student participation in online discussion? Many previous researchers have concluded that students contribute to online forums in shallow ways, failing to demonstrate higher order and critical thinking valued and needed for college level learning. While not a problem unique to the online environment the opportunities for investigating and improving the quality of online student discourse is clear, after all, every comment is recorded and available for investigation. Providing support for improving online discourse has been the subject of considerable research and Gao's quasi-experimental study adds to our understanding of effective approaches. She demonstrates that providing instruction that helps students to understand and label their discussion post as instances of elaborating and clarifying, making connections, challenging and building upon others' views, and questioning increases the frequency of these more productive

contributions. This approach also somewhat enhances the overall quality of the subsequent discourse compared to students who did not receive this intervention. This study is an excellent introduction to the topic of scaffolded asynchronous interaction and will be of great interest to others investigating online discussion, as well as faculty and course designers looking to improve the quality of their courses.

This issue of *Online Learning* also contains two practitioner case studies documenting attempts of online instructors to innovate with and improve their teaching. Both pieces reflect efforts to engage in the scholarship of teaching and learning by exploring and apply systematic approaches grounded in theory and prior research. These case studies reflect the hard work that researcher-practitioners employ to better understand and improve online education and despite mixed success they deserve our attention.

The first case study by Bruce Johnson from American Public University System draws upon an approach called appreciative inquiry that has been used to enhance organizational change. The author utilized a qualitative method in his work with nine part and full-time instructors to implement an adaptation of appreciative inquiry in which instructors engaged with students to understand and encourage reflection on student goals and aspirations. The instructors were also encouraged to rethink their own course designs to better help students realize their goals. The findings suggest that learner motivation, engagement, and performance can be positively impacted through application of the approach. The work shows promise and will be of interest to others working in qualitative research traditions. The very learner-centered focus will make this article equally relevant to faculty and staff seeking to know more about progressive online pedagogical innovations.

The second case study by Kristi Preisman at Peru State College discusses her own efforts as a "lone ranger" seeking to improve her level of presence in online courses. In this study Preisman invests a good deal of effort to enhance her sense of presence using both technical means (e.g. additional video in which she discusses course content) and through more interaction with students in discussions. Despite these additional instructional investments she did not achieve intended goals of improving students' grades on assignments. While these may not have been the right interventions given her objectives, the article does investigate the theme of teaching presence in all its real-world complexity and highlights the need for more support and additional research to define, measure, and improve productive online instructional roles.

The final section includes three articles that broadly investigate faculty issues and begins with a paper by Lane Whitney Clarke and Audrey Bartholome of the University of New England. This study, like Preisman's also uses the Community of Inquiry Framework to examine faculty contributions to online discussions. The authors utilize content analysis as well as questionnaires to better understand faculty participation in these forums. Confirming previous research, the authors found that instructors contributed more social messages and were less likely to add comments reflecting cognitive presence. More importantly they also found recognizable discursive profiles in faculty contributions to online discussions and conclude that students favor instructors who balanced their comments across the three elements of the CoI framework. This paper is intended to spur additional research and to help faculty to improve their own participation in online discussions and will thus be of special interest to new online faculty.

The next article in this section by Christine Lynn Vandenhouten, Susan Gallagher Lepak, Janet Reilly, and Penny Ralston Berg of the University of Wisconsin Greenbay reports on a project designed to

foster a deeper understanding of the collaborative roles and activities necessary for effective online nursing education. At the opposite end of the spectrum from the "lone ranger" approach discussed previously in this issue, this article focuses on the coordinated roles and supports needed to create effective online programs. Using Khan's flexible E-Learning Framework the authors investigated the six dimensions reflected in that model and conclude that faculty are more familiar with course development and design and frequently use student-centered teaching/learning strategies to engage learners. They found that faculty expressed less certainty about institutional, administrative, and management dimensions of the model suggesting gaps that may need to be addressed. The articles emphasis on the emerging and harmonized roles needed for effective program design will be of interest to faculty as well as administrative and support staff collaborating to develop online programs.

Closing out this issue is a related study by Katrina Meyer and Vicki Murrel of the University of Tennessee, Memphis that reports on their national study of evaluation outcome measures and procedures used in faculty development programs in support of online teaching. In this paper the authors review the research on evaluation of faculty development programs to set the stage for their own survey. They disclose that much of the work in this area does not specify clear outcomes for online faculty development and outcomes are either poorly defined or poorly measured. Among their findings they conclude that most institutions measure faculty satisfaction but very few seek to understand more important impacts such as student level outcomes or improvements resulting from faculty development activities. The authors make seven recommendations based on these findings and the study will be of interest to all working in the field of instructional support for online education.

Once again, please enjoy this inaugural issue of *Online Learning* and share it widely with colleagues!

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SECTION I: Massive Open Online Course (MOOC) Research

Why Do Institutions Offer MOOCs?

Fiona Mae Hollands

Why Do Institutions Offer MOOCs?

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Abstract

By reviewing the literature and interviewing 83 individuals knowledgeable about massive open online courses (MOOCs), we investigate the goals of institutions of higher education that are currently developing and delivering such courses. We identify six major goals for MOOC initiatives: extending reach and access, building and maintaining brand, improving economics by reducing costs or increasing revenues, improving educational outcomes, innovation in teaching and learning, and conducting research on teaching and learning. Comparing these goals with the data being collected about MOOCs, their participants, and educational outcomes, as well as the resource requirements and cost drivers of the development and delivery process, we assess whether these goals are being met, or are likely to be in the future. While quantification of success in achieving these goals is for the most part lacking, we conclude that institutions are experiencing at least partial success in achieving each of these goals except for improving economics. We identify obstacles to fuller achievement of the goals and some potential solutions.

Introduction

Over the past few years, observers of higher education have speculated about dramatic changes that must occur to accommodate more learners at lower costs and to facilitate a shift away from accumulation of knowledge to acquisition of a variety of cognitive and noncognitive skills (e.g., "Connecting the Dots," 2013). All scenarios feature a major role for technology and online learning. Massive open online courses (MOOCs) are the most recent candidates being pushed forward to fulfill these ambitious goals. To date, there has been little evidence collected that would allow an assessment of whether MOOCs do indeed provide a cost-effective mechanism for producing desirable educational outcomes at scale. It is not even clear that these are the goals of the institutions offering MOOCs. This paper is a report on the actual goals of institutions creating MOOCs or integrating them into their programs and reviews the current evidence regarding whether and how these goals are being achieved.

Online education at the college level has been expanding rapidly over the last decade with students participating in single courses or even earning entire degrees without setting foot in a brick-and-mortar institution. According to Allen and Seaman (2013, 2014), the online enrollment growth rate in the

United States has ranged between 6.1% and 36.5% per year since 2002. Means, Bakia, and Murphy (2014) outline and document four major trends in how universities are using online learning: "self-paced, adaptive instruction and competency-based learning; blended learning; learning analytics; and MOOCs" (p. 46). The arrival of MOOCs, which allow hundreds of thousands of students to participate simultaneously in a course and are free and open to any interested participant, constitutes a phenomenon that extends preexisting initiatives to provide free, educational resources online, such as MIT OpenCourseWare, Stanford Engineering Everywhere, and Khan Academy.

The goals, structure, and pedagogical philosophy of connectivist MOOCs (cMOOCs), first offered by Siemens, Downes, and other Canadian instructors (see Downes, 2008; Cormier & Siemens, 2010) and "xMOOCs", first offered by Ng, Thrun, Norvig, and Widom at Stanford University (see Markoff, 2011; Waldrop, 2013) are radically different, with the only commonality being that they are scalable and technology based. Whereas in cMOOCs learning occurs through participant interactions with a network of individuals and participants who are expected to create, share, and build upon each other's artifacts (e.g., videos, blog posts), xMOOCs are primarily designed to deliver education at scale and involve more structured and sequenced direct transmission of knowledge. There has been little agreement as to what actually constitutes a MOOC and what educational or other objectives they can and should address. However, as observed by Lewin (2013), one universal impact of MOOCs is clear: "The intense publicity about MOOCs has nudged almost every university toward developing an Internet strategy" (para. 11). Allen and Seaman (2014) report that, in 2013, 5% of 2,831 U.S. institutions responding to an annual survey about online learning were offering a MOOC, 9% were planning to do so, and 53% were undecided as to whether to engage in this innovation. Larger institutions were more likely to offer a MOOC than smaller ones, as were doctoral/research institutions compared with institutions offering less advanced degrees. The value and purposes of engaging with MOOCs have been less clear, and many undecided institutions are struggling with whether and how to join the race to provide education using this relatively untested method of pedagogical delivery. At the same time, development and delivery of MOOCs requires a significant commitment of personnel time and institutional resources. Hollands and Tirthali (2014) document that MOOC production and delivery almost invariably involve multiple actors contributing several hundred hours of their time, costing their institutions between $39,000 and $325,000 per MOOC. Clearly, this demand on effort and resources needs to be justified in terms of expected benefits.

It is curious that MOOCs have taken hold without much evidence as to whether they are effective in improving participants' skills and knowledge, or in addressing other objectives, and without evidence of their economic value. As Means et al. (2014) observe, "Both irrational exuberance and deep-seated fear concerning online learning are running high" (p. 42). This study seeks to address the lack of clarity surrounding institutional motivations for developing and delivering MOOCs and to investigate whether MOOCs are worth the considerable resources and effort being expended on their creation. We first review what is known about institutional goals for pursuing MOOCs. Subsequently, we describe our methods for interviewing a variety of stakeholders in the MOOCscape. We summarize our findings in terms of six goal areas, in each case assessing whether the goals are being met, what the obstacles to their realization are, and how they could be better fulfilled in the future.

Literature Review

Peer-reviewed publications on MOOCs first began appearing in 2008, (see review by Liyanagunawardena, Adams, & Williams, 2013), and some early indicators of student performance in MOOCs have emerged over the past two years (e.g., Breslow et al., 2013; Firmin, Schiorring, Whitmer, Willett, & Sujitparapitaya, 2013; Champaign et al., 2014), but there is a dearth of rigorous studies investigating the effectiveness of MOOCs in addressing educational objectives. Researchers are still

formulating ideas about how to assess the effectiveness of different types of MOOCs. Some researchers (e.g., Grover, Franz, Schneider, & Pea, 2013; DeBoer, Ho, Stump, & Breslow, 2014) point out that current discussions about the effectiveness of MOOCs are based on assumptions and outcome variables relevant to previous learning environments, and that there is a need to reframe the discussions and reconceptualize the variables. In addition, MOOCs are being pursued at many institutions for reasons other than the improvement of teaching and learning, creating the need for alternative metrics to assess the impact of MOOCs on these other objectives.

Hollands and Tirthali (2014) report that colleges and universities have adopted several different stances toward engaging with MOOCs. Some are actively developing MOOCs and may be termed "producers," some are using MOOCs developed by other institutions in their programs and could be termed "consumers," and a few are doing both. Others are adopting a wait-and-see approach, and some have considered MOOCs and have either decided against any form of official engagement or have not met with interest from faculty members to pursue them. While many people assume that MOOC production is limited to "elite" universities, other institutions, including a few community colleges, have concluded that they know how to serve their particular students best and have created MOOCs tailored to the needs of their own student populations. Consumers of MOOCs are integrating MOOCs created by other institutions into their course offerings in flipped classrooms (e.g., San José State University, see Cheal, 2012) or simply as supplemental resources for their students. Instructors at the University System of Maryland are experimenting with a variety of approaches to embedding MOOCs created by others into their classes (Griffiths, 2013; Ithaka S+R, 2013; Ithaka S+R, 2014). A small number of institutions have declared willingness to consider MOOCs for credit (e.g., Georgia State University, University of Maryland University College). A few universities, such as Vanderbilt University and the University of California, Berkeley, could be categorized as both producers and consumers, with some instructors creating MOOCs and others using MOOCs created by their own or other institutions in their classes.

Allen and Seaman (2014) report that, in 2013, 5% of institutions responding to their survey of online education had already offered a MOOC. Among the 140 or so MOOC-offering institutions, 27% indicated that their primary objective was to increase the institution's visibility, 20% primarily sought to increase student recruitment, 18% wanted to innovate pedagogy, and 17% wished to provide flexible learning opportunities. Other primary objectives, mentioned by fewer than 10 institutions each, included reaching new students, supplementing on-campus experiences, exploring cost reductions, learning about scaling, and creating revenues. Surprisingly, increasing the quality of teaching and learning did not appear to be a priority. As the survey asked only for the primary objective, it is possible that increasing the quality of teaching and learning may have been a secondary objective for some. Two thirds of the institutions felt it was too early to judge whether their objectives were being met, while one third felt some or all objectives were being met. It is not, however, clear whether these perceptions were based on substantive evidence.

The Alliance for Higher Education and Democracy (AHEAD) at the University of Pennsylvania recently conducted a poll of administrators, faculty members, and other personnel at institutions of higher education (IHEs) in the United States and found that, among the approximately 44 respondents (reported as "around 29%" [p.4] of 153 respondents) at institutions offering a MOOC, 57% strongly agreed that MOOCs may be a potentially effective mechanism for "raising institutional profile" (AHEAD, 2014). Fifty percent of the respondents strongly agreed that MOOCs could help improve access around the globe, 40% that MOOCs can help improve access in the United States, 34% that MOOCs can improve pedagogy, and only 19% that they can reduce costs. Confidence in the potential for MOOCs to reduce costs was higher among respondents from institutions that had not yet offered MOOCs. For all other goal options offered by AHEAD, MOOC offerers appeared more confident than MOOC abstainers about the potential for MOOCs to achieve the goals.

This limited information from the Allen and Seaman and AHEAD surveys on the goals of institutions offering MOOCs suggests a variety of motivations that extend well beyond the dissemination of knowledge at scale. Our study was designed to investigate institutional goals and objectives for engaging with MOOCs through in-depth interviews, and to collect evidence of whether and how these goals are being achieved.

Method

Using a methodology similar to that employed by Bacow, Bowen, Guthrie, Lack, and Long (2012) to investigate barriers to online learning in higher education, we conducted a qualitative study (see Merriam, 2009) comprising interviews of 83 individuals across a range of institutions. With the aim of eliciting perspectives on MOOCs from several angles, we sought representation from both public and private IHEs, both two-year and four-year institutions, researchers, online learning platform providers, other for-profit education companies, and several additional stakeholders in the online learning space. Table 1 shows the distribution of interviewees across institutional types.

Table 1 Affiliations of Interviewees

Type of institution	Number of institutions represented*	Number of interviewees
Public university	16	20
Private university	14	26
Community college	9	10
Research organization	7	8
Platform provider	5	6
Other for-profit education company	4	5
Other institution**	7	8
Total	62	83

*At the majority of institutions one person was interviewed, but at a few institutions several individuals were interviewed to include interviewees from multiple areas (for example, administrators, faculty members, and researchers).

**Other institutions consisted of the following: one museum (two interviewees); one K–12 school district; one educational technology advocacy group; one higher education association; one venture capital firm; one private foundation; and one independent consultant.

We contacted by e-mail individuals who appeared to be knowledgeable about MOOCs or online learning based on their position in deciding whether and how to participate in the MOOCspace, their experience teaching or planning MOOCs, or their writing and research in this area. Interviewees were identified from the existing academic and journalistic literature on MOOCs, by reviewing the names of conference presenters and panelists for sessions on MOOCs or online learning in higher education, by researching the MOOC activities of institutions on the Internet, and by consulting with known experts in the field of educational technology. Additionally, many of our interviewees suggested other people for us to interview either at their own institutions or elsewhere. Given the targeted nature of our recruitment process, our sample is not representative of U.S. educational institutions as a whole. However, in addition to stratifying our sample across public and private four-year institutions and community colleges, we aimed to include institutions and interviewees that were supportive of MOOCs and those that were not.

We contacted a total of 100 individuals on a rolling basis at 66 different institutions, 39 of which were colleges or universities. Of the 100 contacted, 83 people at 62 institutions were successfully interviewed within the time frame of our study. At least one person from every college or university we contacted agreed to participate. At most institutions we interviewed one person, but at a few institutions we interviewed two or more. Most interviewees were based in the United States, two were in China, two in the United Kingdom, and several were in Canada. Thirty of our interviewees were administrators at IHEs; 22 were faculty members, of which 7 also had administrative duties; 16 were executives at other institutions; 13 were researchers; one was an educational technologist; and one was a program officer at a foundation.

Interviews were conducted between June 2013 and February 2014, and follow up by e-mail with interviewees to obtain updates and to verify information continued until May 2014. Slightly under half of the interviews were conducted face-to-face, and the others were conducted by telephone or Skype. Interviews lasted an average of 75 minutes and followed a semistructured interview protocol (Merriam, 2009). Interview questions addressed what the interviewee's institution was currently doing with respect to MOOCs; institutional goals for pursuing MOOCs; the interviewee's role in the process; how the interviewee and his or her institution define a MOOC; the characteristics of MOOCs, including structure, purpose, enrollment level, fees, and credentials offered; educational objectives of specific MOOCs being offered; educational outcomes being measured; data being collected before, after, and during MOOC delivery; how MOOC-based research is being used to improve pedagogy on-campus; personnel and other resource requirements; cost drivers; how costs of MOOC production compare with face-to-face courses; how the interviewee sees the MOOC phenomenon developing over the next five years, and how this development might help the institution meet its ongoing goals.

Most interviewees granted permission for the interview to be recorded, and the resulting digital audio files were transcribed. All interview notes and transcriptions were coded in NVivo software using deductive codes initially derived from the interview protocol. These initial codes were supplemented by inductive codes that were iteratively refined as more granular themes were identified (LeCompte & Schensul, 1999). Interviewee perspectives were supplemented with a review of the MOOC-related literature and perspectives offered by presenters at various academically oriented MOOC-related events. A comprehensive report of interview findings was circulated to all interviewees in April 2014 to allow for corrections and clarifications. This paper focuses on the data relevant to the goals of institutions engaging with MOOCs.

Results

Of the 62 institutions that participated in this study, 29 had already offered a MOOC or had used one or more MOOCs in their programs, or were in the midst of doing so. Our interviewees identified a variety of institutional goals, which fell into one of six categories:

- extending the reach of the institution and access to education
- building and maintaining brand
- improving economics by lowering costs or increasing revenues
- improving educational outcomes for MOOC participants and on-campus students
- innovation in teaching and learning
- conducting research on teaching and learning

Table 2 indicates the number of each type of educational institution in our sample at which one or more interviewees mentioned each goal, as well as the percentage of all 83 interviewees who mentioned each goal.

Table 2 ***Institutional Goals for Developing and Delivering or Using MOOCs***

Institutional goal	Number of institutions offering/using MOOCs stating this as a goal				% of all interviewees who raised this as a goal (n = 83)
	% of total (n = 29)*	Private universities (n = 10)	Public universities (n = 15)	Community colleges (n = 3)	
Extending reach and access	65	7	8	3	42
Building and maintaining brand	41	3	8	0	25
Improving economics	38	2	8	1	29
Improving educational outcomes	38	4	5	2	20
Innovation in teaching and learning	38	3	7	1	19
Research on teaching and learning	28	4	3	1	18

* Includes one museum in addition to the universities and colleges

Goal 1: Extending Reach and Access to Education Extending the reach of the institution to a wider audience and improving access to education was the most commonly identified goal for offering a MOOC, mentioned by 65% of the institutions in our study that were offering or using MOOCs and 42% of our interviewees overall. These interviewees included administrators and faculty members from seven private universities, eight public universities, three community colleges, and a museum. Some institutions claimed to be pursuing an altruistic goal of reaching the masses globally with high-quality educational experiences, while others presented more defined goals of reaching a specific population or solving a particular challenge related to access. Several instructors described being motivated to offer MOOCs because of their passion for their subject and desire to make it accessible to the general public. Ways in which MOOCs are expected to increase access to education include the following:

- "broadcasting" to global audiences
- alleviating infrastructure constraints domestically and in rapidly developing countries where the existing physical campus infrastructure and level of faculty expertise cannot accommodate the growing demand for postsecondary education
- easing the pressure on oversubscribed programs or "bottleneck" courses
- providing flexibility in time and place of study for nontraditional students
- providing a no-risk, low-cost option for at-risk students in developmental education, setting them on an accelerated path to credit-bearing courses and more timely completion of a degree
- increasing access to instructors skilled in specialized domains and niche subjects;
- flexibility for students to create their own programs using courses from various institutions
- continuing education or professional development for alumni and other working adults

Evidence of MOOCs Extending Reach and Access Institutions offering MOOCs via the major MOOC platforms have attracted a substantial number of participants: edX reported around two million unique users as of March 2014, and Coursera reported over seven million. In January 2014, Coursera reported

over 22 million enrollments, with many participants enrolling in multiple courses. These enrollees were spread across 571 courses and were based in 190 different countries (see https://www.coursera.org/about/community). While these numbers are impressive, only a small fraction of those who registered actually participated in the courses, and far fewer completed them. Ho et al. (2014), using data from 17 HarvardX and MITx MOOCs offered between fall 2012 and summer 2013, found that 841,687 people registered for the MOOCs, but 35% of them never engaged with the content, and 56% engaged with less than half of it. Around 43,000, or 5% of participants, completed their courses. A typical registrant was "male with a bachelor's degree who is 26 or older" (p. 2). This finding is in line with Christensen et al.'s (2013) claim that 79% of MOOC participants have a bachelor's degree, based on a survey of participants in 24 MOOCs offered on the Coursera platform by the University of Pennsylvania. With respect to global reach, 72% of the registrants in the HarvardX and MITx MOOCs were from outside the United States, and 2.7% were from countries on the United Nations' list of Least Developed Countries (Ho et al., 2014). Among the 34,779 participants in the University of Pennsylvania sample, 31% were from non-U.S., OECD countries; 15% were from BRICS (Brazil, Russia, India, China, and South Africa); and 20% were from other developing countries.

These data suggest that MOOCs are providing educational opportunities to millions of individuals across the world. However, most are already well educated, and only a small fraction of these participants fully engages with the courses. Among our interviewees, we found mixed views as to whether MOOCs have succeeded in improving access to their institutions' offerings and reaching wider audiences. Some had no doubt that MOOCs had already expanded access to their courses while others acknowledged that the initial expectations that MOOCs would "democratize" education had not been realized and that MOOCs may even be doing more to increase gaps in access to education than to diminish them. Quantifying the impact of MOOCs offered by a particular institution on improving access to its regular courses is difficult unless institutions accurately document the level and diversity of participation in their programs both before and after offering MOOCs. For the most part, institutions were not yet making a concerted effort to document these potential changes.

Barriers to Using MOOCs to Extend Reach and Access, and Possible Solutions Several interviewees pointed out that simply providing free resources does not necessarily make them accessible to everyone. The end user may still experience infrastructure constraints and cultural barriers. In some locations Internet bandwidth is inadequate for MOOC participation, which involves downloading materials and watching videos. Buying additional bandwidth is very expensive in some countries, such as China, and may be prohibitive for many would-be MOOC participants. Adaptations have been made in certain countries to overcome bandwidth limitations. For example, according to one interviewee, in Pakistan, where the infrastructure outside of cities cannot support MOOCs, the government is partnering with FutureLearn and Coursera to transfer MOOC content to CDs. ZayaLabs, a technology startup, provides tablets and a router loaded with MOOC content in a backpack to schools in India, Indonesia, and Mongolia. Taking the content offline allows participants to engage with it in the absence of any wireless infrastructure. As platform providers such as NextThought and Coursera move toward mobile access to their content, some of these infrastructure constraints may be alleviated.

Less easily addressed were some pessimistic views about the capacity of online courses, massive ones in particular, to reach any but the most dedicated students. One interviewee observed that access to educational resources is only one part of the equation to guarantee success for the majority of college students, with the need to motivate students, track their progress, and guide them along a trajectory toward completion being equally important. Another observed that education is more complex than simply providing access to content. In addition to logistical and pedagogical barriers to improving access to education through MOOCs, a number of regulatory obstacles were mentioned, especially for community colleges and K–12 schools. Such obstacles will only be resolved if accreditation agencies and state education departments review and revise regulations to accommodate online offerings that reach far beyond local confines.

Goal 2: Building and Maintaining Brand For IHEs, building and maintaining brand serves to attract and retain students, faculty members, and partnership opportunities with other institutions, funders, and alumni networks. Interviewees from 41% of the institutions that were offering or using MOOCs stated that branding, positioning, or attracting students was a strategic goal for the initiative. These interviewees represented seven public universities, three private universities, and a museum. None of the community colleges mentioned branding as a goal for engaging in MOOCs. Branding involves different strategies for different types of institutions, depending on their current positioning. For flagship state universities in the United States that have already established local appeal, MOOCs allow for more national and international recognition. For elite institutions, being at the forefront of a highly publicized innovation serves as a signaling mechanism to protect their global ranking among the top universities. Community colleges were less concerned about branding than improving access to education for an underprepared student population.

Institutions that were employing MOOCs as a vehicle to expand their brand made strategic decisions to showcase programs, specialties, and research capabilities in which they believed they were leaders or wanted to be among the first to stake a claim to world-class expertise. Some institutions perceived building brand as a direct pathway to higher recruitment and enrollment in tuition-earning courses and programs. MOOCs offer participants a "frictionless"—that is, a low-risk, no-cost—introduction to a program area and the offering institution can simultaneously identify candidates who might perform well as degree-earning students. In addition to recruiting students, some institutions emphasized the need to showcase themselves as the leader in academic content areas and in pedagogical innovation so as to attract and retain the best faculty members. MOOCs also offer an opportunity to maintain connections to alumni, who are an important source of funding. Finally, MOOCs provide opportunities to forge mutually beneficial partnerships with other educational institutions, and with corporate partners and funding agencies, potentially leading to increased grant revenues.

While many institutions have received significant media attention as a result of their MOOC activities, isolating and measuring the impact of any new initiative on brand is a difficult exercise. Most institutions are only beginning to think about how to capture and quantify branding-related benefits—for example, by comparing historical data on applications and admissions with post-MOOC statistics. One interviewee from an elite institution observed that selective institutions must balance the apparently contradictory goals of increasing access to their offerings with building and maintaining brand. Another complication raised was the question of where the brand actually lies. Do participants opt for a course because it is on a particular platform or because it is offered by a particular university? It was noted that as MOOC platform providers such as edX and Coursera open their platforms to a wider range of institutions, some of the initial cachet of belonging to these consortia is being lost.

Goal 3: Improving Economics: Reducing Costs or Increasing Revenues Thirty-eight percent of the institutions in our sample that were offering or using MOOCs, and 29% of our interviewees overall, claimed that a goal for their MOOC initiatives was to lower costs or increase revenues, or both. Among the 29 institutions currently offering or using MOOCs, this goal was mentioned by representatives of eight of the 15 public, four-year universities, two of the ten private, four-year universities, and one of the three community colleges, suggesting that it was more important to public universities than private ones. Many interviewees expressed concern at the lack of sustainability for MOOC initiatives given the heavy burden on faculty time and other institutional resources. There was widespread acknowledgement that the current expenditures on MOOC development could not continue indefinitely without financial justification.

Potential Cost Savings from MOOCs To date, MOOC production and delivery have resulted in a significant drain on time and money for institutions, but interviewees offered several possibilities for eventual cost savings:

- reusing MOOC materials multiple times
- sharing MOOC materials across instructors and campuses
- developing common courses to offer across institutions
- replacing on-campus courses with MOOCs
- faculty time savings
- reducing the need for facilities
- recruitment efficiencies
- less costly student support services provided by nonfaculty members
- increasing student throughput

Not surprisingly given the infancy of MOOC initiatives, we were able to identify very few examples of actual costs savings realized. To the contrary, we were able to gather significant evidence of the high costs of development and delivery of MOOCs. Realizing cost and time savings may be more difficult than anticipated. Some interviewees, based on their experiences with regular online courses, questioned the likelihood of being able to reuse MOOC materials without significant adjustments each time. Others observed that sharing MOOCs across campuses or developing common courses would require the resolution of logistical issues such as how tuition and credits are transferred, and a shift in culture away from creation of content at each site. Few interviewees believed that MOOCs could fully substitute for on-campus instruction, expecting that they would need to be accompanied by face-to-face interactions between a live instructor and the students.

One example we encountered where less costly student support services are being provided is the MOOC-based Online Master of Science in Computer Science (OMS CS) program that the Georgia Institute of Technology (Georgia Tech) is developing with Udacity. Each course is staffed by a Georgia Tech instructor and a Head Teaching Assistant (TA) serving a projected 127 students in Year 1, rising to 456 students in Year 3 (although the actual average course size for the five courses offered in spring 2014 was 115 students). The Head TA, while selected by Georgia Tech, is employed by Udacity. In addition, Udacity-based Course Managers approved by Georgia Tech each provide technical support to around 390 students. Georgia Tech graduate students, serving 40 students each, serve as TAs to help with grading and responding to academic questions. Georgia Tech and Udacity are working on ways to manage the workload as enrollments increase, including more use of automated grading. Courses are initially taught by a faculty member, but reruns may be taught by a nontenured instructor or the Head TA. While this model may rely less than regular programs on expensive faculty time, it is not clear yet whether it will be sufficient to adequately support students' needs.

MOOCs as a Source of Revenue A small number of interviewees speculated that some IHEs are pursuing MOOCs as a potential source of revenue, but only two representatives from state universities explicitly stated revenue generation as a goal. Potential sources of revenue included the following:

- offering credit for MOOC completion and charging tuition
- creating new for-fee courses and programs
- drawing MOOC participants into existing, full-tuition degree programs
- increasing class sizes
- licensing fees for use of MOOC materials or data by other institutions
- fees for additional services offered to MOOC participants—for example, online tutoring or face-to-face instruction with a local instructor

- increased grant revenues
- matchmaking or training for employers

There are a few instances in which MOOCs or MOOC-like courses have been offered for credit with tuition being charged. San José State University piloted online courses that were offered free and without credit to the public, but a smaller number of formally enrolled students paid $150 each to earn three to five credits per course. Georgia Tech's OMS CS program charges $134 per credit. In each instance where MOOC-like courses are offered for credit, the offering institution has provided some degree of supplementary face-to-face instruction or online support for course participants. However, based on our review of the financial and enrollment projections for Georgia Tech's OMS CS program, we do not expect that the revenues will exceed the high fixed costs of MOOC development over the initial three-year period. We did not have access to financial projections for San José State University's MOOC initiative that would allow a similar review. At the University of Oklahoma, 20 credit-bearing, online courses have been developed with on-campus students as the primary audience in a flipped classroom model. These courses carry the same credits as the university's traditional courses and charge the same tuition. The courses are also open as online only, tuition- and credit-free MOOCs to any member of the public.

Evidence to support the likelihood of revenues materializing from other sources was more limited. We heard several anecdotal reports of increased interest in an institution's regular courses subsequent to a MOOC offering, but we found only one documented instance in which MOOC participants were being drawn into an existing, full-tuition program. University of Texas at Arlington's School of Nursing offered a MOOC through MOOC2Degree, and an undisclosed number of participants were in the process of applying to the university's program. Several interviewees claimed that using MOOC materials to flip the classroom and automating certain aspects of on-campus courses had allowed more students to enroll in a class, but it was unclear whether there was a net increase in number of students at the university or whether these students were simply being drawn away from other existing courses and programs. Some fees have been earned by offering MOOC participants verified certificates of completion, but the percentage uptake for this service has, to date, only been on the order of 1% of initial enrollees. While we heard several reports of licensing arrangements being signed to allow one institution to use another's MOOC content, we encountered no instances where fees had actually changed hands. Revenue increases from grants or from matchmaking or training services for employers currently appeared to be purely aspirational.

Goal 4: Improving Educational Outcomes Thirty-eight percent of the institutions participating in our study that were offering or using MOOCs and 20% of our interviewees overall expected MOOCs to lead to an improvement in educational outcomes, some believing improvement would occur directly within the MOOC format and some others believing improvement would happen indirectly through the transfer of new strategies and techniques to on-campus teaching. This goal was mentioned by representatives of five public universities, four private universities, and two community colleges. Ways in which MOOCs were expected to lead to improvements in educational outcomes included the following:

- providing instant feedback to course participants
- gamification and badging to increase motivation
- outreach to MOOC participants to encourage persistence
- adaptive learning, personalization, or mastery-based learning
- flipping the classroom using MOOCs to provide the online content
- motivating instructors to rethink pedagogy
- redesigning regular courses to incorporate MOOC strategies, such as "chunking" lectures and interspersing questions, and increasing opportunities for peer-to-peer learning

- using MOOCs in K–12 to prepare students for college
- fine-tuning instructional materials

According to a number of interviewees, the most significant impact of MOOCs has been on the motivation they have created for instructors to rethink how they teach. Several interviewees reported that MOOCs have prompted even typically intransigent faculty members to reconsider their teaching styles and have facilitated faculty professional development that might otherwise be resisted. However, several interviewees remarked on the lack of evidence that better learning experiences are actually being created for students, observing that change in practice is not inherently positive. Indeed, while interviewees provided many examples of how MOOCs have been used to change instruction, for the most part, actual impact on educational outcomes has not been documented in any rigorous fashion. Consequently, in most cases, it is unclear whether the goal of improving educational outcomes has been achieved. Cima (2014) and Ghadiri, Qayoumi, Junn, Hsu, and Sujitparapitaya (2013) provide two exceptions in which instructional changes and their effects on student performance have been carefully recorded. While not gold-standard, random-assignment experiments, they provide promising evidence of improvement in student performance as a result of integrating MOOCs into flipped on-campus courses, or adopting some of the MOOC strategies, such as frequent assessment and automatic feedback. On the other hand, Ithaka S+R (2014) conducted several side-by-side comparison tests of courses at the University System of Maryland and found no significant differences in posttest gains between students participating in hybrid courses that included MOOC materials and those participating in traditional versions of the courses.

While many interviewees pointed to the potential for MOOCs to contribute significantly to the development of personalized and adaptive learning, it is clear that current turnaround time for analyzing MOOC platform data is too long to allow for even midcourse corrections, let alone to provide just-in-time customization for individual participants. Without exception, interviewees acknowledged that this potential is far from being realized. A great deal of coordination and collaboration among content experts, instructors, researchers, instructional designers, and programmers will be necessary to result in substantive progress towards personalized and adaptive learning.

Goal 5: Innovation in Teaching and Learning Thirty-eight percent of the institutions in our study that were engaging with MOOCs and 19% of our interviewees overall presented MOOCs as vehicles for experimenting with and innovating pedagogy and models of higher education. Innovation as an end goal was mentioned by representatives of seven public universities, three private universities, and one community college. We note, however, that the other five goals we report involve innovating as a means to a particular end.

A number of interviewees portrayed experimentation with MOOCs and online learning as preparation for an uncertain future. Institutions do not want to be left behind in what they perceive could be a game-changing phenomenon for higher education. MOOCs were also presented as a disruptive innovation within the higher education business model that could help universities become more competitive simply by forcing them to reconsider the status quo and to ask fundamental questions about commonly accepted practices. One interviewee asserted that MOOCs have pushed college personnel to open up to the research about how people learn. A senior administrator observed that, especially for large state universities, change cannot be implemented swiftly. If these institutions do not at least experiment with innovative ideas as they arise, they will always lag behind smaller, more nimble competitors. A researcher at one of the pioneering MOOC producers described a trajectory of innovation in MOOCs starting with the initial infatuation with scale, proceeding to the search for a peer-mediated solution to the challenge of grading thousands of assignments, to the current recognition that participants may learn best when connected with other participants and finding ways to facilitate this through online chat rooms and small group discussions.

Not all of our interviewees were as convinced that MOOCs would introduce more productive innovation than existing experiments with online and blended learning. Interviewees with experience in online education and open learning resources over the last two decades pointed out that many MOOC developers are reinventing and relearning the missteps and successes of online learning and failing to take advantage of scale, the most characteristic aspect of MOOCs that differentiates them from other online education.

The large number of courses that have been developed or substantively redesigned since the appearance of MOOCs can be considered as evidence of innovation—for example, MOOC.list currently catalogs around 1,700 courses. It is abundantly clear that MOOCs have prompted many institutions and faculty members to engage in new educational activities. The strategies employed online, such as frequent assessments and short lectures interspersed with questions, are subsequently being used on campus. It is less clear what has been gained by these new initiatives because the value of innovation is hard to measure unless it can be tied to a more tangible objective. While a few institutions are developing metrics to assess the impact of MOOC-related innovations on various objectives, most institutions are not yet making any rigorous attempt to assess whether MOOCs are more or less effective than other strategies to achieve their goals.

Goal 6: Research on Teaching and Learning Research on teaching and learning was stated as a goal for MOOC initiatives by 28% of the 29 institutions offering or using MOOCs and by 18% of our 83 interviewees. This was a stated goal for one community college, three public research universities, and four private research universities. There is considerable overlap between formal research and ad hoc efforts to improve teaching and learning. While there is often a fine line of distinction between Goal 4 and Goal 6, in this section we generally address work that is being conducted by individuals who consider themselves researchers first and foremost and aim to publish their work, while efforts described under Goal 4 were less about creating generalizable knowledge and more about improving educational outcomes in a specific situation.

We heard from our interviewees about several types of research being conducted that use a MOOC as the vehicle for delivering an intervention or as a source of data on participant behavior and performance. The researchers themselves were in a range of disciplines, which influenced the kinds of questions being asked. Computer scientists and engineers have tended to focus either on descriptive studies, summarizing demographics or establishing how much each educational resource (video, e-text, discussion forum, etc.) was used, or on design research to create badging systems, discussion opportunities, peer grading, and auto-grading applications. Sociologists and education (or learning science) researchers have more often focused on experimental research—for example conducting A/B tests by e-mailing different messages or materials to different participants selected at random. Areas in which interviewees described research explorations and advances included the following:

- the role of social media networks in teaching and learning
- testing pedagogical strategies—for example, Firmin et al. (2013) and Champaign et al. (2014)
- student engagement and motivation—for example, Coetzee, Fox, Hearst, and Hartmann (2014); Kizilcec, Piech, and Schneider (2013); and Kizilcec, Schneider, Cohen, and McFarland (2014)
- machine learning and modeling research—for example, Piech et al. (2013); Halawa, Greene, and Mitchell (2014); and Nguyen, Piech, Huang, and Guibas (2014)
- natural language processing
- human–computer interaction—for example, Kulkarni et al. (2013) and Cambre, Kulkarni, Bernstein, and Klemmer (2014)

- personalized and adaptive learning—for example, Buffardi and Edwards (2014)
- comparing hybrid with traditional courses—for example, Ithaka S+R (2013, 2014) Griffiths (2013); and Bruff, Fisher, McEwen, and Smith (2013)
- developing data standards and a common platform for data mining—for example, Veeramachaneni, Dernoncourt, Taylor, Pardos, and O'Reilly (2013) and Dernoncourt et al. (2013)

A great deal of effort has been expended on trying to improve participant engagement and completion of MOOCs and less effort on determining whether participants actually gain skills or knowledge from the courses. The majority of instructors and researchers appear content with equating the completion of a MOOC with having learned something. One exception is the work of RELATE at MIT (see Colvin et al., in press) which rigorously documents both absolute and relative learning in a physics MOOC using pre- and posttesting and Item Response Theory. A few interviewees noted that this question of efficacy is rarely asked with respect to regular college courses. Others questioned whether findings from MOOCs can be generalized to other populations and contexts. Many noted that progress in using MOOCs for educational research is being impeded by difficulty using the platform data and lack of clarity regarding regulations applicable to the participants and their data. Another obstacle is that in a MOOC researchers do not make the decisions about what gets taught and how, and faculty members may or may not be predisposed toward the researcher's goals.

Conclusions and Recommendations

It appears that the goal of MOOC producers to extend reach to a wider audience and improve access to education has been met to some extent in terms of geographical spread but less so in terms of reaching individuals with fewer educational opportunities. Participants are mostly limited to highly motivated learners who have access to high-bandwidth Internet connections, and the majority have already earned at least a bachelor's degree. These may be new audiences for many existing college and university courses and programs, but it appears that MOOCs are mostly educating the educated and are therefore increasing the divide between those who have access to education and those who do not. It may be more accurate to state that they are extending access to lifelong education rather than making education accessible to a broad group of people. On the other hand, this educated audience is also more likely to be able to pay for certificates and other services, allowing the production and delivery of MOOCs to be financially sustainable. While many institutions express the desire to improve access to education—and this is indubitably a laudable goal—there is little real incentive or financial justification for institutions to do so, except for those participants who can pay for it.

Going forward, if institutions genuinely wish to broaden access to less educated audiences, they must identify multiple channels of communication to reach potential recruits. For example, they may need to use social media networks and advertise through high schools, employment agencies, or community organizations in the United States and abroad. Additionally, courses must be designed to serve learners who are less self-directed by incorporating motivational features and optional instructional scaffolding to address differences in participant preparation levels. However, as IHEs can ill afford to offer free and unsubsidized educational opportunities to the world, the costs of developing MOOCs will need to be covered by some fraction of participants who have adequate resources.

If success in achieving the goal of building and maintaining brand was measured purely by media publicity surrounding MOOCs, many institutions have indeed become more visible as a result of their MOOC activities. This publicity has been mostly positive, but not always. Although several institutions suggested anecdotally that this goal has been partially accomplished, quantifying success could be achieved by comparing pre- and post-MOOC metrics on student recruitment and enrollment statistics,

success in faculty recruitment and retention, breadth and generosity of donors, and quantity and size of grants. In addition, the costs of MOOC production and delivery should be compared to other strategies known to be effective at building and maintaining brand in order to ascertain which alternatives are most cost-effective.

Typical of any early-stage, technology-based innovation, achievement of the third goal, to improve the economics of higher education, is still elusive. We found scant evidence that MOOCs have increased revenues substantially and much evidence that they have increased costs significantly. Gradually materializing revenues could help shift the balance over the next few years, but unless MOOC producers and platform providers continue to expand ways to confer economic value on MOOC completion—for example, in the form of employer-recognized credentials—the market and associated revenue streams will remain limited. One way or another, MOOCs will need to prove they can solve a problem or provide a service more efficiently than existing alternatives.

MOOCs could potentially reduce the costs of higher education if they were used to eliminate the reproduction of similar courses across many campuses. If the licensing issues surrounding such sharing of materials can be resolved, and if MOOCs can be rerun several times without significant adjustments at each offering, the high costs of initial MOOC development could be amortized over all the instances of use. However, as costs of delivering education are mostly personnel related, overall costs of higher education can only fall if personnel numbers or salaries are reduced. Reduction of costs could be realized if academic institutions were willing to shift more of the responsibility for instructional support away from tenured faculty members and onto nontenured instructors, teaching assistants, or outsourced personnel. Tenured faculty positions could not be easily eliminated in the short term, but they could be reduced over time, contributing to the current long-term trend towards "adjunctization" of higher education. This trend does not, however, bode well for the capacity of academic institutions to further various academic disciplines through research, nor is it likely to be welcomed by faculty members and their unions. For now, MOOCs are being promoted as a substitute for repetitive activities, such as delivering the same lecture every year or grading uniform assignments, while faculty members spend time in the classroom with students on problem solving, discussion, and debate. This approach may prove to be more educationally effective than current practice, but it will also be more expensive and therefore even more financially unsustainable.

From the perspective of learners, MOOCs will only favorably impact the economics of obtaining an education if they remain free or charge minimal fees but can be used to substitute for costlier on-campus or online courses to obtain college credits or other credentials that are accepted by employers. While this scenario may be beneficial to the students and to the taxpayer, it may not be in the interests of the academic institutions themselves, as it will imply a loss of revenue per student, which may or may not be possible to make up by increasing enrollments. State and federal education policymakers could adjust regulations to create pathways for MOOCs to be accepted for credit in high schools or to satisfy government-mandated continuing education for professionals, but in higher education it is less clear how accreditation agencies could be persuaded to move in this direction. Establishment of an accrediting organization for individual MOOCs and other nontraditional educational experiences would allow learners to accumulate a portfolio of credentials that serve as a viable supplement or alternative to a college degree. Furthermore, such accreditation of individual courses or other nontraditional educational experiences should confer the ability to use public funds toward the costs of these credentials. Fain (2013) reports on two potential efforts in this direction and highlights some of the surrounding regulatory issues. Ironically, MOOCs have introduced possibilities that, should they materialize, could significantly compete with the very institutions that are racing to develop them.

To assess the sustainability of MOOCs, researchers and evaluators will need to document how much the costs of delivery fall for repeat offerings of MOOCs, how enrollment numbers change, and what the uptake rate is for any revenue-generating services. To determine whether MOOCs are a cost-effective means to deliver education or achieve other objectives, it will be necessary to compare the costs of MOOCs to the costs of alternative interventions, as well as the effectiveness of each alternative in addressing a common outcome of interest, such as increasing participants' knowledge or skills. It would also be useful to gauge the reaction of employers to such nontraditional credentials and to inquire as to what modifications employers might require to allow these credentials to be considered in employment or promotion decisions. The more value employers are willing to place on these credentials, the more fees MOOC offerers can charge to participants in order to offset institutional costs of production and delivery.

Many interviewees would readily assert that the fourth goal of improving educational outcomes has been achieved through MOOCs, at least for a limited group of learners. These positive reports arise in situations where MOOCs have been integrated with on-campus courses or where on-campus courses have been redesigned to incorporate MOOC-like components. Documentation of a small number of these experiments has shown early signs of improving student performance as measured by assessments and course completion rates. Typical strategies include flipping the classroom, implementing frequent assessments, and spending class time on problem-solving activities, often in small groups, rather than on lecture.

Little effort has been made to ascertain whether participants in stand-alone MOOCs gain useful skills and knowledge that can be applied in productive, real-world contexts. To determine whether the goal of improving educational outcomes can indeed be achieved through MOOCs alone will require rigorous evaluation employing pre- and postassessments of knowledge and skills, and comparisons with the outcomes of face-to-face or other online courses. Educators must progress beyond the notion that course completion per se equates with learning and must consider how to allow learners to demonstrate valuable competencies, both cognitive and noncognitive, that may be acquired through MOOC participation. Longitudinal studies tracking post-MOOC outcomes—such as sequences of courses taken, professional certifications obtained, or job opportunities received—would help assess the longer term value of participating in MOOCs. More effort is also required to assess whether MOOCs as stand-alone experiences can be designed effectively to increase knowledge and cultivate skills for any but the most motivated learners. Future research could be designed to broaden the types of learners represented in studies of MOOC activity and impact in order to avoid the presentation of results that are not applicable to the majority of learners.

The goal of innovation in teaching and learning has certainly been met at institutions where online learning did not previously exist, as evidenced by the sheer number of new courses produced and course redesign efforts undertaken. Metrics on the frequency of these efforts could be compared with pre-MOOC activity to provide an assessment of how well the goal of innovation has been achieved, but it is not clear that innovation per se is a sufficient aspiration. In many cases, institutions are innovating with a further goal in mind, such as improving educational outcomes or building brand. Assessing the impact of MOOC initiatives on these distal goals would be a more worthwhile endeavor in judging their contribution to higher education. Some institutions are unclear as to why they are embarking on MOOC initiatives and until they can agree internally on suitable and realistic goals, they will struggle to justify the expense and effort. For institutions that have been offering online and hybrid courses for many years, MOOCs represent more of an incremental step along a preexisting trajectory than a major innovation. Some even consider MOOCs to be regressive because they fail to incorporate best practices in distance learning and repeat many of the mistakes of earlier attempts to educate at scale. Going forward, researchers and practitioners who are familiar with evidence-based best practices in online learning could usefully recommend pedagogical strategies that can be effectively migrated to MOOCs. Finally, the goal of conducting research on teaching and learning has encountered many obstacles, but a few well-funded

institutions with strong computer programming capacity have not been deterred from efforts to use the "big data" from MOOC delivery platforms to document online learner behavior and to experiment with variations in pedagogical strategies. Regrettably, MOOCs are more often serving as a playground populated by captive participants within which researchers tinker with the artifacts than as an object of research to determine whether MOOCs, compared with existing models of education, are an effective and cost-effective means of educating a broad range of learners. MOOC researchers could benefit from soliciting the involvement of experienced online learning practitioners or researchers as they plan studies to experiment with MOOCs. A potentially useful application of the big data from MOOCs is to provide learner analytics. These can be used to iteratively improve courses or to catalyze the advent of high-quality adaptive learning and personalized educational experiences that meet the needs of a variety of learners. It is apparent, however, that the useful application of data-mining techniques to data from MOOC platforms could be facilitated by standardization of data formats across the various platforms. It is also clear that the high demand on resources to develop sophisticated adaptive-learning mechanisms will require the establishment of working partnerships between educators, instructional designers, and programmers. Federal approval of cross-institutional Institutional Review Board agreements could facilitate projects in which expertise and resources can be pooled. Additionally, clarifications regarding the applicability of FERPA to MOOCs would alleviate current confusion over how to handle participant data.

Given the considerable investment that MOOCs represent, we strongly recommend that prior to embarking on MOOC-related initiatives, institutions carefully consider their goals and whether MOOCs present a realistic and financially justifiable means to achieve them compared with existing alternatives. Administrators at academic institutions should work with representative faculty members and, where relevant, their unions to establish a strategy for MOOC engagement and a process for production or adoption of MOOCs. Data collection protocols should be devised up front to measure relevant indicators both prior to and following MOOC engagement in order to permit an objective assessment of whether stated goals are being met. Costs of such initiatives can be estimated by tracking personnel time commitments with respect to MOOC-related efforts and accounting for displacement of other productive activities, such as teaching or grant writing. These costs can be compared with the evidence of goal achievement to judge whether MOOCs are a worthwhile investment of limited educational resources.

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SECTION II: Student Retention and Interaction

The Role of Enrollment Choice in Online Education: Course Selection Rationale and Course Difficulty as Factors Affecting Retention

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Exploring the use of Discussion Strategies and Labels in Asynchronous Online Discussion

Fei Gao

The Role of Enrollment Choice in Online Education: Course Selection Rationale and Course Difficulty as Factors Affecting Retention

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Abstract

There is well-documented evidence that online retention rates are lower than face-to-face retention rates. However, most past research on online retention focuses on student characteristics, with little knowledge existing on the impact of course type. This study uses a matched sample of 2,330 students at a large urban community college to analyze two key course-level factors which may be impacting online retention: the student's reason for taking the course (as an elective or a requirement) and course difficulty level. The results of this study indicate that the online modality increases dropout risk in courses that are taken as an elective or distributional requirement, particularly for lower-level courses. The findings suggest that in the online environment, the student's reason for course enrollment may be considered a risk indicator and that focused learner support targeted at particular course types may be needed to increase online persistence and retention.

Introduction

There has been a dramatic shift in higher education in the last decade toward online education. As a result, online courses are now a core feature of most community colleges and universities (Larreadmendy-Joerns & Leinhardt, 2006; Layne, Boston & Ice, 2013; Sutton & Nora, 2008). Today, more than 30% of all college students, and more than 60% of community colleges students, enroll in online courses. Online enrollments grew by one million students from 2009 to 2010, the largest ever year-to-year increase, far surpassing the growth of higher education in general, and have increased more than 29% since 2010 (Allen & Seaman, 2010; Community College Research Center, 2013; Pearson Foundation, 2011). With higher education enrollments exploding today, and more technologically savvy students seeking alternate pathways to higher education, online education is expected to keep growing in the years to come (Allen & Seaman, 2013).

Concurrent with the accelerated growth in online education is escalating concerns about student outcomes (Boston & Ice, 2011; Hachey, Wladis & Conway, 2013; Howell, Williams & Lindsay, 2003). Course completion serves as an important measure of both student outcomes and the success of an online program (Abel, 2005; Moody, 2004; Willging & Johnson, 2004). Student retention is a costly issue for institutions as well as their students. From the institutional perspective, student dropout incurs staff costs

to handle transitions, involves extra administrative and advising time, and results in lost revenue (Moody, 2004). Moreover, reporting high completion rates is often critical for institutions to secure funding (Patterson & McFadden, 2009). From the student perspective, course dropout can impede progress towards a degree, cause financial loss, and incur potential psychological distress related to withdrawal decisions (Reed, 1981).

Because of the high costs of student attrition and its association with program quality, there is a critical need for higher learning institutions to be able to predict the potential persistence of online students in order to direct targeted support towards ameliorating the problem (Hachey, Wladis & Conway, 2013; Parker, 2003). So far, most research on student retention in the online environment focuses on student characteristics (Layne, Boston & Ice, 2013; for reviews see Levy, 2007; Yukselturk & Bulut, 2007); little knowledge exists on the impact of course type, even though it has been suggested as a potential online retention risk factor (Diaz, 2002). If course type is an online retention risk factor, then targeting particular courses for intervention, instead of seeking out individual students with particular characteristics, may be a more efficient and reliable way of allocating institutional resources to improve student persistence and online retention rates. We contend that the ability to predict online retention rates based on course characteristics may be extremely useful to institutions, since it could allow them to target with extra resources those particular course sections at highest risk of high online dropout—for example, including dedicated course-type specific counseling and coaching, providing course-specific online readiness surveys or special course orientations, and providing course-specific peer tutors. This study seeks to address the need for information about how course-level characteristics may impact online course retention by identifying and exploring two key factors: the student's reason for taking the course (as an elective or to fulfill a distributional or major requirement); and course difficulty level.

Background

While several studies have found no significant difference between student learning online versus in traditional face-to-face classrooms (Bernard, et al., 2004; Russell, 2001), research nevertheless indicates a pervasiveness of non-completion in online learning. The online education literature consistently cites lower retention for online courses in comparison to face-to-face courses across higher education in the United States (Angelino, Williams & Natvig, 2007; Morris & Finnegan, 2008-9; Tyler-Smith, 2006)—retention in online learning programs is often reported as 7-20 percentage points lower than traditional campus-based programs (Hachey, Wladis & Conway, 2013; Moody, 2004; Nora & Plazas-Snyder, 2008; Patterson & McFadden, 2009; Smith & Ferguson, 2005). Based on extensive past findings, we expect to find retention rates to be lower for online courses in comparison to face-to-face courses. Although research has been conducted and findings reported of differences in student retention in online courses across fields (Finnegan, Morris & Lee, 2008-9; Neil, 2001), there seems to be little evidence in the online education literature looking at the impact of course level or a student's reason for enrolling in the course (to fulfill elective, distributional or major requirements). Thus, what is not clear in the literature is if the risk of dropping out in the online modality is increased based on the type of online course that is taken.

Many studies have considered how student characteristics affect course outcomes. However, this study takes a different approach—it focuses on differences at the course level. Colleges administering online programs are often looking for ways to target interventions at students who are at the greatest risk of poor online performance as compared to face-to-face performance. One way of targeting those students is to use student characteristics; however, this method is time consuming and difficult because it requires colleges to collect and track information on a number of student characteristics which are not routinely collected (e.g. motivation, work hours), and because it requires colleges to target students individually. This study seeks to explore if there are particular courses which may have lower successful online completion rates than would be expected given successful face-to-face completion rates of the same course (taught by the same instructor). If such courses can be identified, then colleges can target

interventions to those courses at greatest risk, and in this way, target the students at greatest risk. The reason why these courses are at a greater risk online could be a number of things: it could be that the characteristics of students who take these courses make them particularly at-risk in the online environment, or it could be that there are characteristics of the courses themselves that make them more poorly suited to the online environment. The aim of this study is to identify which courses are at risk so that resources could be targeted to these classes; the goal of future work would, thus, be to explore the reasons behind any differences which are uncovered by this study.

Course Difficulty Level

In this paper, we define course difficulty as the level of a course, or whether a course requires credit-bearing prerequisites. For the college in this study, lower level courses are 100-level courses which do not have prerequisites (other than possible developmental coursework); in contrast, 200-level courses and above require at least one 100-level course as a prerequisite. In this way, 200-level courses cover more advanced material, which is why we refer to them as having a higher difficulty level. There are, of course, other ways in which the difficulty level of a course could be interpreted, but we do not purport to cover all of those interpretations here. Our goal is simply to distinguish between courses which have credit-bearing pre-requisites versus those that do not. Our reasons for focusing on this particular distinction are based on some evidence in the literature that students in lower-level courses may be more vulnerable to doing worse online than would be expected given their face-to-face performance.

Two recent studies of community college students found that students who took online classes early in their college careers were more likely to drop out than those who took only face-to-face courses (Jaggars & Xu, 2010; Xu & Jaggars, 2011), which might suggest that students enrolled in lower level classes which are typically taken earlier in a college career might be at greater risk of dropping out. Since difficulty of instructional materials has been cited as one potential reason students drop out of online courses (Diaz, 2002), the level of difficulty of a course may be one factor that may make it more prone to higher attrition in the online environment. Some prior research has found a strong negative correlation between previous education in the discipline and dropping out of an online course. This indicates that students may be more likely to drop out of lower level online courses, particularly when they are in a subject unrelated to their prior course experience. In other words, students may be more likely to drop lower level online courses that are outside their major (Xenos, Pierrakeas & Pintelas, 2002).

Reason for Course Enrollment (to fulfill Elective, Distributional or Major Requirements)

In particular, there seems to be little research that looks at whether the decision to enroll in required versus elective online courses has an impact on online retention. Student perceptions of online learning have been shown to be a better predictor of outcomes at the post-secondary level than grade point average (G.P.A.) (Lizzio, Wilson & Simons, 2002; Sutton & Nora, 2008). Moreover, across most disciplines, whether a course is an elective or a requirement is a variable that has been linked to student attitudes (Babad, 2001). Consistently in the face-to-face course literature, elective courses receive better evaluations than required courses (for a review, see Darby, 2006). Given the influence of student perception on persistence, this suggests that retention for elective courses may be higher than required courses. However, Reed (1981) contends that persistence in a course is significantly related specifically to students' belief in the relevance of the course to their need and, further, found that students were much more likely to drop courses that were electives.

Rational choice theory may provide an additional framework, beyond that of student persistence, for examining student course selection. Rational choice theory posits that individuals will base their activities and decisions on a cost-benefit analysis (Coleman & Fararo, 1992). If students believe there is a greater "pay off" from a specific course or set of courses, it may induce the student to persist. Students might consider there to be a greater "payoff" when selecting and completing courses that are required for their degree versus electives, and may therefore be more likely to persist in required courses. Additionally, to the extent that students perceive courses in the online environment to be less rigorous, this perception might be an inducement for enrollment. However, such perceptions may also lead to

greater attrition when students find the course to be more difficult than originally thought (Moody, 2004). Course workload and course difficulty are oft cited reasons for course withdrawal but often not the primary reason (Babad, Icekson & Yelenik, 2008; Summer & Johnson Community College, 2001). In a survey of 500 undergraduates enrolled in face to face courses, Babad & Tayeb (as cited in Babad, Icekson & Yelinek, 2008) found that students primarily dropped a course due to "atmosphere'', a factor that was a composite of both a student's connection with classmates (the number of students, the quality of the discussion) and physical conditions (classroom crowding and the characteristics of the room itself). But as Babad & Tayeb (as cited in Babad, Icekson & Yelinek, 2008) assert, the components of "atmosphere" used in this study may be more nebulous in the online environment.

At the college in this study, an interesting pattern was observed during a preliminary review of retention rates that seemed to suggest that the online environment may affect the retention rate more strongly for students taking courses as a distributional versus a major requirement. Retention rates in two different mathematics courses taught by the same professor, in the same semester, and with the same prerequisites were significantly different for the online section of the course as compared to the face-to-face section. Fundamentals of Mathematics (MAT 100) is taken by liberal arts majors as one option for fulfilling their mathematics distributional requirement. Mathematics for Health Sciences (MAT 104) is a required course in certain health care majors such as paramedics and nursing, with the course content entirely focused on applied problems in the field. In this example, the attrition rate in the online section of MAT 100 (the distribution requirement) was almost double that of its face-to-face counterpart; whereas the attrition rate in MAT 104 (the major requirement) was slightly (but not significantly) lower in the online environment compared to the face-to-face version. These preliminary findings suggest that an exploration of course-level factors, such as a student's reason for taking a course (to fulfill elective, distributional, or major requirements), is a logical next step in building predictive models of online student persistence. If course-level factors can be identified which allow institutions to identify courses which are at risk of significantly higher attrition rates in the online environment than would be expected given attrition rates in face-to-face environments, then interventions can be targeted to these courses. The reason why some courses may be at a greater risk in their online form could be that the characteristics of students who take these courses make them particularly at-risk in the online environment; however, focusing interventions on students with specific characteristics is more resource-intensive and difficult than targeting particular types of courses. Therefore, this study focuses on characteristics which are at the course rather than student level.

Purpose of the Study

The purpose of this study is to assess the extent to which students' reasons for taking a course (to fulfill elective, distributional, or major requirements) and course difficulty level may be used as predictors of online versus face-to-face course outcomes. Therefore, the following questions are addressed:

Which combinations of course-level factors (elective vs. distributional vs. major requirements; level) have retention rates that are significantly lower online than face-to-face?

When comparing online and face-to-face sections of the same course, is the gap in retention rates larger for courses which students take as elective or distributional requirements than for courses which students take to fulfill major requirements?

When comparing online and face-to-face sections of the same course, is the gap in retention rates larger for lower-level (100-level) courses than for upper-level (200-level and above) courses?

Is there an interaction between a student's reason for taking a course (to fulfill elective, distributional or major requirements) and course difficulty level in predicting online versus face-to-face course retention? For example, is the correlation between a student's reason for taking a course and online course outcomes greater for lower-level courses than for upper-level courses?

Methodology

Data Source and Sample

This study utilizes data provided by the Office of Institutional Research from a large, urban community college in the Northeast region of the United States. Enrolling approximately 23,500 students in degree-programs each year, the college meets the requirements to be deemed a "large institution", according to Allen & Seaman (2010). This is noteworthy as large institutions educate nearly two-thirds (64%) of all online students. The gathered data represents a diverse student body, as enrollees come from over 150 countries around the world. Eighty percent of the College's student population belongs to groups historically underrepresented in higher education: the College is classified as both a Minority Serving Institution and a Hispanic Serving Institution. The College has offered online classes since 2002, and currently offers a fully online Associate's Degree in Liberal Arts in addition to over 135 online courses.

Data was compiled for 122 course sections (half taught online and half taught face-to-face). The course sections to be included in the sample were selected from a larger pool using the following methods: first, data were obtained for all online course sections taught from 2004–2010 (fall and spring semesters). Second, the sample was limited to include only those course sections for which an instructor taught the same course both face-to-face and online in the same semester, to control for instructor effects. Next, the sample was reduced to only those courses which the instructor had taught for at least three semesters, to limit the effects of instructor inexperience in the online environment. In total, 21 different courses taught by 23 different instructors both online and face-to-face were included. The courses were well distributed across disciplines, with three in business, one in nursing, five in the humanities, five in the social sciences, four in mathematics, and three in science disciplines.

Measures

For each section in the sample, student data was provided stripped of personal identifiers; unique identification numbers were used to distinguish participants. This resulted in a total dataset of 2,330 participants. The following information was obtained for every student: student major (used to determine if the course was taken as a requirement or elective) and final grade in the course (including withdrawal status). The categorization of a course as an elective, distributional requirement, or major requirement for each student was determined based on the requirements of students' majors: courses which did not fulfill any particular curriculum requirement (other than general elective credits) were counted as electives; courses that fulfilled a degree requirement not part of the major's core curriculum were counted as distributional requirements; and courses that were either explicitly required as a part of a major's core curriculum, or were elective major courses that counted as major requirements for a particular student were coded as major requirements. Major requirements were not always limited to courses in the exact subject of the student's major. Courses in related fields were also counted as major requirements if they were listed by a department as being required for the major in the college catalog.

The dependent variable which was the focus of this study was retention: students were categorized as having completed the course if they were still attending class after the tenth week of the semester (only fall and spring semesters were included in the analysis). Students who never attended the course or who received an incomplete grade were excluded from the analysis.

Data Analyses

First we performed significance tests using the Bonferroni procedure and *z*-scores to determine whether different types of courses in the sample had significantly different retention rates (online versus face-to-face; lower-level versus upper-level; elective versus distribution versus major requirements). Then we used these same types of significance tests to determine whether each course subtype (lower level; upper level; elective; distributional requirement; major requirement) had significantly lower retention rates in their online form versus their face-to-face form. Based on current research literature, we expected (but did not assume) average retention rates to be lower online than in face-to-face sections.

However, because the existence, direction, and size of the gap between online and face-to-face completion rates may vary by course type, we used binary logistic regression to determine if any differences in the size or direction of retention rate gaps between different course types (elective, distributional, major requirement) were significant by interacting course-level characteristics with the course medium (online versus face-to-face).

We performed significance tests using the Bonferroni procedure and *z*-scores to determine whether online and face-to-face retention rates were significantly different for combinations of subtypes of courses (e.g. lower level electives). We then conducted separate binary logistic regression models for lower level courses and for upper level courses that compared the differences in size and direction for the gap between online and face-to-face courses among elective versus distributional versus major requirements.

Results and Discussion

Preliminary Analysis of the Data

As a precursor to analyzing differences in retention in different online course types, we first analyzed whether, in this sample, there were generally (not just online) differences in attrition rates among courses taken to fulfill elective versus distributional versus major requirements, or among upper versus lower level courses. Pooling all students in the sample in both online and face-to-face courses to compute retention rates for each category yields the data in Table 1, which includes tests for significance. (We note that Retention rates and Attrition rates are complements of one another: the Attrition rate is the percentage of students who withdrew from the course officially or unofficially [i.e. a student stopped attending class sometime before the tenth week of the semester—students who stop attending after the 10th week of classes receive an "F" grade instead], whereas the Retention rate is the percentage of students who did not withdraw officially or unofficially, but may have earned an "F" or "D" grade.)

Table 1 Retention rates for students in each classification of course type, with tests for significance.

	retention	***n***	***z***	***p***	***z*-score compares:**
face-to-face	81.0%	1107	5.46	**<0.0001**	face-to-face vs. online
online	70.6%	887			
lower level	69.3%	1092	-8.16	**<0.0001**	lower level vs. upper level
upper level	84.9%	902			
elective	67.7%	449	-2.79	*ns*	elective vs. dist. req.
dist. req.	74.8%	980	-5.21	**<0.0001**	dist. req. vs. major req.
major req.	86.0%	565	6.98	**<0.0001**	elective vs. major req.

Results for *p*-values in bold are all highly statistically significant (α=0.01, two-tailed), even when the Bonferroni procedure is used to control for Type I error. The abbreviation *ns* means that the result is not statistically significant.

In *Table 1* it is apparent that attrition is higher: 1) in online courses compared to face-to-face courses; 2) in lower level courses compared to upper level courses; and 3) in courses that are elective or distributional requirements rather than major requirements. All of these differences are highly statistically significant (α=0.01).

Differences in online versus face-to-face course retention rates for different combinations of course-level factors

Next, we considered the interaction between the method of course delivery (online vs. face-to-face) with course type (elective vs. distributional requirement vs. major requirement) and level. Retention rates for each course-level factor can be seen in *Table 2* broken down by course delivery modality.

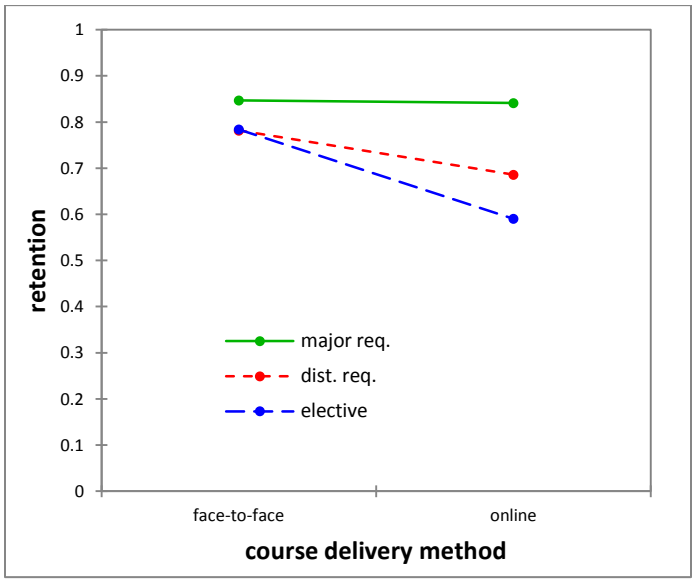
Table 2 Retention rates online and face-to-face for different course types, with tests for significance

	face-to-face retention	*n*	online retention	*n*	*z*	*p*
lower level	75.5%	593	61.9%	499	4.86**	<0.0001
upper level	87.4%	514	81.7%	388	2.35	*ns*
elective	77.8%	203	59.3%	246	4.17**	<0.0001
dist. req.	79.1%	560	69.0%	420	3.59**	<0.0001
major req.	86.0%	344	86.0%	221	0.02	*ns*

** indicates significance level of α=0.01 (one-tailed) for overall set of tests (adjusted to 0.0011 per test using the Bonferroni procedure)

In *Table 2*, retention followed the same pattern in the online environment as in the face to face environment: retention was greater in upper level and major requirement courses versus lower level and elective or distributional requirement courses. Additionally, the following course types had a highly statistically significantly (α=0.01) lower retention rate online than face-to-face: lower level courses; elective courses, and courses that fulfill distributional requirements. This suggests that whatever factors lead to lower overall retention rates for lower level, elective, and distributional requirement courses (e.g. lower levels of student motivation) may be amplified by the online environment. The differences in online versus face-to-face course outcomes by course type are illustrated graphically in *Figure 1*.

Figure 1 Online and Face-to-Face Retention for Electives vs. Distributional Requirements vs. Major Requirements



It is evident from *Figure 1* that students who take an online course which fulfills their major requirements are roughly equally as likely to remain in the course whether they take it online or face-to-face, while students who take the course to fulfill a distributional requirement or as an elective are much more likely to withdraw online than in the face-to-face environment, with this difference particularly pronounced for electives. To determine if the slopes of the lines in *Figure 1* are statistically significant, we performed a binary logistic regression with retention as the dependent variable and course delivery method and course type as the independent variables. We also included the interaction between these two factors as a term in the regression equation. The results of this analysis can be seen in *Table 3*.

Table 3 Type III analysis for binary logistic regression analysis of the interaction effect of course delivery method and course type on retention

	Chi-square (LR)	Pr > LR
course delivery method	0.037	0.847
course type	7.328	0.026*
course delivery method*course type	8.661	0.013*
-2 Log Likelihood	2376.297	
R^2(Nagelkerke)	0.053	

* indicates significance level of α=0.05

When the interaction between course delivery method and course type is taken into account, the interaction between course type and course delivery method is statistically significant (α=0.05). In other words, the differences in slope that we see in the lines in *Figure 1* are statistically significant, and students in elective and distributional requirement courses have a much higher jump in attrition when they move to the online environment than students in major requirement courses.

But what happens if course type and level are combined? For example, would an upper level elective course have lower online retention or not? To address these questions, we next analyzed differences in retention rates for the two factors of course type and level, both online and face-to-face.

How does course level interact with course type and the online environment in predicting course outcomes?

First we looked at each subgroup of course level by type (e.g. lower level elective courses, upper level distributional requirements, etc.), to see which of these groups had retention rates that were lower in the online environment. This data is displayed in *Table 4*.

Table 4 Retention rates online and face-to-face for different combinations of course type, with tests for significance

level	**type**	**face-to-face retention**	***n***	**online retention**	***n***	***z***	***p***
lower level	elective	74.30%	105	52.10%	165	3.64	<0.0001**
lower level	dist. req.	75.90%	390	64.50%	290	3.24	0.0006**
lower level	major req.	75.50%	98	81.80%	44	-0.83	*ns*
upper level	elective	81.60%	98	74.10%	81	1.21	*ns*
upper level	dist. req.	86.50%	170	79.20%	130	1.68	*ns*
upper level	major req.	90.20%	246	87.00%	177	1.03	*ns*

* indicates a significance level of α=0.01 (one-tailed) for overall set of tests (adjusted to 0.0017 per test using the Bonferroni procedure)

In *Table 4*, it is apparent that lower level courses taken as either electives or to fulfill distributional requirements have statistically significantly (α=0.01) lower retention rates online than face-to-face, whereas this effect is not seen for major requirements or for upper level courses. In *Figure 2* and *Figure 3*, these differences are displayed graphically.

For lower level courses (*Figure 2*), all course designation types (electives, distributional requirements and major requirements) have almost identical retention rates face-to-face. In the online environment, however, these retention rates greatly diverge, covering a range that is about thirty percentage points wide. For lower level courses in the online environment, major requirement courses have retention rates that are actually a bit higher than in the face-to-face environment (although this difference is not statistically significant), whereas distributional requirement courses have retention rates that are significantly lower online, and elective courses have retention rates that are much significantly lower online. In contrast, for upper level courses, major requirement courses have higher retention than distributional requirement courses, which have higher retention than elective courses, but this pattern is

nearly identical both online and face-to-face: the gap between courses is about the same both face-to-face and online, and the retention rates for each category, while slightly lower online, are not statistically different from the retention rates for each corresponding category face-to-face.

Figure 2 Retention for Lower Level (LL) courses by type and delivery method

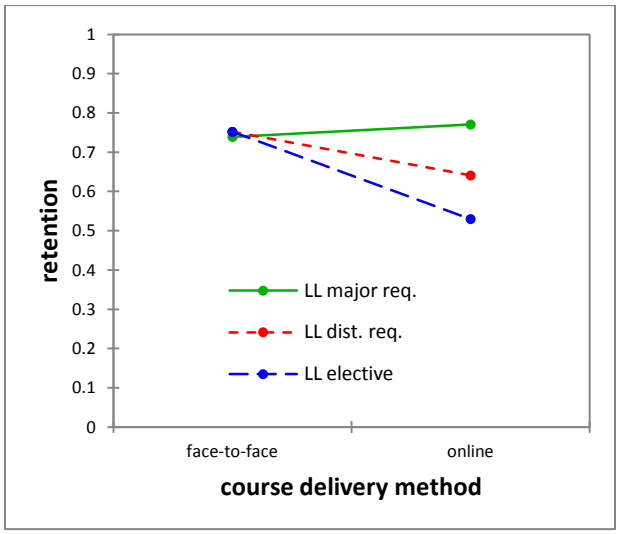
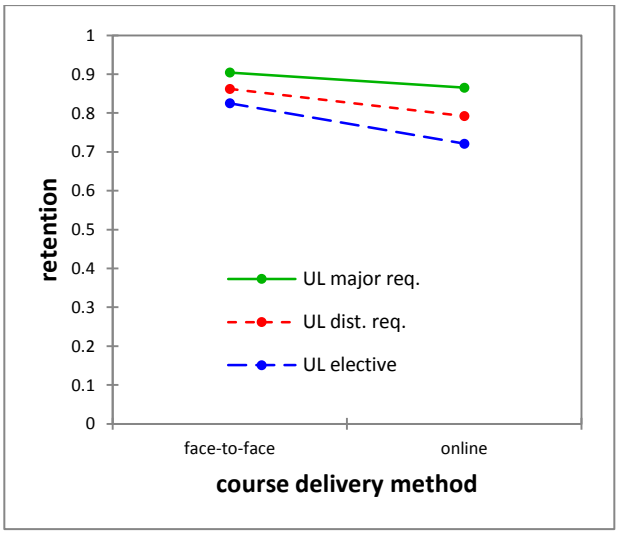


Figure 3 Retention for Upper Level (UL) courses by type and delivery method



To determine whether or not the differences in slopes in *Figure 2* and *Figure 3* are statistically significant, we performed a binary logistic regression—first on lower level courses only, and then on upper level courses only—to determine what effect the interaction of course delivery method and course type might have on retention. These results can be seen in *Table 5*.

Table 5 Type III analysis for binary logistic regression analyzing the effects of the interaction between course delivery method and course type on retention, broken down by course level

lower level courses	Chi-square (LR)	Pr > LR
course delivery method	0.226	0.634
course type	0.096	0.953
course delivery method*course type	7.356	0.025*
-2 Log Likelihood	1556.1	
R^2 (Nagelkerke)	0.042	
upper level courses	Chi-square (LR)	Pr > LR
course delivery method	6.889	0.009**
course type	12.385	0.002**
-2 Log(Likelihood)	769.0	
R^2(Nagelkerke)	0.037	
** and * indicate significance levels of α=0.01 and α=0.05 respectively		

In *Table 5*, we can see that once the interaction between course delivery method and course type is taken into account in the lower level course subsample, the interaction is statistically significant. So the differences in slope that are visible in *Figure 2* are in fact statistically significant, and knowing the type or delivery modality of a course alone does not provide us particularly useful information for predicting online course outcomes in lower level courses. Instead the differences in retention rates among these different categories is better captured by knowing the course type and modality subcategory (for example, knowing that a course is online, or is an elective is not enough to predict a retention rate that might be different from average for lower level courses, but knowing that a course is an elective online is

predictive of retention).

Table 5 also gives the results of a binary logistic regression analysis on upper level courses. In this model the interaction term was omitted because it was not significant, and both course modality and type are significant predictors of retention, which is what we would expect from looking at the graph. For upper level courses, online retention rates are slightly but significantly lower, and the retention rates for major requirements are higher than for distributional requirements, which are in turn higher than for electives, in both the online and face-to-face modality. Planned pairwise comparisons during the binary logistic regression analysis (not shown here for the sake of brevity) show that distributional requirements and electives had statistically lower retention rates overall, but that the difference between elective and distributional requirements was not significant. This means that for upper level courses, unlike for lower level courses, the effects of the online environment on retention seem to be roughly the same across all course types.

Limitations

This research was limited to a specific sample chosen from a single community college, and as such, these results may not necessarily generalize nationally or to four-year institutions. However, this limitation is mitigated in several important ways. First, the community college in this study has a very diverse student body. Second, because the study focuses on a large urban community college, the sample the data was drawn from is representative of the types of institutions which educate the vast majority of community college students in the United States, since 82% of all community college students attend institutions in or on the fringe of mid- and large-sized cities (U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2003). This suggests that research based on the college in this study may be relevant to a large proportion of community college students nationally. Finally, studying students within a single institution rather than across institutions limits threats to internal validity, because faculty conditions, course requirements and institutional elements are more uniform within a single institution (Nora & Cabrera, 1996).

In addition, controlling courses by instructor and semester (including in the sample only pairs of course sections taught by the same instructor both online and face-to-face in the same semester) limits the total number of possible instructors included in the sample, and therefore each instructor may have greater influence on the results. Because all the instructors in this sample taught online for at least three semesters (many of them much longer) and because the college in this study does not let faculty continue to teach a course online if students in their courses have very low retention rates, it is unlikely that a small number of faculty with particularly low retention rates strongly affected the results. With that said, it would be necessary to repeat this study with larger sample sizes at other institutions to confirm the general trends observed here.

Additionally, the differences in significance for factors in the models included in *Table 5* for lower level courses versus upper level courses is not in and of itself proof of a three-way interaction between course type, level, and delivery method. Technically only a larger binary logistic regression model containing all two-way and three-way interactions could ascertain the statistical significance of the differences between the trends seen in *Figure 2* for lower level courses versus those seen in *Figure 3* for upper level classes. However, the sample size in this particular study was not sufficiently large to allow for the necessary statistical power to perform such a test. As such, the differences observed between the patterns seen in *Figure 2* and *Figure 3* should be interpreted as preliminary results only, which should be tested with larger samples. From the institutional perspective, the results of such a statistical test may be less relevant: to improve online retention rates, it may not be necessary to determine for certain whether the patterns observed for upper level courses in *Figure 3* are truly significantly different from those observed for lower level courses in *Figure 2*. Rather, the simple fact that lower level courses taken as electives or distributional requirements have the highest drop in retention when moved to the online environment suggests that targeting this specific subgroup of courses for extra support in the online environment may be sufficient to improve overall online attrition.

Lastly, this research did not explore differences in student characteristics. Numerous studies, including our own (e.g. Jaggars & Xu, 2010; Wladis, Hachey, & Conway, in press; Xu & Jaggars, 2011), have shown that students who possess certain non-traditional characteristics, including being older, working, attending part-time and supporting dependents, are more likely to enroll in online courses. These same characteristics are also factors which have been shown to negatively impact persistence, regardless of course modality. However, the goal of this research is not to compare outcomes of online versus face-to-face students directly. Rather, the goal of this study is to look at the *interaction* between the online medium and course characteristics, which focuses instead on exploring when the gap between online and face-to-face completion rates is significantly larger or smaller for different types of courses.

It is possible that certain types of courses attract students who are more likely to be at risk in online environments, and this could explain any significant differences in the online-versus-face-to-face course completion gap for specific course types. Our study does not discount this as a possible reason for differences in outcomes for different types of courses. For example, students who are enrolled in more advanced level courses have already succeeded to an extent that has not (and may not) occur for students enrolled in lower level courses, and this may explain the differences in the online-versus-face-to-face course completion gap for higher versus lower level courses. Whatever the reason for larger gaps in specific types of courses, identifying courses with larger gaps could allow institutions to target interventions specifically to those course types. Identifying courses that are at highest risk in the online environment allows resources to be targeted to these classes, and then the goal of future work would be to explore the reasons behind differences which have been uncovered by this study.

Implications

For Practice

Ludwig-Hardman & Dunlap (2003) contend that individualization in learner support services is greatly needed to increase retention in online courses. This research suggests that online course retention rates can be improved by providing extra support targeted specifically to lower level courses which are typically taken as electives or to satisfy distributional requirements. Such support could include self-assessment and orientation tools which could be used to help students assess their perceptions and preparedness for the course. At the course level, E-advisors could provide an early mechanism for academic counseling, additional technical support staff could assist students with technical difficulties specific to the online environment, and peer tutors could assist students with the course content. Such measures could improve retention rates for these courses where students are at highest risk of dropping out. Retention online overall could be improved just by targeting the subgroups of courses at highest risk (thereby more efficiently allocating resources). In particular, for the sample in this study, if an intervention (effective enough to improve retention online to the level typical in comparable face-to-face courses) was targeted only at lower level elective and distributional requirement courses, the overall online persistence rate would have jumped from 70.6% to 78.4%, and this increase in overall online course persistence would be sufficient to close the gap with overall face-to-face persistence rates (80.0%). The 78.4% online persistence rate that could be obtained by such an intervention is not significantly different from the 80.0% face-to-face persistence rate (at the α=0.05 level with a one-tailed *z*-test). This suggests that if a sufficiently effective intervention could be implemented, any online and face-to-face attrition rate gap could be closed by targeting just roughly half of the online courses offered at this college.

Some institutions might conclude from these results that they should limit or prohibit certain types of courses to be taught online, because those courses have a lower retention rate online than face-to-face. While this might raise average online retention rates, in practice it would be impractical by limiting access for a huge number of students, and would be a misapplication of the conclusions in this analysis. It is important to note that the designation as an elective or distributional requirement lies with the student, not the course, as it depends upon a student's major. For example, English 201 may be taken at

the college in this study by many students as a distributional requirement, but for English or Writing majors, this course actually fulfills their major requirements. Even if it were practical, removing all the students from online courses who took the course as an elective or a distributional requirement would require prohibiting more than half of the online students from taking courses online, which would defeat the purpose of online education in providing greater access to higher education. In particular, the many students who do succeed in these online courses would have fewer course options and, therefore, might be less likely to persist in college and complete college degrees. Furthermore, removing certain types of courses from the online environment may not actually improve overall online retention. For example, it may be that lower level online courses have lower retention because they contain a much higher proportion of students taking an online course for the first time. If this is the case, eliminating lower level online courses may then simply shift increased drop-out rates from lower level to upper level courses.

For Research

This study has shown that the type of course in which students enroll can have a drastic effect on their likelihood of withdrawal from online courses. However, before larger generalizations can be made about which types of courses lead to lower retention online in the general college student population, this analysis should be repeated with diverse samples across different campuses. In addition, the reasons for the lower rates of retention in lower level online classes taken as electives and distributional requirements are unclear, and further research could help to explain the reasons for these results.

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Exploring the Use of Discussion Strategies and Labels in Asynchronous Online Discussion

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Abstract

Drawing on research in constrained online discussion environments and strategy instruction, this approach combines explicit instruction on discussion strategies with the use of post type labels. In a trial of this approach in an online course, students actively used the discussion strategies and post type labels in their discussions. Analysis of student posts and survey responses suggested that students in the experimental group used discussion strategies more frequently after the intervention as compared to the control group and perceived that this approach positively impacted their discussions. In addition, there was a certain degree of improvement in the quality of discussion as measured by Gunawardena, Lowe, and Anderson's (1997) critical analysis model.

Introduction

Asynchronous online discussion has become one of the major means of supporting student learning in online environments (Joeng, 2003; J. Thomas, 2013). Researchers believe that asynchronous online discussion forums could provide ideal environments for the social constructivist mode of learning, where the learners actively and continuously negotiate and construct meanings in the social context (Jonassen, 1991; Kanuka & Anderson, 1998; Oztok, Zingaro, Brett, & Hewitt, 2013). More specifically, asynchronous online discussion forums support a more decentralized and collaborative learning environment, where the teacher acts as a facilitator, and students take responsibility for their own learning (Jonassen, Davidson, Collins, Compbell, & Hagg, 1995). In addition, online discussion tools automatically keep written records of the discussion, providing learners more opportunities to identify, examine, and make connections between ideas. Asynchronous discussion also frees learners from time and space constraints, providing more time for reflection and increasing the chances that in-depth thinking will occur (Anderson, 1996; Collison, Elbaum, Haavind, & Tinker, 2000).

Discussion in online courses, however, typically falls short of this ideal (Rourke & Kanuka, 2009). Students participating in asynchronous online discussion do not automatically interact to construct knowledge (An, Shin, & Lim, 2009; M. J. W. Thomas, 2002), and they make limited efforts to extend and

deepen the conversation by building upon others' ideas (Hara, Bonk, & Angeli, 2000; Larson & Keiper, 2002). The focus of online discussion, therefore, often remains at surface levels, such as sharing or comparing information, seldom delving to deeper levels that involve negotiating meanings, synthesizing or applying newly acquired knowledge (Davidson-Shivers, Luyegu, & Kimble, 2012; Gunawardena et al., 1997; Moore & Marra, 2005; Wegmann & McCauley, 2008).

To solve the problem of lack of quality student participation in online discussions, researchers have explored and experimented with a number of different approaches, including developing online activities to engage learners (Ertmer et al., 2007; Nussbaum, 2005; Seo, 2007), providing participation guidelines and expectations (Gilbert & Dabbagh, 2005), teaching and modeling ways of interaction (H. J. Choi & Johnson, 2005; Yang, Newby, & Bill, 2005; Zydney, deNoyelles, & Seo, 2012), enhancing instructor's or moderator's facilitation (Berge & Muilenburg, 2002; Bradley, Thom, Hayes, & Hay, 2008), and designing constrained discussion environments by adding specific features to the discussion forums to increase the likelihood of effective discussions (Guzdial & Turns, 2000; Jonassen & Kim, 2010). This study is another effort to address the common problems in online discussions. Building upon previous research on constrained discussion environments, the study examines the effectiveness of teaching students using discussion strategies in a constrained online discussion environment. More specifically, students received explicit instruction on how to effectively use five discussion strategies during online discussions and were asked to use post type labels built into the constrained discussion environment to structure their posts. The purpose of the study is to find out how the approach affected student participation in the online discussion.

Literature Review

Constrained Online Discussion Environments

Concerned about the lack of quality participation from students in online discussion, researchers have designed constrained discussion environments to scaffold the process of online discussion. A constrained environment is a pre-structured form of discussion environment that guides learners to participate in the discussion in certain ways. Typically, it requires learners to start their notes with a predefined phase (a post starter, such as "My argument is") or label their notes using a predefined set of post types, such as *evidence* or *elaboration* (Jonassen & Kim, 2010; Oh & Jonassen, 2007). The rationale is that such structured environments can promote learners' metacognitive thinking and engage them in desired cognitive processes (Jonassen & Remidez, 2005; Scardamalia & Bereiter, 1994).

Constrained discussion environments have been examined by a number of researchers to determine their effectiveness. Nussbaum and colleagues (2004), for example, encouraged counterargument using a constrained environment, in which students were asked to choose from a drop-down menu a post starter, such as "On the opposite side," "I need to understand," or "My argument is," to begin their notes. By comparing discussion in this environment with that in a threaded forum, they concluded the approach significantly increased the frequency of disagreement but was not equally effective for all types of learners. The approach was particularly useful for students with low degrees of curiosity or assertiveness. In another study, Chiu and colleagues (2013) examined whether such a constrained environment could be used to enhance fifth-grade students' communicative competence and collaborative productivity. They found that students who used a predetermined phrase from a list of utterance patterns to structure their posts had significantly better communicative competence development than those in the unstructured condition. Students in the structured environment also continued to demonstrate better collaborative productivity.

In addition to post starters, some researchers designed environments where participants were required to add a post type label adjacent to the titles of their posts. The SpeakEasy environment

introduced by Hoadley and Linn (2000), for example, allows students to use semantic labels such as *and*, *or*, *but*, *i.e.*, and *?* to indicate the relationship of a current post to previous posts. During the discussion, students were prompted to categorize their comments by picking a semantic label before providing a subject heading. When comparing student discussions in SpeakEasy with those in a regular threaded forum, they found no significant difference. Students in both discussion formats gained an integrated understanding of the learning content. Research on constrained environments, however, has led to inconsistent findings. In the constrained environment developed by Oh and Jonassen (2007), post type labels (which are *hypothesis cause*, *solution generation*, *verification*, *rebuttal*, *evidence*, and *elaboration*) and post starters (including "My experience is," "I believe," "Research shows," and "A scholar says") were applied. After comparing the online argumentation that occurred in this environment with that in a threaded forum, Oh and Jonassen concluded that participants in the constrained environment generated more evidence posts, and more hypothesis and hypothesis testing posts. Similarly, Scheuer and colleagues' (2013) study suggested that when students used a combination of post starters and argument diagramming, where students chose among four boxes with distinctive colors ("main thesis," "main argument," "helping argument," and "fact") to indicate different post types, they posted more elaborative comments and had a more positive attitude toward the learning experience. The study conducted by Jeong and Joung (2007), however, reported negative effects of using such labels. The researchers compared the nature of online argumentation of three groups: (a) control group; (b) constraints-only group, where students posted only specific types of message from a prescribed set of message categories, such as *arguments*, *evidence*, *critique*, and *explanation*; and (c) constrained-with-labels group, where students posted specific types of messages and at the same time manually labeled each message with a prescribed post type label. The study found that participants in the constrained-with-labels group were less likely to critique others and respond to critiques than the other two groups, suggesting that post type labels might inhibit the process of developing deeper and more critical analysis of individual arguments.

In addition to examining the change of quality in student discussion, other effects of constrained environments were also studied. For example, Tsai and Tsai (2013) explored the effects of the constrained environment on student conceptions of and approach to online argumentation. The study revealed that students with fragmented conceptions of argumentation tended to employ a surface approach during the discussion despite the use of post type labels and question prompts. However, those students tended to develop potentially deeper approaches than those who did not used question prompts. In sum, though using post type labels and post starters seems to be a promising approach to improve the quality of online discussion, the findings are rather mixed and inconclusive. In addition, most constrained environments were designed to enhance student argumentative skills, but little is known about how such environments can be used to benefit online discussions that are not argumentative in nature.

Learning Strategy Instruction

It is assumed that people regulate and control their learning by choosing the learning strategy that seems to be most suitable for dealing with the learning task. Rooted in cognitive psychology, learning strategy is defined as "behaviors and thoughts that a learner engages in during learning and that are intended to influence the learner's encoding process" (Weinstein & Mayer, 1986, p. 315). It has two key components: (a) cognitive processes used to complete the task at hand and (b) metacognitive processes used to select a strategy for the task, monitor the success of the chosen strategy, and evaluate the outcome of using the strategy (Schumaker & Deshler, 2006).

An extensive body of research has shown that the strategy instruction is effective for improving reading and learning (Brown, Pressley, Van Meter, & Schuder, 1996; Chamot, 2005; Deshler & Schumaker, 1988; Deshler, Schumaker, Lenz, & Ellis, 1984; Duffy & Roehler, 1987, 1989; Graham, 2006; King, 1991; Palinscar & Brown, 1984; Pressley, 1986; Pressley, Wood, Woloshyn, & Martin, 1992). Recently, some researchers have also examined the feasibility of learning strategy instruction in adult education settings, and have suggested that learning strategy instruction might have a positive impact on

the instructor–learner interaction (Mellard, 2006) and potentially help less successful learners perform better (Hock & Mellard, 2011; MacArthur & Lembo, 2009).
According to Pressley and Woloshyn (1990), though the way the strategies were taught varies significantly, effective strategy instruction shares the following fundamental principles:

> *Teacher modeling*. The teacher describes the strategy to students by providing metacognitive information such as what the strategy is, why the strategy should be used, and when and where it should be used. The teacher then models the use of the strategies.
>
> *Guided practice and feedback*. Students spend ample time practicing the strategy under the teacher's guidance. The teacher provides scaffolding as well as feedback regarding how to improve the execution of the strategy. Practice usually begins with fairly simple tasks and then moves to more complex tasks.
>
> *Gradual increase in students' responsibility*. Students take more and more responsibility in using the strategy. The ultimate goal is that students use the strategies appropriately, skillfully, and autonomously.

These three principles thus guided the design of online discussion strategy instruction in this study.

Five Online Discussion Strategies

Based on the literature on both constrained discussion environment and learning strategy instruction, an alternative approach that combined the use of labels with strategy instruction was proposed to improve the quality of online discussion, and a quasi-experimental study was conducted to understand the effectiveness of this approach.

Five discussion strategies were developed. The first four strategies were selected based on the productive discussion model (Gao, Wang, & Sun, 2009). According to Gao and the colleagues (2009), in a productive discussion, learners should demonstrate the following dispositions: (a) discuss to comprehend, where learners engage in cognitive processes such as interpretation, elaboration, and making connections; (b) discuss to critique, where learners critically examine other people's views and are analytical to conflicting views; and (c) discuss to construct knowledge, where learners negotiate meanings and reconsider and refine previous thinking. As a result, the following four strategies were chosen to support each of the dispositions: *elaborating and clarifying* (Disposition 1), *making connections* (Disposition 1), *challenging others' views* (Disposition 2), and *building upon others' views* (Disposition 3). *Questioning* was added as the fifth strategy, because peer questioning has always been considered as an important strategy to improve the quality of small group discourse in face-to-face environments (Brookfield & Preskill, 1999; Dillon, 1984; King, 1990, 1991; King & Rosenshine, 1993), and a number of researchers suggest that peer questioning has the potential to improve the quality of peer interaction in online discussions (I. Choi, Land, & Turgeon, 2008; I. Choi, Land, & Turgeon, 2005; Johnson, 2006), though its effectiveness has not been thoroughly explored. Table 1 presents the five online discussion strategies to be taught to the students. It is assumed that teaching students these strategies would prompt students to use these strategies more frequently when having online discussions.

Table 1 ***Five Online Discussion Strategies***

Strategies	**Definitions**
Elaborating and clarifying	Support an argument with evidence or details
Making connections	Connect discussion to other pieces of arguments or resources
Challenging others' views	Suggest a different or contradictory perspective
Building upon others' views	Build upon and further develop others' perspectives
Questioning	Raise questions to move the discussion forward

Research Questions

The proposed approach combined explicit instruction on the five discussion strategies with the use of post type labels. To examine the effects of this approach on student discussion, a quasi-experimental study was conducted in an online master's-level course in educational psychology. The students in Section B served as the experimental group and received the intervention. More specifically, in Section B, the instructor provided explicit instruction on the five strategies. Then, in the discussion forums, students in Section B were required to label their posts with post types indicating the strategies used: (a) *elaborating and clarifying* (EC), (b) *making connections* (MC), (c) *challenging* (CH), (d) *building* (BLD), and (e) *questioning* (QST). The discussions generated by students in Section B were then compared to those generated by students in Section A of the same course, where no strategy instruction or post type labels were provided. The exploratory study focused on the following questions:

1. Did students in Section B use the discussion labels and strategies more frequently in their discussion as compared to students in Section A?
2. Did the approach affect the overall quality of the discussion?
3. How did students perceive the impact of this approach on their discussion and learning?

Method

Participants and Setting

The research participants were students from two different sections of a master's-level online course in educational psychology. Twenty-two students in Section A served as the control group, and 17 students in Section B served as the experimental group. Most of the students (around 70%) in both sections were K–12 teachers, and the rest (around 30%) were nursing students. The majority of students in the study (28 out of 39) were females. Both sections were taught by the same instructor.

This online course contained a one-week introduction unit and four learning modules. In the introduction unit, students read an article on the classical learning theories of Plato and John Locke, and had discussions about the two learning theories. In each of the four subsequent two-week modules, students were required to read articles on one particular educational theory and participate in the online discussion within a small group of three to five members responding to questions posted by the instructor. The purpose of the discussions was to have students connect the readings to their own experiences so as to develop a deeper and more nuanced understanding of the learning theories. Here is a typical example of the discussion questions: "Find an example from your work or from elsewhere that might be an example of the idea that 'what were once mistakes are now *alternative conceptions*.' Describe the example and make it clear how it illustrates some of the important qualities of the constructivist perspective on learning." All online discussions in the introduction unit as well as in the modules were held in the threaded online discussion forums.

Procedures

In each module of the class, students first completed two or three readings on a particular educational theory and then responded to the instructor's question based on what they had learned from the readings. The instructor observed the discussions and only stepped in occasionally to point out misunderstandings or to redirect the discussions to important issues.

All the content and activities were the same for both sections except that students in Section B were instructed to use discussion strategies and post types from Module 1 to Module 3. The introduction unit served as a baseline for comparing the discussions across the two sections. In Section B, the instructor introduced one or two discussion strategies every module before the discussions, and students were asked to use the strategies they had learned along with corresponding post type labels in their

discussions.

More specifically, for each strategy, the instructor provided a written mini-lecture explaining what the strategy is and how it should be used. Appendix 1 provides an example of how these strategies were taught. At the end of each module, the instructor selected a few good examples from the student discussions demonstrating good use of strategies, and provided general feedback to the whole class as to how well they used the strategies in the discussions. By the end of Module 3, all five strategies had been taught. Students continued using the strategies and labels in the last module. The instructor monitored the discussions but provided no scaffolding or feedback unless discussion groups overlooked, misinterpreted, or struggled with certain learning tasks.

The intervention lasted for six weeks (from Module 1 to Module 3). Altogether, the instructor taught five strategies to the students in Section B. *Clarifying and elaborating* and *making connections* in Module 1, *challenging and building* in Module 2, and *questioning* in Module 3. In Module 4, which was the final two weeks of the course, no new discussion strategy was introduced. Students in Section B were asked to continue using the strategies and labels in their discussions.

Throughout the class, students in Section B had access to an online forum where they could write about their experiences of using discussion strategies and labels. Participation in this online forum was completely voluntary. At the end of the semester, students in Section B completed a survey on their experiences of learning and using discussion strategies and labels. This survey was composed of 10 Likert-scale items with five answer choices ranging from *strongly disagree* to *strongly agree*.

Data Analysis

Student online posts in both sections were analyzed and compared, and the survey responses were used to triangulate the results of the post analysis.

Online posts

The number of post type labels used by the students in the final module was calculated. Then, the types of strategies present in each post in the introduction week and the final module were identified. When more than one strategy was evident in one post, all of them were coded. The number of individual strategies used was counted based on the coding. Two trained coders independently coded all the posts. Their coding was considered as an agreement only when the number and the type of the strategies they identified were exactly the same. For example, if one coder identified three strategies on a post and the other identified two of the three, it was counted as a disagreement rather than an agreement. The percentage of agreement was 71.1%, and the Cohen's kappa was .56. According to Capozzoli and colleagues (1999), a Cohen’s kappa between .40 to .75 indicates fair-to-good agreement beyond chance.

Finally, to determine the overall quality of the discussions, students’ posts were analyzed using Gunawardena et al.’s interaction analysis model (see Table 2). This particular model was chosen for two reasons. First, the purpose of this model is to identify the different phases of knowledge construction in online discussions. The adoption of this model may help the researchers understand the processes of how meaning is negotiated and how knowledge is constructed collaboratively in such online discussions.

Second, the model has been widely used by researchers for understanding and assessing online discussions (Kanuka & Anderson, 1998; Moore & Marra, 2005; Yang et al., 2005) and, thus, allows for comparison of the quality of discussions in this study with those in other studies. Two coders independently coded all the posts, and one post could be coded under multiple categories (Gunawardena, et al., 1997). The coding reached a Cohen’s kappa of .76, with 83.8% of the units coded exactly the same. Disagreements were resolved through discussion.

Table 2 ***Gunawardena, Lowe, and Anderson's (1997) Interaction Analysis Model***

Phase I: Sharing/comparing of information
A. A statement of observation or opinion B. A statement of agreement from one or more other participants C. Corroborating examples provided by one or more participants D. Asking and answering questions to clarify details of statements E. Definition, description, or identification of a problem
Phase II: The discovery and exploration of dissonance or inconsistency among ideas, concepts, or statements
A. Identifying and stating areas of disagreement B. Asking and answering questions to clarify the source and extent of disagreement C. Restating the participant's position, and possibly advancing arguments or considerations in its support by references to the participant's experience, literature, formal data collected, or proposal of relevant metaphor or analogy to illustrate point of view
Phase III: Negotiation of meaning/co-construction of knowledge
A. Negotiation or clarification of the meaning of terms B. Negotiation of the relative weight to be assigned to types of argument C. Identification of areas of agreement or overlap among conflicting concepts D. Proposal and negotiation of new statements embodying compromise, co-construction E. Proposal of integrating or accommodating metaphors or analogies
Phase IV: Testing and modification of proposed synthesis or co-construction
A. Testing the proposed synthesis against "received fact" as shared by the participants and/or their culture B. Testing against existing cognitive schema C. Testing against personal experience D. Testing against formal data collected E. Testing against contradictory testimony in the literature
Phase V: Agreement statement(s)/applications of newly-constructed meaning
A. Summarization of agreement(s) B. Applications of new knowledge C. Metacognitive statements by the participants illustrating their understanding that their knowledge or ways of thinking (cognitive schema) have changed as a result of the conference interaction

No significant difference was found between the two sections in the introduction unit in terms of the frequencies of strategy use and the number of posts under the five phases of the interaction analysis

model. As a result, a multivariate analysis of variance (MANOVA) was conducted to determine the magnitude of differences in student behaviors in the final module.

Survey

The survey contained 10 Likert-scale questions, each with five responses from *strongly disagree* to *strongly agree* (coded as -2, -1, 0, 1, 2 respectively). A positive number suggested a positive effect of the approach. Student responses were examined to see if there was any extreme answering pattern (e.g., providing responses of only *strongly disagree* and *strongly agree*), which could emotionally obscure the precision of the answers, and no extreme patterns were identified. Finally, MANOVA was used to determine whether the means of student responses to the 10 Likert-scale questions were significantly higher than zero.

Student online comments

As mentioned in the procedures section, students in Section B wrote on a separate online forum throughout the course about their experiences of receiving discussion strategy instruction and having online discussions using strategies and labels. This is not a formal data source, and students were not required to make a comment. But the data were analyzed because of their potential to offer additional insights to answer the research questions. Two coders worked together and identified three major themes that emerged from students' comments. Then, they worked independently to code all the comments into the three categories. The interrater agreement was 85.2%, and the differences were resolved through discussion.

Results

To address the first research question concerning the extent to which students used the discussion strategies and labels in the discussions, students' use of the post type labels and discussion strategies were examined.

Student Use of Post Type Labels

Table 3 presents how the students in Section B used the five labels during the final module. Students used labels in 54 posts, approximately 60% of the total posts. All but two students labeled at least one of their posts. The labels chosen by students, however, did not always reflect the actual content of the post, as judged by the independent coders. For example, only 64% (9 out of 14) of the posts labeled *building* were considered to be correctly labeled, and most of the rest were more like showing agreement with or acknowledging other students' opinions. The *challenging* label was correctly used all the time, but it was the most infrequently used label. Later analysis revealed that students used at least one strategy in 29 of the 39 posts that were not labeled. No strategy use was observed in only 10 posts.

Table 3 ***Numbers and Proportions of Labeled Posts in the Final Module, Section B (n = 17)***

Label used	Posts using labels		Posts correctly labeled	
	n	Proportion	*n*	Proportion
Elaborating and clarifying	10	0.11	7	0.70
Making connections	18	0.19	16	0.89
Challenging	3	0.03	3	1.00
Building	14	0.15	9	0.64
Questioning	9	0.10	8	0.89
No label used	39	0.42		
Total	93	1.00		

Student Use of Strategies

Student actual use of strategies was analyzed, regardless of how they were labeled. Table 4 shows the frequencies of strategy use in the introduction and final modules for students in both sections.

Table 4 ***Means (Standard Deviations) of Frequencies of Individual Student's Strategy Use in Both Sections (n = 22 in Section A; n = 17 in Section B)***

	Introduction unit		Final module	
	Section A	Section B	Section A	Section B
Strategy 1: EC [a*]	2.12 (1.45)	2.14 (1.17)	2.29 (1.31)	3.41 (1.59)
Strategy 2: MC [b*]	1.23 (.75)	1.12 (.99)	1.32 (1.04)	2.24 (1.44)
Strategy 3: CH [c*]	.95 (.90)	.88 (.93)	.27 (.55)	.82 (1.07)
Strategy 4: BLD [d]	.95 (.84)	1.24 (1.25)	1.14 (1.46)	.88 (1.05)
Strategy 5: QST [e**]	.18 (.39)	.18 (.39)	.27 (.55)	1.00 (.79)

[a] Elaborating and clarifying. [b] Making connections. [c] Challenging. [d] Building. [e] Questioning.
* $p < .05$; ** $p < .005$

The result of MANOVA showed a statistically significant difference in the number of strategies used by students in the two sections ($p < .001$, power = .967). The test of between-subject effects revealed further information: When controlling for the difference in strategy use in the introduction unit across the two conditions, there were group effects for Strategy 1 (*elaborating and clarifying*) ($p < .05$, power = .654), Strategy 2 (*making connections*) ($p < .05$, power = .578), Strategy 3 (*challenging*) ($p < .05$, power = .512), and Strategy 5 (*questioning*) ($p < .005$, power = .910). This suggests that compared to the students in Section A the students in Section B used more of Strategies 1, 2, 3, and 5 in the final module. There was no significant difference in the use of Strategy 4 (*building*). Running MANOVA on the proportions of strategy use led to the same results.

Quality of Discussion

To judge the quality of discussions, student posts were analyzed according to Gunawardena, Lowe, and Anderson's (1997) interaction analysis model. Table 5 presents the means and standard deviations of the number of student posts that showed the characteristics of the five phases in the model, and Table 6 presents the total number of posts that demonstrated the characteristics of the five phases. Because one post can be coded into multiple categories (Gunawardena, et al., 1997), the sum of the posts under the five phases is greater than the total number of posts.

Table 5 ***Means (Standard Deviations) of Frequencies of Individual Students' Posts Showing the Characteristics of the Five Phases in Both Sections (n = 22 in Section A; n = 17 in Section B)***

	Introduction unit		Final module	
	Section A	Section B	Section A	Section B
Phase I*	2.47 (1.42)	1.86 (.99)	2.24 (1.35)	3.36 (1.92)
Phase II*	.77 (.87)	.53 (.72)	.91 (.92)	1.53 (1.18)
Phase III	.32 (.65)	.41 (.62)	.32 (.57)	.88 (.99)
Phase IV	.00 (.00)	.00 (.00)	.00 (.00)	.06 (.24)
Phase V	.05 (.21)	.06 (.24)	.09 (.29)	.14 (.44)

* $p < .05$

Table 6 ***Total Number of Posts Showing the Characteristics of the Five Phases in Both Sections (n = 22 in Section A; n = 17 in Section B)***

	Introduction unit		Final module	
	Section A	Section B	Section A	Section B
Phase I*	54	32	49	57
Phase II*	17	9	20	26
Phase III	7	7	7	15
Phase IV	0	0	0	1
Phase V	1	1	2	2

No significant difference was observed in the introduction unit, so MANOVA was conducted to see if there was a significant difference in student performance in the final module. The result revealed an overall effect of group ($p < .05$, power = .817), and the follow-up tests of between-subject effects suggested a statistically significant increase in Phase I ($p < .05$, power = .682) and Phase II ($p < .05$, power = .508). This implied the intervention had a positive effect on increasing the posts in Phase I and Phase II. But there was no significant increase in Phase III–V. Table 6 shows that, similar to what Gunawardena et al. (1997) found in their research, the number of posts coded into Phases I and II (e.g., 83 posts in the final module of Section B) is much larger than those coded into Phases III to V (e.g., 18 posts in the final module of Section B). This suggests that the intervention had an impact on those phases with the majority of posts.

Survey of Student Perceptions

The means and standard deviations of survey responses are presented in Table 7. The ratings to all the 10 items have medians of 1. Except for Item 7, the other nine items have modes of 1, suggesting that around 50% of the students chose *agree* (denoted as 1) as their responses. Around 30% of the students provided their answers as *strongly agree*. The consistent results among mean, median, and mode suggested that almost all of the students believed that the instruction had a positive impact on their online discussion. There is no surprise when MANOVA revealed statistically significant positive responses to all 10 items ($p < .05$). **Table 7** ***Means and Standard Deviations of Survey Items (n = 17)***

Survey items	Mean (SD)
Using online discussion strategies and labels helps me	
1. state my own thoughts more clearly	.93 (.997)*
2. support my own thoughts with more solid evidence and reasoning	.86 (1.027)*
3. pay more attention to other people's views	1.14 (1.027)*
4. evaluate and compare other people's views more critically	.86 (1.167)*
5. learn more from other people's views	.86 (1.027)*
6. make more connections among different views	1.14 (.770)*
7. develop a solid understanding of the issue discussed	.64 (1.082)*
8. engage more fully in the online discussion	.93 (.997)*
9. interact more actively with other students	.86 (1.027)*
10. feel more confident about participating in online discussion	.86 (1.027)*

* $p < .05$

Student Online Comments

Though it was not required by the instructor, 15 out of 17 students in Section B commented at least once on their experiences of using labels and strategies in the separate forum. All of them expressed that the intervention was helpful. Three major themes were identified in the comments, as is shown in Table 8.

In general, many (11 students) believed that using labels and strategies helped them organize their thoughts and communicate more effectively. Nine students also felt that the intervention helped establish expectations and a common ground for discussions, so that they knew what to expect and what was expected from them. There were three comments, however, showing some concerns about this approach: One student wrote that it was hard for her to differentiate between *elaborating and clarifying* and *making connections*. This was echoed by a comment from another student, who said, "It can be difficult sometimes to determine which label to choose for your post." In addition, one student expressed the concern that she felt it difficult to challenge other people's views in the online environment.

Table 8 ***Major Themes Identified* From *Student Comments (n = 17)***

Major themes	Examples	Number
The approach facilitated the process of thinking, writing, and communication.	"I really enjoy learning those discussion strategies. It's helping me to organize my thoughts in a more structured fashion, which in turn, makes the learning process more effective."	11
	"I have found the mini-lectures to be very helpful! By having to choose whether I was 'elaborating and clarifying' or 'making connections', I was able to re-think what I was posting and the message I was trying to get across. It allows me to evaluate my questions and comments to make sure I am contributing appropriately to the discussion!"	
The approach helps set up expectations and norms for the online discussions.	"It's nice that the challenging aspects of discussion have been laid out as an expected objective, rather than optional because then those who haven't had on-line experiences won't be offended when their comments are approached in this manner."	9
	"In past on-line courses, where no guidelines were provided, the discussion forums would lose their effectiveness, I believe. The discussion threads were incoherent and the conversations were confusing because we (the students) lacked direction or guidance. I appreciate the discussion strategies and labels because they help me decide if my ideas and thoughts are really relevant to the discussion."	
Concerns or confusion	"I sometimes have difficulty differentiating between 'elaborating and clarifying' and 'making connections'. I feel there's a great deal of overlap. Does anyone else feel this way?"	3
	"Reading that one of the discussion strategies for this Module is 'Challenging Others' View,' put me in a panic. I am usually up to a good debate when face-to-face, however, I find myself very uncomfortable having to challenge someone online. Not sure why...maybe because I'm just afraid I'll offend someone and not know it. Whereas, if I'm speaking face-to-face I have the advantage of observing body language, tone, etc. to clue me in on how the conversation is going…"	

Discussion

Both the analysis of student strategy use and the survey on student perceptions suggested potentially positive effects of the intervention, which entailed teaching and labeling discussion strategies. The study, however, also raised a few concerns regarding this approach. Here are the major findings.

First, students in Section B used labels extensively after the intervention. Among 93 posts, 54 were labeled, suggesting a wide adoption of the labeling approach. There were, however, times when the labels were used incorrectly, indicating that some students might not have fully grasped how to use certain strategies though they intentionally tried to use them. This was especially true for the Strategy 4 (*building*)—36% of the posts labeled as *building* were actually showing agreements with or acknowledgements of others' opinions. There is probably a need for the instructor to provide more explicit explanation on how this strategy differs from showing agreements and demonstrate the differences with examples.

The analysis suggests that 39 posts of the total of 93 posts were not labeled, but only 10 posts did not demonstrate the use of any strategies. In other words, the number of posts that were identified as using at least one strategy was much higher than the number of posts that were labeled. Multiple reasons may contribute to this result. It is possible that sometimes students used certain strategies but forgot to label the posts despite being reminded to do so. Or they might have chosen not to use the labels because it was difficult to determine which post type they were to use. It also possible that some students did not fully understand the instruction and were not sure when or how to use these strategies. Understanding the reasons behind why some students did not label their posts despite using one or more of the strategies may provide insights into how to improve the effectiveness of the proposed approach. In this sense, future research should consider conducting in-depth interviews with participants to gain a better understanding of why they decided to use or not to use the post type labels.

Second, compared to those in the control group, students in the experimental group used more strategies after the intervention. Except for Strategy 4 (*building*), the frequencies and proportions of all the other strategies increased significantly after the intervention, indicating that the use of discussion strategies and labels can be an effective approach to encourage the desired types of posts in online discussions. The analysis also showed that the degree of increase was uneven. The use of Strategy 5 (*questioning*) had the greatest change, showing an average increase of .82 in Section B as compared to an increase of .09 in Section A. This might imply that questioning was a strategy that students might not naturally think of using on their own. But when taught by the instructor, students could easily adopt it in the discussions. As for other strategies, such as elaborating and clarifying, making connections, and challenging, it might take students more time and more practice to master them. Strategy 3 (*challenging*) was rarely used despite the intervention. One possible reason could be that students felt uncomfortable challenging their peers in online discussions, even though they were explicitly encouraged by the instructor to do so. This concern was expressed by one student: "Reading that one of the discussion strategies for this Module is 'Challenging Others' View' put me in a panic. I am usually up to a good debate when face-to-face, however, I find myself very uncomfortable having to challenge someone online. Not sure why...maybe because I'm just afraid I'll offend someone and not know it. Whereas, if I'm speaking face-to-face I have the advantage of observing body language, tone, etc. to clue me in on how the conversation is going." It is worth noting that the majority of the participants were females, and according to Guiller and Durndell (2006), females were more likely than males to be supportive and express agreement.

Third, the quality of posts was examined using Gunawardena, Lowe, and Anderson's (1997) interaction analysis model. Though the analysis suggested an increase of the posts in Phases I and II, there was no significantly increase of posts in Phases III to V. There are a few possible explanations. First,

Gunawardena et al.'s model was developed based on the analysis of learners' posts in an online debate. As a result, some of the behaviors described in the higher phases of Gunawardena et al.'s model, such as testing and modification of proposed synthesis, may not be as commonly seen in the discussions, where students were asked to share and make connections to their own personal experiences to develop a better understanding of the learning theories. Second, the focus of this particular study was the five basic online discussion strategies. Some other strategies, which are also important and may lead to behaviors described in the higher phases of the model, such as synthesizing, were not explicitly taught. As a result, there is little increase in those types of behaviors.

Finally, the survey results revealed that students had positive attitudes toward the intervention. They felt they were able to pay more attention to other people's views and make more connections to different views. The comments they wrote expressed their enthusiasm for using the labels and strategies. One student said, "I wanted to say that I too have learned a lot from the mini lessons. I wish that I had this information seven online classes ago!" The survey results and student online comments suggested that students believed that they benefited from the use of labels and strategies.

Limitations and Future Research

The study draws upon previous research on constrained discussion environments and strategy instruction, and develops a new instructional approach to promote quality discussion online. This particular approach combines online discussion strategy instruction with the use of post type labels. The findings of the study suggest that the approach increased student use of the desired strategies, positively impacted student perceived learning experience, and improved certain aspects of the quality of the online discussions.

The study has a few limitations. First, the participants in the study were not randomly assigned to two different sections, so this is not a strict experimental study. As a result, the findings of the study still need to be interpreted with caution. Second, the study mainly focused on the process of learning by examining the use of labels and strategies as well as the quality of discussion. The learning outcome was not measured. So it is uncertain whether the discussions had led to enhanced learning. Future studies that measure the learning outcomes are needed to better understand the value of this approach.

The findings of the study suggest a few directions for future research. First, the study raised the question of what strategies should be taught and under what circumstances. Certain online discussion strategies are quite generic and can be used in most online discussions regardless of the discussion topics, as those taught in this study. There are times, however, when students need to be taught specific types of strategies depending on the purposes of discussion or learning. For example, participating in online argumentation may require students to know how to make counterclaims or rebuttals. When researchers and instructors make decisions on which discussion strategy to teach, they should consider whether the set of discussion strategies selected are appropriate for the learning tasks at hand.

Second, future studies should explore how instructors could better encourage and support students to use the strategy of challenging/critiquing when necessary. Student comments revealed that fostering a safe and honest learning community was essential for students to feel comfortable doing so. In fact, some researchers have examined the effects of having debates on controversial issues on increasing the amount of challenging and critiquing posts. What they found was that although online debates encouraged participants to spend more time on arguing and elaborating on what others had stated, participants rarely critiqued and evaluated each other's ideas (Davidson-Shivers et al., 2012). So, will it help if we teach students to use the challenging strategy and label and then have them practice it in an online debate? The combination of both approaches might have a chance to increase the quantity and quality of challenging posts in the discussion.

Third, the results of the study reveal that, on some occasions, students found it hard to differentiate the strategies or to choose the right labels. This result is understandable because a student could use more than one strategy when composing a post, and in some cases the strategies are intertwined. Having students choose a single strategy label for a post may benefit them at the initial stage of learning, because this allows them to focus on learning and practicing one discussion strategy at a time. However, a good post often requires an effective use of more than one strategy. That means students also need to know how to use a combination of two or more strategies in one single post. Will students naturally be able to do this when they have mastered each individual strategy? Or do they need additional instruction or scaffolding to achieve it? And if so, how should instructors provide such scaffolding? These are the questions worth exploring in future studies.

Based on the discussion above, here are a few suggestions for instructors who may consider adopting this approach in their own online classes. First, when making decisions about discussion strategies to be taught, instructors need to make sure that the strategies chosen are aligned with the learning tasks. At the same time, one discussion task may be more suitable than another when it comes to learning a particular discussion strategy. Carefully choosing the discussion strategies to be taught and pairing them with the appropriate discussion tasks may help students learn in a more efficient way. Second, in this study, the instructor modeled the strategy use and provided general feedback to the whole class but did not intervene the discussions by pointing out what needs to be improved for each individual student. The results suggested, however, that some of the students did not fully grasp the strategies taught. As a result, when implementing this approach in the future, instructors may need to consider providing timely feedback to individual students regarding how well they use the strategies and labels.

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Appendix

Appendix 1. An Example of Discussion Strategy Instruction

Here is an example of how the strategy of *elaborating and clarifying* was introduced to the students in a mini-lecture. The mini-lecture started with common problems when having online discussions:

> To appropriately state your own thought is always the first step toward a productive discussion. The problems we usually see in not very good discussions are: (a) the participant states his/her opinions in only one or two short sentences without sufficient elaboration on what they mean by it; (b) the participant writes about different issues and jumps from one thought to another, which makes it hard to follow his/her reasoning and logic; (b) Sometimes, a point is made, but little relation can be found between what the participant has said and the topic under discussion. In this lecture, we will introduce two discussion strategies that aim at solving such problems in discussion. The first one is *elaborating and clarifying*.

Then, the strategy was introduced:

> **Discussion Strategy I: Elaborating and Clarifying**
>
> When you are stating your opinions in a posting, you will need to make your point clear and easy to understand by others. If the idea you are presenting is complex or abstract, you will probably need to elaborate on your idea. There are several ways to make a clear and elaborative point:
>
> a. Use concrete examples or metaphors to illustrate an abstract idea;
> b. Draw on evidence from your personal experiences, from what you have read from book or what you have learned from others to support your point. *Attention: Please understand if you refer to your experience or quotation, you are using it to illustrate your idea. So provide your analytical or reflective thoughts of the experience or quotation.*
> c. Make clear your logic or reasoning of how you get to this point. This will make your postings more explicit, coherent, and persuasive to others.
>
> When you finish your posting, go through this checklist. If you have successfully addressed all the questions below, you probably have done a good job of elaborating and clarifying your opinions.
>
> Checklist for *elaborating and clarifying*:
>
> - Why am I saying so?
> - When I say this, what does that mean?
> - Is my point well supported by certain theory/evidence?
> - Am I presenting my argument in a logic and reasonable way?

Finally, instruction was given on how to use the post type labels along with the strategies when they were having discussions:

> **Task:** In this week's discussion, you are supposed to try the strategy in your discussion forum. When you go to the page of posting a new message, you will see 'post type' right under 'subject.' Click on the pull-down menu of post type, you will see you are able to choose 'none' or a particular strategy. So, if you are using the strategy of elaborating and clarifying, please choose 'Elaborating and Clarifying' as your post type. If you think you are using more than one strategy, choose the one you think most evident in your post. Leave the post type to 'none' if you are not using any strategies in your posting."

When students started the discussions, the instructor modeled the newly taught strategies a few times. Here is an example of the instructor modeling the use of *elaborating and clarifying*:

> You raised an interesting question. What can we do to help others, such as our children or our students, become more motivated? From my opinion, in addition to teaching kids things that they feel useful and interesting, modeling your passion to your students is important. Let your students see what you are passionate about. If possible, find times when you can talk about your passion and share it with your students. I can still recall those Friday afternoons when my elementary teacher read aloud the poems she loved to us. Everyone in the classroom was attracted by the beautiful rhythms and the world full of imagination. That was when I started to understand poems and become a passionate reader of poems myself.

SECTION III: Case Studies

Transformation of Online Teaching Practices Through Implementation of Appreciative Inquiry

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Teaching Presence in Online Education: From the Instructor's Point-of-View

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Transformation of Online Teaching Practices through Implementation of Appreciative Inquiry

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Abstract

The purpose of this case study was to explore the application and outcome of appreciative inquiry as an online instructional strategy for the development of three specific factors: adult learner motivation, engagement, and performance. Appreciative andragogy was an original phrase developed for this study and is an adaptation of appreciative inquiry. Appreciative inquiry has been successfully utilized within organizations to facilitate change and development, while enhancing employee motivation, engagement, and performance. Because there is little research concerning the application of appreciative inquiry to an academic environment, elements of appreciative inquiry were implemented as an instructional strategy within undergraduate and graduate online classrooms. The appreciative inquiry model was adapted for this study as appreciative andragogy and utilized over a four-week implementation period. The participants worked with selected students from their online class and they measured the three factors (motivation, engagement, and performance) before and after the implementation phase. The findings of this study indicate that appreciative andragogy can be applied as an instructional strategy in any online classroom regardless of the subject matter and it holds the potential to have a positive impact on the online learning classroom environment. The study concluded that appreciative andragogy has an ability to take the distance out of distance learning.

Introduction

The online classroom has not impacted the basic principles of adult learning. Rather the format of adult learning has been impacted by the enabled use of technology. The process of adult learning in any classroom environment involves the acquisition of information, interaction with that information through activities, and the creation of new knowledge. The classroom provides a learning environment that becomes the context for knowledge acquisition by establishing conditions that are conducive to learning. The structure of this environment determines the overall effectiveness of the learning process (Caffarella, 2002).

Within a traditional classroom the instructor is physically present and it is that presence that maintains social interactions and builds relationships with the students. The instructor can gauge the level of student motivation and adapt the instructional methods used based upon what is physically observed. Also visible to the instructor is the student's level of engagement and participation in the class. In addition, the instructor is available to observe, guide, and discuss the student's performance and address any potential issues. These physical observations are often absent from the online classroom environment.

The online classroom may change the nature of students' motivation, engagement, and performance. A student's need for self-motivation and taking responsibility for his or her class

participation and assignment completion may be greater with an online classroom. Some students use assignment deadlines and grades as their source of motivation. The online student's engagement in the class is usually encouraged through the use of discussion boards and asynchronous interactions with his or her instructor. Performance in an online classroom environment is based upon the student's work product, whether this is accomplished through group activities, online assessments, or written assignments. Students are provided feedback from their instructor and the level of feedback can vary from a letter grade to the number of points earned, or the inclusion of developmental comments. Depending upon the level of involvement by the instructor and the student, the online classroom has the potential to become very mechanical in nature and it may become easy for a student to experience a sense of disconnection from the class and/or the instructor.

Another environment where issues of individual motivation, engagement and performance are studied can be found within the organizational setting. These issues are considered essential factors of a successful employee and lead to improved overall organizational performance. The field of organizational development has produced numerous theories of employee development—one theory that addresses development from a positive frame of reference is appreciative inquiry. David Cooperrider and Suresh Srivastva developed appreciative inquiry in 1987 as a means of facilitating organizational change through the use of a positive approach (Orem, Binkert, & Clancy, 2007). Appreciative inquiry has been successfully utilized within organizations and has demonstrated an ability to affect individual motivation, engagement, and performance. Due to this success of appreciative inquiry and its ability to impact individuals as well as organizations, it has the potential to be adapted to other environments, including the online classroom environment. As an instructional method, appreciative inquiry has a potential to help bridge the gap between the instructor and student within an online classroom. Appreciative inquiry also has the potential to assist in the development of positive working relationships, which in turn may improve the student's motivation, engagement, and performance.

Background of the Study

Within an online classroom environment, instructors and students will typically interact through class discussion boards and other activities that require instructor and student involvement. The primary methods of meaningful interaction occur through the submission of assignments by the student and the feedback that is provided by the instructor. Assignments are the most common forms of student work products in online classrooms. The feedback an instructor provides may include the points or grade earned, without any further explanation. Feedback may also include the use of rubrics and comments that address the content and mechanics of the assignment. There are also varying levels of comments used, from a “met requirement” or “did not meet the requirement” to detailed narratives that address developmental issues and concerns.

With feedback there may be a tendency to focus on compliance, from due dates to meeting the assignment criteria. The feedback provided may also highlight deficits in the assignment or the student's abilities. If a student believes his or her feedback is nothing more than a canned response or if a grade was provided without any explanation that supports his or her development, the student may not feel encouraged to continue putting forth his or her best effort and it is possible they can experience a feeling of disappointment. An instructor's feedback has the potential to build relationships and influence engagement, motivation, and performance; however, feedback that is focused on negative aspects can discourage a student, especially given that the instructor is not physically present to address his or her issues and concerns.

Within organizational environments appreciative inquiry has been used to affect organizational change by examining what has worked well and looking for the sources of excellence (Watkins & Mohr, 2001). To accomplish this goal, employees are asked to consider peak times, and an emphasis is placed on positive attributes that contribute to peak performance (Van der Haar & Hosking, 2004). Appreciative inquiry takes a positive approach to change (Cooperrider, Whitney & Stavros, 2008) and the development of relationships rather than placing an emphasis on employee and organizational deficits. An appreciative

method of development is asking employees to consider his or her strengths and how to build upon those attributes, which changes the mindset of the employee. Instead of trying to force changes in his or her performance, a positive method of development results in a sustained level of improved performance (Van Oosten, 2006). This approach encourages employee motivation, increases employee engagement in his or her job, and results in an employee performing at a higher level than the employee who is continuously reminded of what they are doing wrong and what has not work well in the past.

There has been little research exploring the application of appreciative inquiry to an academic environment. One adaptation of appreciative inquiry has been called appreciative pedagogy and its primary purpose was to address assignments used in a traditional classroom (Yballe & O'Connor, 2000). Appreciative inquiry has the potential to be adapted as an instructional strategy that could bridge the gap between an instructor and his or her students. The goal of this adaptation of appreciative inquiry is to increase student motivation, engagement in the classroom, and improve his or her performance. Appreciative inquiry has already been noted for its usefulness in any relationship that is social in nature (Van der Haar & Hosking, 2004), which supports its use in a classroom environment. Further support of the use of appreciative inquiry is the potential that a positive classroom experience holds for influencing increased student motivation (Darabi, Nelson, & Paas, 2007). This adaptation of appreciative inquiry has been labeled appreciative andragogy.

Andragogy is a theory that addresses how adults learn and is distinguished from the theory of pedagogy or the instruction of children. The basic premise of andragogy holds that adult learning occurs through a process of action and self-reflection (Cooper & Henschke, 2006). Appreciative andragogy emphasizes the positive nature of adult learning and the enhanced view of self that will occur through supportive interactions with an instructor. Through the use of appreciative andragogy as an instructional method, the instructor may have a tool that can build nurturing relationships and increase the instructor's presence within an online classroom environment. With a positive approach to student development the student is likely to experience a greater sense of motivation, engagement in the classroom, and improved performance overall.

Statement of the Problem

It is not known if an appreciative inquiry approach has a positive effect in an online post-secondary classroom environment. Appreciative inquiry is an organizational development tool that has been used to affect change and influence employee performance. Elements of appreciative inquiry have not been applied directly to an online classroom environment as a means of influencing the online student's performance, engagement, and motivation. Appreciative andragogy is an adaptation of appreciative inquiry, developed as an instructional method to influence the adults' level of motivation, engagement in the classroom, and overall classroom performance.

Purpose of the Study

The purpose of this multiple case study was to explore the application and outcome of appreciative andragogy as an online instructional strategy for the development of adult learner motivation, engagement, and performance from multiple perspectives. Each individual case consisted of one instructor applying appreciative andragogy to his or her classroom. A final cross-case analysis is presented, which highlights common themes found among all of the individual cases. The participants of this study were instructors facilitating online courses for an online university. The participants were solicited through a formal announcement issued through a university's faculty website and through a professional networking website with members that are online instructors. The participants were not confined to one demographic region as the online courses taught by the participants were not limited to one demographic region.

Research Questions

1. Central research question:

How does the application of elements of appreciative andragogy as an instructional strategy for instructors positively affect online post-secondary classes?

2. Subordinate research questions:

1. How do online instructors apply elements of appreciative andragogy as a positive instructional strategy for online post-secondary classes?

2. How does the application of elements of appreciative andragogy as an instructional strategy for online instructors influence adult learner motivation?

3. How does the application of elements of appreciative andragogy as an instructional strategy for online instructors influence adult learner engagement?

4. How does the application of elements of appreciative andragogy as an instructional strategy for online instructors influence adult learner performance?

Theoretical / Conceptual Framework

Appreciative inquiry was developed as an organizational developmental process and change initiative method. The act of appreciation includes acknowledging each employee's value and abilities, and inquiry is an exploratory process that uses questions as a form of communication (Whitney & Trosten-Bloom, 2003). Appreciative inquiry is based upon social constructivism, which is the individually held and socially constructed image of reality that each employee creates (Walker & Carr-Stewart, 2004). An employee will act according to their beliefs about this subjective view of reality (Watkins & Mohr, 2001) and the perception of reality can only change when the underlying beliefs used to create that reality are understood (Orem, Binkert, & Clancy, 2007). Appreciative inquiry creates a positive frame of reference by allowing employees to collaborate and contribute towards the development of a shared vision (Van der Haar & Hosking, 2004). Organizational development and change processes can only occur when an employee shares the organization's future vision as part of their own reality (Cooperrider, Whitey, & Stavros, 2008).

Appreciative inquiry is also based upon the positive principle, which holds that any type of change process that results in an employee working at their maximum capacity can only occur when it is developed from a positive perspective (Whitney & Trosten-Bloom, 2003). An employee who feels valued, who can contribute to the organization's future, and is allowed to make choices about their involvement in the work environment are also more likely to be engaged, productive, and actively involved in the organization, which also results in strong working relationships (Bushe & Kassam, 2005).

Literature Review

Andragogy

Andragogy is a model of learning that makes a distinction between teaching adults and teaching children (Sheridan, 2007). The term andragogy is most often associated with Malcolm Knowles, as Knowles developed andragogy as a means of describing the characteristics of an adult learner (Merriam, 2001; Rachal, 2002; Sheridan, 2007). The premise of andragogy is that the adult has a need to learn and a willingness to take responsibility for that learning, the adult possesses life experiences that must be acknowledged, and an adult has both the readiness and motivation necessary to learn (Knowles, Holton III, & Swanson, 1998). Facilitating adult learning can be customized for maximum effectiveness by clarifying the important characteristics of an adult learner and the needs that are specific to adults.

Andragogy takes into consideration the characteristics of an adult and explores how those characteristics influence adult learning; whereas, pedagogy is a term used to describe the nature of teaching children. An adult has life experiences that may influence the learning experience, while a child

is often in the process of learning how to learn. The adult learner may possess motivation to learn because of needs, goals, or specific problems, whereas a child often participates in the learning process because it is a mandatory requirement. The strongest source of motivation for an adult learner is his or her internal sense of self-worth, self-esteem and self-identity, which is not fully developed in a child (Ozuah, 2005; Rachal, 2002). In addition, the adult is likely to take responsibility for his or her learning and become actively involved in the learning process. A child is learning to become responsible and the knowledge provided is often factual in nature. The distinctions between an adult and a child helps to inform the process of facilitating adult learning and has led to the development of methods that are designed to facilitate learning rather than teach the process of learning.

Another relevant distinction between adults and children is the self-directed nature of learning by the adult learner. Children tend to be passive participants in the learning process as they are recipients of instructor knowledge. An adult tends to be an active participant in the learning process because they have chosen the formal classroom for specific purposes and needs, and the adult is often willing to take a responsible role in the learning process (Bolton, 2006). An adult learner may not expect to be given knowledge by his or her instructor (Raelin, 2007). However, an instructor is often expected to provide optimal learning conditions. The adult also has specific societal roles that can further shape his or her needs, including career development, job responsibilities, family responsibilities, and social status (Forrest & Peterson, 2006).

Adults have an ability to learn informally from their daily interactions and experiences, or they may seek out knowledge on their own (Merriam, 2001). When adults enter a formal classroom they are often seeking to participate in the process of learning for a specific purpose, as a means of gaining specific, relevant, and meaningful knowledge (Patterson & Crooks, 2002). Due to the need to learn and acquire individualized knowledge, the pedagogical role of teaching children who may be dependent upon their teachers to give them knowledge is transformed to an andragogical approach of teaching adults who are often independent learners.

There are challenges that arise when utilizing andragogy as a framework for understanding the adult learner. The primary issue is the transition from childhood to adulthood and the preparedness of a new adult in becoming a responsible, self-directed learner. Individuals who have made a recent transition from childhood to adulthood, because of the change in their age or societal role, may still lack the educational experience necessary to function as independent, self-directed adult learners (Miflin, 2004). The challenge of facilitating the process of learning for new adults can be met when adult learners are understood from an individual perspective, which can be accomplished through constructive dialogue with their instructor. Another challenge for the andragogical approach is that this method may not apply to all learning environments. A pedagogical method may still be necessary in a learning environment where a specific skill needs to be learned and adult learners must be given the required technical knowledge or procedural facts (Ozuah, 2005).

Learner Performance

Within an online classroom the principles of adult learning do not change; therefore, the nature of a learner's classroom performance would not change, only the environment that the learner is working within. Adults attending a traditional classroom are physically present to take exams, submit written assignments, and demonstrate their learning through other means, including classroom presentations. Learners have an understanding that when they attend a class they will be expected to do some type of work to demonstrate their learning. For an online classroom, the most common form of learning product is the written assignment. An instructor should have an understanding of the potential factors that enhance learner performance and detract learners from optimal performance in an online classroom, as they are not physically present to guide the learning process.

One method of improving learner performance is to have periodic contact with the instructor (Zepke & Leach, 2006), especially when the instructor is viewed as a source of information and support for the learner (Lyons, Kysilka, & Pawlas, 1999). Some schools have met this need for contact by having

instructors hold weekly office hours, requiring instructors to be available at specified times through instant messaging tools, assigning mandatory participation requirements for the discussion board, or by having instructors respond to all learner communication and emails within a specified time period. The need for contact and effective communication in an online classroom environment is often greater than a traditional classroom, as the contact becomes a means of replacing the instructor's physical presence, supplementing the instructor's virtual presence, and supporting the learner's development.

One factor that influences performance is the learner's competence with technology. While learners may be familiar with technology in general they may not be technologically competent to function in an online learning platform (Osika & Sharp, 2002). Learners' ease with technology influences how well they perform, especially if there is limited prior experience. Another factor influencing performance is the ability of the learning environment to provide a climate that is conducive to cognitive development (Kiely, Sandmann, & Truluck, 2004). An adult learner who has prior experiences and knowledge needs to be encouraged to do more than memorize facts, as learning is more likely to occur when high-order cognitive processes are utilized. Discussions in an online classroom provide the means necessary for cognitive and intellectual development as all learners and the classroom instructor are expected to participate and contribute. This is in contrast to the traditional classroom environment where discussions usually involve one learner answering a question and receiving a reply from the instructor (Klecker, 2007). Online classroom discussions provide an opportunity for learners to interact with each other and share their experiences, which in turn can deepen the learning and knowledge creation process.

Adult performance in the classroom is often affected by their responsibilities (Lyons, Kysilka, & Pawlas, 1999). Performance encompasses the quality of the written assignments submitted, the level of involvement in the course, and an ability to demonstrate that progress has been made towards meeting the learning goals and objectives. Performance also includes the level of participation in the classroom discussions, along with the quality of the interactions with other learners and the instructor (Palloff & Pratt, 2003). It is possible that performance may be adversely affected when adults have taken on too many roles and responsibilities. Performance may also decline if adults have too many demands made of their time or they are not effectively managing their time and balancing coursework assignments with these responsibilities. Within a virtual classroom, where a physical presence is not maintained, adults can easily become disconnected from the class and the learning process, resulting in poor overall performance.

Learner Engagement

The level of learner engagement in the classroom and the learning process is an important consideration for the online instructor as it is considered to be an action-based state that concerns what the learner is doing. Engagement involves the amount of time, effort, and energy that a learner will put into all aspects of the class (Robinson & Hullinger, 2008). Engagement involves more than a learner just getting by in his or her class or doing the minimum required to pass the course; engagement is a matter of the learner devoting the time necessary to actively participate in the course and the learning process (Shieh, Gummer, & Niess, 2008). The issue of engagement has been actively studied in workplace settings as an employee development principle and the same research applies to adult learners, as engagement has been directly related to performance and personal satisfaction (Wefald & Downey, 2009). When adults experience full engagement in what they are doing they are devoting their full attention to the task and they are enthusiastically involved, highly interested, and experiencing positive emotions (Goleman, 2006).

Factors that influence learner engagement include the connection that is felt or perceived with the class and the emotions that are experienced during the learning process. Adults that are introverts by nature find that they can easily adapt to the online classroom; whereas, adults that are extroverts rely upon a strong, personal connection and find it challenging at times to be fully engaged in the class (Offir, Bezalel, & Barth, 2007). Emotions also have the ability to increase or decrease learner motivation. The adult learner may experience a range of emotions throughout the course that can adversely impact

engagement, including frustration and isolation (Zembylas, 2008). Learners may also find that during times of critical reflection they will experience a range of emotions when exploring their present knowledge, information, ideas and belief systems (Dirkx, 2006). The process of critical reflection can happen while the learner is working on his or her own or during classroom discussions, especially if the words, meaning, or tone of another learner's message is misinterpreted. When learners feel positive emotions and have experiences that produce positive emotions they are likely to be fully engaged in the learning process and actively present in the class.

Learner Motivation

The five basic principles of motivation include attention, relevance, confidence, satisfaction, and self-regulation (Keller, 2008). An adult's motivation is primarily a psychological state of mind and the source of that motivation can be externally or internally based. External motivation is often the result of grades that the learner hopes or expects to receive, the rewards that are anticipated from completing assignments or the degree program, or the motivation may be the result of societal pressures concerning the adult's career, housing, family, or other lifestyle expectations. Internal motivation can be the result of the adult's needs being met and these needs may include the need for self-esteem, knowledge acquisition, and goal completion. The need for self-esteem is a greater factor among younger adults than it is with older adult learners (Kelly, 2007). The need for specific knowledge is related to an adult's decision to pursue an educational program, whether to advance his or her career or meet other societal expectations. Adults are likely to complete the educational goals that they have begun because of these external or internalized needs, which helps to maintain their motivation throughout the duration of his or her course.

The adult's internal motivation is also influenced by a sense of identity established throughout the learning process (Wlodkowski, 1999). An identity can be formulated or shaped by interactions with other learners or through the perceptions and expectations held by the adult learner. A positive classroom experience can lead to a positive self-image. As self-directed learners, adults are also expected to take responsibility for their self-motivation, whether the source of that motivation is external or internal. Adults will hold motivational beliefs about their ability to learn and the relevance of the information received throughout the learning process (Artino Jr., 2008). An adult learner is more likely to stay motivated when they believe the task they are asked to do can be completed, there are resources available to assist them, and the information acquired will lead to the creation of knowledge that is relevant to their needs and lives.

Motivation has been directly linked to a student's overall success in the learning process (Menchaca & Bekele, 2008; Rovai, Ponton, Wighting, & Baker, 2007). What is most effective for sustaining continued motivation are conditions within the classroom environment that allow the adult learner to experience positive emotions and a feeling of being connected to the class (Notar, Wilson, & Montgomery, 2005). A strong working relationship with the instructor, one that provides support and guidance for the learner's progress and development, helps to create a positive emotional state and sustain the learner's motivation. An adult may or may not have a built-in support system from family members or friends and this can influence motivation as the learner experiences challenges with the course or assignments. Other factors that have an impact on learner motivation include self-discipline, self-confidence, and technological issues. The level of motivation will decrease if there is a lack of self-discipline (Li & Irby, 2008) or self-confidence in the adult's ability to be involved in the learning process (Ahl, 2006). An adult can also be discouraged if they experience challenges with the technology required to participate in the online learning platform (Motteram & Forrester, 2005).

Appreciative Inquiry

The concept of appreciative inquiry originated with David Cooperrider and Dr. Suresh Srivastva in 1985 through a dissertation study conducted within the Weatherhead School of Management, Case Western Reserve University (Cooperrider, Whitney, & Stavros, 2008; Watkins & Mohr, 2001; Whitney & Trosten-Bloom, 2003). As appreciative inquiry was further developed, its underpinnings were based upon

the theory of social constructivism, which provides a correlation between images that are held individually and the perception of reality created from those images (Watkins & Mohr, 2001; Van der Haar & Hosking, 2004). Individuals hold a view or perception of the world they live in and these are powerful images that have been individually constructed. This perception of reality is a socially constructed process and developed as a result of the interactions and relationships that an individual has with others (Walker & Carr-Stewart, 2004). It is believed that a perception of reality can change only when an individual understands the nature of what they believe and the language they have used to create that reality (Orem, Binkert, & Clancy, 2007).

In addition to a theoretical base, appreciative inquiry is further defined by five principles, including a constructionist principle, simultaneity principle, poetic principle, anticipatory principle, and a positive principle (Cooperrider, Whitney, & Stavros, 2008; Watkins & Mohr, 2001; Van Oosten, 2006). The constructivist principle maintains that conversations create meaning, communication influences our perception of reality, and knowledge is also a reality that is subjectively held on an individual basis (Whitney & Trosten-Bloom, 2003). In addition, the beliefs that are held about reality further determine the way a person acts and behaves (Watkins & Mohr, 2001). The principle of simultaneity relates change to inquiry; that questions as a form of inquiry set the stage for change (Cooperrider, Whitney, & Stavros, 2008). Questions also lead to the development of innovative, new ideas (Whitney & Trosten-Bloom, 2003) and a process of renewed discovery (Watkins & Mohr, 2001).

Appreciative inquiry is based upon the act of appreciation and the premise of inquiry. Both of these concepts are important tools for change initiatives; however, when combined they bring about a very specific form of guided improvement. From a developmental viewpoint, appreciation refers to acknowledging the value that a person holds and inquiry denotes a process of exploration as a means of enhancing the learning process (Whitney & Trosten-Bloom, 2003). When an employee experiences appreciation they feel a sense of being valued and the most effective method of inquiry, when used as a means of understanding relevant issues, occurs through the use of questions (Watkins & Mohr, 2001). Appreciative inquiry involves more than showing appreciation and asking questions, there is a combined purpose of uniting the two processes as a means of creating a shared vision or images about the future (Cooperrider, Whitney, & Stavros, 2008). When employees begin to share a common purpose their relationships are strengthened (Bushe & Kassam, 2005).

Application of Appreciative Inquiry to Adult Education

A technologically-enabled online classroom brings together adults and instructors for the purpose of learning, meeting specified learning goals and objectives, and creating knowledge. The classroom environment is created through the processes and interactions that occur between the learners, instructors, and information provided. The adult learner is self-directed, according to the principle of andragogy, which means that his or her ability to learn depends on his or her involvement in the process and the ability of the learning activities to meet his or her needs. The online instructor facilitates the learning process, while acting as a guide, coach and mentor for the adult learners. The instructor interacts with learners, builds working relationships, communicates with learners, and uses instructional strategies that include written feedback. The adult learners have performance expectations that include demonstrating their progress throughout the process of learning, as well as an expectation that they will be motivated and engaged in the class.

The adult learning process is an active, developmental effort that involves numerous interactions. The adult learner is interacting with his or her instructor, the information presented or acquired, and the classroom environment. Through an adult's performance, engagement, motivation, and interactions in the online classroom meaningful knowledge may be constructed. The learning process is similar to the organizational developmental process as the focus is placed on employee performance, engagement, motivation, and the interactions of employees within the organizational environment. Appreciative inquiry has been utilized to improve employee performance, engagement, and motivation through the use of positive interactions.

The adult learning process could also benefit from the use of appreciative inquiry by enhancing the learner's performance, engagement, and motivation, through positive interactions with his or her instructor and the classroom environment. A positive approach towards learning is also likely to enhance the knowledge creation process. There have been few applications of appreciative inquiry to a learning environment described in the literature and none that were found applicable to an online classroom. Appreciative inquiry was applied to a traditional classroom as a test process called appreciative pedagogy, specifically "in both undergraduate and MBA organizational behavior classes" (Yballe & O'Connor, 2000, p. 478). The adult learning process and all learning activities were greatly enhanced through the use of a positive state of mind during the implementation of appreciative pedagogy.

When adults are included in the process of learning and knowledge creation they are also encouraged to use high-order cognitive functions, including critical thinking and critical reflection. An adult begins to examine the meaning of his or her experiences through critical thinking (Dabbagh, 2004) and the use of reflection is an active part of the appreciative inquiry process. The process of learning also involves the adult's emotions (Merriam, 2008) and a positive classroom experience can impact his or her performance, motivation, and engagement in his or her work. For the purpose of this study the phrase appreciative andragogy was utilized as a means of examining how appreciative inquiry elements can be applied to the online classroom environment for the purpose of having a positive impact on the adult's level of performance, engagement and motivation.

Methods

For this research design a choice was made between utilizing a quantitative method and a qualitative method of data collection, based upon the research purpose and research questions. This study was conducted as a means of exploring enhanced instructional strategies that can help overcome barriers to adult learning (specifically performance, motivation, and engagement issues) within an online classroom environment. Appreciative inquiry has been chosen because of its ability to have a positive impact on adult performance, motivation, and engagement in an organizational environment. There are limited research studies available that address the use of appreciative inquiry within an online academic learning environment. Appreciative inquiry has been effective with enhancing working relationships within organizations and due to its positive nature there is a possibility that it can also enhance instructor and learner relationships.

A qualitative research design was chosen for this study as this type of research is best suited for research subjects that have limited existing research or theories (Creswell, 2003). There are numerous theories concerning adult learning; however, there are few theories and limited research that address the use of appreciative inquiry as an instructional strategy in an online classroom environment. This study provided a description of participants' experiences as they attempted to work with the concept of appreciative andragogy and utilize appreciative andragogy in their online classrooms. A quantitative study will make predictions from numerical data and a qualitative study will examine variables within a natural environment (Sogunro, 2002). This feature of qualitative research further supports the decision to utilize a qualitative research design for this study. For this study it is also important that the concept of appreciative andragogy be tested in an existing online course; therefore, a qualitative study matched the necessary context of this study. In addition, the participants' online facilitation expertise was more important for this study than the subject matter of the course, as the research questions presented were applicable to any online course. The study was bound by a set period of time during a participants' current online class.

The Research Site

This study explored strengthening the instructional practices of an online instructor through the application of appreciative andragogy. The researcher was not interested in studying the methods or practices of a particular online school or university, including any grading forms, guides, or any other

materials that the school may provide the instructor. The participants were given a concept to work with and asked to apply it to their online classrooms. Each participant has a unique or individualized way of relating to his or her students, which is a unique characteristic of the participant rather than a methodology provided by the school. Appreciative andragogy was viewed as a tool that would be made available to the instructor as a means of enhancing his or her facilitation practice, with the impact of student development studied. The subject matter taught by the participant is not relevant to the study as these strategies would be applicable to any online course. Because this is a multiple case approach, there were multiple research sites.

One of the proposed research study sites was an online university situated in the United States and is accredited by The Higher Learning Commission (HLC). This online university was also chosen because the potential online instructor population could provide more than enough participants for this case study. The participating university indicated the provisional access would be granted provided all conditions established by their Office of Institutional Effectiveness were appropriately met. These conditions included a completed proposal and IRB application form, along with other stipulations established by their legal department. The process of requesting permission was completed and all conditions were met. It was mutually agreed any published form of this dissertation would not reveal the identity of this university or the participants.

Participants

For a qualitative study, a small number of participants are selected as a purposeful sample rather than serving as a representation of the entire population, which is used in quantitative studies (Sogunro, 2002). Following the guidelines for a successful multiple-case study, there were a total of nine cases, involving nine participants. Each case utilized one instructor as the unit of analysis. The voluntary participants of this study consisted of instructors facilitating online courses. The average age range for the participants was 40 to 60 years old. Other demographic characteristics had no bearing on this research study and therefore were not taken into consideration. An online instructor teaching at the undergraduate level is required to have a master's degree at a minimum, while an instructor teaching at the graduate level is required to hold a terminal degree. For the primary online university utilized in this study, the participants were solicited through a formal announcement issued through the university's faculty website. These participants facilitated online classes at the undergraduate level. Additional participants for this study were obtained through an announcement posted on the professional networking website, LinkedIn. The participants obtained from this source had varying levels of education and experience, along with a background of facilitating online courses at the undergraduate and graduate level for multiple universities.

The primary concern for selecting participants was their background, including experience facilitating online classes. Online instructors may be hired by an online university as full-time faculty members or adjunct faculty members based upon their facilitation experience, work-related experience, or a combination of the two skill sets. The level of experience, in terms of the actual number of years that the participants' have facilitated online courses, did not influence the study results as the researcher was interested in learning about the instructor and learner interactions, along with the instructional strategies utilized to influence performance, motivation, and engagement in the online classroom when appreciative andragogy was introduced. Once the initial interviews were conducted the researcher evaluated each potential participant with a goal of selecting six to ten participants. The final determination of participants for the study was made based upon participants' willingness to participate voluntarily in the study, their prior experience facilitating an online course, their willingness to commit the time necessary to participate in the full range of activities designed for the study, and the ability of the researcher to obtain permission from their online university to use the participants' online classrooms as research sites. Those applicants who were selected as participants were then contacted and all necessary permission and consent forms were provided.

Application of Appreciative Andragogy

Appreciative andragogy was applied as an instructional strategy by utilizing the 4D cycle that was developed for appreciative inquiry. The goal of an appreciative andragogy 4D cycle is to enhance the development of the instructor's relationship with their students over a four-week period. The first week consisted of contacting each of the selected students and having a conversation with them, utilizing the Discovery and Dream processes. Discovery is a process of learning about each student's hopes, dreams, and prior peak experiences. The Dream phase is a time for students to imagine what might be for their future through a process of self-reflection. For some students their future may be focused on completing the class, completing their degree program, or entering a new career field.

The second week involved another conversation and the use of the third factor in the 4D process, which is the Design phase. Participants discussed resources and strategies that would help students meet their developmental needs, which included working on the creation of their desired future. This was also a time of showing belief in the students and their abilities, while helping them reach for what they wanted to accomplish. During the third week that participants worked with students there were no scheduled contacts—the third week was planned as a time to allow students to work with the recommended resources and strategies provided during week two. The fourth and final week that participants worked with the selected students was characterized by the last factor in the 4D cycle, which is the Destiny phase. This conversation provided a sense of support for the students' progression towards working on their desired future, while utilizing the resources and strategies suggested by their instructors.

Data Collection Instruments

This researcher asked participants to become familiar with appreciative andragogy, which is based upon the organizational theory of appreciative inquiry, and how this concept could be applied as an instructional strategy within his or her online classroom. The participants were asked to select a predetermined number of learners within his or her online class, to evaluate his or her performance, engagement, and motivation in the class before and after the use of appreciative andragogy. To accomplish this task there were interviews conducted between the researcher and participants, worksheets were provided by the researcher and collected from the participants, journal entries were written by the participants and collected by the researcher, and other documents were collected from the participants that provided examples of instructional strategies utilizing appreciative andragogy.

Data Collection

There were a total of nine participants for this study, with eight facilitating online classes in a part-time capacity and one facilitating online classes in a full-time position. Three of the participants held a doctorate degree and previously participated in a research study. Six of the participants held a master's degree and had not yet participated in a research study. Participants' previous teaching experiences ranged from one to forty years, while participants' previous experiences teaching online ranged from eight months to nine years. Four of the participants recognized the concept of appreciative inquiry or were somewhat familiar with the term, one participant knew about appreciative inquiry as they utilize a constructivist approach to teaching, and four participants were not familiar with the term.

For most participants, they planned to add appreciative andragogy as an instructional strategy and begin implementation with a one-on-one phone conversation. One participant did not require any changes to their instructional strategies as they already use a constructivist approach to teaching. P1, P2, and P5 attempted phone contact with all of the selected students during the first week of the implementation phase. P3 began implementation after the initial bio assignment was completed by his/her students and P3 added questions to this assignment about goals and dreams. P4 approached students during the first week of implementation and discussed areas of needed improvement. P6 first asked students to self-reflect and consider their dreams. P7 asked students about their goals and dreams. P8 waited to contact students until they posted their introductions and completed the first assignment. P9 contacted students and asked them to talk about their progress, goals, and dreams. Most of the participants selected five students to work

with during the implementation phase of the study. P3 selected a total of six students and P2 withdrew from the study prior to implementation. Most of the participants still had five students at the end of the implementation phase. P1 had a total of two, P3 had six, and P8 had four. There were a total of

thirty-seven students that went through the complete four-week implementation phase.

There were three forms of data collected for this research study and included interviews, worksheets that were completed by the participants, and journal entries submitted by the participants. The first participant (P1) served as a test case and a determination was made that there was no need to alter the study design, as the interviews were conducted as planned and the participant followed the implementation phase as designed. The participant interviews were all recorded and utilized semi-structured, open-ended questions that allowed each participant to share their thoughts, ideas, knowledge, and experiences. The interviews were scheduled around the participants' availability, which included day and evening appointments. Each interview took an average of ten to thirty minutes to complete. The interviews provided the researcher with an opportunity to explain the underlying theories of appreciative andragogy and appreciative inquiry, to obtain feedback from the participants about their participation and answer any questions or concerns, and it allowed the researcher to hear about each participant's experience after working with appreciative andragogy during the implementation phase. Most of the participants provided meaningful responses and were willing to take the time to participate in each of the interviews. In addition, most of the participants were highly engaged in the study, they were interested in learning about appreciative andragogy and how to apply it to their online classroom, and they were willing to contribute their time, energy, and effort to the research study. The researcher took notes during the interviews and after the interviews were conducted the researcher transcribed each of the statements.

The participants were given worksheets that asked them to evaluate their present instructional strategies, the use of appreciative andragogy as an instructional strategy, along with the level of motivation, engagement, and performance for their selected students prior to and after the implementation phase. Most of the participants provided detailed responses and completed the worksheets within the one week period requested. The participants were also asked to record journal entries during the implementation phase to document their thoughts, feelings, and experience with the use of appreciative andragogy. Some of the participants completed the journal entries in detail and submitted them with the post-implementation worksheet. The journal entries gave a feel for the lived experience of the participants and documented the amount of time and thought that was put into the implementation phase. The journal entries also documented the challenges that were encountered during the implementation phase and the positive feedback received from the students. For those participants who did not submit journal entries, or journal entries with few details, their experience with the implementation phase was discussed during the final telephone conversation.

A concern for the data collection process was monitoring the students' progress as each participant worked with them and utilized the 4D cycle. During the implementation of appreciative andragogy, the destiny phase was the most difficult to assess since many of the students' dreams and goals went beyond the four-week timeline. Some of the students expressed their goals in terms of completing the class, their degree program, or obtaining a specific career. The participants could only monitor the students' progress at this point and continue to show belief in the students and offer resources. Another concern for the data collection process involved knowing the participants' progress and determining if they were following the research design during the implementation phase. A weekly follow-up email was sent to each participant during the implementation period and an outline of the implementation plan was included with each email to serve as a reminder. Some of the participants responded and provided a progress update. Overall, the participants followed the research design, participated in the phone conversations as requested, and conducted the implementation phase as planned.

Data Analysis

After the data was collected, individual case reports were written to document the overall findings for each participant. Once the individual case reports were written, a cross-case summary report was completed to summarize common themes that emerged from the data. When sorting through the data, the researcher had to make a determination of the key points, the most important and relevant information, and the least important or least relevant information. The challenge was to accurately portray each participant and their unique viewpoint and experience working with appreciative andragogy.

3. Research Question: How does the application of elements of appreciative andragogy as an instructional strategy for instructors positively affect online post-secondary classes?

The participants indicated that appreciative andragogy was easy to implement, the methodology was effective, and the concept could be used by other online instructors. Appreciative andragogy positively affected online classes in three key ways and included the relationship between the instructor and their students, the ability of appreciative andragogy to change students' views of online classes, and the life-giving elements that appreciative andragogy influenced. Through the use of appreciative andragogy the instructor developed stronger working relationships with their students. The instructor was provided with an opportunity to get to know their students better by relating to them through their dreams and goals. The students found it meaningful that an instructor would invest additional time and show a concern for the student's success. The instructors felt connected with their students, they were able to develop a stronger rapport with their students, and the use of appreciative andragogy helped the instructor to be seen as a real person. The instructor's role was expanded to include acting as a mentor and by learning more about their students' needs they could tailor the class materials to meet those needs. The use of appreciative andragogy positively affected online classes by raising an awareness of the life-giving forces within the classroom and supporting those positive elements. The participants indicated that what gives life to the online classroom includes the students' motivation to learn, the class discussions, the interactions between the instructor and their students, and the students' life experiences.

4. Research Question: How do online instructors apply elements of appreciative andragogy as a positive instructional strategy for online post-secondary classes?

Appreciative andragogy was implemented through the use of a 4D cycle over a four-week time period. The first week was the discovery phase and involved contacting students to discuss their hopes, dreams, and peak experiences. The first week also included the dream phase or a time of reflecting on what is important and imagining what might be in the future. The process of discovery included appreciating the student's present qualities and abilities, along with the development of a mutual understanding between the instructor and the student. The dream phase also involved a time of self-reflection for the student and thinking about possibilities, which may involve completing their degree, gaining specific knowledge, or passing the class. The second week of the implementation phase involved contact with the students again to talk about resources and strategies that might help them meet their dreams and goals, which is the design phase of the 4D cycle. This phase was designed as a time for the instructor to show belief in their students, along with their abilities and the potential that each one holds. The third week of the implementation phase required no contact with the students, which provided time for the students to work with the resources and strategies suggested. The fourth week of the implementation phase was the destiny phase and included a follow up conversation with the students to find out if the students had attempted to utilize the resources and strategies provided. The destiny phase involves a time of creating what will be and often the students' dreams and goals would not be completed by the end of the course; therefore, the participants utilized this as a time of checking in with the student and offering their support and additional guidance.

5. Research Question: How does the application of elements of appreciative andragogy as an instructional strategy for online instructors influence adult learner motivation?

The participants indicated that peak motivation is evident when students are enthusiastic and

engaged in the class, when their written responses exceed the assignment criteria, and they are at an above average performance level. Peak motivation is also observed when students are offering encouragement, assisting others, and they are sharing real-world examples and alternative perspectives. Students are at peak motivation when they are actively participating in the class discussions, showing an interest in the course, maintaining frequent communication with their instructor, applying what they have learned to their lives, and completing their assignments ahead of time. The use of appreciative andragogy influenced student motivation through the use of positive encouragement from their instructor. Some instructors used visualization to increase motivation, asking students to visualize successfully meeting their goals and dreams. Some participants noted that motivation was highest at the start of the class and appreciative andragogy helped to sustain that level of motivation throughout the class. Some participants found that students' motivation increased because of the strong working relationships that were developed during the implementation phase. The personal contact that the participants had with their students helped to develop a connection and the participants took a positive approach to working with their students. For this study there were a total of 37 students who experienced the use of appreciative andragogy. The participants noted that 16 students' levels of motivation remained unchanged, 19 students experienced a positive increase in their motivation, and two students demonstrated an overall decline in their level of motivation.

6. Research Question: How does the application of elements of appreciative andragogy as an instructional strategy for online instructors influence adult learner engagement?

The participants indicated that peak engagement can be observed through class discussions, along with students' interactions, their classroom presence, and the work they have submitted. Peak engagement occurs when students are actively participating in the class discussions and have a high level of interactions. Peak engagement also includes students who are sharing their knowledge and experiences, encouraging others, and engaging others in the discussions. During the implementation phase, some of the participants were discussing methods for increasing participation with their students, they were providing emotional support, and modeling active engagement in the class. Many of the participants found that increased engagement was often due to increased performance and motivation, which is an automatic process when those elements are emphasized. For this study there were a total of 37 students who experienced the use of appreciative andragogy. The participants noted that 10 students' levels of engagement in the class remained unchanged, 25 students experienced a positive increase in their engagement, and two students demonstrated an overall decline in their level of engagement.

7. Research Question: How does the application of elements of appreciative andragogy as an instructional strategy for online instructors influence adult learner performance?

The participants found that peak performance was demonstrated with the students' discussions and assignments. Peak performance included quality discussion responses, along with assignments that exceeded the objectives and criteria. Peak performance was also evident when students were submitting their assignments on time, demonstrating the use of critical thinking, challenging themselves to do better, maintaining frequent communication with their instructor, and earning an "A" overall for the class. During the implementation phase some of the participants were assisting their students with questions about the assignments, offering feedback about their performance, recognizing the students' contributions, challenging students to do more, discussing resources that are available to meet their developmental needs, and offering strategies for completing their goals. The participants noted that the students' performance increase because of these strategies used, along with the personal connection made. For this study there were a total of 37 students who experienced the use of appreciative andragogy. The participants noted that eight students' performance level remained unchanged, 27 students had a positive increase in their performance level, and two students demonstrated an overall decline in their level of performance.

Results

The data collected for this study led to conclusions about the potential of appreciative andragogy to influence adult learner motivation, engagement, and performance. These conclusions are drawn from an exploratory case study involving the implementation of appreciative andragogy within a live classroom; with the participants' lived experience providing the data.

Research Question 1: "How does the application of elements of appreciate andragogy as an instructional strategy for instructors positively affect online post-secondary classes?"

What was learned from this study is that the use of appreciative andragogy had a positive effect on many aspects of online post-secondary classes. When implemented as an instructional strategy a conscious shift in thinking occurred for the instructor and the students. For the participants, they began to discover the students' interests, abilities, goals, and potential through the use of one-on-one interactions, developing an individualized perspective and view of each student. From the students' perspective, they were encouraged to utilize critical thinking and self-reflection during their conversations with the instructor, causing a shift in their thinking and perceptions, which is believed to have led to cognitive and intellectual development. Through the use of appreciative andragogy the students felt a sense of value and inclusion in both the class and the learning process, which in turn had a positive impact on their motivation, engagement, and overall performance. This outcome matches the same results experienced within organizations when appreciative inquiry was utilized. Organizational employees experienced a sense of being valued because of the nature of the appreciative efforts utilized (Watkins & Mohr, 2001).

Research Question 2: "How do online instructors apply elements of appreciative andragogy as a positive instructional strategy for online post-secondary classes?"

What was learned from this study is that appreciative andragogy could be applied as an instructional strategy for online instructors regardless of the subject matter. Participants were encouraged to take a caring approach to facilitation rather than forcing students to comply with the learning process. The participants sought the students' involvement and they adapted the process when students were unable to schedule all of the one-on-one conversations or were not interested in having more than one discussion. An important factor for successful learning within an online classroom environment is the ability of an instructor to provide continuous assistance (Reisetter & Boris, 2004). The participants reached out to the students and expressed an interest in discussing their progress. For many of the participants this caring approach was already being utilized within their instructional strategies and most participants were already working to influence, develop, and improve their students' motivation, engagement, and performance. For these participants the use of appreciative andragogy did not feel like a completely new process rather it was a new developmental tool. It is unknown how effective appreciative andragogy would be implemented if the instructor's disposition was not similar in nature to the participants for this study. Most of the participants were already used to providing meaningful feedback and encouragement to support the development of their students, and they were readily available to provide assistance.

Research Question 3: "How does the application of elements of appreciative andragogy as an instructional strategy for online instructors influence adult learner motivation?"

During the implementation phase of appreciative andragogy the participants used visualization, questions, critical reflection, critical thinking, and direct contact as methods of having a positive impact on their students' level of motivation. These techniques were an addition to the positive methods already used by the participants to influence student motivation. The participants measured the motivation level

of their students by such factors as the students' grades, performance, work product, and involvement in the class discussions. The participants made a determination of motivation levels based upon what they could physically observe or measure within their online class. What was learned in this study is that the development of a strong connection between the students and their instructor, along with a satisfactory class experience, often resulted in a positive sense of identity and sense of self-worth. In addition, strong working relationships that were developed throughout the implementation phase also led to students having the potential for a greater success in the learning process. Students often expressed the belief that they were valued by their instructor, which had a positive impact on their overall sense of self-worth throughout the class. Through the implementation of appreciative andragogy the participants indicated they were able to shift the students' thinking away from grades as a primary focus, to thinking about the meaning of those grades and the class towards meeting their long-term goals. While it was believed that this shift in thinking would cause a positive effect on student motivation, and the participants noted a positive reaction from students to the use of appreciative andragogy, the motivation levels reported were not always improved.

Research Question 4: "How does the application of elements of appreciative andragogy as an instructional strategy for online instructors influence adult learner engagement?"

What was learned in this study is that a strong working relationship between the instructor and their students is likely to increase students' levels of engagement in the class. The students were directly interacting with their instructor on a frequent basis and the instructor attempted to establish a positive and supportive tone with all of their communication. The use of an approach that is focused on students' needs, dreams, goals, and overall development is more likely to create a positive emotional reaction than an approach that is focused solely on students' weaknesses. This is the same lesson learned within organizations when change initiatives were changed from a deficit-based approach to one that considers strengths and contributions that employees are capable of making to the organization (Cooperrider, Whitney, & Stavros, 2008). While there is a need for behavioral conversations at times, the use of appreciative andragogy provides an ability to build positive working relationships that allow issues and concerns to be openly discussed before behavioral issues develop. During the implementation phase it was also learned that students' active engagement led to increased participation in class discussions, which is the gauge participants often use to measure levels of engagement. Participants became consciously aware of the increased participation and believed that these students were fully engaged in the class because they were visible in the discussion boards. Many of the participants also found that engagement increased when motivation and performance were discussed through the one-on-one discussions—participants were providing strategies and resources that students could use to meet their developmental needs. As students felt supported by their instructor, and used all of the suggestions provided by the instructor, their level of motivation increased, their performance was notably improved, and their engagement in the class was visibly increased.

Research Question 5: "How does the application of elements of appreciative andragogy as an instructional strategy for online instructors influence adult learner performance?"

What was learned in this study is that the quality of student work products improved because of a strong connection between the students and their instructors. The one-on-one conversations provided detailed feedback that let the students know how they could improve their performance and what resources would help their progress. During the implementation phase the participants worked with a total of 37 students, and there were only eight students who did not have a change in their performance level over the four-week implementation period. This was the smallest percentage of students who did not experience a change when compared to the number of students who did not have a change in their

motivation or engagement levels. There were a total of 21 students who had a one level change in their performance, which was the highest percentage increase for a one level change, when compared to the students' level of change in their motivation and engagement. There were five students who experienced a two level change in their performance level and one student that experienced a three level change in their performance level. This indicates that for this study, appreciative andragogy had the greatest impact on students' overall performance. There were two students who experienced a decline in their performance level, which are the same two students who also experienced a decline in their level of motivation and engagement.

Limitations

This case study considered only the perspective of the online instructor as the instructor was responsible for implementing appreciative andragogy as an instructional strategy. The instructor either utilized appreciative andragogy effectively or determined that it was an ineffective instructional method. In addition, if the instructor already utilized qualities of appreciative andragogy in his or her instructional practice, the results reported would find little change in the student's performance, motivation, and engagement.

This case study is also limited in its focus on random applications of appreciative andragogy to online classes, rather than a procedure that has been established by an academic institution and supported through training and development efforts. The use of appreciative andragogy also depended upon the instructor's understanding of adult education, his or her willingness to implement all of the suggested uses as an instructional method, and his or her ability to gauge the effectiveness of this approach. This study would also be limited if the theory of appreciative inquiry, adapted as appreciative andragogy, could not be applied to an online classroom. Finally, this study was limited by the lack of scholarly research concerning the application of appreciative inquiry to an online classroom environment.

Conclusions

The use of appreciative andragogy was tested within eight online classes with a total of 37 students. While this is a small sample, the study did reach conclusions as a result of the implementation phase when appreciative andragogy was used as an instructional strategy during an ongoing class. The students' level of performance was measured before and after the implementation period when appreciative andragogy was utilized through a 4D cycle. After the implementation period, 73% of the students experienced a positive change in their performance level and 27% of the students experienced no change in their performance level or had a decrease. For student motivation, after the implementation period 51% of the students experienced a positive changed in their motivation level and 49% of the students remained unchanged or experienced a decrease. For student engagement, after the implementation period 68% of the students experienced a positive change in their level of engagement and 32% of the students remained unchanged or experienced a decrease. There were a total of two students who experienced a decrease for all three factors measured and these students not only experienced a decline, they also withdrew from the class.

The impact of appreciative andragogy extended beyond the measurements provided after the implementation period as there were other positive benefits to the use of appreciative andragogy. The measured indicators (motivation, engagement, and performance) reflected changes that could be observed or documented after a four-week implementation period. Since the participants were conducting one-on-one discussions they were able to learn about the students' background, capacity, and abilities, and they were able to have a positive influence on the students' beliefs, perceptions, and involvement in the process of learning. All of the participants indicated that they took a positive approach to teaching prior to the implementation of appreciative andragogy and that this provided them was another resource, a motivational tool, and a structure for working with the students. The students became aware of the extra attention and direction that was being provided and many noticed the support, care, and concern being

offered by their instructor. The participants helped their students learn about working towards peak motivation, engagement, and performance by encouraging students to do their best and relate their efforts to their hopes, dreams, and goals. The result of this new frame of reference for some of the students was a positive change in their performance, motivation, and level of engagement. For students who did not experience a noticeable change during that time period, it is possible that more time was needed to manifest those results, especially for students with limited prior academic experience and skills.

The use of appreciative andragogy provided many benefits for the participants and the conclusions reached after the implementation period indicate the potential that it holds to be applied to other online classes. The use of appreciative andragogy as an instructional strategy was easy to implement, even with limited prior knowledge of appreciative inquiry, because of the conversations held with each of the participants about the underlying concepts and related theories. The participants found that appreciative andragogy provided an effective relationship-building tool and it helped them put the focus of their conversations on the students' developmental needs, which were then tied to the students' future goals. The use of appreciative andragogy also modeled active motivation, engagement, and performance on the part of the participants, which in turn demonstrated that the participants were responsive to their students and actively present in the class.

It was concluded from this study that appreciative andragogy could be transferrable to any online classroom environment regardless of the class size or subject matter. During the implementation period appreciative andragogy was effectively utilized in undergraduate and graduate level classes. The primary reason for the effective use of appreciative andragogy was that it provided a language for participants to find common ground with their students and build effective communication. With a method that promotes communication and one-on-one interactions between the instructors and their students, the "distance" element is being taken out of the phrase "distance learning." The preferred method of communication for the use of appreciative andragogy, especially during the initial implementation period, was contact by telephone. For those students that could not be reached by telephone or did not prefer that form of communication, appreciative andragogy was still effective when the participants maintained the same level of active involvement with the students by email. Another conclusion reached as a result of the study is that the use of appreciative andragogy does require an investment of time by the instructor for the preparation and implementation of this concept as an instructional strategy. For this study all of the participants were willing to invest the time required as they indicated a desire to learn and an interest in developing their facilitation skills. It was concluded that the participants' willingness to try a new instructional strategy, or add a new instructional strategy as another facilitation tool, was necessary for the effective implementation of appreciative andragogy, due to the level of time and the positive frame of reference required when working with the students. Instructors must be open to trying a new approach and the participants in this study were not only willing to test a new approach, they also believed that they could coach and mentor students, allowing students to become co-creators in the learning process.

Recommendations

It is recommended that future studies of appreciative andragogy consider the need for clear definitions and standardized measurements of motivation, engagement, and performance factors as these qualities often overlap and influence one another. It should also be considered what type of training is necessary for instructors, before they begin implementing appreciative andragogy. Within this study participants were provided with a background and history of appreciative inquiry and were given an opportunity to ask questions and express concerns. There is a possibility that appreciative andragogy may be more effective if implemented at the college or university level, to establish standardized faculty training and encourage faculty to utilize the process.

Furthermore, the length of the implementation period should be another consideration as four weeks may not be long enough to accurately determine if there were behavioral changes or changes in motivation, engagement, and performance. It is possible that a longer time period may provide a better opportunity to accurately assess the overall impact and effect of appreciative andragogy. It is unknown if

a larger class size, or implementing appreciative andragogy on a class-wide basis instead of a few selected students, would have any bearing on the outcome. On a class-wide basis there is going to be a much greater demand placed upon the instructor as the use of appreciative andragogy involves one-on-one interactions.

Future research concerning the use of appreciative andragogy may also consider the characteristics of an online instructor and the relationship of these personal characteristics to the effectiveness of appreciative andragogy. It is not known if all instructors will care about the developmental needs of their students, from the perspective of helping students reach peak motivation, engagement, and performance. In addition, it is unknown if most online instructors would be willing to adopt a new method of facilitation and adapt their current facilitation strategies. It should be considered whether or not the instructor's attitude about the process of learning and the students' involvement in that process has any effect on the implementation of appreciative andragogy. While appreciative andragogy takes a very positive approach towards student development, it is unknown if most online instructors would agree with that method and find the process easy to follow, implement, and utilize for all students.

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Teaching Presence in Online Education: From the Instructor's Point of View

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Abstract

Most often the topic of creating presence in online education is viewed from the student perspective (Oztok & Brett, 2011). The purpose of this mixed methods research was to look at the creation of teaching presence from the vantage point of a *lone ranger* instructor (Anderson, 2004). Based on data collected from student grades, student-instructor communication, and course evaluations, the researcher/instructor set out to determine if creating a greater sense of teaching presence was a worthwhile investment of her time and energy. Over the course of three semesters, the researcher/instructor incorporated various techniques to create a greater sense of teaching presence in one of two simultaneously occurring graduate assessment courses. There was minimal evidence from this study that demonstrated that creating a greater sense of teaching presence in the online classroom was an effective use of the instructor's time and efforts. It was also determined that instructors play a key role in the creation and facilitation of the learning process, but it is likely more important for the instructor to simply be available for students through a well-structured course as opposed to creating a presence of oneself in the online classroom.

Introduction

This research, examined from the instructor's point of view, sets out to determine whether creating a greater sense of teaching presence is an effective investment of time and energy based on data collected from student grades, student–instructor communication, discussion board postings, and course evaluations. The motivation behind this research is twofold. First, according to Oztok and Brett's (2011) review of the research, the idea of presence is historically viewed through the eyes of the student learner and/or community of learners with a specific focus on strategies to create/improve presence in the online setting. The research presented here is based on the perspective of the instructor and how she perceived the time and energy invested in attempting to create teaching presence in her online courses. Second, though not conclusively proven (Van de Vord & Pogue, 2012), there is a general consensus that faculty perceive online education as more demanding and time consuming than face-to-face instruction (Bollinger & Waslik, 2009; Harber & Mills; 2008, Worley & Tesdell, 2009). If online courses are more demanding, it is important to make sure that the instructional choices made are a smart investment of the instructor's time and energy.

Literature Review

Social presence is a term that can take on vastly different meanings depending on the field in which it is being studied. Lowenthal (2010) stated, "It is often hard to distinguish between whether someone is talking about social interaction, immediacy, intimacy, emotion, and/or connectedness when they talk about social presence" (p. 125). Due to the fact that presence in online education is such a broad term, the researcher/instructor chose to examine this concept using the theoretical model of Garrison, Anderson, and Archer's (2000) community of inquiry (CoI). Within this model, there are three elements that come together to create a complete educational experience in online education: social presence, cognitive presence, and teaching presence (Anderson, 2004). Though the focus of this work is on teaching presence, social presence and cognitive presence are a part of a complete educational experience and, therefore, will be referenced. As mentioned, the definition of teaching presence that is used for this project comes from Anderson, Rourke, Garrison, and Archer (2001):

> …teaching presence as the design, facilitation, and direction of cognitive and social processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes. Teaching presence begins before the course commences as the teacher, acting as the instructional designer, plans and prepares the course of studies, and it continues during the course, as the instructor facilitates the discourse and provides direct instruction when required. (p. 5)

Teaching presence consists of three critical roles for the instructor. According to Anderson, Rourke, Garrison, and Archer (2001), the first responsibility is design and organization of the learning experience, which takes place prior to the course opening and during the run of the course. Second, instructors are responsible for the creating, implementing, and monitoring activities that encourage communication and interaction between the students, teachers, and content resources. Finally, instructors must contribute academic knowledge and relevant experiences through forms of direct instruction. Anderson (2004) also notes that students contribute to this third facet as well because they bring their own knowledge and experience to the course.

Research regarding presence, which can be referred to as social, teaching, instructor, and cognitive presence, focuses on a few specific areas. Most often, researchers will study the impact of presence on student success and satisfaction (Archibald, 2010; Allen & Laumakis, 2009; Bliss & Lawrence, 2009; Ladyshewsky, 2013; Oztok & Brett, 2011; Sheridan & Kelly, 2010; Shutt, Allen, & Laumakis, 2009; Wise, Chang, Duffy, & Del Valle, 2004). Picciano (2002) found a significant correlation between positive social presence and students' positive perception of their learning. Picciano (2002) and Jung et al. (2002) have also found some indication that a greater social presence correlates with higher performance. Others (e.g., Anderson et al., 2001; Rovai, 2002) have examined social presence and its impact on the development of community in online learning. There is a plethora of information ranging from articles to websites on how to create presence in the online classroom. Research that focuses on instructor satisfaction primarily pertains to institutional job satisfaction (e.g., McLawhon & Cutright, 2012; Wilson, 2008) or satisfaction with e-learning tools (e.g., Keengwe, Diteeyont, & Lawson-Body, 2012).

Dichotomy of Online Presence

There is a great dichotomy when studying presence in the online environment. Research promotes creating a greater sense of presence, immediacy, and/or community of learners in online courses because it is perceived that it can have an impact on students and the learning environment. Oztok and Brett (2011), through their meta-analysis of research on social presence, sum it up effectively when they state that "studying online communities through the concept of social presence could provide a fundamental understanding of how individuals connect, communicate, interact, and form relationships as they work collaboratively in an online environment" (para. 6).

However, a contradiction exists when one examines the various reasons why many students *choose* to take online courses. There is not a strong indication that students need a personal connection with the instructor; rather, the literature demonstrates that students enter the online world because it is suitable for independent learners because it offers a delivery format that is convenient, flexible, anonymous, and immediately accessible (Mupinga, Nora, & Yaw, 2006). Beaudoin, Kurtz, and Eden (2009) listed elements of online experiences that influenced satisfaction among Western students, and these included content and organization, convenience and flexibility, online interaction, and instructor's role, especially in providing feedback. Sheridan and Kelly (2010) found the indicators of instructor presence that were most important to students were clear course requirements, responsiveness to students' needs, timeliness of information, and instructor feedback. The authors stated that while there was a focus on instructor communication and responsiveness, students did not find importance in synchronous communication or being able to see or hear their instructors. According to Mupinga, Nora, and Yaw (2006), the top three expectations of students include communication with the instructor, instructor feedback, and challenging online courses. Cheawjindakarn, Suwannatthachote, and Theeraroungchaisri (2012) listed five critical success factors according to students in their higher education study. These factors, in order, were institutional management, learning environment (that included interactive learning with students and instructors), instructional design, services support, and course evaluation. A study conducted by Fetzner (2013) investigated why students leave online learning. Of the top 10 reasons they listed, only one addressed the instructor (teaching style). Most of the others addressed personal reasons, difficulty of course, or technical difficulties. Within this study, there was no indication that students left because the instructor was not present enough for their satisfaction.

Overall, the focus of online presence centers, as it should, on the learner and how much he or she is invested and part of the course. As stated earlier, researchers have examined through the measurement of involvement, grades, retention, and community how the student is impacted by social presence. The dichotomy of online presence and the examination of teaching presence from the viewpoint of the instructor is the motivation behind this research. Based on data collected from student grades, student–instructor communication, discussion board postings, and course evaluations, will the time and energy spent creating greater teaching presence be a worthwhile venture for the instructor?

Method

This mixed method research examines the creation of teaching presence from the vantage point of a *lone ranger* (Anderson, 2004) instructor, one who is solely responsible for the creation and management of the course. Based on data collected from student grades, student–instructor communication, discussion board postings and course evaluations, the researcher/instructor set out to determine if creating a greater sense of teaching presence was an effective investment of her time and energy. Through a three-semester study, the researcher/instructor incorporated various techniques to create a greater sense of teaching presence in one of two simultaneously occurring graduate assessment courses.

This study took place at a small state college in rural Nebraska. At this institution, courses are taught in a variety of settings that include face-to-face, hybrid, and online courses for undergraduate students and online-only programs for graduate students. Though the majority of students in the graduate program are teachers in Nebraska, there are graduate students from across the nation that complete degrees through this online program. As a lone ranger, the researcher/instructor is responsible for creating and developing her own course shells for each undergraduate and graduate course. There is a push at this institution to be more "present" to online students; however, there is minimal assistance or professional development provided by the institution to guide and/or assist instructors in this process.

Over the course of three semesters from 2011–2012, the researcher/instructor gathered data from the graduate department capstone course, Assessment of Instruction. Students were completing their

master's degrees in Curriculum and Instruction. Class size averaged 21 students, and each semester the researcher/instructor taught two sections of the course. Each course was eight weeks long with weekly assignments and discussion board postings, a final project, field experience, and the completion of a graduate portfolio.

The Assessment of Instruction course had been in production for five years prior to the beginning of this research study. During the first five years, the course did contain both synchronous and asynchronous elements. In order to conduct the research, the researcher/instructor duplicated the current course shell but worked to incorporate a greater sense of teaching presence into one of the shells based on Anderson's (2004) explanation of the three components of teaching presence. In the following sections, each of these components will be identified in both the original course shell and the modified course shell.

Original Course Shell: Minimal Teaching Presence (MTP)

First, regarding the design and organization of the learning experience, the original course centered on a textbook and supplemental readings, which helped to guide discussions and facilitate assignments. There were instructional PowerPoint presentations for students to view throughout the course that focused on the cumulative final project and some information regarding course material about assessment. Also, included were a variety of YouTube videos that addressed assessment from professionals, as well as entertaining views. These videos were selected to highlight key ideas from the week's lessons. Finally, voice-over PowerPoint presentations were included in the original course. These weekly presentations provided students opportunities to hear the instructor's voice as she addressed the main points of the upcoming week on each of the slides. Minimal direct instruction took place in these presentations.

Second, in the original assessment shell, the devising and implementing of activities to encourage discourse was minimal. The weekly discussion board forums were the only purposeful way created by the instructor for students to interact with the learning community. Each student was required to post one original thought and respond to three of their peers' responses each week. The researcher/instructor did not participate in the discussion board forums.

Finally, according to Anderson (2004), in order to add teaching presence to the online classroom, instructors should add subject matter expertise in a variety of forms through direct instruction. Throughout the course, instructor engagement was limited. The instructor responded to student questions through e-mails and phone calls. The assignments in the course were building blocks for the final project, so the instructor gave written feedback on the rough drafts in order to help students improve each section for the final project. There was no interaction between the instructor and students on the weekly discussion board unless there were specific questions posted in the "Questions/Comments" folder, which was a general forum for students to ask questions and/or make comments about course content, assignments, graduation expectations, or any other personal/professional issues.

Modified Course Shell: Increased Teaching Presence (ITP)

In order to better understand whether creating greater teaching presence was a worthwhile endeavor for the researcher/instructor, an enhanced Assessment course shell was created. In the revised Assessment course shell, along with the information listed above, there were more deliberate choices made to interact effectively with students and create a greater teaching presence. Each week, there were videos recorded that allowed students to see and hear the instructor that not only addressed the weekly goals, but also touched on instructional topics that students were going to read/explore throughout the week. The instructor also participated in the weekly discussion board forums by exchanging ideas with students, asking in-depth questions about their posts, and sharing personal educational experiences.

Screenr.com, which creates instant screencasts, was an additional method of feedback used for student assignments that allowed the instructor to display the students' papers and give verbal feedback as she addressed each section of the assignment. This tool gave students the opportunity to see the written comments and hear the instructor elaborate on the changes suggested for the final project.

Finally, there was a stronger emphasis placed on communicating with the students. There was an additional discussion forum that asked the students to share a bit about themselves: Skype conversations, phone calls, and e-mails were encouraged. Throughout this modified course shell, the three areas of teaching presence (Andersen, 2004)—design and organization, devising and implementing activity to encourage student interaction, and adding subject matter expertise— were addressed purposefully.

Data Collection and Analysis

Data was collected over three semesters from the two courses during the fall of 2011 and the spring and fall semesters of 2012. Between the six courses, a total of 124 students participated in the courses. The MTP courses were taught with limited contact between student and instructor, while the ITP courses included deliberate actions and activities to increase the instructor's presence in the online classroom.

The following data was collected: student grades (from the grade book); student–instructor communication (through e-mail); discussion board postings (information specifically posted in the Questions/Comments folder); and course evaluations (both quantitative and qualitative data). When examining student grades, there were four assignments selected for analysis. The first three were rough drafts of three parts of the final project, and the fourth assignment was the completed final project. An independent sample *t*-test was conducted to compare grades between each of the sections over the course of the three semesters. Discourse analysis was used to identify trends and themes within the written e-mail and discussion board communication. Finally, an independent sample *t*-test was conducted to compare the 13-item course evaluations from the assessment courses.

Limitations

As with all studies, there are limitations. However, the limitations of this study will encourage further research. Based on the fact that the instructor is the researcher and vice versa, there is concern about using self-reported data and losing objectivity during the data analysis. Despite these concerns, this choice of research methods offered the researcher/instructor the opportunity to more closely analyze her own courses and come to conclusions about the creation of a greater sense of teaching presence in *her* online courses. All over the country, online courses are taught differently, and there would be no way truly to replicate this type of research because of the many variables that come into play with students, instructors, institutions, and researchers. The purpose of this study was for one instructor, who faces many exciting challenges as a lone ranger in the creation and implementation of her online courses, to share the results and insight into her research and pose questions for others to answer.

Another limitation of the research is the type of students that took part in the research. These were graduate students in their final course of a graduate degree program. The results will be different depending upon the group of students (undergraduate vs. graduate) and where they are in their program (beginning, middle, or end). The students in this research could have had the mindset that they did not need the presence of the instructor because they simply wanted to complete the course and receive their degree.

Online education is moving forward at an alarming pace, and there is great desire for presence in these settings. This research, though small in size and subjective given that it is one individual's teaching

methods, examines whether presence is a needed component from the instructor's point of view. Since it is a rarity to look at teaching presence from the instructor's point of view, it is hoped that others will follow along the lines of the type of self-study in order to better understand if creating presence in online education is a valuable use of time and effort.

Results

In this mixed method research, data were analyzed from student grades, discussion board postings, e-mails, and course evaluations collected from two courses. Tables A–C highlight themes that emerged through thematic analysis of the student–instructor communication via discussion board postings and e-mail. Table D includes the analysis of the four large course assignments, and Table E displays the comparison of the course evaluations. The written analysis highlighted comments that addressed teaching presence through specific keywords, such as *personal* and *connection*, *hearing your voice*, and indication of *thanks* or *appreciation*. This study addressed the areas of thanks and appreciation because, from the vantage point of the instructor, appreciation and gratitude can validate the work that goes into creating a greater sense of teaching presence.

Table A: *E-mail Communication (Over the Course of Three Semesters)*
Minimal Teaching Presence (MTP) Groups: 208 E-mails Sent to Instructor
Increased Teaching Presence (ITP) Groups: 181 E-mails Sent to Instructor

Type of comment	MTP	ITP
Referencing instructor facilitation/direction as *personal*	0 comments	7 comments
Referencing *hearing instructor voice*	0 comments	13 comments
Indication of *thanks/appreciation* to the instructor	13 comments	10 comments
Referencing feedback/guidance	22 comments	32 comment
DUH! questions	12 questions	7 questions

Table B *Discussion Board Postings (Posted to Questions/Comments Folder Only)*
Minimal Teaching Presence (MTP) Groups: 58 posts
Increased Teaching Presence (ITP) Groups: 122 posts

Type of comment	MTP	ITP
Referencing instructor facilitation/direction as *personal*	0 comments	0 comments
Referencing *hearing instructor voice*	0 comments	1 comment
Indication of *thanks/appreciation* to the instructor	0 comments	0 comments
Referencing feedback/guidance	6 comments	1 comment
DUH! questions	4 questions	9 questions

Table C *Instructor Evaluation Comments*
37 Comments From 124 Students Over the Three-Semester Study

Type of comment	Minimal Teaching Presence	Increased Teaching Presence
Referencing instructor facilitation/direction as *personal*	1 comments	0 comments
Referencing *hearing instructor voice*	2 comments (referencing voice-over PowerPoints)	2 comments
Indication of *thanks/appreciation* to the instructor	0 comments	0 comments
Referencing feedback/guidance	11 comments	10 comments

There were 606 pieces of student–instructor communication analyzed. For the MTP courses, there were 58 discussion board postings, and in the ITP courses, there were 122 discussion board postings. Over the course of three semesters, there were 208 pieces of e-mail data collected from the MTP courses and 181 pieces of e-mail data collected from the ITP courses. Also analyzed were the comments listed in the course evaluations. Of the 124 students that participated in the courses over the course of the three-semester study, 37 students made comments on the evaluations.

Tables A–C highlight comments directly related to reference of teaching presence in various ways. Content analysis of e-mail communication, Question/Comments discussion board comments, and comments on the course evaluations were completed to examine the ways that students acknowledged teaching presence during each of the courses.

Based on the focus of the research and throughout the analysis of data, five areas emerged within the analysis of the e-mail communication and the discussion board postings. First, when examining comments regarding the facilitation and direction of the course, the researcher specifically looked for comments that would indicate a personal connection to the instructor. Secondly, with the personal connection through instruction, comments regarding hearing the instructor's voice became evident in the e-mail communication. Prior to the updates of the assessment shell, there were minimal opportunities to see and/or hear the instructor.

Third, communications indicating thanks or appreciation were also evident. These comments connected to the focus of the research because through analysis of these comments, it could be determined whether or not the efforts made by the instructor to increase teaching presence had an impact on students. The fact that students took the time to mention gratitude for improvements made or lack thereof impacted the way the researcher/instructor viewed her efforts to create a greater sense of teaching presence.

A fourth theme that clearly emerged from the data analysis centered on feedback and guidance from the instructor. Based on previously mentioned research (Beaudoin, Kurtz, & Eden, 2009; Mupinga, Nora, & Yaw, 2006; Sheridan & Kelly, 2010), this is a part of online teaching that students find important. One of the goals in this research was to increase presence through increased feedback, and students commented on feedback/guidance in all areas of communication.

Finally, within these communications, the researcher noted that there were DUH! questions. These were questions that students asked that had seemingly obvious answers if students read the syllabus, weekly announcements, and/or e-mails, or viewed or listened to voice-over PowerPoint presentations, and weekly videos (ITP groups). These questions also impacted the instructor's view of her work because fewer DUH! questions would indicate that the instructor's efforts through the use of audio, video, and the written word were thorough and complete. The researcher identified how many of these questions were asked between the MTP and ITP groups because it could be assumed there would be fewer DUH! questions if there were more communication and presence in the course.

Grade Comparison of Minimal Teaching Presence (MTP) and Increased Teaching Presence (ITP) Groups

An independent sample *t*-test was conducted to compare grades (Table D) between each of the sections over the course of the three semesters. In Assignments 1 and 2, there was a possibility of 20 points. Assignment 3 had 10 possible points, and Assignment 4 had 100 possible points. Based on this analysis, Assignment 3 was the only one of the four major assignments that was significant at the .05 level between the MTP and ITP groups.

Table D *Assignments: Grade Comparison of Minimal Teaching Presence (MTP) and Increased Teaching Presence (ITP) Groups*

	MTP	ITP	*t*	*df*
Assignment 1	18.9 (2.5)	18.5 (3.6)	.626	60
Assignment 2	18.4 (2.5)	19.03 (1.8)	-1.6	60
Assignment 3	9.3 (.24)	9.8 (.71)	-2.04*	60
Assignment 4	95.4 (5.9)	95.9 (5.2)	-.56	60

Note. *= $p \leq .05$

Instructor Evaluation Comparison of MTP and ITP Groups

An independent sample *t*-test was conducted to compare course evaluations (Table E) from the assessment courses. Of the 13 evaluation criteria, one was statistically significant at the .05 level between the MTP and ITP groups throughout the three semesters: *The instructor clearly communicates course objectives and how they relate to the program's goals and mission at the beginning of the course.*

Table E *Instructor Evaluation Comparison of Minimal Teaching Presence (MTP) and Increased Teaching Presence (ITP) Groups*

	MTP	ITP	*t*	*df*
Question 1: The instructor clearly communicates course objectives and how they relate to the program's goals and mission at the beginning of the course.	1.6 (.84)	1.3 (.61)	2.06*	53
Question 2: The instructor follows the syllabus and/or explains when a deviation is necessary.	1.4 (.8)	1.3 (.55)	1.1	53
Question 3: Course material/presentations/discussions clearly relate to the course objectives.	1.5 (.64)	1.4 (.71)	.78	53
Question 4: Course material/presentations/discussions were well organized and clearly presented.	1.5 (.86)	1.4 (.69)	1.1	53
Question 5: Exams/assignments clearly relate to the course objectives.	1.4 (.72)	1.3 (.51)	1.2	53
Question 6: Exams/assignments are well organized and clearly presented.	1.6 (1.05)	1.5 (.7)	1.2	53
Question 7: Grading criteria is clear.	1.7 (1.08)	1.6 (.88)	.7	53
Question 8: Graded assignments are returned within a reasonable time.	1.4 (.63)	1.4 (.52)	.42	53
Question 9: Appropriate feedback is provided on graded material.	1.4 (.66)	1.3 (.48)	.69	53
Question 10: The instructor responds effectively to questions.	1.6 (1.02)	1.4 (.57)	1.5	53
Question 11: The instructor is available for individual help.	1.7 (.99)	1.5 (.64)	1.4	53
Question 12: The course is intellectually challenging.	1.6 (1.15)	1.5 (.7)	1.3	53
Question 13: The instructor teaches this course effectively.	1.5 (.91)	1.4 (.6)	1.4	53

Note. *= $p \leq .05$

Discussion

The results of this study indicate two findings regarding the creation of teacher presence in the online classroom from the instructor's point of view.

There Was Minimal Evidence From This Study That Demonstrated Creating a Greater Sense of Teaching Presence in the Online Classroom Was an Effective Use of the Instructor's Time and Efforts

Student/Instructor Communication According to Argon (2003), specific ways of increasing presence in the online classroom include incorporating audio and video, contributing to discussion boards, promptly answering e-mails, providing frequent feedback, and sharing personal stories and experiences. In the analysis of the student–instructor communication, the researcher specifically looked for conversations that focused on this information. Connected themes that emerged included referencing instructor facilitation/direction as *personal*, referencing *hearing instructor voice*, indication of *thanks/appreciation* to the instructor, referencing *guidance/direction*, and *feedbac*k. Some analysis from the study indicated that the efforts of the researcher/instructor to increase teaching presence were effective uses of her time, but other analysis did not indicate that the extra work was worth the time invested.

First, by creating a greater sense of teaching presence in one of the two graduate courses, it was assumed that there would be a greater sense among students of personal connection to the instructor as a result of seeing her and hearing her voice. There were a total of 595 e-mail and discussion board postings from both the MTP and ITP groups over the course of the three semesters. There were eight comments related to a *personal* connection with the instructor. Seven of the eight comments came from the ITP group. Similarly, there were 18 comments regarding hearing the instructor's voice through PowerPoint presentation and videos. Sixteen of these were from the ITP group. It makes sense that more of these comments would come from the group with increased teaching presence; however, there were not very many comments made that related to a personal connection resulting from hearing the researcher/instructor. This representation of importance placed on hearing/seeing the instructor demonstrates support of the dichotomy of online instruction. Though some research (e.g., Cheawjindakarn, Suwannatthachote, & Theeraroungchaisri, 2012; Mupinga, Nora, & Yaw, 2006; Sheridan & Kelly, 2010) demonstrates the value of instructor interaction, only 4% of the communication that occurred between the students and instructor in this study validated the desire or need for the instructor to be present.

A second observation is related to the comments that referenced feedback/guidance. The use of feedback is a significant part of online teaching because of the lack of verbal and nonverbal interaction between student and instructor (Gallien & Oomen-Early, 2008; Mupinga, Nora, & Yaw, 2006; Sheridan & Kelly, 2010). There were 39 comments made about feedback from the MTP group and 43 from the ITP group. Overall, there were positive comments regarding feedback/guidance from both groups, but there were more negative comments that came from the MTP group. This is consistent with having less teaching presence in the online classroom. The ITP group did have more comments relating to feedback/guidance, but the majority of these comments were solicited regarding Screenr.com. Most of these comments were very positive regarding the guidance and direction the feedback provided.

There were two areas that were somewhat surprising to the researcher/instructor, and these related to the comments that addressed thanks/appreciation and what were considered DUH! questions.

Each of these categories was similar for both groups. Comments that identified some kind of acknowledgement of the researcher/instructor's efforts in the course were a bit more prevalent in the MTP group at a total of 13, whereas the ITP group, where all of the extra effort was placed into increasing teaching presence, had only 10 comments expressing thanks/appreciation. This did have a negative impact on the researcher/instructor and how worthwhile she believed her time and energy were in creating a greater sense of teaching presence.

DUH! questions were questions that students asked whose answers were seemingly obvious if students read the syllabus, weekly announcements, and/or e-mails, or viewed or listened to voice-over PowerPoint, and weekly videos (ITP groups). One could make the prediction that the more exposure to the information, the more likely students would be to understand and be able to follow through with the expectations. Though the course navigation was similar for both groups, the ITP group received more direction and clarification through the weekly videos as well as verbal comments through the evaluation tool, Screenr.com. The researcher/instructor believed that by allowing the students to hear her, this would emphasize the written information, and there would be less confusion for the ITP group. There was no difference between the MTP and the ITP groups regarding the DUH! questions; therefore, the extra efforts to create the videos and use Screener.com were not validated from the instructor's point of view.

In summary, the increased student–instructor communication did not clearly validate the researcher/instructor's work to create a greater sense of teaching presence. There was not enough difference between the two sections, especially in the areas of thanks/appreciation and DUH! questions, to demonstrate that the efforts of the researcher/instructor made a difference. In other areas, such as personal connection and hearing the instructor's voice, the comments made regarding these two pieces creating a greater sense of teaching presence were minimal. The area of feedback/guidance was a stronger theme in both of the groups. Whether students were addressing it in a positive or negative way, both groups found this to be an important aspect to discuss.

Student Grades Most research on student success in the online classroom focuses on self-reported student learning (e.g., Jung, Choi, Lim, & Leem, 2002; Picciano, 2002; Shea, Li, & Pickett, 2006). This research, however, examined student grades for four of the major assignments in the course. The first three assignments were rough drafts of three sections of the fourth and final assignment. It was important to examine whether or not there were differences in the scores of these assignments because of how the instructor/researcher taught the courses. In the ITP course, these assignments were explained through written word, voice-over PowerPoints, and videos. They were then submitted and assessed through the Screenr.com grading tool. The students in the ITP group received more direct instruction and verbal feedback on each of the three assignments. Despite the increased amount of teaching presence for the ITP group, there was only one assignment that was significantly higher between the two groups.

The efforts to create a greater teaching presence in the three areas of teaching presence from the community of inquiry framework did not lead to a significant difference between the two groups' assignments. Perhaps the use of audio/video was not embraced by the ITP group. Through the study, the instructor noted that not all students in the ITP group were watching the weekly videos. As an estimate, between 40%-60% of the students in the ITP group watched the videos each week. Though these numbers were not officially recorded, this could be a possible indicator of how worthwhile the videos were. A second indicator of the impact of audio/visual increase was the use of Screenr.com for the ITP group. Though this tool received many positive remarks, there were some who indicated that the basic written feedback was sufficient:

> Listening to the voice over did not do anything for me further than what I got from simply reading the comments (e-mail communication, spring 2012)

> Thanks [*sic*] you so much for e-mailing me the attachment [of my paper]. It was much easier to use that rather than the screenr. I did like the screenr, however the attachment is a nice way for me to make sure I don't forget anything (e-mail communication, fall 2012)

> I enjoyed viewing the Screen. It has to take a lot of time to do that! I think it would be great to keep doing the Screenr, but I find the attachment of what you have entered in my paper to be the most beneficial (e-mail communication, fall 2012)

> Though the ITP course was given more audio/visual directions for assignments and feedback during the eight-week course, only one of the four assignments was significantly different. The differences in student grades did not validate the work of creating a greater sense of teaching presence.

Instructor Course Evaluations Of the 13 evaluation criteria, only one was statistically significant at the .05 level between the ITP and MTP groups: *The instructor clearly communicates course objectives and how they relate to the program's goals and mission at the beginning of the course.* The MTP group was given information about the course objectives through the syllabus and voice-over PowerPoint presentations in Week 1 of the course. The ITP group heard about the objectives through these two methods as well as Weekly Welcome videos, which addressed goals and objectives for each week. At the onset of the course, it was believed that multiple evaluation criteria would have been significant between the ITP and MTP groups based on the efforts placed into creating a greater sense of teaching presence.

> It is interesting that the only significant evaluation criterion was connected to feedback/guidance, as stated in the student–instructor communication above. The course objectives were stated in both written and verbal form each week for the ITP group, and this could have made them more secure in their understanding of the course plans and procedures each week.

Instructors Play a Key Role in the Creation and Facilitation of the Learning Process, but It Is Likely More Important for the Instructor to Simply Be Available for Students Through a Well-Structured Course as Opposed to Creating a Presence of Oneself in the Online Classroom

Based on the results of this study, it cannot be said that creating a greater sense of teaching presence was an effective investment of the instructor's time and energy. Based on the data, it appeared that students needed the instructor to be present regarding organization, communication, feedback, and assistance, but the creation of the teaching presence and the attempted connections associated with it did not appear as important. Sheridan and Kelly (2010) support this conclusion:

> It is possible that the instructor attributes that students find important in online courses are not indicative that the teacher is present but are indicative of the teacher's presence. Teacher presence (i.e., personality traits and dispositions) may have little to do with the level at which a teacher is present in the course. (Discussion section, para. 5)

> This research also suggests the need for an instructor to be *present* as opposed to having a *presence*. Perhaps it would be wiser to focus on quality or "best practice" online strategies that positively impact student learning.

Regarding the written comments in the instructor evaluations, of the 37 comments (from 124 students) listed, 21 addressed instructor guidance/directions or feedback both positively and negatively. Findings from Sheridan and Kelly (2010) and Mupinga, Nora, and Yaw (2006) also found instructor guidance/direction and feedback to be important to students. The comments gathered for this study focus more on the *process* of guidance/direction and feedback rather than a connection to the instructor. For example, students said the following:

> Very well-structured course. (Course evaluation, fall 2011)
>
> There are discrepancies in due dates between Blackboard and the syllabus which makes it confusing. (Course evaluation, fall 2011)
>
> Assignments are relevant to the course objectives. It was refreshing to have fewer restrictions/guidelines for DB posts- this made it much easier to apply relevant comments rather than 'wordy' comments to meet a length goal. (Course evaluation, fall 2012)
>
> The instructor is extremely helpful in her feedback. She is in-depth and provided constructive criticism. (Course evaluation, fall 2011)
>
> The only item to work on is responding to discussion board questions posted to her. (Course evaluation, spring 2012)
>
> I'm absolutely amazed at how quickly this instructor grades and effectively responds to my work so I know how to do it better. (Course evaluation, spring 2012)

Sheridan and Kelly (2010) also found that students did not place a high value on synchronous or face-to-face communication; nor did they find great significance in hearing or seeing the instructor. This research explored this idea as well. E-mail and discussion board communications were examined for comments that addressed the videos posted by the instructor, including PowerPoints, the Weekly Welcome videos, and the use of Screener.com as a grading tool. Within these comments, there was minimal reference to hearing the instructor throughout the course. There were a total of 18 comments out of 606 total communications between students and instructor. It is important to note that many of these comments were solicited because the instructor specifically asked for feedback on the Screenr.com grading tool.

> From the communication exchanges for both groups, there were 82 comments addressing teacher feedback/guidance. In comparison, there were more comments addressing teacher feedback/guidance than there were for hearing/seeing the instructor. With a total of 18 comments regarding hearing/seeing, there were over four times as many comments about feedback. It seems that the important aspects of the student-to-instructor connection came more from the professional interaction through grading rather than the personal connection that the instructor tried to create during these courses.

Of the 13 instructor evaluation criteria, only one was statistically significant: *The instructor clearly communicates course objectives and how they relate to the program's goals and mission at the beginning of the course.* There were items that could have more clearly indicated the importance of presence if they had been significant. These items touched on topics such as instructor availability, communication and feedback, and whether or not the instructor taught the course effectively. It is

interesting that the one criterion that was significant relates to the literature that demonstrates that students find content organization important (Beaudoin, Kurtz, & Eden, 2009; Sheridan & Kelly, 2010). The organization of the course can allow for more flexibility for students because they know the expectations of the course and are able to complete the tasks in a manner that is suitable for them.

It is also important to readdress the idea of the dichotomy of online education. Research demonstrates that students take online courses for self-gratifying reasons—flexibility, accessibility, convenience, and the freedom to achieve goals from anywhere at any time. This research identifies with this idea and supports the thought that the researcher/instructor was a needed part of the course through organization, facilitation, and guidance, but her teaching presence was not a required part of success in the course. The data showed there was not enough difference between the MTP and ITP groups regarding student grades, student–instructor communication, and course evaluations to highlight the need for personal connection or community.

Conclusion

The results of this study indicate that the researcher/instructor's efforts to create a greater sense of teaching presence were not an effective use of her time and energy. The statistics demonstrate minimally significant differences between student grades and the criteria of the instructor evaluations. Overall, the written communication indicated a need for feedback and guidance more than the need to see and hear the instructor.

Based on these conclusions, and Anderson et al.'s (2001) idea of teaching presence, instructors may want to focus more on the design and facilitation of online courses by developing and implementing more highly individualized cognitive activities and assignments. Feedback, especially formative feedback, was important to students in this study. Instructors may want to invest time in this type of progressive feedback to support students' autonomous work throughout the course, as it was more important to students in this study than the other means of creating teaching presence. It is also important to further identify teaching strategies and methods that are considered "best practices" in online education. Effective online teaching addresses course elements such as clear goals and objectives, effective course management, timely and responsive feedback, quality discussion board opportunities, and a variety of learner opportunities to process information. In relation to this research, it is important to identify which strategies are the most effective for students and the best use of instructor time and energy.

The overall goal of this research was to share information and experiences that can positively impact online education. This study, which is unique to the vantage point of the instructor, can be a springboard for more research regarding the value of creating presence in the online classroom. The time and energy invested in online teaching by the instructor, especially if she or he is a lone ranger in the creation and implementation of the course, needs to be evaluated to find out what will result in the best rate of return.

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SECTION IV: Faculty

Digging Beneath the Surface: Analyzing the Complexity of Instructors' Participation in Asynchronous Discussion

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Abstract

The purpose of this study was to investigate instructor participation in asynchronous discussions through an in-depth content analysis of instructors' postings and comments through the Community of Inquiry (COI) framework (Garrison et. al, 2001). We developed an analytical tool based on this framework in order to better understand what instructors were saying in discussions. We found instructors relied heavily on social codes and were less likely to employ cognitive codes, that there was a variance in the types of discursive interactions as indicated by different discursive profiles, and that students tended to favor instructors who balanced their comments across the three elements of the framework. We believe engaging in this type of analysis can help us become more effective online instructors and provide a next step for research investigating relationships between comments supporting the COI framework and student participation.

"The purpose of online discussions is to talk! If we didn't discuss, it would be a self-taught class"

- Online student from this study

"I try to be the teacher who sits in the circle on the floor and participates but doesn't dominate the discussion. It can be tricky to find the right balance sometime"

- Online instructor from this study

Introduction

As online education continues to grow, educators will constantly think about, analyze, and reflect upon pedagogical practices which push teaching and learning forward. Many of us believe in the social constructivist view where learning is a collaborative experience, not taking place in isolation but rather through interactions with others (Vygotsky, 1978). Through this lens, knowledge is constructed while individuals are engaging in activities, receiving feedback, and participating in other forms of human interaction in public social contexts (Henning, 2004). The student quote above sums this up nicely—without social interaction, online education could become a "self-taught" learning experience.

One instructional practice that has become vital in supporting this social constructivist approach to online learning is asynchronous discussions. Class discussions are a common way to engage students in learning communities (Cazden, 1988). In online learning, asynchronous discussions have become a common feature through which learning experiences are structured (King, 2002). However, many instructors struggle with how to find the "right balance" in facilitating such discussions. It can be tricky for instructors to find his or her role in these discussions in order to support a collaborative community and stimulate student interaction with the content and each other. As a result, the purpose of this descriptive study was to examine instructor comments and participation in asynchronous discussions. We believe that in order to understand the impact of instructor participation on student learning, we first need to have a richer understanding of the content within instructor comments. Previous studies have looked at surface level factors such as instructor comments versus questions, or the frequency of instructor participation. We believe this surface level analysis gives only a starting point for examining the instructor's role in discursive interactions. In this study we aim to provide an approach to look deeper into what an instructor says in asynchronous discussions. By developing an analytical tool based on the Community of Inquiry framework (Garrison, Anderson, & Archer, 2001) we categorized the types of comments made by instructors as well as identified more complex profiles of instructor interaction. By understanding our own practice as instructors we will potentially be better able to make connections between our behaviors and how this impacts student learning and student satisfaction. We believe this study will enable others to better understand the transactional nature of asynchronous discussions and can lead to continued research on this important pedagogical approach used in many online learning environments. Through our investigation we hope to help instructors who also see participating in online discussions as a balancing act, and support the facilitation of online environments in which students are engaged in meaningful talk.

The Importance of Asynchronous Discussions

Student Participation in Asynchronous Discussions

Asynchronous discussions have found their place in online learning and have generated an extensive research base (Carr-Chellman & Duchasteel, 2002; King, 2002; Paloff & Pratt, 1999; Peterson, & Slotta, 2009). Within this body of research there has been much focus around how students participate in these discussions. For example Vonderwell and Zachariah (2005) analyzed asynchronous discussions and identified various student participation profiles such as active participators, lurkers (i.e., those who read but do not post), and non-participators. Additionally, Peterson and Slotta (2009) found that while all students contributed at least one discussion board prompt, the number of responses students received from peers ranged widely. The number of peer responses to an initial post appeared to depend on the frequency and timing of students' contributions. They continued to examine the quality of responses and categorized these into three groups: personal connection to the reading, knowledge building notes, and relationship building notes. Thomas (2002) investigated student participation in asynchronous discussions and found that over the course of a semester, discourse patterns shifted from an overtly academic, highly structured tone to a more familiar pattern of interaction. Hew, Cheung, and Ng (2010), identified the factors that limited student contribution in asynchronous discussions in order to better understand how students engage in these discussions. These studies represent a small sampling of the research base on student involvement in discussions; however these few studies indicate that research has been undertaken on student participation that goes beyond the surface level of participation. By identifying student profiles, patterns or interaction, and types of comments we get a richer understanding of how students participate in discussions. However, this is just one side of the equation—we also need to understand the other side of this social interaction: that is, the instructor.

Instructor Participation in Asynchronous Discussions

While studying how students interact in asynchronous discussions is an important line of research it is also equally important to understand the instructor's role in discussions. There seems to be two lines

of research developing in this area. First, some researchers have looked at how an instructor's presence impacts students' learning and engagement. The findings around this question seem to be mixed. For example, there has been research indicating students' reporting of learning and satisfaction improves when they have more interaction with their instructor (Moore, 2002; Swan, 2001), when instructors motivate students in asynchronous discussions (Wu & Hiltz, 2004), and when a discussion board is moderated by an instructor (Wise et al., 2006). Jiang and Ting (2000) found the number of instructor responses had a strong relationship with the number of student responses although they cautioned this finding was based on a small amount of data. These positive findings; however, have been contradicted by two larger studies done by Mazzolini and Madison (2003, 2007). In their 2003 study, Mazzolini and Madison categorized instructor participation as either "sage on the stage", "guide on the side", or "ghost in the wings". They wanted to find out if these types of participation styles by the instructor impacted students' rate of posting, length of posts, and student perception. This study indicated instructor's actual postings had little correlation with the rate or length of student posts. In a follow up study (2007) they examined the content of instructor posts; however, they only categorized posts as questions, comments, or neither. Similar to the first study, they found that none of these types of posts influenced the rate and length of students' posts. They also looked at frequency (i.e., how often) and timing (i.e., when was the best time to post). They found as an instructor's posts *increased*, it was more likely the students' posts *decreased* in frequency and length. Similarly, An, Shin, & Lim (2009) found when instructors participated a lot in discussions students tended to answer more of the instructor's comments and not as many of their peers comments. This notion of the instructor's participation contributing to decreased student participation has also been echoed in similar research (Dixon, 2006: Fauske & Wade, 2003-2004; Li, 2003).

The second line of research has led researchers to look more deeply at these discussions beyond the frequency and surface features of instructor participation. For example, Arend (2009) looked closely at the differences in instructor facilitation and found that it was not the frequency of an instructor's comment that impacted a discussion but rather there were general facilitation characteristics that promoted critical thinking in student discussions. In an effort to identify these characteristics, Nandi, Hamiliton, & Harland (2012) examined the quality of asynchronous discussions and identified themes related to instructor participation. The researchers indicated nine themes such as providing feedback with an example, periodic intervening to direct and extend discussions, and promoting deep learning. They found that instructors did play an active role in initiating and carrying a discussion forward and validated the belief that the role of the instructor is an important one.

Community of Inquiry Model

One possible way to further analyze how instructors participate in discussions is to use the Community of Inquiry (COI) framework. Garrison, Anderson, & Archer (2000) developed this framework in an attempt to establish a process for how students construct knowledge. This process is based on John Dewey's work on community and inquiry, and extends it to online asynchronous courses (Garrison, Anderson, & Archer, 2010). The COI is constructed by three elements: social presence, teaching presence, and cognitive presence. All three presences interact and are interconnected and influenced by each other (Garrison & Arbaugh, 2007).

Research has indicated the COI is a valid way of analyzing the different elements of an online course. For example, Arbaugh et al. (2008) developed a 34 item survey asking students to indicate their level of agreement with statements regarding the three different presences (e.g., "Online or web-based communication is an excellent medium for social interaction"). A factor analysis confirmed the framework to be a valid model for developing and delivering a course, though results did also indicate a need for teaching presence to be better refined. Some additional issues with the COI framework have been noted, particularly the argument that the COI does not contribute to deep and meaningful learning (Rourke & Kanuka (2009); however, there is a research linking the framework with student outcomes and/or satisfaction (Akyol & Garrison, 2011; Shea, 2006; Shea, Li, & Pickett, 2007).

In addition to research on the framework as a whole, there also has been research examining each presence by itself. Social presence can be defined as establishing personal and purposeful relationships with both peers and instructor. The original categories include affective expression, open communication, and group cohesion (Garrison & Arbaugh, 2007). Research has indicated making this social connection is an instrumental foundation that can potentially lead to more effective learning (Swan & Shih, 2005). Recent research has suggested different indicators of social presence are concentrated at different points in a course (i.e., affective expression may decrease while group cohesion increases; Akyol & Garrison, 2011).

Teaching presence is directly related to student satisfaction and learning. Because of the lack of proximity in online learning, it is important that a teacher is cognizant of how his or her teaching presence manifests in an online environment. According to Garrison's model there are three categories within this domain: design, facilitation, and direct instruction. Recent research has indicated teaching presence needs to be better defined (Arbaugh et al., 2008) and in fact a fourth category has been suggested: assessment (Shea, Vickers, & Hayes, 2010)

While most research on teaching presence has focused on discussions and announcements as areas of teaching presence, there is research to suggest teaching presence indicators can be found across the course (e.g., course emails, private folders) and levels of this presence can be maintained at a high rate even for an instructor who has little participation in threaded discussions (Shea, Vickers, & Hayes, 2010).

Cognitive presence is defined as "the exploration, construction, resolution, and confirmation of understanding through collaboration and reflection" (Garrison, Anderson & Archer, 2000, p. 65). This presence is based on the Practical Inquiry Model and includes four phases: triggering, exploration, integration, and resolution (Garrison & Arbaugh, 2007). Although research has suggested little evidence of students reaching the resolution phase, there is some research indicating different activities can facilitate students reaching the different phases. For example, Archibald (2010) found a higher number of students reaching the resolution phase in case-based discussions versus open-ended discussions.

In addition to using the COI to examine the effectiveness of an entire course, there has been research identifying how this framework can be used to examine just asynchronous discussions. Because so much of instructor participation in discussions can be classified as facilitating discourse, it is easy to assume asynchronous discussions are largely comprised of teaching presence indicators (Shea, Vickers, & Hayes, 2010). However, there has been research indicating discussions contribute to the two remaining presences: social and cognitive. First, Swan (2003) analyzed a sample of asynchronous discussions postings and identified an average of six social presence indicators per message. Darabi, Arrastia, Nelson, Cornille, & Liang (2010) drew on the Community of Inquiry (COI) model to examine how the structure of a discussion impacts cognitive presence. They found asynchronous discussions can engage students in three of the four cognitive presence phases.

This current study attempts to further this research by examining instructor participation only and identify how we can understand this participation through the COI framework. We are interested in knowing more about how an instructor can encourage and support engagement and motivate through these discussions, but we believe that we need to look deeper into the content of these discussions in order to find this answer. Like Nandi, Hamilton, & Harland (2012), we strive to look at themes and patterns that go beyond Mazzolini and Madison's (2003) guide on the side, and sage on the stage or simply looking at questions or comments (2007). We also believe that like Darabi, et al. (2010) the COI is an effective framework to look more closely at instructor participation. In this study we offer a more nuanced approach to understanding instructor discursive patterns beyond instructor participation. We believe that we also need to look at what the instructor actually says before we can make broad conclusions about an instructor's influence on a discussion and use the COI framework as a lens through which to investigate. The goal of this study is to take this first step and help others more closely analyze how an instructor participates in asynchronous discussions. Once we have a way to represent this complexity, then we believe additional research can provide us with a deeper understanding of this discursive event.

Our Study

The purpose of this study was to add to the existing research on instructor participation in asynchronous discussions by doing an in-depth analysis of the content of instructors' postings and comments. There were several goals of this research. First, we wanted to better understand what instructors were saying in asynchronous discussions by engaging in a content analysis based on the Community of Inquiry (COI) model (Garrison et. al, 2001). Second, as a result of this content analysis, we wanted to develop a user-friendly tool that can be used by other instructors to analyze their own participation in asynchronous discussions. The third goal of this study was to lay a detailed foundation for subsequent research on the different ways instructor participation can influence student participation. Finally, we hope this research will encourage instructors to become more effective in their participation in asynchronous discussions to improve engagement and deepen knowledge for students.

Tool Development

In order to investigate instructor participation in asynchronous discussions, we developed an analytical tool based on the Community of Inquiry (COI) framework. We had two goals in the development of this tool. First, we wanted a tool which would allow us to more closely analyze the content of an instructor's comments. Second, we hoped that this tool could be shared with others who wished to do the same. We knew that in order to capture the richness of how an instructor participates in asynchronous discussions we needed to look beyond the surface features of discussion (e.g., length, frequency, question, or comment). By basing our tool in the COI framework, we were confident this would assist us in providing a deeper understanding of what instructors were saying and how they were engaging in asynchronous discussions with their students.

The development of the tool occurred in multiple phases:

- *Deciding on Codes:* Once the Community of Inquiry (COI) Model was identified as a framework to drive our analytical tool, we established discursive codes that would correspond with each of the broad categories of types of comments. First, we identified and reviewed previous research that used discursive codes to analyze data (Dixson, et al., 2006; Meyer, 2003; Wang & Chen, 2008). This review led to a list of potential codes. Then we took each of these codes and put them under each category (i.e., teacher, cognitive, social). We vetted this list of codes over multiple rounds until we had a working list of codes.

- *Operationalizing Codes*: Once we had a working list of codes, we sought to define and pilot each code using discussion samples from a different course. We went through multiple rounds of practice coding to determine if codes did or did not fit the assigned category from the COI model. A coding notation was developed for each code along with a definition of the code and a discursive exemplar for illustrative purposes.

- *Trial Runs with Codes*: After the codes were developed and piloted successfully, we then conducted another coding trial run using asynchronous discussions from a previous course. These practice rounds were conducted independently. After each round we came together to reconcile codes, refine definitions and exemplars, and reach consensus.

- *Validating the instrument*: After multiple trial runs we achieved inter-rater reliability of 80% on independent coding.

Figure 1 Coding Categories for Analytical Tool

Cognitive Codes	*Exploration, construction, resolution, and confirmation of understanding through collaboration and reflection*			
Code		***Purpose***	***Do your comments…***	***Example***
Challenging/ Probing	**CH**	Challenging or probing students to think deeper about a topic/issue.	Use signal words like: I wonder, what do you think…usually followed by a question.	One thing I wonder though is the balance between the texts that we give to kids at their instructional level and the complex texts that we need to use. What have you found to be the right balance?
Student Elaboration	**SE**	Exploring a topic deeper	Asking students to elaborate on a topic or idea the student mentioned in their post with the intent of having think deeper on the topic	I am curious what your colleagues say about building background knowledge and the role it plays in comprehension instruction?
Questioning	**Q**	Extending thinking around a topic or issue	Asking students a question but the answer does not require an elaboration.	I assume you find this effective?
Teaching Codes	*Design, facilitation, direct instruction of learning*			
Code		***Purpose***	***Do your comments…***	***Example***
Pulling Together	**PT**	Summarizing or pulling together a student or multiple students' ideas.	Refer directly to one or more student ideas to make a point	I think what you are trying to say is echoed in (another student's) post.
Providing Resources	**PR**	Adding information or details to a discussion	Provide a tangible link or resource to elaborate on a topic.	Here is where you can go for more information….

Sharing Ideas	**SI**	Directing students to provide more information by sharing with them your thoughts	Provide an idea for the student to do in their own practice	Maybe you can take photos of what active reading does NOT look like- that might be powerful too!
Teacher Elaboration	**TE**	Expanding on an idea to make a point. Goes beyond confirmation of the student response and typically uses an example to illustrate the point.	Build on students comments but provide illustrative examples or ideas in order to teach a concept	One thing that caught my attention was what you said about resiliency. I just read a great article on the importance of giving our kids texts that they struggle with. We do so much modeling, and background knowledge building, and vocabulary scaffolding that sometimes we don't let our students wrestle interdependently wit h tough texts and perhaps we are doing them a disservice by not helping them build up their resiliency.
Technical Assistance	**TA**	Helping with technology	Address technology or computer issues	Have you tried using a different browser?
Connections	**CON**	Deepening understanding by making connections between new knowledge and established understandings, experiences, or knowledge	Making a connection within the course (e.g., between two posts, a post and the text, a post and a larger issue in the field).	As to you question about background knowledge -- - this is one that has been brewing in the literacy world as a result of the CCSS.
Social Codes	*Ability to project one's self and establish personal and purposeful relationships- end result in building an effective learning community*			

Code		*Purpose*	*Do your comments…*	*Example*
Encouragement	**E**	Trying to get a student to do something through positive reinforcement	Use a positive tone, celebrate, provide supportive ideas, use emoticons or explanation points	Maybe you can take photos of what active reading does NOT look like- that might be powerful too!
Drawing in participants	**DIP**	Trying to get others involved in the discussion—really only refers to a statement that specifically asks for more students to offer their response. Words to look for- we, us, you all	Address others in the class? Ask questions to more than one person?	How do you all ensure that this follow up/reflective part actually happens- any classroom strategies that you all have used??
Compliment	**COM-SC**	***Social Compliment-*** Providing a compliment with the goal of praising, inspiring intimacy, validating, naming the student, and/or drawing student into the learning community	Start with I, is positive in tone, celebrates a specific point or idea	I am glad you are finding this book helpful I love your example Wonderful idea! Thanks for sharing this!
	COM - TC	**Teaching Compliment-** Providing a	Start with I, is positive in tone, celebrates a specific point or idea **but** then	You raise a great point about how difficult it is to find those comfortable texts as oral reading and

		compliment to set up for a more instructive statement with a teaching point and/or bringing some content from the course.	launch into a topic or idea connected to the content	silent comprehension do develop at different rates
Social Information	**SI**	Giving personal and/or social information in effort to be part of a learning community	Use I, share something from your life that may or may not be attached to the course content	This winter is killing me too- I just can't seem to get warm- I think we are all in the same boat!
Personal Experience	**PE**	Using an example from your life- more specific level elaboration	Use I, share something from your life that is attached to the content	There are so many times that I have run out of time and then don't get to debrief too!

Methodology

The data used for this study came from five sections of a required course in an online Masters of Education program with a concentration on literacy, EDU743: Connecting Writing with Reading for Success. The students in this study were all practicing K-12 teachers, from across the United States and Canada, working towards a master's degree or Certificate of Advanced Graduate Study in Education. This particular course had five sections with five different instructors teaching from the same course shell (i.e., they all taught from the same content, organization, and discussion questions) with approximately twenty students per section. All course instructors were female and had between five and ten years experience teaching in an online setting. Four of the instructors were adjunct and also worked as teachers in K-5 classrooms. One of the instructors was an Assistant professor, as well as one of the authors of this paper. This course was chosen for a number of reasons. First, it was a mature course, meaning it had been taught numerous times by all instructors. Therefore, all instructors had a strong knowledge of the course's content and organization. Second, because the course content focused on writing there tended to be more robust written discussions. Third, this course was a popular course and had multiple sections which enabled us to look at the same course across multiple instructors. All discussions were conducted on a weekly schedule and were part of the students' grade. Each discussion was assessed using a rubric that identified the criteria for an initial substantive post as well as engaged dialogue. Student discussion participation was not analyzed for this study but students were asked to voluntarily complete an anonymous survey. The data sources for this study included the following:

- printed discussions from three different, one-week modules from the five courses (this totaled 34 single spaced pages and 18,322 words)
- survey results of student perceptions of their instructor's participation in asynchronous discussions (the survey included three Likert questions relating to each code as well as three open

ended questions about student perceptions of online discussions)

- survey results of instructors' perceptions about his or her participation in asynchronous discussions (also included three Likert questions and three open ended questions)
- official course evaluations (three questions from the course evaluations were specifically included to gauge student perception of his/her instructor's engagement in these discussions)

This data set enabled us to analyze patterns and themes and generate some conclusions we hope others will find helpful.

Data Analysis

Data analysis consisted of several steps. First, each instructor was assigned a pseudonym and identifying information was removed. Second, instructor comments were entered into a database. Third, the analytical tool (see Figure 1), based on the COI model, was created in order to facilitate analysis. Once the tool was created we engaged in coding the transcripts based on Strauss and Corbin's (1994) model of grounded theory. The process was as follows:

1. *Selective coding*: First, the co-researchers used the analytical tool to code a transcript apart from the data set to establish code agreement. Once agreement was established, each researcher then coded each set of sample transcripts and then switched to cross code each transcript. We continued to cross code sample transcripts until we reached a 75% agreement in our coding process when coding the same transcripts.
2. *Field Notes*: Once the codes were established, transcripts were randomly assigned to both researchers and coded. To establish inter-rater reliability, 20% of transcripts were cross-coded until an agreement of 75% was reached. As each researcher engaged in coding, she kept detailed field notes. These memos and observations were shared between researchers in weekly meetings.
3. *Themes:* Themes and patterns were identified from the coding notes and participation profiles were established. Researchers checked these themes against previous research as well as and the coding categories.

Limitations

As in any research endeavor there are limitations to this study. First, it is important to recognize that the content of a course can greatly influence the results. This course was a course in education where both the students and the instructor are all elementary and secondary teachers. Every community has a discursive identity and the way a teacher talks to another teacher is very different from the way two mathematicians or two historians may engage in discussion. Nandi, Hamilton, and Harland (2012) emphasize that the content of courses can impact how discussions take place. Second, another variable that was not accounted for is the impact of personal approaches and how these shaped the way instructors engaged and supported discussions. Vlachopoulos & Cowen (2010) investigated personal teaching philosophies and found that different facilitators had different approaches based on these approaches. While we did ask our instructors about their goals for discussion we did not dig deeply into their personal philosophies. Also, all of our instructors were women and there has been much research on gender as it relates to discursive practices. Third, other factors such as timing of posts, differences in discussion topics, and how the instructors' comments influenced student discussions were also not considered in this research. Discussion is complex and there are many factors that influence how it occurs in any setting. Fourth, in addition, although we developed a level of agreement before coding and also exchanged a sample of transcripts to establish inter-rater agreement, the threat of observer bias still exists. We chose to calculate inter-rater agreement rather than analyze our results with statistics such as Cohen's kappa. Additionally, our definition of what constituted as certain indicators may not be in agreement with the instructors and/or students. Issues with social presence particularly may exist as it has been suggested that this aspect may be a matter of individual perceptions by students (Gunawardena, Lowe, & Anderson, 1997). For example, what we may have considered as encouraging may not be the same for all of the

students in the course. Finally, this study does not set out to establish any type of causal relationship between instructor participation and student engagement or achievement, nor do we attempt to make broad statements about all instructors as they participate. We do, however, wish to present a model for examining instructor participation and share how this tool helped us better understand how we participate in asynchronous discussions.

Results

The results of our analysis are organized around four questions:

1. What is the instructor saying in these discussions?
2. How do instructors interact differently in these discussions?
3. How do the students perceive the instructor's participation in these discussions?
4. How do the instructors perceive their roles in these discussions?

In order to answer the first two questions, we drew upon the coding categories that were generated as a result of our content analysis. First, we present the codes that were most and least common overall for all instructors. Then we focus on individual instructors and the differences in patterns of interaction between the five. Next, we analyze the survey data to understand how students perceive their instructor's roles in these discussions. Finally, we draw on survey data to better understand how the instructors see their role in these discussions. By addressing these four questions, we are able to draw some conclusions and make recommendations as to further research in this area.

When we look at the types of codes instructors used overall we see some patterns. By looking at Table 1, we see some trends across instructors. First, the frequency of each category is presented as an average across instructors. Social comments were the most common (average of 52.6%). In the table, the frequency of each type of comment within each category is also represented. Within the social comment category, teaching compliments were delivered the most frequently (average of 25.5%). Teaching compliments (see Figure 1 for elaboration on each code) are defined as compliments that not just lead to social cohesion of the group but also serve as a spring board to a teaching point or to pull in some content. Here is an example of a teaching compliment from a transcript, "You raise a great point about how difficult it is to find those comfortable texts as oral reading and silent comprehension do develop at different rates." The instructor started this interaction by complimenting the student on the point he or she raised. Then she continued to point out that oral and silent reading comprehension develops differently, thus using this interaction to teach a concept. Because of the distinct differences in compliments, we decided to differentiate compliments as either a teaching compliment or purely a social compliment (e.g., "Great job" or "Nice contribution"). Teaching compliments were the most common code amongst all comments regardless of category. The second most common type of comment within the social category was personal experience (average of 11.6%). Many of the instructors shared their own experiences in the classroom to connect with students. An example of this was when one student commented on the lack of time he/she had to teach and the instructor added, "There are so many times that I have run out of time and then don't get to debrief too!"

Table 1 Frequency of comments by category and instructor

Type of comment	Instructor						
	Jay	Hawk	Dove	Eagle	Owl	**Total**	**Average**
Cognitive	**1**	**0**	**33**	**24**	**2**	**60**	**11.6**
Challenging/Probing	1	0	10	0	0	**11**	**2.1**
Student Elaboration	0	0	19	18	1	**38**	**7.4**
Questioning	0	0	4	6	1	**11**	**2.1**
Teaching	**6**	**2**	**61**	**103**	**11**	**183**	**35.4**
Pulling together	0	0	0	0	0	**0**	**0**
Providing resources	0	0	4	10	0	**14**	**2.7**
Sharing Ideas	2	0	0	10	1	**13**	**2.5**
Teacher elaboration	3	2	48	69	9	**131**	**25.3**
Teaching assistance	0	0	0	0	0	**0**	**0**
Connections	1	0	9	14	1	**25**	**4.8**
Social	**6**	**2**	**49**	**194**	**21**	**272**	**52.6**
Encouragement	0	0	2	3	2	**7**	**1.4**
Drawing in Participants	0	0	6	23	0	**29**	**5.6**
Social compliment	0	1	19	10	10	**40**	**7.7**
Teaching compliment	0	1	22	105	8	**136**	**25.5**
Social Info	0	0	0	0	0	**0**	**0**
Personal experience	6	0	0	53	1	**60**	**11.6**
Total:	**13**	**6**	**143**	**321**	**34**	**517**	
Average:	**2.5**	**1.1**	**27.7**	**62.1**	**6.6**		

Overall, the second most common category of code was teaching (average of 35.4%). We considered teaching codes to be those whose purpose was to facilitate and direct student learning. Overall, the most common code in this category, and the second most common type of comment overall, was teacher elaboration (average of 25.3%). Teacher elaboration occurred when the instructor took an idea and expanded on the idea in order to make a point. These comments were different from teacher compliments as the goal of these comments were not to build social cohesion in the group but rather to engage in an opportunity to direct discussion and thinking around a topic. For example, in the comment below the instructor picks up on a statement a student made and uses his/her comment as a jumping off point to introduce an article and elaborate on the topic of resiliency:

> One thing that caught my attention was what you said about resiliency. I just read a great article (and I do not have it with me but will look for it when I go into my office tomorrow to attach) on the importance of giving our kids texts that they struggle with. We do so much modeling, and background knowledge building, and vocabulary scaffolding that sometimes we don't let our student wrestle independently with tough texts and perhaps we are doing them a disservice by not helping them build up their resiliency.

The least common category of codes was cognitive codes (average of 11.6%). The goals of cognitive codes were to support student exploration, construction, resolution, and confirmation of understanding through collaboration and reflection. While the codes in this category were used least frequently, the highest type of comment made was student elaboration (average of 7.4%). When an instructor engaged in student elaboration she asked students to elaborate in order to get the students to move their discussions to a deeper level. For example, one instructor asked a student to probe more deeply into what others in her building were doing around background knowledge. One example is, "I am curious what your colleagues say about building background knowledge and the role it plays in comprehension instruction?" We defined elaboration different from just asking a question that may or may not have had more than a simple answer.

How Do Instructors Interact Differently in These Discussions?

We used the COI tool to analyze what codes instructors tended to use overall. We then used this tool to more closely examine how instructors engaged differently in these discussions. As mentioned in the methodology, all of the instructors were teaching the same course, with the same content, using the same discussion questions, at the same time. However, the way instructors engaged in discussions was radically different.

When we first looked at the overall data we noticed a huge discrepancy in the rate of participation of our five instructors. Eagle, the most active commenter, made a total of 321 comments. Dove, the second most frequent poster, made 143 comments, Owl made 34 comments, Jay made 13, and Hawk made only 6 comments in the same time period. Clearly the instructors had dramatically different posting frequencies.

In order to dig deeper into the content of instructors' posts, we examined the frequency of the types of comments made by each instructor and created a profile of how each instructor typically constructed her post. First, the most prolific poster, Eagle, used social presence comments (194) and teaching comments (103) most frequently, with only 24 cognitive comments. The following profile demonstrates a typical comment by Eagle. This exemplar demonstrates her use of positive reinforcement and elaboration with the goal of connecting with students and also finding ways to teach through examples. For illustrative purposes our coding is in brackets.

> I love your ah-ha moments. I think that we do tend to communicate a very narrow definition of what writing is (or at least our testing does). **[S-Teacher Compliment]** When kids say they don't like to write they tend to think about the 5 paragraph essay or going through all of the parts of the writing process- but writing is as diverse as reading and we need to communicate this to them. I also really connected to the writing process comment. **[T-Teacher Elaboration]** I actually enjoy

> the process of writing. I like to start with a blank page and then see what I have at the end very satisfying. **[S-Personal Experience]** I also liken this to sculpting with clay- start out with a blob and then work it into something that actually has form and substance- again the process is the satisfying part for me. **[S-Personal Experience]**

What was interesting about Dove was that this instructor was not just the second highest poster but the one instructor who tended to balance all three codes most evenly. She had 33 cognitive codes (which was the highest number amongst all instructors), 61 teaching codes, and 49 social codes. This balance of interaction is seen in the exemplar below, where she starts with a social code, moves into a teaching code, and ends with a cognitive code.

> Karen, you bring up an important point about the connections between reading, writing and oral language. **[S-Teaching compliment]** All three processes occur as a part of a child's literacy development and it's important for us as educators to promote these connections. **[T-Teacher Elaboration]** I like the way you focus on authentic forms of writing so that your students will understand the many ways in which written communication is a part of our lives. **[T-Teaching Compliment]** What are some of the ways that you (and anyone else as well) establish and support the connections between reading, writing and oral language? **[C-Student elaboration]**

Owl made 34 comments and 21 of these were social comments (double that of her next highest comment type: teaching). Owl's comments tended to be very positive and upbeat giving lots of social comments to her students. This instructor also tended to start all of her posts by addressing the student by name. For example, in the below example, she begins with a compliment to Lisa and then goes into her teaching elaboration and then concludes with another compliment.

> Lisa-You make some excellent points based on what was striking to you in your reading**[S-Social Compliment]**. I think use of models is so important. It's the first stage in the Gradual Release of Responsibility with the latter two (some say three) being we do together (with teacher support/feedback) and you do independently. **[T-Teacher Elaboration]** Love that model! **[S-Social Compliment]**

Jay made very few comments (13) and these were pretty evenly split between teaching (6) and social (6). This instructor did a lot of personal sharing as the following exemplar highlights.

> Wendy, I also have very little wall space for student work so I have been doing more writing share at the end of workshop days. I also try to have something up in the hallway bulletin board to showcase their writing work. We make a lot of books as well!

Hawk made a total of six comments; two of those were teacher elaboration comments, two were social compliments, and two were teaching compliments. It is unclear why this instructor posted so infrequently. As a result we were not able to look more closely at this instructor's pattern of responses.

How Do the Students Perceive the Instructor's Participation in These Discussions?

In addition to looking at what the instructors said in these discussions, we were also interested in knowing how students perceived their instructor's participation. We asked students to comment on how their instructor's participation in asynchronous discussions impacted their higher level thinking and engagement with the content. We also asked students to reflect on how engaged they believed their instructors were in these discussions.

Table 2.1 Student perceptions of how their instructor's comments **encourage in-depth thinking** on the topic.

Instructor	Level of Agreement				
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
Owl	21	26	42	5	0
Jay	25	25	35	0	5
Hawk	29	29	33	5	0
Dove	47	40	13	0	0
Eagle	58	37	0	5	0
Average	36	31.4	24.6	3	1

First, we asked students to reflect on how their instructor's comments in the discussions encouraged in-depth thinking on each topic (Table 2.1). We broke down the results by instructor and represented these responses by percentages. While the results for Owl, Jay, and Hawk were pretty even with similar percentages of students agreeing or strongly agreeing, Dove had the highest percentage of students who strongly agreed (47) and agreed (40). Additionally, Eagle had the highest percentage of students who strongly agreed (58), however 5% of her students disagreed that she encouraged in-depth thinking.

Table 2.2 Student perceptions of how their instructor's comments increased their **level of engagement** in the class.

Instructor	Level of Agreement				
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
Owl	26	21	42	5	0
Jay	25	20	45	0	0
Hawk	24	29	33	10	0
Dove	47	47	7	0	0
Eagle	58	26	5	5	0
Average	36.2	28.6	26.4	4	0

The next set of data (Table 2.2, previous page) indicates the percentage of students "who perceived whether their instructor's comments increased their level of engagement." Overall, students indicated they strongly agreed their instructor's comments increased their level of engagement over the other levels of agreement. Students of Dove and Eagle were more likely to indicate their instructor's comments increased levels of engagement compared to students of the other instructors. Again, Dove's percentages of students who either strongly agreed or agreed was the highest (both at 47%), while Eagle had the highest percentage who strongly agreed (58%)—she had 5% who disagreed that her participation increased levels of engagement.

Table 2.3 Student perceptions of how **engaged their instructor** was in the discussions.

Instructor	Level of Agreement				
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
Owl	21	42	32	0	5
Jay	30	35	20	5	0
Hawk	29	29	33	5	5
Dove	47	47	7	0	0
Eagle	68	21	0	5	0
Average	39	34.8	18.4	3	2

Finally, we asked students to report on how engaged their instructor was in the discussion. Table 2.3 indicates these perceptions. Overall, more students strongly agreed their instructors were engaged in the discussions than any other level of agreement. Again, Dove's and Eagle's students were more likely to strongly agree their instructor was engaged than students in the other sections. Dove's students almost equally believed she was engaged (47% each) while more than half of Eagle's students (68%) strongly agreed she was engaged in this discussion.

How Do the Instructor's Perceive Their Roles in These Discussions?

The final piece of data that we analyzed was results from an instructor survey which asked participants to indicate their perception of their role in these discussions. These data on their general ideas about discussions indicate instructors see themselves more as facilitators rather than direct instructors. For example, when asked how they perceive their role in these discussions, the instructors reported they tried to keep the discussion on track. They perceived their goal as encouraging students, ensuring active participation, providing resources, and being supportive. Additionally, when asked what they hoped their students would receive from their participation in these discussions, they responded:

- We learn best from each other.
- A professional learning community where they are safe to share and can learn from one another.

- My hope is that they will get information that will impact their instruction in some way. This might include teaching strategies, peer advice, a better understanding of current research, a new perspective.
- Collaboration with other students

Discussion

Pulling these findings together enables us to begin to more closely examine the role of instructors in asynchronous discussions. We learned not just about what we are saying and how we are saying it but also how instructor participation is perceived by students—as well as ourselves—within the context of the Community of Inquiry framework. We feel by examining this data as a whole raises some interesting patterns and trends that are worth exploring in more depth.

Lack of Cognitive Presence

When we ask ourselves what instructors are actually saying in these discussions, the results indicate our instructors are really good at giving social comments and even teaching comments but not as good at supporting the cognitive component of the COI model. Our instructors do not use that many cognitive codes. Wang and Chen (2008) assert that online discussions are a great place to practice higher level thinking, but are we supporting this in our responses? We found our instructors were good at validating student comments but not as good at using comments to push discussion further. The instructors in this study also clearly favored the social and teaching parts of the COI framework. All five instructors, regardless of profile, came up with social or teaching codes as the most common type of discursive interaction. This leads us to wonder why our instructors seem to shy away from pushing this discussion into more cognitive domains. We have several hypotheses why this might be the case.

First, we believe that as teachers we are indoctrinated into the discourse of supporting vs. challenging. When we asked the instructors what they believed their role was in asynchronous discussions, they almost uniformly believed that they were facilitators or filled a supportive role. One instructor likened her role to sitting in a circle on the floor with her students—not a very combative location. They emphasized fostering a learning community where students felt safe to share and learn from each other. Perhaps in an online community, one that tends to be less personal in proximity, our instructors felt an extra responsibility to support a positive learning climate which may explain why they used more social codes in their discussion.

Another explanation could be that our instructors, who are mostly classroom teachers, are more comfortable with a discourse based in positive reinforcement. One social code that was common was teacher compliments. Our instructors tended to use teacher compliments to elicit specific responses and to move discussions in specific directions. Our instructors also used teacher elaboration which is a common vehicle through which we teach in the classroom. Personal Experiences is a social code that was used differently amongst the instructors. Some instructors used personal experiences from their direct classrooms while some took them from different parts of their lives. It would be worth exploring these codes in depth to see how these may have contributed to students' responses in these discussions. While perhaps overt cognitive codes were not used, it is possible that some of these teacher and social codes may support other types of desirable discursive interactions.

Another explanation for the lack of cognitive codes could lie in the medium through which the teaching is being delivered: text. These findings made us think deeper about putting things in writing versus saying them out loud in a real time face-to-face discussion. We also wondered why our instructors tended to start many of their posts with teacher compliments. We reflected on our own verbal discussions and do not see ourselves starting each of our teaching conversations face-to-face with compliments. This made us think about the rhetorical style we adopt through a text-based medium and how this is different from face-to-face teaching. We found that in asynchronous discussions our instructors tended to be much

more complimentary. Perhaps when we put things in writing we have to be more aware of the tone as we don't want to put someone off right away, where as in a face to face discussion we can rely on things like body language and eye contact to make our message come off in a certain way. Following up on these differences in these two discursive styles would be an interesting topic for further examination.

Finally, the reason may lie in the structure of the discussion itself. The forums were relatively open and the questions asked students to engage in readings, digest the material, process and reflect upon the topics. Darabi, et.al (2011) found that the way we structure a discussion can impact the type of cognitive presence supported through this medium. For example, they found that the way we create prompts led to different amount of higher level thinking and engagement. They believed that the conventional method of online discussion in which students respond to isolated questions did not necessarily support cognitive presence where scaffolded discussions, role plays, and debates where more effective in raising the complexity of student responses. Our study seemed to support this finding and also reaffirms that we need to think through these findings as we construct online discussion experiences.

Most Desirable Profile for Interaction

One of the reasons we were interested in this topic is that we wanted to become better online instructors. With contradictory research on this topic, it was hard for us to know if we should post a lot, a little, or if the difference even mattered. While this study did not set out to determine what the ideal posting ratio looked like, it does start us thinking about what good instructor participation might look like. In this study, we had a wide range of posting styles. Mazzolini and Madison (2003) categorized posting styles as sage on the stage, guide on the side, and ghost in the wings. We believe, however, posting styles are much more complex than these three categories. While this study did not set out to draw relationships between instructor's style and students' behavior; it is worth mentioning that two profiles, Eagle and Dove, tended to favor the most positive results.

Eagle posted 321 comments during this three week period. The students noticed this high number of posts and rated her as the most engaged in discussions (68% strongly agreed that she was engaged in the discussions). Eagle tended to use more social codes than teaching codes. However, students did not seem to rate her any higher on stimulating their thinking or helping them to be more engaged than Dove. It seems that looking at Eagle's profile of high rate of posting did not seem to matter much for the students. This finding is consistent with previous research identifying the lack of effect the frequency of instructor posting had on student participation (Mazzonlini & Madison, 2003, 2007). However, this becomes a bit more interesting when we compare Eagle to Dove.

Dove was the second most prolific poster at 143 comments. This frequency put her above the third most frequent poster (Owl) by 109 comments but she still lagged behind Eagle by 178 comments. Despite the difference in amount of posts; however, Dove's and Eagle's students rated them similarly in how their posts supported higher level thinking and kept them engaged (see Tables 2.1 and 2.2).What was interesting about Dove's posts; however, was the ways in which she balanced all three types of codes (Social, Teaching, and Cognitive presence) within the same post. Many of her posts start with a social comment, usually a teaching compliment, where she would make a connection with the learner and build on this connection (she also had a tendency to use student names as openers). She then moved into a teaching comment and finished the post by asking a probing question (see exemplar in the results section). While we do not have data to support how effective this particular style was, we do know students rated her as high in stimulating their engagement and promoting higher level thinking.

These findings led us to the work by Arend (2009) who found that instructors who posted less frequently but with more purpose had a higher level of critical thinking in their discussions. She raised the need to think more about the content of the post versus frequency. She explored what "purposeful" posting looked like. She noticed that contributing specific questions that extended or challenged ideas were effective but when an instructor complimented a student or told them it was a "good point" the conversation tended to end with the compliment. She also asserts that while an instructor still needs to provide a safe and positive environment for students (hence the importance of the social and teaching

presence codes) that quality posts are more important than quantity. She ends her study by calling for more research around developing facilitation skills for instructors and we hope that our study adds to this conversation.

The issue of infrequent contributions in discussions did come up with a few of our instructors. Hawk posted a mere six times, Jay posted only thirteen times, and Owl posted thirty four times during this time period. These numbers were in sharp contrast to the level of participation by Eagle and Dove. While we agree with Arend (2009) that quality is more important than quantity—we wondered if there should be at least a minimum level of participation required. These low posting rates curiously did not impact student evaluations. While students rated these instructors lower than Eagle and Dove in encouraging in-depth thinking, increasing their level of engagement and being engaged themselves (see tables), student evaluations still were favorable. It is important to recognize there are many different ways to communicate teacher presence in an online class. (Shea, Vickers, & Hayes, 2010) and its possible students were rating these instructors as acceptable because they were active in other ways (such as timely feedback on assignments, quick answers to emails, and frequent announcements). It is important that research considers the full picture of the course rather than just relying on discussion participation as an indicator of instructor participation—although this is certainly a key area as it relates to instructor presence, student engaging and student satisfaction. Examining how an instructor engages in discussions versus overall in a course would be another area for further research.

Negotiating the Balancing Act

When we asked students what they sought from their instructors in asynchronous discussions some of the responses included that they wanted an instructor who would critique and lead to further understanding of course content, share experiences and ask probing questions, give more resources on a topic, and provide constructive criticism that would lead to new understanding of content. Students also valued the comments from their instructors that were encouraging, positive, and reaffirming. This leads us to consider the balancing act that one of our instructors mentioned was difficult—how do we simultaneously provide encouragement and also probe to levels of deeper learning? While this is what students reported to have wanted and said we as instructors are doing a good job with social comments (e.g., encouraging, validating) we are falling short on cognitive comments—especially challenging, probing, and elaborating). Using a tool such as the COI will help us see how we are negotiating this balance both in theory and in practice. Research in this area is contradictory and makes finding this balance difficult. Moore (2002) and Swan (2001) believe when instructors have more interaction with students that student satisfaction increases. Mazzolini and Maddison (2003, 2007), on the other hand, questioned the correlation between instructor participation and student posting. By understanding how we can reconcile these competing forces we may be able to begin to more accurately connect our participation with student achievement and satisfaction.

Bliss & Lawrence (2009) address this in their study on discussion posts and patterns. They found that instructor feedback is an important part of discussion facilitation. They believe that instructors who used affective and supportive comments were more effective than those who posted often but lacked warmth and enthusiasm (p. 28). As they assert, “instructors who are present, attentive, and active in discussion boards can facilitate student participation in discussion forums” (p. 29). This furthers the idea that we need all three parts of the COI framework to be effective but how we employ this framework takes a careful and thoughtful balancing act.

Conclusion

If online discussions are going to be an important dimension of our teaching it is crucial that we turn our critical lenses inward to better understand our own practice. If we are committed to supporting a constructivist approach to teaching online, one that values the transactional nature of discussions, then becoming more aware of how our participation impacts our teaching will enable us to make the

connections between our teaching practices and how this effects student learning. This line of research has the potential not only to broaden understanding around online discussions, but also encourage instructor self-reflection on participation and effectiveness.

This study is situated at the nexus of contradictory research about the role of instructor participation in online discussions. We know discussions should be moderated (Wise, et. al., 2006) but we are unclear as to how much participation can be too much (An, Shin, & Lim, 2009) or if our participation really matters at all (Mazolini &Madison, 2003,2007). We believe that using a COI framework to help us dig deeper into how we participate in discussions will answer Dixon et al's (2006) call to learn more about the role of the instructor in this medium.

The goal of this research was to more closely examine instructor engagement. For this study we did not look at how instructors' comments impacted student comments. However, now that we have developed an analytical tool and have begun to get a closer look at the complexity of an instructor's engagement in discussion a logical next step would be to look at the impacts of each of these codes on student discussion.

We also feel this study has the potential to lead us in several directions, both practical and theoretical. First, we believe engaging in this type of analysis can help us become more effective online instructors. It is important for us to understand the different things we say and the ways in which we communicate in these online settings. We hope that others can use this analytical tool to look at their own discussions and think about the types of codes that are used most and least frequently as well as the way in which these codes are employed. We also feel this study would provide a good next step for some larger relationship studies to further understand how the instructors' comments do impact student discussions—beyond student perception. Finally, we believe that by digging beneath the surface level of these interactions we can learn more about how this medium supports different types of discursive relationships and can help us create more effective online pedagogy.

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Collaboration in E-Learning: A Study Using the Flexible E-Learning Framework

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Abstract

E-Learning remains a new frontier for many faculty. When compared to the traditional classroom, E-Learning requires the talents of many team members from a variety of departments as well as the use of different teaching and learning strategies. Pedagogy as well as team configurations must change when moving to the online environment. As a result, collaboration is a key component in creating quality E-Learning. This article describes the results of a faculty survey based on the Flexible Framework for E-Learning. The authors developed a survey to capture faculty perceptions of E-Learning dimensions. Using a descriptive design, the authors surveyed participating faculty (N = 45) from several Midwestern campuses during a year-long faculty development program on E-Learning. Items related to the E-Learning dimension being discussed during the monthly videoconference were distributed prior to the monthly video sessions to assess faculty understanding of the E-Learning dimensions. The project was designed to foster a deeper understanding of E-Learning dimensions and of collaborative roles and activities necessary for E-Learning.

Introduction

E-Learning in higher education is a team endeavor. In contrast to traditional face-to-face programs, E-Learning requires a wider network of collaboration among all professionals involved (instructors, instructional designers, technology support staff, etc.). An instructional designer, for example, who seeks to improve interface design in an E-Learning program may encourage faculty to structure their courses using a consistent interface template. This simple interaction between the instructional designer and faculty enhances ease of use for students by creating a more consistent course appearance across the program.

One E-Learning framework that can foster collaboration among E-Learning professionals is the Flexible E-Learning Framework (Khan, 2005). The framework provides an organizing structure to understand E-Learning perspectives within the following eight dimensions: pedagogy, technology, interface design, evaluation, management, resource support, ethics and institution (Khan, 2005). E-Learning professionals need to understand all eight dimensions and be cognizant that specific roles and

responsibilities are dependent upon the combination of select dimensions to a greater or lesser degree. For example, instructors may be most involved with the E-Learning dimensions of pedagogy, evaluation, technology, and ethics. In contrast, instructional technology specialists may more heavily participate in the technology, interface design, and resource support dimensions. Using this framework, it is easy to recognize that no one professional has exclusive coverage over all dimensions of E-Learning. Quality E-Learning occurs when there is sufficient overlap of roles across dimensions, expert professionals filling those roles, and good communication among professionals enacting their roles.

Faculty Development to Enhance Understanding of E-Learning Dimensions and Collaboration

Five University of Wisconsin (UW) System Schools of Nursing have offered a fully online, collaborative RN to BSN program called BSN@Home for over nineteen years. As part of this program, the five UW schools were involved in a Wisconsin Technology Enhanced Collaborative Nursing Education (WITECNE) five-year grant (2006-2011) designed to infuse technology into nursing education (US Department of Health & Human Services, Health Resources & Services Administration [HRSA] Project #U1KHP07714). Beginning in 2006, each UW School of Nursing led a year-long faculty development program across five campuses, with a unique focus on instructional technology (i.e., simulation learning, problem-based learning, telehealth, virtual worlds [Second Life®], and E-Learning). Each UW campus had a site leader who encouraged participation and maintained regular communication with their campus scholars regarding scheduled videoconferences and available resources. A total of 150 scholars participated across the five-year grant, including nursing faculty and non-faculty (e.g., instructional designers) representing each of the five UW nursing schools and the Wisconsin Technical College system, tribal and private colleges.

This article describes the outcome of the fifth and final year of the grant hosted by the UW-Green Bay Professional Program in Nursing with a focus on faculty development on E-Learning. A multi-disciplinary planning group of nine members (e.g., nursing educators, instructional technologists, outreach specialist) considered various approaches, models, and topics in planning the year-long E-Learning faculty development program. They recognized the focus of E-Learning at the institutional level often becomes the technologies that also a major emphasis of faculty development for online teaching/learning. The planning group wanted the E-Learning year to be about more than simply using a specific technology in nursing education. The group recognized that a comprehensive view of E-Learning, as reflected in the Flexible E-Learning Framework (Khan, 2005), could guide the development of a survey and guide the design of the monthly videoconference topics throughout the faculty development year.

The year-long program consisted of six monthly videoconferences, an online course to deliver content, and development of surveys corresponding to monthly videoconference topics (Reilly, Vandenhouten, Gallagher-Lepak, & Ralston-Berg, 2012). The purpose of the project was twofold: 1) to provide a faculty development program on E-Learning using the Flexible E-Learning framework, and 2) to describe faculty perceptions regarding the dimensions of E-Learning and the collaborative nature of E-Learning. By understanding the dimensions of E-Learning (parts), it was anticipated that faculty would gain a deeper understanding of E-Learning (whole) and the necessity of collaboration among E-Learning professionals in the design and delivery of online courses.

Background

E-Learning Roles and Collaboration

The function of E-Learning development teams are often described in the literature through distinct roles and tasks. For example, instructional designers are often characterized as being in a support

role to content experts, E-Learning program managers are often described in administrative roles beyond that of development, and there exists a wide separation in general between administration of E-Learning and those dedicated to E-Learning design and development (Meyer & Barefield, 2010; Reid, 1999). However, Khan's dimensions of E-Learning suggest an overlap of roles and responsibilities and the need for collaboration within an institution. Table 1 depicts the eight roles within the Flexible E-Learning Framework. In the Flexible E-Learning Framework, individual professionals both within and at times outside of an institution must communicate, interact, and share ideas to address all aspects of E-Learning (Khan, 2005).

Table 1 Dimensions of E-Learning and Professional Roles

Dimensions of E-Learning	E-Learning Roles
Pedagogy	Faculty, instructional designers
Technology	Information technology staff (IT), LMS administrators, instructional technologists, multimedia specialists, production specialists, faculty
Evaluation	Faculty, instructional designers, evaluation specialists, quality assurance staff, editors, researchers
Management	Program manager, academic department manager, project manager, department / team manager, textbook management staff
Resource Support	Technical support staff, production specialists (tip sheets, tutorials)
Ethics	Administrators, faculty, academic integrity officers, copyright assurance staff, researchers
Institutional	Administrators, academic affairs staff, student services staff, faculty development staff, intellectual property agreements, librarians
Interface Design	Instructional designers, graphic designers, web designers, usability and accessibility specialists

Sources: Grant, 2012; Khan, 2004; Khan, 2005; Ralston-Berg & Gordy, 2002; Ralston-Berg, McCaffrey, & Kmetz, 2012.

Collaboration, or *how* these professionals work together, must be considered when configuring E-Learning teams and roles. Awareness of roles is a key component, but for true collaboration, team members need a deeper understanding. Breaking down silos and educating all team members on *what* others do, *how* they do it, and how professionals in different roles can *work together effectively* sets the stage for collaboration. This level of understanding often requires a refinement and adjustment of how faculty think about each other as well as expectations (Davis, Little, & Stewart, 2004).

Collaboration permeates every stage of the E-Learning process: from planning and development to the evaluation and ongoing support of online programs. When members of a team collaborate, they "share their expertise such that emergent ideas/designs are created and no one member can claim ownership." This in turn results in a higher quality product (Aleckson, 2010, p. 2). It is the person in the administrative role that sets expectations for the faculty-designer team and determines how collaborative the relationship between faculty, designers, and other staff will be. Management influences collaboration by communicating administrative expectations and values, clarifying roles of specialists selected to work on a project, supporting a structured process that allows time for collaboration, and supporting an evaluation plan that allows reflection, review, and revision. Although experts working independently within a process can impact quality, this practice usually involves a division of labor which does not

maximize the potential for quality (Bates, 2007; Dziuban, Hartman, Moskal, Sorg, & Truman, 2004; Ellis & Phelps, 2000; Meyer & Barefield, 2010). Promoting collaboration is just as important to success as employing necessary key staff or implementing a structured process (Bates, 2007; Ellis & Phelps, 2000).

Communication and sharing over distances often occurs within E-Learning collaboration. Team members may use videoconferencing, web conferencing, telephone communication, email, or shared online documents. Whatever the means, it is important that resources are available for support, all team members have shared access and materials can be shared equally between all team members (Aleckson & Ralston-Berg, 2011; Ellis & Phelps, 2000).

Knowledge and Reflection Needed for Faculty to Collaborate in E-Learning

In many institutions, instructional design and development teams appear more adept at collaboration than faculty, who may still be transitioning to online teaching and less aware of the benefits of collaboration in E-Learning. Ellis and Phelps (2000) describe this transition for faculty as moving from working in isolation to working with teams of people with unique skills. In cross-team E-Learning development, faculty need to know not only the players and their roles, but also how they as content experts can support the team to design effective E-Learning courses (Deubel, 2003; Ellis & Phelps, 2000; Reid, 1999). Ellis and Phelps describe the need for a systems approach to assist faculty as they transition through collaboration, faculty development, and change management. One exemplar of a systems approach that helps assure quality in E-Learning is the Quality Matters™ Program, which is a faculty-centered, peer review process that engages an interdisciplinary team for continuous E-Learning course improvement (Quality Matters, 2013). Another exemplar noted in the literature uses an open systems framework to evaluate pedagogy, management, and evaluation in E-Learning programs (Rovai, 2003). Rovai's open systems approach is similar to the dimensions in the Khan Flexible E-Learning Framework.

Making the transition involves increasing knowledge of the unique skills and contributions team members can make to E-Learning as well as reflecting on one's own role in the E-Learning process. Several tools that enhance faculty reflection on E-Learning are described in the literature. Sikl-Daniell, Williams and Wong (2006) used two tools for online adjunct faculty evaluation at U21Global, an online graduate school owned by 17 international universities. The first tool allowed adjunct faculty a chance to voice their perspective on E-Learning issues such as workload, pedagogical and technological support, and overall experience of online teaching. The second tool provided opportunities for two-way communication, starting with the mentor and students giving feedback to the adjunct faculty member. The adjunct faculty member was encouraged to reflect and respond in writing on how to approach things differently in future online courses. This process was guided by the premise that quality adjunct instructors are retained through quality faculty support, as found by Schnitzer and Crosby (2003).

Another self-reflection tool found in the literature was a rubric designed to allow online faculty at an Australian university to self-reflect on and self-evaluate their course development and online teaching skills (Northcote, Seddon, & Brown, 2011). The rubric was designed to provide a benchmark through which online teaching by academic staff at all levels of expertise could be gauged. The rubric includes descriptive statements designed to identify knowledge and skills associated with effective online teaching and course design based on three main areas: content, technology, and pedagogy (Northcote et al., 2011). While these tools address some aspects of E-Learning, the need for a more comprehensive process of reflection on E-Learning for faculty was identified.

Methods

A descriptive design was used to assess faculty perceptions of E-Learning dimensions and collaboration. Participants were nursing faculty, hereafter referred to as scholars, from each of the five UW nursing schools (UW-Eau Claire, UW-Green Bay, UW-Madison [principal investigator], UW-Milwaukee, and UW-Oshkosh), one nursing program representing the Wisconsin Technical College system, one tribal institution, and one private college. Scholars were invited and/or selected by their

institution to participate in a year-long faculty development program related to E-Learning. In total, 45 nursing faculty participated in the faculty development program.

To overcome the distance between the five UW campuses, the structure of the year-long faculty development program consisted of monthly videoconferences designed to engage scholars in one of the E-Learning dimensions. Videoconference sessions were one hour in duration, and took place on a consistent day and time. While this served to provide consistency in scheduling, faculty whose teaching schedules conflicted were unable to participate in the monthly sessions. Faculty were introduced to the Flexible E-Learning Framework by the author, Dr. Badrul Khan, during the first videoconference. The remaining sessions engaged scholars in a discussion about some aspect of the E-Learning dimensions. For example, during the videoconference on the management dimension, faculty scholars discussed the structure and roles of collaborative work teams and how to maximize available resources to deliver E-Learning.

Resources were uploaded for each of the eight dimensions of the Khan framework and were provided to participants via an online Desire2Learn© (D2L) course. Faculty scholars were encouraged to participate in reflective discussions, both online and during the monthly videoconferences prior to and following the sessions.

Survey Design

The authors recognized that a comprehensive view of E-Learning would be helpful to faculty in understanding roles, functions, and collaborative activities in E-Learning. The survey was not intended to assess participant's reaction to the content of the monthly videoconferences but rather to determine their understanding of the E-Learning dimensions. The Khan Flexible E-Learning Framework included over 600 items corresponding to the eight dimensions of the Flexible E-Learning Framework to assist those involved in the E-Learning process to understand aspects of E-Learning in a comprehensive way (Khan, 2005, p. 13). Understanding the limits on faculty time, a limited number of Khan's items from each of the dimensions were selected and/or adapted (10-15 items per dimension) for a survey designed to determine faculty awareness of the collaborative nature of E-Learning, roles, activities and processes. Items were selected with particular emphasis on their relevance to online teaching and the scope of faculty involvement in E-Learning. Items were reviewed by outside experts with expertise in online course design, education program evaluation, and E-Learning to ensure that dimensions were sufficiently represented.

For example, Khan's institutional dimension checklist included 144 items addressing readiness to implement E-Learning, organization and change, budgeting and return on investment, partnerships, program and course information, marketing and recruitment, admissions, financial aid, registration, on-line program entry, program delivery, student services, and intellectual property. From this extensive list of items, 14 items were chosen to represent the institutional dimension. Selected items were further refined and reviewed by outside experts with expertise in online course design, education program evaluation, and E-Learning to ensure dimensions were sufficiently represented.

The final survey created by the authors was composed of 95 items using primarily open-ended and Likert-type responses. Items were divided into six separate online surveys corresponding to the dimension covered during the monthly videoconferences. An interactive website with sample survey items can be found at http://www.uwgb.edu/witecne/.

Procedure

Following institutional review board approval, 45 faculty scholars received an e-mail invitation to the monthly online survey with items corresponding to the topic of videoconference. Participants received the link to a consent form and online survey just prior to the six videoconferences. Participants were able to access the online surveys at their convenience from any Internet-connected computer. Reminders were sent to non-responders at regular intervals. Participation was encouraged by an incentive drawing for educational technology prizes for those completing all online surveys over the faculty development year.

Findings

Survey response rates varied and are reported for each dimension below. Response rates varied from a high of 40 participants (89%) responding to the survey related to the pedagogical dimension of E-Learning to a low of 17 (38%) responding to the survey on the institutional dimension. Levels of participation may reflect scholars' perceived relevance, comfort, and knowledge of the dimensions. Approximately 60% of scholars were experienced online educators. It was anticipated that participation in monthly surveys would drop as the year progressed for a variety of reasons, not the least of which included survey fatigue, faculty workload, or other demands on time. While it is beyond the scope of this article to include all results, several interesting findings follow reported by dimension and the number of scholars who responded.

Pedagogy Dimension (n=40)

Forty of the 45 scholars completed the electronic survey related to the Pedagogical dimension of E-Learning. Survey items addressed topics germane to this dimension including content design, learner needs and goals in the design, and organization of E-Learning strategies. Six out of ten scholars indicated they employ a combination of faculty-centered and student-centered approaches to learning. Strategies used to allow students some control over the material to be learned included choosing topics for course projects (69%), composing discussion questions (46%), flexible due dates (35%), selecting own work groups (27%), and negotiating learning goals (19%). Fifteen scholars (38%) indicated they surveyed students regarding what they expect to learn or gain from the online course. When asked about the degree to which course assignments and discussions are flexible enough to accommodate students' learning goals, the large majority (83.6% endorsed very much or somewhat) felt their course(s) allowed for this flexibility. Types of multimedia used included video clips (68%), YouTube video links (48%), synchronous chat (18%), podcasts (35%), Second-life© activities (13%), and other (30%) including voiceover lectures, wikis, case studies, and simulations. Teaching strategies used most often in online courses were asynchronous discussions (84%), followed by case studies (66%), online presentations (46%), simulation (33%), and role playing (30%). Strategies used less often included online games (22%), synchronous discussions (22%), debate (16%), and virtual exhibits (14%). In terms of instructional and technical effectiveness, most strategies were perceived as good or excellent by scholars (71% and 100%, respectively).

Technology Dimension (n=31)

The technological dimension of E-Learning included issues of planning the physical and digital infrastructure (hardware and software) needed to deliver E-Learning courses. Reliable and adaptable infrastructure is required of the institution including hardware (e.g., computers, servers, networking devices) and software (e.g., word processers, e-mail, learning management systems) as well as competent technical staff (Khan, 2005). The majority of scholars (46%) were unaware of their institution's technology plan. In response to the question regarding whether cost of technology was a deterrent to taking an E-Learning course, over half (57%) of the respondents did not feel cost was a deterrent and indicated the institution provided special pricing to students for needed hardware and software (71%). Half indicated their institution provided links to resources for the required hardware and software and an orientation program that provided technical training to students prior to enrolling in online courses.

Evaluation Dimension (n=38)

The evaluation dimension of E-Learning includes items related to evaluation of people (e.g., E-Learning team members and students), processes (e.g., the design and evaluation of online courses), and products (e.g., course materials). Items chosen focused on assessment methods used by faculty to evaluate student learning, deter academic misconduct, and elicit student feedback on course content. All scholars indicated that students were given the opportunity to evaluate courses with the following methods used: instant feedback (15%), mid-semester feedback (18%), end of semester feedback (94%). A wide array of individual and group assignments were employed to assess learners including online

assignments (79%), group projects (61%), individual projects (48%), case studies (36%), quizzes (27%), journals or web blogs (24%), and online presentations (24%). Instructor feedback was primarily delivered via feedback in the gradebook or Dropbox (94%). The majority (78%) of faculty indicated they impose a penalty for late work. In addition to instructor evaluation of student learning, other evaluation methods included self (42%), peer (36%), and group evaluation (27%). Strategies used to reduce academic misconduct (e.g., students work is their own) included time limits (45%), assigning different topics (42%), randomizing test items (36%), plagiarism checking software (36%), proctored online exams (30%), and student signature on an academic honesty statement (12%).

Management Dimension (n=21)

The management dimension refers to managing the stages of E-Learning content and resources. This can be divided into two phases: content delivery and maintenance. Depending on the scope of the project and size of the institution, the number and type of team members involved in the development of online courses can vary. Examples of team members include instructional designer, content expert, and project manager. The majority of scholars felt support services were well coordinated with one scholar stating "the learning support staff was involved at all phases of course development, supplying expertise for instructors developing new courses." Yet another scholar indicated support services were "not well coordinated and that a person has to be assertive and determined about seeking help as needed." Other management areas included tutoring services, copyright issues, and notices about course modifications (faculty and student). Scholars reported tutoring services were provided through live chat as well as email. Over half (53%) of scholars were unaware of who was responsible to acquire and renew copyright permissions with learning materials, with library staff identified most often. Finally, a variety of methods were used by scholars to notify students of news and changes including course announcements, message boards, email, and Skype.

Resource Support Dimension (n=38)

The resource support dimension involves online support resources required to deliver meaningful learning environments (Khan, 2005). Types of online support for students identified by scholars included training on how to access online library services (61%), non-instructor assistance with E-Learning tasks (41%), and frequently asked questions (FAQs) sections for students (38%). Scholars provided guidance to students on how to send e-mail attachments (65%), upload or download files (65%), open files in e-mail (52%), attach pictures (39%), install software (35%), and create online presentations (26%). Telephone, live chat, and email support for distance learners were available. Email was the primary link for tech support, tutoring services, library services, admissions, and the bookstore. Resources primarily provided via phone included registration, bursar, and financial aid.

Ethics Dimension (n=26)

Ethical considerations of E-Learning come from a wide array of topics including social political influences; geographic; learner and cultural diversity; the digital divide; and legal issues. Scholars identified several ethical issues including academic misconduct (e.g., plagiarism, "individual vs. collaborative" work), socioeconomic issues (hardware/Internet access, learning preferences, privacy issues, social skills, and personal biases of students), and political issues (e.g., polarizing health policy, personal political beliefs). Eight out of ten scholars identified strategies for presenting viewpoints on controversial issues including a variety of resources from different perspectives, use of debates, and identification of pro and con formats. Disability issues in E-Learning were particularly challenging for students experiencing visual, mobility, and hearing challenges. Accommodations identified by scholars included allowing extra time for exams, tutoring services, and providing transcripts of audio materials. Another issue specifically challenging in the E-Learning environment is sensitivity to student location (i.e., students residing in different time zones). Scholars identified strategies in E-Learning courses such as use of asynchronous discussions and a specific time (midnight) for consistent due dates.

Institutional Dimension (n=17)

The institutional dimension included administrative affairs (e.g., needs/readiness assessment, budgeting and return-on-investment, partnerships with other institutions, marketing and recruitment, admissions, financial aid), academic affairs (e.g., accreditation, instructional quality, faculty and staff support workload, compensation) and student services (e.g., pre-enrollment services, advising, services for students with disabilities, library support) (Khan, 2005). Scholars identified perceived strengths as supportive media, design specialists, and regular platform (D2L) upgrades. Identified weaknesses included feeling unprepared for the system upgrade, differences in departmental support for E-Learning, and lack of 24-hour technology support for students. When asked about budgets for E-Learning, marketing for online programs, institutional policies regarding intellectual property rights, and partnerships with other institutions for shared resources (online library, bookstores, etc.), the majority of scholars responded they were unsure suggesting they are less aware of institutional resources than perhaps the other dimensions.

Interface Design Dimension

Interface design issues involve the overall look and feel of an E-Learning program, including content organization, accessibility, and navigation (Khan, 2005). Interface design was not evaluated directly through a monthly survey but rather by consultants with expertise in E-Learning design and nursing education and then shared with scholars. Consultants designed and applied an interface design rubric, based on Khan's E-Learning framework (2005) and contemporary learning theories, to each of the six core nursing courses in the BSN@Home program. Such outside review was important to evaluate consistency and ease of online course navigation for students since each of the core courses was designed and developed by a different UW School of Nursing. A major finding of the interface design evaluation was the need for a consistent online course design across the BSN@Home program. Often the course design mimicked the design of an individual campus template instead of one design applied to all BSN@Home courses. Evaluation categories in the rubric included (a) coherence and consistency between and within courses, (b) content management, (c) learner engagement, and (d) curriculum design (Tyczkowski, Bauman, Gallagher-Lepak, Vandenhouten, & Reilly, 2012, p. 291). Findings of the review offered both "quick fixes" to courses as well as more involved fixes requiring additional time and effort to implement. Examples of "quick fixes" included greater consistency in a variety of course elements such as the location of materials in course syllabi (e.g., text or other readings, videos, websites), consistent format for identifying course assessment strategies (i.e., locate on grades page), and use of a rubric for evaluating online discussions. More involved fixes included the need for a stronger brand presence for the BSN@Home collaborative program and improved consistency in course structure to improve the overall experience for the learner. One possible strategy to improve consistency in course structure involved establishing a single point of entry for all e-materials possibly linked through a centralized database. Other suggestions included greater transparency in identifying assignments requiring research, refining group activities to provide skill building in collaboration and consensus building, and use of a standard grading scale in all courses.

Collaboration and E-Learning Roles

This project involved the nursing programs at the UW campuses of Eau Claire, Green Bay, Madison, Milwaukee, and Oshkosh. These nursing campuses collaborate to deliver an innovative distance education program, the BSN@Home program. While the nursing curriculum and teaching responsibilities for this online program are shared among the nursing campuses, each is responsible to take the lead for one of the five required core courses in the collaborative program. Elective courses are shared among the campuses. A collaborative approach is critical to the success of a shared program.

The survey incorporates aspects of collaboration necessary in E-Learning. Select items and results related to collaboration among E-Learning professionals are provided in Table 2. These items (as well as other items in the survey) address roles among e-learning professionals, issues addressed by several roles, and how E-learning professionals work in complementary and interdependent ways.

Table 2 Sample Items and Results related to E-Learning Roles and Collaboration

Sample Items	Results
What is the predominant role in the online course you teach (check all that apply)?	**% (n)**
-domain expert	38% (15)
-facilitator	80% (32)
-coach	35% (14)
-mentor	25% (10)
-eclectic	8% (3)
-not sure	8% (3)
-other, please specify	5% (2)
Does the course have orientation programs that provide technical training to students before starting the course?	**% (n)**
-Yes	50% (14)
-No	43% (12)
What clearly defined roles exist for E-Learning support? (Select all that apply)	**% (n)**
-Project Managers	11% (2)
-Instructional Designers	58% (11)
-Editors	16% (3)
-Interface Designers	16% (3)
-Course Developers	37% (7)
-Graphic Artists	11% (2)
-Media Production Specialists	32% (6)
-Programmers	21% (4)
-Webmasters/ Course Management System Administrators	47% (9)
-other (content experts)	21% (4)
Does the E-Learning budget allow for support staff?	**% (n)**
-Yes	28% (5)
-No	44% (8)
-I don't know	28% (5)
How frequently do students ask technology related questions of faculty?	**% (n)**
-Frequently (daily)	12% (4)
-Seldom (2-3 times/wk.)	42% (14)
-Rarely (≤ once/wk.)	45% (15)
-Never	0% (0)
In what ways has Senior Administration been supportive of and made financial and other resources available to implement E-Learning?	Responses: Participation in grant activities, support to faculty when new to E-Learning, media specialist support hired, not sure/aware of any additional resources

Describe methods, materials, and staffing used to recruit online students.	Majority of scholars were unsure or unaware of how students are recruited; 3 scholars were aware of marketing approaches at their institution.
Describe the institution's strengths and weaknesses in assembling qualified staff, internet access and equipment necessary to support faculty and student success to ensure successful E-Learning.	Identified strengths included regular course platform upgrades, technical support, knowledgeable & supportive instructional design staff, and access to hardware. Weaknesses included lack of wireless access, feeling unprepared for course platform upgrades, lack of 24 hour technical support for students and faculty, insufficient budget and staff support for course design and development, and lack of time to develop online courses

Disseminating the Findings of the Year-Long Faculty Development Program

Results of the monthly surveys were collated and presented at an end-of-year conference. Written copies including the aggregate results of their scholars' responses to the survey were provided to each of the five nursing programs. It was hoped that these would be used to engage scholars in further exploration of E-Learning issues beyond the year-long faculty development program. A plenary conference session presented by the interface design consultants reviewed results of their evaluation and suggestions. This gave faculty the opportunity to learn important elements of interface design and strategies for improving the interface design elements of the BSN@Home curriculum.

Scholars evaluated the impact of their participation in the E-Learning year on their understanding of E-Learning issues. Ninety-five percent of scholars indicated their participation had a moderate to substantial impact (based on a 5-point Likert-type scale) on their understanding of E-Learning issues (mean = 4.40). Specific examples of how they applied new knowledge of E-Learning to their teaching, research, or outreach included the use of a self-directed readiness tool for students, tools for engaging learners with learning content such as use of student cafes, case builder software, and e-portfolios. One scholar described recruiting other faculty to increase involvement in E-Learning in his/her institution. Scholars were also asked to describe ways they planned to apply new E-Learning knowledge, attitudes, or skills to teaching, research, and/or outreach in the future. Many scholars noted they planned to adopt a new electronic health record (EHR) in their courses to enhance student use of healthcare technologies. Other plans for applying E-Learning included additional use of e-technology such as incorporation of plagiarism detection software, Wiki's, Twitter, gaming, podcasts, and case scenarios. Finally, one scholar noted he/she would integrate new technology not for its own sake but to support learning outcomes and to appeal to a variety of learners.

Discussion and Implications

Findings of the monthly surveys indicate faculty scholars were aware of pedagogical, resource, evaluation, ethical, and resource support E-Learning issues. The most common pedagogical strategies employed were discussions, case studies, and presentations. As evident by the sharing and exposure throughout the year-long faculty development program, collaboration can bring new pedagogy, strategy, ideas, and technology tools into E-Learning design and development. End of semester feedback from students is the most prevalent form of evaluation. Feedback gathered throughout the E-Learning process can be used as a source of feedback and improvement for faculty. This type of iterative evaluation may include feedback from peers, self, or students.

Responses to the monthly surveys for the institutional, technological, and management dimensions of E-Learning revealed that scholars were less aware of these dimensions and the impact of these dimensions on their faculty role. This may indicate a need for better communication between the silos of teaching and learning (pedagogical) with those of technological and institutional. For work within larger collaborative teams across institutions, team members need consistent messages, support, and common goals to work toward. Administrators and managers can influence the degree to which collaboration takes place through expectations, values, and common goals defined and shared with E-Learning teams. They also influence the process, which allows time for collaboration and iterative evaluation. It is not sufficient to create an E-Learning team or a task force. There needs to be a larger process which includes common goals, a communication plan, and a formal evaluation component to support the team.

Administrative support, essential to successful online course development and delivery, was also critical to the success of this year-long faculty development program. A greater understanding of their roles and the common goals shared among all team members encourages collaboration between faculty and management.

Persistence, flexibility, and a clear commitment by UW nursing programs were key to the success of this project. The knowledge gained allowed scholars to push past "what is" and bring innovation to their current practices while expanding collaboration to include others. Using a more comprehensive framework or plan as a guide for faculty development programs can foster collaboration within E-Learning teams. Collaboration opens opportunities to learn and interact with unfamiliar units. Without some sort of guide or framework outlining all aspects of E-Learning development, faculty development program planners may omit or minimize dimensions necessary for success. For example, during this year-long program scholars expanded their knowledge and are now able to distinguish tasks associated with different support roles and also proactively work toward more effective interface design.

Future research regarding collaborative approaches to the design and delivery of online courses is needed to better understand the faculty's comprehension of the E-Learning dimensions and need for collaboration. Of particular interest is the alignment between faculty development programs and collaboration within larger E-Learning teams. Can faculty development programs be tailored to increase faculty efficacy within highly skilled teams of professionals? Also, as faculty work in teams with other professionals, what is the impact of a formal framework on the success of that team?

Limitations

The aim of this project was to understand faculty perspectives of E-Learning and to deepen understanding of E-Learning and its unique collaborative roles and activities. As was mentioned earlier, the focus of this study was not to assess participants' reactions to the content of the monthly videoconference but rather to determine faculty understanding of the E-Learning dimensions. Not surprisingly, participation declined with each subsequent monthly survey throughout the year. We attribute this to multiple factors, including faculty workloads, survey fatigue, and possibly faculty interest in the E-Learning dimension topic for the month (i.e., 89% response rate to the pedagogical dimension topic offered in the first month vs. 38% response to institutional dimension discussed in the last month).

The author-designed instrument included items adopted and adapted from a comprehensive Flexible E-Learning Framework by Khan (2005). Content validity of survey items was assessed by E-Learning experts as well as experienced online faculty to ensure dimensions were sufficiently represented. Reliability of the survey instrument was not conducted.

Findings represent the perceptions of faculty from a large state public university system, as well as faculty from one private and one tribal institution. While not generalizable, these data posit important perspectives and understandings of E-Learning from nursing faculty across one Midwestern state system. Further, faculty development based on this E-Learning framework, use of the survey (or similar modifications of the Khan items) is encouraged among other E-Learning programs.

Conclusion

Overall, participants were interested in E-Learning content but had difficulty on some occasions preparing for and/or attending videoconferences due to teaching and other responsibilities. Faculty took on the role of "learners" in the faculty development program. Similar to the experiences of online students, some faculty expressed feelings of uncertainty, frustration and inadequacy in dealing with new educational technologies and social media (e.g., Twitter, Polleverywhere) used during the webinars. Results of this study suggest faculty are more familiar with aspects of E-Learning that involve course development and design. Faculty employ a wide array of student-centered teaching/learning strategies designed to engage the learner. Faculty expressed less certainty around issues related to E-Learning dimensions of institutional, administrative, and management.

Faculty need ongoing professional development in E-Learning, especially since technology changes rapidly and students are increasingly more tech savvy. The transition to E-Learning for faculty is more than a pedagogical shift and the incorporation of new technologies. It is a paradigm shift on several levels. The literature has documented well the shift in role from "sage on the stage" to "guide on the side" (Young, 1997). Similarly, there is a shift from what Bates (1997) defined as "lone ranger" to being part of a "superhero team" which has been much less emphasized. The solo approach to development and delivery of courses used in traditional F2F settings no longer applies in the E-Learning environment. Consultation and collaboration with other E-Learning professionals are needed by faculty to build and deliver quality E-Learning.

It takes "a superhero team" to deliver and protect quality in E-Learning programs. The network of E-Learning professionals can range from faculty and instructional designers to graphic designers, information technology staff, and program managers. More attention needs to be given to how E-Learning professionals in different roles work together. Such questions are new to faculty who have traditionally handled most aspects of teaching and learning on their own. Similarly, collaboration (e.g., working with a team perspective) may be new to faculty.

The literature is sparse in addressing how faculty transition from solo to team players in E-Learning. Using the Dimensions of Faculty E-Learning Survey based on the Flexible E-Learning Framework, faculty can develop a more comprehensive perspective of E-Learning and better understand roles, processes, activities, and issues that are part of E-Learning. This knowledge will help faculty in collaborating with other E-Learning professionals. The survey dimensions (e.g., technological, institutional) provide a shared language as well as talking points to facilitate discussions and enhanced collaboration. The Khan Flexible E-Learning Framework (2005) has been successfully used in multiple cultures and disciplines across the globe.

E-Learning, and roles within E-Learning, will continue to evolve. Faculty and other professionals in E-Learning need to understand the major paradigm shifts in moving from F2F to the online classroom to be most effective in their roles.

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A National Survey of Faculty Development Evaluation Outcome Measures and Procedures

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Abstract

This article presents the results of a national study of 39 higher education institutions that collected information about their evaluation procedures and outcome measures for faculty development for online teaching conducted during 2011-2012. The survey results found that over 90% of institutions used measures of the faculty person's assessment of satisfaction and usefulness of the training itself, rather than student outcomes or changes in teaching methodology. Online evaluations were utilized by 80% of institutions and focus groups were used by 21% of institutions.

Introduction

The Online Learning Consortium's five pillars of quality (Online Learning Consortium, n.d.), look at faculty development vis-à-vis the pillar of Faculty Satisfaction. This pillar stresses the importance of faculty satisfaction within the online teaching experience, and notes the need for faculty to improve their online instruction. The Online Learning Consortium (formerly the Sloan Consortium) characterizes faculty satisfaction as resulting from institutional support, which includes the opportunity for "training in online instructional skills" (Online Learning, n.d., para. 5). Thus, faculty development in online teaching is a critical foundation for quality online education. The Online Learning Consortium created an advisory panel of practitioners and researchers (http://onlinelearningconsortium.org/jaln_advisory_panel_fs) focused on faculty satisfaction, development, and support. A first step in the work of the advisory panel was to identify the current state of knowledge of the evaluation measures and processes for faculty development for online teaching, which is the aim and purpose of this current research study.

The next section answers the question, what can we learn from the research literature on faculty development that can improve our efforts to help faculty learn how to teach online?

Review of Literature

Faculty Development Models for Online Teaching

The literature contains many articles about specific faculty development programs at specific universities. Most of these programs offer several training activities; in other words, they offer multiple training opportunities in different settings using different tactics and cannot be simplified as one approach or one activity. However, the evaluations used for these types of multi-dimensional programs do not allow for assessing each part of the program. As a result, the often-modest evaluations of these faculty

development programs use simplistic outcome measures. Additionally, some of the current research does not provide ample information on the content of the faculty development itself.

For example, a faculty development for online teaching program was named Creating Optimum Learning Environments (CREOLE) and involved collaboration between two unnamed institutions, a community college and an eastern research university (Schrum, Burbank, Engle, Chambers, & Glassett, 2005). Four modules were developed, each by experts in the following fields: "learning theory, motivation research, blending face-to-face classes with online supplements, and creating completely web-based courses" (Schrum et al., p. 280). The four modules were eventually offered as one graduate-level course, and an evaluation was given. However, no further information was provided about the modules or the course. In fact, the article does not provide sufficient detail about CREOLE to allow another institution, developing its own faculty development effort, to know what these institutions are doing.

Another example was found in the New England Center for Inclusive Teaching (NECIT), which provided faculty development seminars at seven colleges and universities (Daly & Dee, 2009). The seminars met weekly for a semester, and included faculty participants reflecting on their professional lives, identifying strengths and competencies, and encountering new ideas. The actual innovative ideas are not described. However, the evaluation was insightful. It involved interviewing faculty to discuss their participation in the seminars as well as "overall growth and development as a faculty member" (Daly & Dee, 2009, p. 14). The interviews were conducted by individuals not involved in the implementation of the seminars. The findings indicated the seminars promoted significant changes to the ways participating faculty pursued teaching.

Pennsylvania State University and its World Campus have been in the forefront of developing faculty development for its online teachers. Ragan et al. have described their faculty development efforts, including an early "Online Learning (OL) Series" that includes 12 courses organized in four levels, with 1000-series courses focused on orientation to online learning for the novice teacher, 2000-series courses focused on pedagogy, 3000-series courses focused on new and emerging technologies, and 4000-series course on authoring online courses (Ragan, Bigatel, Kennan, & Dillon, 2012). Individuals interested in the learning outcomes and teaching behaviors each course produced are encouraged to read the article (Ragan et al., 2012). While it is not impossible to go from the teaching behaviors outlined in the series to the likely content of each course, the precise contents of each course are not spelled out.

These examples are not intended to criticize what these programs and institutions have done; the intent is just to note that the exact contents of the faculty development program are not specified. And in fact, given that these programs involve activities over a semester (Schrum et al., 2005; Daly & Dee, 2009) or possibly several semesters (Ragan et al., 2012), it is difficult to identify which specific activities may be evaluated or tied to an outcome of interest. If a program involved ten activities, which one(s) affected the faculty person's subsequent online teaching?

Many institutions have implemented a variety of faculty development programs aimed at helping faculty design and teach online courses in addition to using technology wisely in a traditional classroom. The University of Central Florida requires all faculty teaching online to participate in a 70-hour faculty development course. Central Michigan University also implemented professional development for online faculty that went beyond the one-time workshop to include weekly tips, online mentoring, and online teaching resources. The University of Houston system created the CampusNet Online Workshop program that includes faculty networking, hands-on practice, and a comfortable environment for asking questions of all kinds (Kidney & Frieden, 2004). The University of Colorado created a Web Camp, offered over the summer and winter months, where faculty participate in a week-long intensive workshop that also includes hands-on training and design (Lowenthal & Thomas, 2010). Michigan State University used master's students enrolled in an instructional design course to help faculty design an online course (Koehler, Mishra, Hershey, & Peruski, 2004). The Open University tackled development of its faculty for mobile learning by providing events, communities, exploratory spaces, and resources (Kukulska-Hulme, 2012). PBS's Teacherline has extensive faculty development opportunities based on problem-based approaches (Southern Regional Education Board, 2009) and developed a comprehensive ("3D")

evaluation in the Appendix (Storandt, Lacher, & Dossin, 2012). Capella University uses a META model (for Mentoring, Engagement, Technology, and Assessment) for its faculty development for online teaching (Dittmar & McCracken, 2012). The University of Cincinnati funded grants that were proposed by faculty or departments (Camblin & Steger, 2000). Colorado State University used active mastery learning, using Bloom's taxonomy and systems theory to create faculty development for online courses (Puzziferro & Shelton, 2008). Fetters and Duby (2011) described a faculty development program at Babson College which tied Rogers' (2003) theory of innovation diffusion to blended learning. Florida Atlantic University developed a detailed plan for a new central eLearning unit (Orozcco, Fowkles, Jerzak, & Musgrove, 2012). A community of practice approach pulled nursing faculty together across multiple campuses for faculty development (Reilly, Vandenhouten, & Gallagher-Lepak, 2012). A three-tiered approach was used for online faculty development, from orientation, to mentoring, and ongoing support (Vaill & Testori, 2012). Finally, a three-week training session at University of Wisconsin-La Crosse was described in Koepke and O'Brien (2012). Given this array of training models, it is challenging to provide comparisons of effectiveness or, indeed, of evaluation metrics.

Disentangling Treatments

In order to attempt to make sense of the available research, it will help to delve into the details of the evaluation tools. Once again, a few in-depth examples will have to stand in for several instances. Daly and Dee (2009) state that the NECIT program asked faculty to reflect on their professional (especially teaching) skills. The interview questions asked of the faculty participants are provided in an Appendix and appear to be comprehensive (Daly and Dee, 2009). However, the questions focus on what was going on in the faculty person's thinking and do not tie these reflections to any particular activities undertaken during the seminars. In other words, the evaluation tool focuses on the ultimate goals of the training (faculty perceptions and understandings) rather than on the training itself. That is not a criticism of the evaluation, but a comment on the inability of the evaluation to help the developers identify activities or interview questions that worked and provided useful information.

The CREOLE project provided several mean responses on statements ("I gained knowledge," "I improved DE [distance education] teaching") (Schrum et al., 2005, p. 285-286). This is another example of a good summative evaluation that does not provide the developers with detailed input. However, it is important to note that interviews with participants did elicit specific comments about the training that could provide important feedback.

Penn State also provided a detailed evaluation of its Online Learning Series, including a factor analysis of 64 statements regarding the types of behaviors important for online instructors. Based on their analysis, Penn State synthesized these statements into seven areas of competency: Active Learning, Administration/Leadership, Active Teaching/Responsiveness, Multimedia Technology, Classroom Decorum, Technological Competence, and Policy Enforcement (Ragan et al., 2012). These competencies make sense and are consistent with the trend within higher education to focus on assessing learning outcomes; however, the way in which participant responses could be used to inform faculty developers as they upgrade their coursework is not clear.

It is likely that each of the programs profiled above has a process of evaluating the basic components of its training, but this information is not included in the published research. The intent of this discussion is not to infer that such evaluations do not occur, but that this data has not been reported.

A larger issue is this: with the numerous deliveries of various training content available, how can evaluations unravel all of these treatments so that faculty developers can know which one is more likely to be effective? This point is not just about knowing what is working (and what is not), but about identifying those parts of the development effort that can be eliminated should institutional and program budgets be constrained. It is likely that faculty developers may increasingly be asked to produce more or better results with the same or lower budget and thus faculty development professionals must ask which activities to keep and which may need to be dropped. To make this critical decision, faculty developers need to analyze how each element of the faculty development effort contributes to the changes it wants.

King (2004) attempted to disentangle the influences on faculty by asking them which activities influenced their perspective transformation: 86.1% of participants mentioned learning activities, which were further broken down into discussion (69.4% of participants), journals (52.8%), reflection (47.2%) and readings (47.2%). A total of 72% of participants also mentioned the influence of other persons, including a professor (33%), classmate (28%) or other student (28%). Disentangling a multi-dimensional (and multi-week) effort is enormously difficult to do and will require a different approach to evaluation, perhaps exploring just-in-time evaluation (an evaluation screen that pops up at the completion of an activity), reflective evaluations (asking participants to identify what activity helped them to learn or understand a concept as was done by King, 2004), or authentic assessments (asking participants – or program completer—to produce an example of the learning intended). Program evaluations may need to go well beyond what is usually conducted under the name of formative and summative evaluations, and might include multiple formative evaluations, designed to capture learning that is the result of a specific activity, as well as longer-term evaluations, which would capture the learning that may take time to be integrated. The goal of such efforts to disentangle the effects of a variety of treatments is to understand—precisely—what is working and for whom. It is also important to determine what is not working and for whom.

Rigorous Evaluations

In an earlier review of the faculty development literature, one of the criticisms made of faculty development evaluations is their lack of rigor (Meyer, 2014). This point is different from disentangling complicated faculty development programs. Rigor has more to do with a lack of clear and definable objectives, measureable outcomes, and a data collection method that does not preclude hearing bad news. Good evaluations allow faculty developers to ask the tough questions and to get the news that something is not working (or working as assumed) and should therefore be revised or eliminated.

Kucsera and Svinicki (2010) conducted a literature review of nine journals that published faculty development evaluations between 1992 and 2007. Unfortunately, they concluded that only a few studies "met best practice standards" (Kucsera, & Svinicki, 2010, p. 5) for program evaluations or for precision in those evaluations. To put this insight into perspective, only 47% of the articles included in this review could be construed as "research" (defined broadly as using either quantitative or qualitative methods and including any outcome measures at all). The reason for the lack of good program evaluations may be because faculty development programs are complex (comprising many parts and activities, as noted above), take place over an extended period of time, and enroll small samples of faculty who are evaluated immediately at the end of the training rather than being followed over time. While randomization and other qualities of good evaluation may never be possible, given the constrained budgets of faculty development programs, the authors conclude that perhaps qualitative research methods—such as ethnographies, anthropological methods, and case studies—would be more likely to lead to useful insights into the training provided to faculty.

Evaluations of faculty development programs or trainings have increasingly depended on qualitative research methods (as recommended by Kucsera & Svinicki, 2010, above) and eschewed the identification of outcome measures *a priori*. For example, Lackey (2011) interviewed six participants in faculty development programs for teaching online and found that one-on-one assistance as well as both technical and pedagogical training were most beneficial for preparing them to teach online. While an example of good qualitative research, more studies like this one and McQuiggan's (2012) are needed as well as larger studies that focus on more and more diverse faculty and teaching changes over time. So far, the literature lacks rigorous research comparing the effects of different faculty development models, programs or activities, or comparing these effects across different institutions. It is understandable why this has not been done, since it would be costly to conduct and gather such cross-institutional data. However, perhaps individual faculty developers can pool resources across institutions and across institutional types to undertake such an endeavor in the future.

What is disconcerting is the lack of stringent evaluations of some (although not all) of the faculty

development programs found in the literature. Evaluations can help developers at other institutions decide which interventions work best based on particular outcome measures that support the conclusions. In all fairness to these institutions and their hard-working faculty development staff, collecting detailed evaluations may not have been of immediate concern since they were likely experiencing pressures to get something underway and respond quickly to a felt need. However, to build expertise and understanding of what specific activities work and why, the field of faculty development may need to contemplate a number of changes to the program evaluations they are currently doing.

Outcome Measures

To design a quality program evaluation, the faculty developer needs to know what the training is intended to achieve. For example, are the outcomes of interest a change in faculty perceptions of their teaching roles, as in Daly and Dee (2009), or a set of teaching competencies as in Ragan et al. (2012)? The evaluation should measure how well the learning objectives were achieved, but this tenet is not reflected in the research. An earlier review of the literature on faculty development for online teaching (Meyer, 2014) found that not many evaluation measures are named, and the few that are mentioned are not particularly clear or robust. Here is a partial list: number of new educational programs added (Gruppen, Frohna, Anderson, & Lowe, 2003), opinions about effectiveness of the training (Maxwell & Kazlauskas,1992), adoption of case studies in instruction (Atheny & Hoffman, 2007), improved teaching (DiLorenzo & Heppner, 1994), professional growth of faculty (Lindman & Tahamont, 2006), usefulness (Steinert et al., 2006), satisfaction or relevance to participant (Lavoie & Rosman, 2007), use of portfolios (Haviland, Shin, & Turley, 2010), more cooperation across disciplines (Camblin & Steger, 2000), and confidence with and attitudes about assessment (Edwards et al., 2001). Steinert et al. (2006) also reports outcomes of training by intervention type (e.g., workshops, short courses) which begins the process of tying outcomes to treatments, although in less detail than may be helpful. Lavoie and Rosman (2007) compiled a variety of outcome measures used in faculty development efforts for medical educators, from a positive change in attitudes to increased knowledge of and change in teaching behavior or student learning. Storandt et al. (2012) included such outcome measures of the faculty development provided to PBS online teachers as a score on the course rubric, learner course grades, and turnover of faculty. Edwards et al. (2001) also identified possible moderating variables: faculty who think of themselves as facilitators of learning (rather than disseminators of information) or have a higher sense of personal efficacy were more successful in completing all of the faculty development modules. Knowledge of pedagogy and innovative course design were also important for successful change. Koepke and O'Brien (2012) found that training changed faculty's conceptions or "myths" of online learning, away from more critical or negative points of view as well as changed several teaching behaviors: from adding video and audio files to providing more, and more prompt, feedback. Orozco et al. (2012) found that faculty development yielded such outcomes as increased comfort with using technology but also 27 detailed evaluations of the training provided (from "objective clarity" to "ease of interaction" to "discussion effectiveness"). While this list is deliberately brief, it is perhaps clear that the program outcomes are described in less detail than what may be helpful to other faculty developers. Some do a better job of delineating outcomes of interest and either developing an evaluation instrument to measure those or delving more deeply into the factors that lead to faculty change (Edwards et al., 2001; Skeff et al., 1997). Others are too amorphous or poorly defined to be identified with any confidence.

Commonly used outcome measures for faculty development for online teaching include usefulness (as assessed by the participant); willingness to recommend the training to another faculty; self-reported knowledge or ratings of self-efficacy; and changes in behavior, beliefs, and attitudes (Grant, 2004). Schrum et al. (2005) included many of these measures, but also utilized self-reports of participants altering their pedagogy, redesigning their courses, or experiencing community online. In an attempt to understand the reasons for satisfaction with faculty development, Grant (2004) investigated an individual's intrinsic factors (convenience, comfort, interests) and extrinsic factors (external pressure to teach online). In a more detailed evaluation of Purdue University at Calumet's online courses for faculty, 47 participants underwent a year-long development program and then were followed over four years; the

program evaluation included 72 evaluation items, from "I am satisfied" to "My on-campus teaching has improved" (Hixon, Barczyk, Buckenmeyer, & Feldman, 2011). Potter and Meisels (2005) included such authentic measurements as giving an example of how the faculty development impacted the individual's "ability to think critically and use information to solve problems and answer questions," "understanding of science in the news," and applications of "problem-solving approaches learned" in the training (p. 194). These examples are then enhanced with further reflective questions that focus faculty persons' attention on their teaching beliefs and application of concepts to other courses they teach.

What is clear from this information is that outcome measures are often poorly defined or poorly measured and they depend on the honesty and self-understanding of those undergoing the training. While many faculty persons possess these qualities, evaluations of faculty development should not depend solely on simple or easy measures (such as, "Are you satisfied with your training?"). For example, what is actually being measured when a faculty person indicates satisfaction with training? Does satisfaction capture how much they enjoyed themselves, that they liked the facilitators, or that they thought the training would be helpful to them? Here is another complication: Liu (2012) surveyed 11,351 students taking distance education courses at 29 colleges and found that student reasons for taking the course influenced their ratings of instructors' teaching skills. Therefore, and by extension, the faculty person's reasons for undergoing training may also affect the evaluation of the training as were the students' evaluations of teaching in Liu (2012)

Faculty developers need to improve ways of identifying authentic outcomes of training. Although reliable and rigorous assessments are often more cumbersome and more costly than simple Likert-scale items, perhaps they are a way to give flesh to the bones of our current set of outcome measures.

Who Should Evaluate?

What may be clear from the above discussion is that faculty persons who undergo training are the predominant source of evaluative comments or judgments. This begs the question of whether others might provide more objective assessments, or at least an alternative view, of the training's results. For example, should students have a role in evaluating instruction provided by faculty persons who have been through training to teach online? Stehle et al. (2012) extended the issue of using students to evaluate a faculty person's online teaching by also assessing the correlation between student evaluations of teaching effectiveness and student learning; unfortunately, the results were equivocal (Stehle, Spinath, & Kadmon, 2012). These studies encourage us to explore the usability or practicality of having students evaluate their teachers' online teaching as a way to judge the effectiveness of faculty development or correlating faculty development experiences with student learning. Another possibility is administrators' (or other outside entity such as instructional designers from another institution) evaluations of faculty development for online teaching. Allen and Seaman (2012) asked a national sample of faculty and administrators to respond to a number of questions, two of which dealt with faculty development. For both questions ("My institution offers excellent training and support for using digital tools in the classroom" and "My institution offers excellent training and support for the use of lecture capture"), administrators chose "strongly agree" by over 10 percentage points more frequently than faculty. This may be a case of "what you see depends on where you stand" but could be worth further exploration.

Differences by Carnegie Classification

Higher education institutions in the United States have been classified into like groupings based on work originally done in 1973 by the Carnegie Foundation for the Advancement of Teaching. The classifications have been regularly updated as criteria were revised to address changes in higher education institutions and to better capture the diversity of institutions. The Carnegie classification also captures how institutions at "lower" levels work to "raise" their classification, also known as "Mission Creep" (Longanecker, 2008) or "striving" (O'Meara, 2007). The Carnegie classification has been a useful tool in research covering a wide range of topics, from funding to faculty to information technology. For example, Carnegie classifications have been instrumental in understanding differences in uses of institutional websites. Meyer (2008a and 2008b), Wilson & Meyer (2009), and Jones & Meyer (2012); found that

types of Carnegie institutions may have more, or less, funding or staff to provide support to students or the general public through the use of various technologies (e.g., web-based services, Facebook sites). Based on this kind of information, it is reasonable to expect that having the expertise and staffing to design, implement, and use detailed evaluations may also vary by the Carnegie type of the institution.

Research Questions

The four research questions for this study are:

> What outcome measures are higher education institutions using to evaluate their faculty development for online teaching?
>
> Are there differences in use of outcome measures by the institutions' Carnegie type?
>
> When and how are faculty asked to evaluate the training they receive?
>
> Are there differences in evaluation options by institutional Carnegie type?

Methodology

Research Design and Instrument

This study is based on survey research that collected information from participating higher education institutions. As this is one of the first attempts to assess faculty development for online teaching practices in a national sample, a survey research approach is appropriate.

The instrument used was developed by the first author and was based on a thorough review of the published literature on faculty development for online teaching (Meyer, 2014).

A draft of the instrument was reviewed by the Online Learning Consortium Advisory Panel for Faculty Satisfaction as well as representatives of the Online Learning Consortium and WCET organizations, including organizational leaders and researchers, faculty developers, and faculty who conduct research on this topic. Because this would be a national study of faculty development for online teaching, the findings would be of interest to members in both organizations. This process resulted in many additions and revisions that resulted in a cleaner and more comprehensive instrument. Given the face validity of the items, the data resulting from the instrument are valid; a test for reliability was not conducted due to the small number of responses which should be considered a limitation of the study.

The present study focuses on three items from the instrument (which included a total of 26 items). Two items dealt with the two issues in the research questions. First, the institution would indicate which outcome measures it used to evaluate training including faculty satisfaction with training, faculty assessment of the usefulness of training and relevance of training, faculty developed skill or competency, faculty willingness to recommend training to other faculty, faculty assessment of elements of training (explanation of instructional design principles, research behind training, mentoring relationship, clear purposeful communications, improvement in teaching, changes to their face-to-face teaching, changes in attitude toward online learning, changes in perception of teacher's role), student evaluations of faculty teaching, students' course grades, students' cumulative GPA, students' grades for specific course assignments. Answers provided allowed for two responses (numerical coding in parentheses): Yes (2), No (1).

Second, the institution indicated how it conducted faculty evaluations to evaluate their training. Institutions were allowed to check all options that were used. Options included: after all training is completed, after each elements of training is completed, after all training of a particular type is completed (all presentations, all discussions, etc.), paper evaluation tool, online evaluations, delaying evaluation (after a passage of time), one-on-one interviews, and focus groups. Two responses were provided (numerical coding in parentheses): Yes (2), No (1).

Third, the individual completing the survey was asked to indicate the Carnegie classification of the institution, if this was known. If it was not known, this item was to be left blank and the first author used the following link: http://classifications.carnegiefoundation.org/lookup_listings/institution.php. This

look-up function is offered by the Carnegie Foundation for the Advancement of Teaching.

Population and Sample.

A request to complete the survey was sent from an Online Learning Consortium officer to the official representatives of higher education institutions that are members of the Online Learning Consortium. This totals 407 institutions. The first author also sent a request to complete the survey to the online WCET (WICHE Cooperative for Educational Telecommunications) Discussion Board, which is open to any individual who is an employee of the 295 WCET member organizations. The request asked that the survey information be forwarded to the individual responsible for faculty development at the institution. It also asked institutions to beware of duplicative emails, since institutions can and are members of both organizations. Two items were included in the instrument (institution name and individual's name) so that duplicative responses could be identified and one eliminated.

This sampling procedure was chosen since it would most efficiently get to institutions that offer online learning and would be most likely to offer faculty development for online learning. Since it was these practices of faculty development for online learning that were the focus of the research, sending the instrument to a wider range of institutions would not likely be effective. Therefore, while the results reflect the practices of institutions that offer faculty development for online learning, it is a limitation of this study that the results cannot be generalized to all higher education institutions.

Responses were received from 39 institutions including 13 doctoral/research institutions, 12 master's institutions (institutions offering degrees up to and including master's degrees), three baccalaureate institutions, and 11 associate's institutions. Given that institutions do belong to both the Sloan and WCET organizations, it is impossible to calculate a response rate. Given the low number of baccalaureate institutions that responded, results are reported but are not interpreted or discussed in comparisons to other Carnegie types. Responses from one special focus institution and one international institution were deleted for the analysis that used Carnegie classifications in order to protect the anonymity of responses. However, not all 39 institutions answered every question on the survey, so the number of institutions upon which results are based is noted throughout the results section.

The survey was completed by individuals responsible for faculty development with titles including coordinator, director, dean, and Vice President, and located in Academic Affairs (57.9%), Chief Information (Technology) Office (23.7%), an academic department (18.4%), an academic college (13.2%), or Central/System Office (5.3%). This diversity of job titles and locations seems to imply faculty development for online teaching is occurring in many different locations within institutions and under different personnel. In other words, institutions have approached faculty development with a variety of organizational locations and titles.

Data Collection

The instrument was created within SurveyMonkey.com, which provides a flexible set of question types for the researcher with options for long-term data storage. The initial request to institutions for responses to the instrument was sent January 4, 2013 and the deadline for receipt of responses was February 1, 2013. On this date, the survey was closed to further responses and analysis began.

Data Analysis

For research question 1 ("What outcome measures are higher education institutions using to evaluate their faculty development for online teaching?"), answers are reported by frequency of the answer options (yes, no, don't know, will use in future).

For research question 2 ("When and how are faculty asked to evaluate the training they receive?"), answers are reported by frequency of evaluation options. For research questions 3 and 4, the answers are reported by Carnegie classification. No statistical analyses of differences were attempted due to the low sample size.

Findings and Discussion

Outcome Measures

Table 1 reports the types of outcome measures used in evaluations of faculty development for online teaching by frequency (number of institutions reporting use of the measure, percent of institutions using this measure, and the rank order of the measure based on frequency of use). Due to the number of ties among the items, the rank of an item should be interpreted as suggestive; references to rank in the discussion which follows are intended to help clarify findings.

Table 1 Outcome Measures Used in Evaluations (n= 39 institutions)

Outcome measure	Frequency	Percent of institutions	Rank
Faculty satisfaction with training	37	95	1
Faculty assessment of usefulness of training	35	90	2
Faculty assessment of relevance of training	34	87	3
Faculty developed skill or competency	28	72	4
Faculty willingness to recommend training to other faculty	24	62	5 (tie)
Faculty assessment of clear, purposeful communication	24	62	5 (tie)
Faculty assessment of improvement in teaching	22	56	6
Faculty assessment of changes to their face-to-face teaching	19	49	7 (tie)
Student evaluations of faculty teaching	19	49	7 (tie)
Faculty assessment of changes in attitude toward online learning	18	46	8
Faculty assessment of changes in perception of teacher's role	17	44	9
Students' course grades	11	29	10
Faculty assessment of explanation of instructional design principles	9	23	11
Cost of training	8	21	12
Faculty assessment of mentoring relationship	7	18	13 (tie)
Students' grades for specific course assignments	7	18	13 (tie)
Students' cumulative GPA	5	13	14
Faculty assessment of research behind training	2	5	15

It appears that this sample of institutions is consistent in its reliance on three faculty assessments of the training received: their satisfaction, assessment of usefulness, and assessment of relevance (ranks 1, 2 and 3). This is consistent with the findings of Grant (2004) and Steinert, et al. (2006), who reported usefulness (as assessed by the participant) to be a commonly used metric of faculty development, and with Lavoie and Rosman (2007), who used satisfaction or relevance to the faculty person in evaluation measures. These assessment measures may be seen as the reliable, tried-and-true measures by trainers who work in a variety of settings and teach a variety of topics and are reflected in the research. What is perhaps more interesting is the reliance by at least 72% of the institutions on some sort of assessment of the faculty's skill or competency with online teaching (rank 4), as reported by DiLorenzo and Heppner, (1994) and Hixon et al. (2011). This may be a worthwhile parallel to the emphasis on competency assessments for student learning required by accreditors. Three outcome measures of particular interest (ranks 5, 6, and 7)—because they emphasize the importance of encouraging critical reflection on the part of the faculty person (the faculty participants' assessment of improvement in their teaching, changes they made to their face-to-face teaching, and changes in perception of their teaching role)—are used by only half of the institutions. This lack of reflective evaluation is consistent with what was found in the review of literature. If the greater use of transformational learning among faculty developers (as noted in Meyer, 2014) were responsible for this finding, more faculty might be encouraged to undertake some serious reflection on their beliefs about teaching as they undergo faculty development for online teaching.

At least half of the institutions use student evaluations of faculty teaching (rank 7), but only one-third use student course grades (rank 13). It is both good and bad news that one-third of the institutions are attempting to tie the success of faculty training to student learning. However, the rank of this measure, as well as the low rates for other measures that attempt to capture student learning (rank 13 and 14)—student grades for specific assignments and cumulative GPAs—may be for two reasons. First, an institution may face technical difficulties of gathering such data, given the complications of student databases. Second, it may be too time-consuming to connect student data to faculty participating in development activities. Similarly, given the multiple influences on student grades, there may be too many confounding variables to tell the developers anything of importance. As Stehle et al. (2012) found, resulting data may be ambiguous. It might be useful for those institutions that use such measures to share what they are learning about the validity of using these measures so that they can help other developers improve the evaluations of training at their own institutions.

Two other infrequently used evaluation measures are of particular concern. First, few (21%) of institutions attempt to capture the cost of training (rank 12), and fewer yet (5%) evaluate how and whether faculty participants understand the research that provides the basis for the training (rank 15). This latter finding has several explanations, including research findings in the training are not valued by faculty developers, it is not considered appropriate for the faculty, or an outcome measure has not been devised to assess this. There may be other explanations which need to be explored further in future research studies. Given the findings of Meyer and Murrell (2014a), where only 48.9% of the institutions indicated they included research on online learning in their faculty development materials, the simplest explanations may be "all of the above."

To ease comparisons between Tables 1 and 2, the outcome measures in Table 1 are presented in the same rank order in Table 2. Table 2 presents the outcome measures used by institutions and are grouped by Carnegie classification.

Table 2 Outcome Measures by Carnegie Classification (n= 39 institutions)

	Research/Doctoral		Master's		Baccalaureate		Associate's	
Outcome measure	%	Rank	%	Rank	%	Rank	%	Rank
Faculty satisfaction with training	100	1	92	1	100	1	91	1
Faculty assessment of usefulness of training	92	2	92	1	100	1	82	2
Faculty assessment of relevance of training	85	3	92	1	100	1	82	2
Faculty developed skill or competency	77	4	58	3	66	2	82	2
Faculty willingness to recommend training to other faculty	69	5	58	3	66	2	55	4
Faculty assessment of clear, purposeful communication	62	6	75	2	66	2	55	4
Faculty assessment of improvement in teaching	54	7	50	4	66	2	58	3
Faculty assessment of changes to their face-to-face teaching	62	6	33	5	66	2	45	5
Student evaluations of faculty teaching	69	5	33	5	66	2	36	6
Faculty assessment of changes in attitude toward online learning	46	8	58	3	33	3	36	6
Faculty assessment of changes in perception of teacher's role	46	8	50	4	66	2	27	7
Students' course grades	23	11	25	6	33	3	36	6
Faculty assessment of explanation of instructional design principles	38	9	17	7	33	3	9	9
Cost of training	15	12	17	7	66	2	18	8
Faculty assessment of mentoring relationship	31	10	17	7	0	4	9	9
Students' grades for specific course assignments	23	11	33	5	33	3	18	8
Students' cumulative GPA	0	14	8	8	33	3	27	7
Faculty assessment of research behind training	8	13	0	9	33	3	0	10

The results in Table 2 seem to portray several differences in the usage of various outcome measures by Carnegie classification. Research/doctoral institutions seem less interested in assessing whether faculty developers assess participants' attitudes toward online learning (46%) and perception of the teacher's role (46%), both receiving a rank of 8. These measures seem to be more highly ranked by master's institutions (rank 3 and 4, respectively) and associate's institutions (rank 6 and 7, respectively). Use of student measures (course grades, assignment grades, cumulative GPA) is ranked lower for research/doctoral institutions (ranks of 11, 11, and 14) than other institutions (master's institutions rank these at 6, 5, and 8; associate's institutions rank these at 6, 8, 7), and surprisingly, research/doctoral institutions rank the use of an outcome measure capturing the research behind the training as the lowest item as do all other institution. This is consistent with the findings of Meyer and Murrell (2014a), in which the use of research about online learning during the development of training was reported by fewer than 25% of faculty developers.

Details on Faculty Evaluation of Trainings

Table 3 presents the results from the survey on the type of evaluations used by institutions, focusing both on the form of delivery and its timing.

Table 3 When and How Faculty Evaluate Training (n=38 institutions)

Evaluation type	Frequency	Percent of institutions	Rank
Online evaluations	30	79	1
After all training is completed	27	71	2
After each element of training is completed	15	40	3
After all training of a particular type is completed	14	37	4
Paper evaluation tool	13	34	5
Delayed evaluations (after passage of time)	11	29	6
Focus groups	8	21	7
One-on-one interviews	7	18	8

Several insights can be gleaned from these results. First, no one type of evaluation seems to be universal; even online evaluations, perhaps the least labor-intensive method, were used only by 80% of institutions. But this number is intriguing in comparison to the lesser-used paper evaluation tool (34%). Many institutions seem to have moved online to conduct their evaluations, which pairs logically with teaching faculty how to teach online.

Second, the majority (71%) of institutions continue to pursue summative evaluation (after all of the training is completed), although about one-third try to conduct evaluations in a more formative fashion by doing so after an element of training is completed (perhaps after a PowerPoint presentation was made or a lab exercise was done) or after all training of a particular type is completed (e.g., after all the PowerPoint presentations or all of the exercises were completed). Third, evaluations that take more time and resources to conduct seem to also be used by fewer institutions with 29% of institutions trying to evaluate training after a passage of time, 18% of institutions using one-on-one interviews, and 21% of institutions using focus groups. Given pressures on both budgets and staff, these lesser frequencies are understandable, but their loss means that in-depth, rich, and reflective evaluations may be foregone. Perhaps such evaluation tools or approaches can be done on occasion.

To ease comparisons between Table 3 and Table 4, the evaluation types in Table 3 are presented in the same rank order as in Table 4. Both present differences according to Carnegie classification.

Table 4 When/How Training Occurs by Carnegie Classification (n=38 institutions)

	Research/Doctoral		Master's		Baccalaureate		Associate's	
Training	%	Rank	%	Rank	%	Rank	%	Rank
Online evaluations	75	1	67	1	66	1	73	1
After all training is completed	75	1	67	1	66	1	73	1
After each element of training is completed	42	3	17	4	33	2	58	2
After all training of a particular type is completed	50	2	33	3	0	3	36	3
Paper evaluation tool	50	2	17	4	33	2	36	3
Delayed evaluations (after passage of time)	17	5	58	2	33	2	9	4
Focus groups	25	4	33	3	0	3	9	4
One-on-one interviews	8	6	33	3	33	2	0	5

Two things may be seen from Table 4. First, there is consistency among the preferred evaluation types and timings across the Carnegie classifications. Online evaluations and evaluations done after all training is completed were ranked number one by all institutional types. Second, paper evaluations are ranked higher (number two) among research/doctoral institutions than the other Carnegie types (master's rank of number four and associate's rank of number 3). Third, the time- and staff-intensive evaluation types consistently receive lower rankings, although master's institutions use delayed evaluations more frequently than the other Carnegie institutional types and over three times more frequently than research/doctoral institutions.

In fact, the master's institutions are more likely to pursue the last three evaluation types (delayed evaluations, focus groups, and one-on-one interviews). This finding bears further analysis. Are these institutions more committed to evaluation? Do they make more resources for evaluation available than at research/doctoral institutions? Answering these questions might help elucidate whether these are real and substantive differences among Carnegie types or an anomaly of this particular study.

RECOMMENDATIONS AND FUTURE RESEARCH

Based on the findings from this research, seven recommendations seem reasonable. First, it may be valuable for institutions to share their evaluation measures with other institutions. If the measures are too idiosyncratic (or applicable only to a single institution), then perhaps like institutions can coordinate on the development of outcome measures and tools. More informal associations could be formed than those noted in Daly and Dee (2009), but national memberships, like the Online Learning Consortium, might provide a data warehouse of proven evaluation measures. This would encourage institutions to use the best evaluation tools that are currently available and that are suitable for a particular type of institution. For time-pressed faculty developers, this need not be an onerous process; instruments that institutions use to collect evaluation information, especially including unique outcome measures, may be shared online or through an organization of like-minded individuals.

Second, it is understandable that the more time- and staff-intensive approaches to evaluation (one-on-one interviews or focus groups, as described in Daly and Dee, 2009; Lackey, 2011; and McQuiggan, 2012) are not a regular staple of faculty developers' evaluation plans. However, these evaluation approaches often produce insightful results that can help developers adjust what they do in the future. Can there be some attempt to either use these approaches less frequently—perhaps once a year—or to collect such data across institutions? It is difficult to recommend that institutions spend money when budgets are tight, but perhaps some modest investment in the kinds of evaluations that can inform developers on what is working and what is not is money well spent.

Third, while the evaluation types addressed in this study are a good attempt to disentangle treatments, more can be done to provide developers with specific information on what is working to help faculty learn to teach online. Certainly this will be difficult to do, but without such input, how will decisions be made when budgets are cut or the number of faculty to be trained increases? Again, this sharing could be accomplished using an organization of like-minded individuals.

Fourth, more attention needs to be paid to student outcomes and tying these to faculty development. This may require analysis of data from online courses, student assignments, and faculty training. Of course, this presumes that the data are available. However, as institutional budgets continue to be constrained and attention on student learning continues to grow, this is an area that will require greater attention on the part of faculty developers and their institutions.

Fifth, if faculty developers are unsure of their evaluation skills, there are good models to borrow from. Boulemetis and Dutwin (2005) is one such model that guides the tentative evaluator through a number of steps, including identifying suitable outcomes, measures that capture these outcomes, and designing approaches to collect those measures. This may be one way that faculty developers can improve the rigor of their evaluations so that decisions based on evaluation data can be made more confidently.

Sixth, the field may benefit from focusing on what does not work. For example, a group of faculty development professionals that come together to share stories of their failures might go a long way towards finding out the flaws in current assumptions or the differences among faculty that are not included in evaluations at the present. A centralized clearinghouse for this kind of feedback (perhaps this can be done so responses are anonymous) might help ensure the involvement of faculty and faculty developers alike.

The last issue about faculty differences leads us into a concern that is poorly addressed in the literature as well as in our own study. The near-universal lack of attention to faculty differences in the evaluations of faculty development programs seems to imply that developers and those who design and carry out evaluations may believe that faculty members learn in a homogenous fashion. Much of faculty development is packaged as a "one-size-fits-all" endeavor that reveals similar assumptions about how faculty persons think, feel, and learn. Perhaps the ways faculty persons learn are more diverse than our current faculty development models account for, and research-based learning theories (Meyer & Murrell, 2014b) could be better utilized in the development of faculty training.

The opportunities for future research are vast. We need research that explores the faculty person's different perceptions of their roles, student learning, and appropriate pedagogy for their disciplines. We also need to better understand the faculty person's learning preferences, as well as differences by other kinds of personal and professional variables such as rank, age, and gender. A better understanding of faculty may produce faculty development tailored to the individual's learning preferences and skill needs, resulting in optimal outcomes for the faculty person, the students, and the institution.

About the Authors

Dr. Katrina Meyer was professor of higher and adult education at The University of Memphis specializing in online learning and higher education. She is the author of Lessons Learned from Virtual Universities, a 2009 publication in the *New Directions in Higher Education* series, and *Cost-Efficiencies of Online Learning*, a 2006 publication of the ASHE Higher Education Report Series. For over three years, she was Director of Distance Learning and Technology for the University and Community College System of Nevada. Prior to this, she served over eight years as Associate Director of Academic Affairs for the Higher Education Coordinating Board in the state of Washington and was responsible for technology planning and policy related to online learning.

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