

**WILL SCHOOL-BASED ONLINE FACULTY DEVELOPMENT BE AN EFFECTIVE
TOOL FOR THEIR PROFESSIONAL GROWTH?**

by

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Abstract

This case study was built on the premise that faculty in higher education, in order to be effective core facilitators of student learning, need additional development beyond their fields of expertise—specifically, in areas relevant to teaching such as pedagogy, creativity and innovation, multiple means of instruction, and instructional technology.

The study hypothesized that over 300 faculty at the business school of a private university will be effectively served with customized school-based online support that they can access just-in-time, or as needed. Accordingly, the author created an online Faculty Development Forum (FDF) under consideration of and displaying content about instructional methods, concepts, and principles, such as Universal Design (UD). The launch of the FDF coincided with the start of the study.

The purpose of this mixed-methods study was to investigate the effectiveness of the FDF, if it succeeds in mitigating barriers for faculty to engage with learning about pedagogy and if it provides a source for knowledge and thought exchange with peers. Findings indicated that faculty accepted and engaged with this form of online professional development. However, the study also suggested that school-based initiatives emphasizing the importance of pedagogy, goal setting and alignment are necessary as external motivators for faculty engagement with professional development.

This study informs further improvement and expansion of the FDF and can be a model for schools at other institutions of higher education.

CHAPTER ONE: OVERVIEW OF THE STUDY

In 21st century teaching and learning, nurturing Creative Thinking (CT) in college students is increasingly important. Our age is driven by the fast globalization of social and economic systems, by technological advancements and by the specialization and even fragmentation of knowledge as disciplines grow more complex. New knowledge often results when disciplines interface, or is generated or enhanced through digital media and open access to information (Csikszentmihalyi, 2006). However, individuals are challenged by information overflow and to think creatively is vital to support their ability to cope with chaos, constant change (ambiguity) and insecurities. They need to be able to recognize and navigate emerging trends, realize their implications and opportunities in order to understand their world and add value to their (global) communities (Csikszentmihalyi, 2006; Smyre, 2008; White & Glickman, 2007).

As skills sets for future employees are changing quickly, curricula have to constantly and swiftly adapt; not only to provide a valuable education experience for the students, but also ensure that universities' four-year undergraduate higher education is a viable option that answers to the market demands of the 21st century. In this market, the "customers" of higher education, parents, students, future employers, are demanding a return on investment and, quite poignantly, question what institutions are doing to keep their faculty up-to-date (Davis, 2003; Keeling & Hersh, 2012; White & Glickman, 2007).

Faculty in higher education is at the forefront to foster not only critical thinking, but by extension, creative thinking and creativity in the most diverse student population to date (Smyre, 2008). And with wider access to education for students, their presumed technology savvy

requires greater flexibility on part of the faculty who needs to know how to apply technology to broaden the learning experience.

Background

Little doubt exists that faculty is just as challenged as their students to navigate information flow, has little time for reflection, does not consider or ignores the importance of creativity, and is under pressure to be abreast of domain specific knowledge developments and technological advancements (Csikszentmihalyi, 2006). At the same time, they are challenged to research and create new knowledge in an economic climate that hardly will reduce workload conditions and research obligations for faculty (Kezar & Lester, 2009). In order to be leaders in education and role models for students, faculty development with a focus on creativity and innovation is a necessary continuous effort to promote teaching creativity and teaching creatively in higher education and to provide stimulating education for the next generation of learners.

Few ideas have been researched to look at how instructors can provide alternative paths for these diverse populations, and many faculty lack training in pedagogy, instruction design and instructional technologies. Pedagogy is not an integral part of graduate studies which aim to train researchers and not teachers. Likewise, higher education increasingly employs teaching faculty who come to the institution because of their non-academic professional expertise but have no training in teaching, learning theories, and practices (Sorcinelli, 2007). In fact, the number of non-tenure track faculty has increased significantly in the last 20 years constituting about one third of all faculty. While faculty development needs differ between non-tenure and tenure track faculty, all need opportunities for professional growth so that they can create curriculum and learning content that aims for equitable access and that leads to desired outcomes (Gappa, 2008).

Two of the emerging practices to provide this access are the application of Universal Design (UD) principles and the integration of technology and media to enhance teaching and learning. In detail, Universal Design for Instruction (UDI) and Universal Design for Learning (UDL) are an extension of the original concepts for universal physical access for individuals with disabilities to provide universal access to education for all populations. Since their inception, the concepts of UDI/UDL have expanded in many directions and have taken on an increasingly important place value; particularly, in response to external pressures on higher education, such as the increased diversity and internationalization of student populations, the challenges to integrate digital technology with the curriculum, and the demand for increased institutional accountability for learning outcomes (McGuire, Scott, & Shaw, 2006; Zeff, 2007).

Assuming that these efforts are well underway, and considering the internationalization in higher education, it is now timely to also apply UD principles to support faculty so that they build or sustain their self-efficacy and engage their learners in a creative and innovative knowledge exchange and expansion—and grow their ability to tailor learning contents and pedagogy to the needs of all their populations. To date, many different approaches for faculty development exist; for example, campus-wide and school-centered workshops, or peer mentoring at the departmental level. These are traditional development approaches. While workshops have high merit, provide a way to network, and can be very informative and inspiring, scheduling conflicts and time pressures make it difficult for faculty to engage in these types of development. Peer mentoring, on the other hand, is often met with suspicion and presumably serves more to stir up faculty's lack of self-efficacy than to enhance it, or faculty heeds judgment that the mentor might not completely understand their teaching intentions or be knowledgeable about their expertise to provide critical and constructive feed-forward (Andrade, 2006; Kezar, 2005).

Consequently, Chapter Two reviewed research that explored barriers to faculty development, such as workload issues, institutional culture, and their impacts on faculty motivation. Further, it investigated research about faculty development needs to establish that a shift in mindset (e.g., through double-learning), gaining knowledge about pedagogy, realizing time for reflection and assuming leadership are necessary foundations for faculty to develop their creativity and sense for innovation that they then can translate into their curricula and teaching approaches. Because these, in turn, can be enhanced through UD methods and technology, the literature review exposed that faculty not only needs to learn about these methods, but also to experience learning with them in order to be able to integrate those with their teaching mission.

Purpose

Building on the premises that no one-size-fits-all approach exists when it comes to faculty development and more creative approaches for faculty development are timely, this dissertation hypothesized that faculty in a business school will be effectively served by an Internet-based professional development forum that is customized to their needs. This online forum exposes faculty to relevant topics in pedagogy and provides a space for knowledge and idea exchange with peers and experts on demand or just-in-time—in other words, when faculty needs development or has time to engage in it, and not only when development opportunities are offered through the university, their school, or unit. The intention is not to replace physical workshops, mentoring, or other forms of professional development—rather, the goal is to enhance these opportunities and provide an alternative that involves faculty in learning with and not only about technology. In fact, this web-based development forum is an expression of a heightened interest and focus on multiple means of furthering faculty's professional growth in regards to teaching in this so-called “Age of the Teacher” (Sorcinelli et al., 2006, p. 8).

The web-based faculty development platform at the study site is a product of this research and its launch was concurrent with the start of this study. The Faculty Development Forum (FDF) was continuously expanded throughout the study period of four months and beyond. In its intent it is designed to aim at intrinsically motivating faculty to continuously engage in learning, knowledge exchange and creation to an extent that will make the question of their professional responsibility to not become obsolete redundant. The FDF and its uses were developed under consideration of UD principles because these have proven to foster inclusiveness, engagement and motivation, and to enable universal access (Davis, 2003; Higbee, 2006). Further, as Zeff (2007) noted, UD offers a fresh lens that provides plausibility for faculty who might otherwise resist acknowledging a need for development. In addition, because the use of media and technology per se has not proven to be more effective in motivating and facilitating learning than an in-person environment, the use of an internet platform must be considered primarily as a vehicle for information access, collaboration and exchange (Clark, Yates, Early, & Moulton, 2010). Content for the FDF was aggregated and sourced with the faculty learner at the business school in mind and under consideration of employing selected elements of relevant instructional design methods that Merrill (2002) labeled the Five Star System, or the demonstration, application, task-centered, activation, and integration principles.

The study researched how faculty responded to the module and if and how it succeeds in providing an environment that motivates faculty to participate in the online development. Further, the study explored if faculty learned about pedagogy and gained an understanding of creativity and innovation, and if they believed the module will support their efforts to provide equitable and engaging learning environments for students in the 21st century. Accordingly, the research question and its sub-questions were as follows:

1. To what extent did the web-based development platform provide a universally accessible and acceptable source that effectively motivated faculty to engage in professional development?
 - 1.1 To what extent did faculty use the web-based platform?
 - 1.2 To what extent did faculty indicate interest in further learning about issues in instruction?
 - 1.3 To what extent is the web-based development platform effective in exposing faculty to multiple means of learning and instruction, such as universal design in learning and instruction?
 - 1.4 To what extent is the web-based platform effective in augmenting or fostering faculty creativity for curriculum innovation, such as project-based learning or using instructional technology?
 - 1.5 To what extent did faculty engage in thought exchange with peers on this platform?

These research questions were investigated through a concurrent transformative mixed-methods approach (Creswell, 2009). The results and discussion of the study informed faculty development at the site of investigation first. However, the FDF has the potential to be a model for other schools and inform research and practices in faculty development on a broader scale. Further, the study sought to propose that professional development for university faculty cannot lag behind trends in education driven by the demands of society in our world today and that professional development leads to higher engagement of faculty. In turn, engagement leads to more effective teaching, increased accountability, and ultimately produces better student learning outcomes. Accordingly, the study served to draw greater attention to the importance of pedagogical knowledge for all faculty to better support our next generations of students. And,

hopefully, administrations will acknowledge these benefits and allow for faculty to allot time to these efforts despite economic constraints. Lastly, improved faculty development should also serve to break down perceived barriers between teaching and research faculty, support greater understanding and appreciation of each other, and open up opportunities for collaboration.

Summary

This chapter has presented background and relevance for the issues of faculty development in the 21st century. It has provided an argument that faculty development needs to be reconsidered and that new approaches for it have to be promoted. Accordingly, key areas for the review of the literature, the research questions and method were identified. The study ultimately sought to support faculty who have made it their profession and mission to educate future generations.

Definitions

For the purpose of this dissertation, the term universal design (UD) will be used, which includes concepts of UDI and UDL. The Faculty Development Forum (FDF) is the fictional title of the web-based faculty development site.

CHAPTER TWO: LITERATURE REVIEW

Faculty must take into account teaching a highly diverse student body, including international students and those with disabilities; accordingly, curricula and teaching methods need to be adapted and should be easily customizable to suit these populations (Davis, 2003). Researchers Ameny-Dixon (2004), Andrade (2006), and Smyre (2008) further substantiated that the world needs individuals who are open-minded and capable of rethinking traditional principles. Smyre (2008), in particular, emphasized that traditional creativity and critical thinking needs to evolve into a new type of creativity that seeks to connect divergent ideas in order to establish concepts, innovate products, conceive methods, and develop services that expand on traditional experience and knowledge. Students should be able to identify trends in their early stages and conceive strategies and generate ideas; they should be poised to discover connections and *new* knowledge (O'Neal, 2007; Smyre, 2008). Clearly, the need for a creative and innovative, multi-perspectival and interactive curriculum is non-negotiable (Smyre, 2008). Teaching is being called upon to enable students to think in non-linear patterns so that they can respond to rapid change and uncertainty. In other words, building on the premise that our society needs creative knowledge workers, faculty is no exception and needs to develop curricula, teaching methods and assessment tools that are effective in an international, linguistically and culturally diverse classroom and that answer to the multiple levels of prior knowledge and abilities in students—this includes international students, students with disabilities, students with varying maturity in the same class level, and, most of all students who are savvy users of technology (Darling-Hammond, 2007; Pink, 2008).

Faculty needs to understand what their own creativity is, how they can utilize it and how they can fully integrate it with their profession, and that faculty development itself has to be

creative to model innovative approaches. Wisdom (2010), for example, stated poignantly that faculty has to learn what it means to teach creatively and effectively and to become professional teachers. Many researchers rightfully claimed that, to date, most faculty development efforts are often stalled due to workload, research demands, time constraints and working environments that do not foster collegiality, reciprocal support, or learning and developing new teaching approaches (e.g., Ambrose, Huston, & Norman, 2005; Davis, 2003; Jacobs & Winslow, 2004; Kezar & Lester, 2009). In addition, the economic climate in the 2010s is increasingly concerned with budget restrictions and administrations in higher education are hardly able to free up funds to support innovative faculty development (Grummon, 2009). Another hindering factor in the United States higher education climate, noted by Camblin and Steger (2000) and by White and Glickman (2007), is that our institutions have reached a level of maturity that shares the characteristics of mature enterprise; namely, to be risk-adverse and not readily open to new ideas, to be self-satisfied and not accepting a need for reflection and openness necessary for innovation, and to be encumbered with high operating costs. All these issues provide infertile grounds for institutional and educational creativity and innovation—and for faculty development.

In the following, the literature review, in a deductive approach, examines issues in and barriers to current faculty development, including workload issues, problems in institutional culture, and lack of motivation. This supports the argument of professional development to emphasize and embrace concepts such as a focus on reflection, double-loop learning, leadership, and pedagogy. Because creativity and creative thinking are a pervasive topic bracing the discussion, a closer look at what defines creativity and creative thinking in this context appeared necessary. Lastly, the literature review establishes why universal design paired with technology,

and considering instructional principles like Merrill's (2002) Five Star System, offers an applicable framework as a foundation to create online faculty development and content for it.

Current Issues in Faculty Development

This section takes a closer look at broader current issues in faculty development and their effects on faculty in order to provide a background for the relevance of attempting new approaches to faculty development. Issues include the discussion about pedagogy, faculty collaboration and opening up the debate about what kind of development might be feasible.

Professional development for faculty traditionally was geared at increasing domain knowledge and not at developing their pedagogy (Postareff, Lindblom-Ylänne, & Nevgi, 2007). Clark, Feldon, van Merriënboer, Yates, and Early (2008) further pointed to this problem by discussing issues like expert ignorance, ineffective collaboration, competition, faculty isolation, and the effects of budgetary constraints. They argued in particular that the aspect of domain knowledge development and growing expertise might result in a greater cognitive separation between faculty and student learner because the expert might fail to understand the layman learner and, claiming that faculty is often stuck in this pattern, supported that pedagogy training needs to be part of the development discussion.

Kezar (2005) also recognized these problems and pointed out that workload and motivational issues augment them and that collaboration attempts are often encouraged as a "cure all" to mitigate these problems. In fact, Kezar documented a trend in higher education from individual to collaborative approaches for faculty work; in other words, efforts to perform inter-disciplinary research, team-teaching, etc., which then support professional development. However, more than 50% of those collaborative efforts fail mostly because institutions are not

structured to support these efforts. Thus, the researcher applied case studies to examine how four institutions actually arrived at fostering a collaborative environment.

Kezar (2005) identified a three-stages model of collaboration: (a) building commitment to collaboration, (b) commitment to collaboration, and (c) sustaining collaboration (pp. 846-850). This model emphasized the importance not only of a managerial or administrative commitment to such effort, but also of moral considerations seeking to establish a common value system and egalitarianism. However, this commitment is not easy to build when the collaboration remains a concept and has no external support—such as directives from institutional leadership. In addition, collaboration, arguably, can only be fruitful when individual faculty is confident and self-efficacious in their research and teaching. Kezar's three-stage model is useful because it pointed to fundamental prerequisites necessary for any type of faculty development.

Bensimon and O'Neil (1998) also confirmed the impact of a lack of institutional leadership for faculty development. They posited that if the institutional environment does not succeed in building commitment and prioritizing faculty development, it will be difficult to engage faculty—the more so, since higher education traditionally provides for faculty autonomy and forms of collaboration that attempt to combine individualistic and community norms have not been promoted or explored to great extent. The researchers claimed that a fundamental rift between individual and collaborative work exists and while it is commonly accepted that collaboration is necessary, collaboration approaches that will satisfy individual and group goals are lacking. In fact, Bensimon and O'Neil's investigation of faculty collaboration issues still appears timely today because more than a decade later the mindset of faculty and their institutions has not changed much. Ironically, the rapid technological advancement and the need to address the internationalization of the institution in the last decade added to the complexities

of faculty development, created increased competition among individuals to be first adopters of new technologies, and might have diminished the importance of collaborative work.

Researchers Diaz, Garrett, Kinley, Moore, Schwartz, and Kohrman (2009) reviewed faculty development programs and initiatives across five very different institutions (from a large multi-campus university to a small private college). They found that the menu of offerings for faculty development is showing great variety of customized approaches from face-to-face to online and just-in-time choices, etc. However, the myriad of offerings might contribute to isolation of faculty, and the authors claimed that more needs to be done to adopt faculty development in the same way institutions revise curricula to suit the Millennial, or Gen-Y, students. White and Glickman (2007) supported this claim arguing that in light of the maturity of our higher education enterprise, innovation in faculty development continues to pose a challenge. In addition, the budgetary restrictions in our current economic climate make it seem unlikely that faculty development will receive priority funding and teaching loads or research obligations will not lessen; hence, faculty continues to struggle to satisfy the demands of their stakeholders and their own development needs (Diaz et al., 2009).

In summary, the issues above confirmed that faculty development is problematic and has become increasingly complex in today's higher education environment. They are indicative of a variety of barriers to professional development that make it difficult for faculty to engage in it.

Barriers to Faculty Development

The complexities, demands, and challenges that current issues pose to faculty development easily veil underlying problems in the university context, which, however, must be brought forward. Hence, this section will address faculty workload issues and institutional culture, which emerge as primary impacts on faculty motivation. These are systemic and, if imbalanced,

counterproductive to the triadic reciprocity of environment, person, and behavior that Bandura (1978) established within the framework of social cognitive theory as a fundamental condition for a healthy work environment. Davis (2003) further confirmed that workload and culture both strongly influence how faculty feels about their job. The researcher also confirmed that faculty is too busy teaching and grading and is not motivated to spend extra time to develop or nurture additional interests, or does not recognize a personal career advantage. However, since faculty needs to be self-motivated to engage in any form of development, which also includes advocating for institutional change, contributing barriers that impact motivation such as a lack of self-efficacy in teaching, affects of attribution (e.g., feeling undervalued) and unclear performance goals deserve a closer examination in this context.

Workload Issues

Faculty's perceived lack of a supportive structure for development often stems from workload and work-life balance issues, as well as the departmental and/or school climate, including concern about collegiality and competition; in other words, while professional development resources might be available, circumstances can limit access and use (Ambrose, Huston, & Norman, 2005; Burke & Rau, 2005; Gappa, 2008; Kezar & Lester, 2009; Sorcinelli, 2007). An overarching prohibitive issue when it comes to faculty time available for development is workload. Jacobs and Winslow (2004), for example, analyzed statistics for male and female full-time faculty workload as reported by National Center for Education Statistics (NCES) of the U.S. Department of Education: The average work-week for full-time faculty on average exceeds 50 hours, and, for all ages and ranks combined, 45.5% of females and 34.3% of males reported to be dissatisfied with this condition (n=10,116).

According to Freund, Ulin and Pierce (1990), the difficulty of striking a balance between

workload standards adds to the concerns of time limitations and reluctance for engagement in development. The researchers identified four basic principles for workload standards: (a) time devoted to teaching and teaching-related activities, (b) scholarly activity and service, (c) equity among faculty in workload assignments, and (d) an adjustable standard for faculty effort depending on individual and school needs. Conflicts arise between faculty objectives and desires and institutional goals, such as the percentage of a faculty's research versus service and teaching obligations. Assessing and comparing faculty performance in these contexts is a widely ongoing debate in higher education (Bensimon & O'Neil, 1998; Sorcinelli, 2007). Ambrose et al. (2005) looked deeper into these contextual issues. They categorized faculty into groups based on faculty reports on how they felt about internal and external benefits at their institutions. For the purpose here, their findings about internal issues like faculty's feelings of departmental and school community, or degree of peer support and development opportunities is noteworthy. Thirty-nine percent of the surveyed faculty (n=62) did not feel supported by their peers or school leadership. Not only was this rather large number alarming, but the authors further confirmed that feeling a lack of support often lead to disengagement, spreading a negative atmosphere among colleagues, and, ultimately impacted faculty retention. Another finding of this study suggested that research about faculty issues in order to improve opportunities for and retention of faculty should be institution-specific due to the great differentiations among institutions of both external and internal factors.

Institutional Culture

While Ambrose's et al.'s (2005) sample might be small, many researchers echo their findings and concerns (Ambrose, Huston, & Norman, 2005; Kezar & Lester, 2009; Sharma and Jyoti, 2009; Sorcinelli, 2007). Their studies highlighted the importance of a healthy

organizational culture as a prerequisite for successful faculty performance. Of course, culture can be characterized in various different ways. Russian scholar and psychologist Lev. S. Vygotsky's socio-cultural theories have been recognized and explored widely since the 1980s (Gredler, 2009). One of the leading principles of Vygotsky's extensive work throughout the 20th century was that cultural signs and symbols define the way we think, learn and act, and individuals interpret the sign and symbols of their environment and adapt to it (Gredler, 2009).

This overarching concept of culture defined as shared history, values, goals, beliefs, emotions, and (work) processes of a specific group of people has not only entered the education discourse but is also influencing the debate of organizational behavior (Schein, 2004; Clark & Estes, 2008). Organizations, departments and even groups can have their own cultures, a reason why institutions invest great effort and resources in attempting to build a shared or unifying culture for their members. In other words, if the work environment carries negative signals about expectations from faculty—for example, that their workload does not give them time for scholarly activities, and limits faculty aspects of their development—performance is impacted. Coincidentally, even though this is a negative culture, it will be difficult to change because the status quo provides a degree of stability and predictability (Schein, 2004). One cause that hinders achieving the performance goal to motivate faculty is when they experience that workload and service assignments are overbearing and hard to manage and service lacks clear definitions and allocations. While some faculty appear to be engaged in extensive service tasks, others are not. The workload does not allow time to pursue other academic interests such as research. Plus, the perception that research is superfluous for the group of non-tenure track faculty impacts their sense of futility (Kezar, 2005). A second cause is when faculty experiences a sense of disorder, or senselessness in excessive service tasks that they label “busy work” and

feel they could spend their time more productively. Perceived senselessness and disorder are known contributors to feelings of anxiety (Schein, 2004). In the extreme, this can cause apathy and disengagement, and can promote further isolation, or as Burke and Rau (2007) proposed, lead to faculty's excuse-making behaviors. The authors applied Schenkler's (1997) responsibility triangle, which suggests that a strong reciprocity between prescription (job/task objective), identity (faculty's role, character, aspirations), and event (task performance) is necessary to increase responsibility to perform well, and with it accountability to do so. Burke and Rau (2007) made a convincing point that faculty's responsibility is weakened when the links between these three components are interrupted. For example, unclear or conflicting performance goals, workload expectations that are too high, lack of acknowledgment or reward can result in faculty sentiments of resignation. In turn, such sentiments not only impact performance, but also will hinder potential faculty participation in professional development.

In addition, as posited in Chapter One, the nature of teaching, learning and scholarship is changing, and institutions should integrate teaching and research, which signifies a change in culture. In fact, Sorcinelli, Austin, Eddy, and Beach (2006) reported in their study of goals and purposes for faculty development that faculty program developers agreed that the definition of scholarship must be expanded to include scholarship of teaching as an important component of faculty development to facilitate learning in a 21st century technology driven age. Their study further confirmed that the mature institution runs opposite to what faculty needs: Time to reflect and innovate and a reduction in workload, a culture that supports their willingness to take risks, budgets that allow for experiment and research and faculty development programs. In summary, the researchers confirmed that many constraints have been recognized—most importantly, a need

for learning about pedagogy and engaging actively in reflection (Bensimon, 2005; Davis, 2003; Gappa, 2008; Jacobs & Winslow, 2004; Freund, Ulin, & Pierce, 1990).

Impact on Faculty Motivation

The exploration of institutional barriers to faculty development is not complete without looking at issues of faculty motivation. Motivation is understood as the drive to take action (active choice), persist in its execution (persistence) and the willingness to learn new things (mental effort) (Mayer, 2011). These positive emotions and the satisfaction of performing a task increase intrinsic motivation (Pintrich, 2000; Pintrich & Linnenbring, 2003). Self-efficacy, attribution, performance goals and also interest are considered the primary drivers of motivation, and even though the scope of this literature review does not allow for a full-fledged exploration of faculty's intrinsic and extrinsic motivational issues, it will highlight these main contributors to a lack of faculty motivation: issues of self-efficacy, attribution and lack of clear performance goals as they relate to workload and culture (Ambrose et al., 2005; Bandura, 1978; Clark & Estes, 2008; Klassen & Chiu, 2010; Hirst, van Knippenberg, & Zhou, 2009; Kaya, Webb, & Weber, 2005; Weiner, 2010).

The discussion of self-efficacy in the realm of education was first primarily focused on student achievement as it related to their performance capabilities in a specific domain and relation to socio-cultural contexts (Zimmerman, 2000). However, this social-cognitive theory that goes back to Bandura (1978) has long been applied in a wider context, but particularly as one determinant of academic motivation in learners of all ages. A lack of self-efficacy in teaching is indicative of decreased interest, engagement, and resignation in the workplace, which all can demotivate faculty to seek support. Klassen and Chiu (2010), for example, performed a longitudinal study of more than a thousand teachers that can be generalized to university faculty

who operate in a closely related field and experience similar challenges. The authors built on Bandura's social-cognitive theory that defined self-efficacy as an individual's beliefs about their capability to successfully perform a particular course of action. In contrast to Bandura, however, who described self-efficacy as a global state that remains relatively stable throughout a career, the authors determined that self-efficacy beliefs are domain specific and are not static, but change over time. They emphasized the following as major determinants for teachers' self-efficacy: teachers' beliefs about their capabilities, influence of past and present experience, age-related physical and psychological factors, and external influences such as workplace environments (i.e., feedback, support, and modeling through peers, principals, students, parents). Further, Klassen and Chiu (2010) pointed to the importance of considering multilevel stress factors that are detrimental to self-efficacy—especially, two overlapping sources whose multiple factors contribute separately to the overall stress level: teacher stress (negative emotions resulting from low self-efficacy, poor student rapport, low levels of effectiveness, etc.) and workload stress (role ambiguity, low autonomy, overall workload, conflicts with peers, etc.). This is in accordance with Jacobs and Winslow's (2004) findings, which pointed to the added stress of family demands on faculty. Because stress levels and job demands vary throughout the career span, the authors claimed that professional development should be tailored to individual needs—this should not only boost skills, but more so lower job stress, enhance job satisfaction and, last but not least, build and support a continued high level of self-efficacy.

Next, it is necessary to point to attribution issues in relation to influences of culture and workload on motivation. Attribution in this context refers to faculty's locus of internal and external control. If faculty feels they lack ability (an internal, stable, uncontrollable cause), and departmental/school support (an external, stable, uncontrollable cause), they will not exert effort

because the environment does not value effort (Weiner, 2010). The importance of Weiner's (2010) elaborations on attribution theory is that these affects are not anticipated but experienced and translate into an individual's thinking, and this thinking results in feelings that guide action. In other words, a faculty's feeling of not being valued does not need to have a direct causality, but is cumulative, and can lead to disengagement and negative moods that trigger feelings of anxiety, perceived loss of control, unnecessary competition, backstabbing, depression, and so on. These negatively impact motivation and can lead to faculty doubts about their career and performance goals and feelings of resignation; consequently, it might appear as if faculty does not value professional engagement (Ambrose et al., 2005; Clark & Estes, 2009).

However, clarity of goals is essential to professional development. Kaya, Webb, and Weber (2005) investigated the issue of what influences faculty goals in greater detail. Their survey of faculty (n=156; about evenly split between males and females) confirmed the importance of goal setting for faculty. For example, they showed that if a higher emphasis was placed on a faculty's teaching roles, the number of goals for teaching also increased (and vice versa for scholarly goals). Most prominently, however, Kaya, Webb, and Weber's study confirmed that goals differ by the nature of the discipline (i.e., natural science's faculty might have more research goals than social science faculty, whose goals are more teaching related). In addition, the researchers not only found evidence that the alignment of institutional, departmental, and individual goals matters significantly, but more so that the relationship between individual and departmental goals is most important. They stipulated that the proximity of those two, aided by guidance through the department chair, and determining short-term achievement goals for faculty is crucial for faculty engagement and performance. However, in practice, this goal setting might be limited to institutional and departmental achievement goals

rather than supporting the individual in the pursuit of these goals. While tenure-track or tenured faculty is charged with producing top-tier research, teaching faculty must produce effective learning experiences for students (measured through teaching evaluations) and accept multiple service requests. In other words, the institutional goals are often misaligned with faculty goals and the goal-setting conversation is limited to the summative annual performance review meeting with department leadership (Gappa, 2008; Kaya et al., 2005). Accordingly, the researchers suggested that to establish solutions to achieve higher motivation, cognitive explanations of change have to be blended with performance-based interventions strategies. Clearly, this emphasizes the importance of a departmental culture that is supportive of faculty development and realizes individual needs on a continued basis.

Lastly, Hirst, van Knippenberg and Zhou (2009) looked deeper into the correlation of performance goal orientation and creativity studying employees (N=198) in research and development departments in various organizations and their findings supported the above points. Similar to faculty, these employees need to generate ideas and engage in creative problem solving. Performance goal orientation is mostly motivated by external outcomes; in the case of faculty, for example, this can be the immediate feeling of success or failure in the classroom. The researchers hypothesized that this external outcome will be attributed to increased/decreased achievement, which then translates either into heightened intrinsic motivation, or, on the negative side, performance avoidance (Hirst et al., 2009). Building on Amabile's (1996) research on creativity, the researchers then confirmed that a heightened intrinsic motivation is interest driven and supports a learning goal orientation, which, in turn, is conducive to increased creativity and the readiness to take on challenging tasks. Their study, however, also proposed that this relation between goal orientation and resulting creativity was strongest in effective team

learning contexts (Hirst et al., 2009). This finding ties back to the importance of a supportive culture and the necessity of thought exchange among faculty to support their motivation and performance.

In summary, people's perceptions of their environment and their professional family are the foundation for motivation, performance, and retention—and the basis for providing a stimulating and caring learning experience for students. However, the barriers to faculty development outlined here are impacting faculty engagement and cannot be remedied ad hoc or with drastic imposed measures. To begin the discussion of a shift in culture, a revision of workload and how to increase motivation, faculty needs to realize that they, too, can change as well as affect change. In the following section, the literature review examines research that explored as well as proposed processes that should facilitate faculty development and their willingness to learn; it argues for faculty empowerment and institutional support. For example, the web-based development platform is intended to overcome the above barriers by providing access to information about pedagogy, building a community and creating awareness for development issues. It provides access to information about and discussion opportunities for issues like reflection, multiple means of instruction, cognitive frames, and leadership identified in the following as faculty expansion needs.

Faculty Development Expansion Needs

The barriers for faculty development that were identified in the previous section need to be diminished if not eliminated to foster faculty development. The need for reflection, an understanding and internalizing of double-loop learning as well as learning about pedagogy has to be embraced by faculty and supported by institutional leadership. The following research confirmed this theory and established why satisfying these topics is a prerequisite for faculty's

development, and, accordingly, their learning about creativity, innovation, universal design and technology. Accordingly, reflection, arguably the most encompassing and fundamental need for faculty development, will be discussed first, followed by double-loop learning, leadership and learning about pedagogy.

Reflection

Schön (1987) was the first researcher to establish the necessity for reflection as an important function of the learning process because it reinforces and deepens experiences and knowledge, both for the faculty and the student. This necessity to reflect has been widely acknowledged, as have the barriers to do so (Bolman & Deal, 2009; Davis, 2003). For example, a heavy workload not only inhibits faculty's ability to participate in professional development, but also it hardly leaves time for reflection. Schön (1987) postulated that while faculty can provide opportunity and their own knowledge for the learner, learning itself is a process of self-discovery in the learner. He claimed that the art of the teacher is to re-frame their own knowledge through listening and reflecting, in repeated dialog, in order to open pathways for the learner to learn. Honing this art can only happen if faculty reflects upon themselves as well as their learners (Davis, 2003). In addition to the time constraints, however, reflection about learners has become more complex due to the ever-growing diversity of the 21st century student population, which means that faculty not only teaches learners from many cultures, with different abilities and disabilities, ages, maturity levels, and so on, but faculty also should reflect on those individual learner traits. However, reflection on these many variables can be overwhelming, especially since the faculty might not have sufficient knowledge about a students' ethnic, cultural, or knowledge background (Smyre, 2008). As a result, faculty avoids reflective practice, engaging in excuse-making behavior, and reverts to choosing a pedagogical teaching

method that is appropriate for the content they aim to communicate to the learner, but largely remains ignorant of the learners' learning needs (Burke & Rau, 2007; Davis, 2003). Not only does this defy Vygotsky's (1934/1987) theories of determining learners' zone of proximal development and to scaffold learning content accordingly, it also clearly is not responding to what organizational theories promote, which is tailoring your message to your target audience (Bolman & Deal, 2008; Mayer, 2011). Accordingly, faculty tends to teach the way they were taught and have always taught and may not attribute sufficient importance to reflection (Camblin & Steger, 2000; Davis, 2003). In fact, the demands of their learner population exposes faculty to unguided and involuntary discovery-based learning about their students, which can diminish their effectiveness in the classroom setting, or their reflection-in-action, because this requires a tremendous amount of mental effort that is not task oriented (Clark et al., 2008; Schön, 1987). Naturally, this increases the cognitive load not only for the faculty but also for the learner who has to exert effort to figure out the modus operandi of the teacher (Mayer, 2011).

Bolman and Deal (2008) pointed to yet a more fundamental need for and effect of reflection, which, much like meditation, is a path to identify and reflect upon ones own faith and values; in other words, reflection aids not only to learn about oneself and others but also to build inner strength. Undoubtedly, this foothold serves the individual to acknowledge difficulties but at the same time instills confidence that solutions are possible—ultimately, fostering their intrinsic motivation to grow professionally, while enabling generative and creative thinking, the ability to recognize multi-frame thinking as well as double-loop learning (Bensimon, 2005; Smith, 2011).

In summary, the awareness of the necessity of reflection, the ability to engage in reflective

practice, and guidance on developing a method to do so are fundamental prerequisites for effective teaching and need to be nurtured in faculty.

Double-Loop Learning

Double-loop learning was first proposed and explored by Argyris (1976) in the context of decision-making behavior in organizational contexts. Since then, the distinction between single and double-loop learning has found applications in many fields including in higher education. Basically, single-loop learning is one-directional, aiming to rely on known or external corrections to problems. Double-loop learning examines root causes of a problem and considers modifications of underlying attitudes, values, norms, beliefs and practices (Argyris, 1976; Bensimon, 2005; Smith, 2011). Bensimon (2005) applied the concept of double-loop learning to trigger shifts in faculty's cognitive frames—individual perception lenses, or conceptual mind-maps that filter and categorize information and thus determine action. The researcher was particularly arguing for faculty's need to develop what she called an “equity frame of mind” (p. 101), meaning faculty pursue a substantive revision of perceptions and attitudes to better serve a diverse student population. Understanding the importance of cognitive frames and double-loop learning is essential for faculty's understanding of their way of thinking and realizing that problems underlying effective teaching are multilayered and not one-dimensional. While this is a process of inner reflection, both single- and double-loop learning can be supported by external means such as faculty development and should foster, among others, faculty empowerment and leadership as part of substantive transformational change efforts (Moore, Fowler, & Watson, 2007).

Leadership

Building upon the foundations above, the next step is developing transformational teacher

leadership. Transformation means a structural shift in thought, feelings, and actions. Learning is a process of making meaning. In today's landscape of higher education, the changing professoriate should include the scholarship of teaching, and faculty needs research-based understanding of pedagogy and learning theories to develop effective classroom practices (Sorcinelli, 2008). Faculty who is continuously engaged in this process will be better equipped to be a change agent and serve the needs of the 21st century student population (Pounder, 2006).

In order to become transformational leaders, faculty will further benefit from being guided to review their perspectives in relation to Bolman and Deal's (2010) four frames of leadership: (1) structural-managerial, (2) political, (3) human resources, and (4) symbolic. For the teacher-student relationship and the classroom environment, Achinstein and Barrett (2004) apply the first three frames in particular as follows (Table 2.1):

Table 2.1

Applied Frames Reflecting Teacher Perspectives of Students and Classroom

Perspectives	Frames		
	Managerial	Human Relations	Political
General concepts	Rules Control Procedures	Relationship needs	Power Equity Conflict Social Justice
Metaphor of classroom	Effective organization	Caring family, interactive	Democratic community
Metaphor for teacher-student relationship	Manager-learner (manager-worker)	Trusted collaborator-unique individual	Change agent and controller; collaborator

Note. Adapted from Achinstein & Barrett (2004)

Professional development should introduce faculty to these concepts and aim to enable faculty to reflect on these frames, realize they are collaborators and change agents who operate in a classroom that is a democratic community. Ultimately, they will relate these roles and

concepts to their own cognitive frames, integrating the concept of double-loop learning and experiencing a cognitive shift in their underlying norms, beliefs, principles and approaches (Moore et al., 2007). The researchers emphasized that this reframing process, ideally, will be supported by in-person or computer-based workshops, and through mentoring to make meaning of it. Further, this process of reframing will move faculty through the stages of *Bloom's Taxonomy* (as cited in Andersen & Krathwohl, 2001), ultimately enabling them to reach metacognition where they will create, try out and potentially adopt new perspectives that will transpire into creative and innovative curriculum redesign and teaching methods.

In summary, if faculty experiences cognitive shifts they will more readily realize new possibilities and become more versatile in their approaches, and, in fact, change their habitus (Bourdieu, 1973). Accordingly, they become enabled not only to promote a change in disposition among their colleagues, but also to think creatively about teaching approaches (Pounder, 2006).

Pedagogy

Thinking (creatively) about teaching approaches, and encouraging colleagues to reflect on theirs, is not easy if faculty relies on what they consider best practices but cannot back those up with knowledge of pedagogical theories. In fact, Sorcinelli et al. (2006) pointed out that the scholarship of teaching should take on an equal role to that of research in today's faculty development. White and Glickman (2007) confirmed this insight, positing that the rapid developments in technology and interconnectivity have opened up new ways of teaching and, indeed, bring a degree of urgency to the issue. With this urgency comes an opportunity to explore learning theories and pedagogy and to interpret how they can be applied in today's teaching environments. Postareff et al. (2006) claimed that faculty today understand that

professional development cannot be limited to expanding their domain knowledge, but that they have to find new ways of communicating and transferring their knowledge to the students. This is in line, as the researchers observed, with a growing debate about the necessity of enhancing faculty's pedagogical thinking and know-how. In fact, they were able to show positive effects of pedagogy training for faculty that was aimed in particular to motivate faculty to segue from a teacher-centered to a learner-centered teaching approach. Their study sample consisted of 204 faculty with varying degrees of both prior knowledge in pedagogy and years of teaching experience. These faculty were invited to pedagogy courses they could choose based on interest; for example, short courses on learning and instruction as basic teacher-training courses aimed to give faculty the basic skills to plan, instruct and assess teaching and learning in their courses. The quantitative part of their study showed, among other results, that the longer faculty had pedagogy training, the more their student-centered approach grew. Further, in post-study interviews, more than fifty percent of the faculty reported having gained higher awareness of their teaching approaches and methods as well as witnessed an improvement of their reflective skills.

In summary, learning about pedagogy and the necessity for reflection, including double-loop thinking and concepts of transformational leadership, are necessary components for faculty's professional growth and deserve greater recognition. Arguably, supporting faculty in these areas should lead to increased creativity. Online faculty development can offer pathways to engage in learning about these issues, when browsing content tailored to those topics and sharing questions, thoughts, ideas and examples of their experiences. In fact, as Hiser (2008) confirmed in her review of different approaches to online faculty development, the quasi-anonymity breaks down barriers of disengagement making it easier to be honest and asking

questions; writing a blog post, for example, provides a great tool for reflection while it is a form of thinking out loud. In addition, faculty can receive comments from colleagues of other domains or from more senior colleagues. This should contribute to expanding their cognitive frames and seeing problems through different lenses while offering the domain or topic expert opportunity for leadership. Most of all, it will avert the excuse of being too busy. Diaz, Garrett, Kinley, Moor, Schwartz, and Kohrman (2009) confirmed these advantages and suggested reinforcement through periodic surveys and assessments to ensure the sites are catering to faculty needs, are proactive in anticipating developments in education, and are aligned with institutional strategic goals.

Creativity and Creative Thinking

The need for creativity and creative thinking (CT) in this context is an overarching theme. Referring back to the problem that in order to guide students to develop their creative thinking skills and nurture their creativity, faculty must first deepen their understanding of creative thinking and creativity in order to develop novel approaches to teaching and to interact with ambiguities in their environments (Wisdom, 2006). The following will illustrate the current state of the creativity discussion, reveal what attempts to infuse curricula with creativity have been attempted and studied by selected faculty researchers, and support that the discussion of creativity as an element of faculty development needs to broaden. Consequently, it is important to first explain characteristics of the creative person, process and product in relation to the higher education environment, and why constructivist teaching approaches adapt well to nurture creativity. It will be demonstrated that creative project-based and problem-solving strategies foster generative thought in both faculty and students and that, while not exclusive, applying those teaching strategies requires faculty to change the perceptions of themselves from teacher to

facilitator. Three practice examples by Bruton (2010), Karakas (2010) and Kerr & Lloyd (2008), respectively, will further elaborate and expand on those findings, particularly emphasizing the need for creative thinking and creativity in business schools.

Defining Creative Person, Process, and Product

Among many variables of creativity, researchers generally agree upon the characteristics of a creative person as being imaginative, having the ability to combine ideas, being ambiguity tolerant, showing a willingness to take risks, to explore and create, being open, conscientious, and self-efficacious, to name a few (Bruton, 2010; Csikszentmihalyi, 2006; Jackson & Sinclair, 2006; Kerr & Lloyd, 2008; Nicholl, 2004; Ma, 2009; Plucker, Beghetto, & Dow, 2010). In other words, and in De Bono's (1991) tradition of thought, creative persons are capable of lateral thinking; that is, they recognize dominant ideas, search for multiple perspectives, and relax rigid thinking to achieve creativity or creative problem solving (Boden, 2011; Powell, 2007; Sobehardt, 2011). These character tendencies can be cultivated and brought out in the individual who can gradually increase creativity if the environment encourages it and if certain conditions are met; for example, through the interplay of learner and teacher in effective higher education settings (Nicholl, 2004). Ma (2009), in a meta-analysis of 111 studies, among other findings extrapolated that the creative process involves divergent and convergent thinking, inter-domain creativity, and encompasses five stages: (a) defining the problem, (b) retrieving problem-related knowledge, (c) generating potential solutions, (d) generating criteria for evaluating appropriate solutions, and (e) selecting solutions and implementing it. The creative product, measured primarily in terms of fluency and flexibility, combined creative originality of the solution with practicality of application. Ma's (2009) meta-analysis substantiated the applicability of project-based teaching approaches for the college level learner.

Creativity and Constructivism

Despite the attempts to define CT, the studies in this review also showed consensus that the mechanisms of CT are still not known well enough and are therefore difficult to teach (Bruton, 2010; Kerr & Lloyd, 2008; Morrison & Johnson, 2003; Nicholl, 2004). Moving away from linear and lecture type teaching, project-based, problem-based, and case-based learning appeared to be the most applicable approaches to teach CT. These approaches are all rooted in constructivism, which defines learning as a process of knowledge construction. In other words, using one's current knowledge, new knowledge is constructed by making assumptions about the world and by collaborating with others. This necessitates learners' meta-cognition and with it their ability for self-regulation, which relies on forethought, performance and self-reflection (Dochy, Segers, Bossche, & Struyven, 2005; Jackson & Sinclair, 2006). Studies included in this review combined the above-mentioned teaching approaches to some extent, emphasizing one or the other while utilizing similar instructional methods. However, while each study applied a different experiential framework, such as grammatical design, arts-based intervention, or management concepts, Csikszentmihalyi and Nakamura's (2006) systems approach of teaching strategy to include the student, the teacher, the environment and the field of study clearly is a main influence for all (Bruton, 2010; Jackson & Sinclair, 2010; Kerr & Lloyd, 2008; Morrison & Johnson, 2003; Nicholl, 2004).

Creative Project-Based and Problem-Solving Strategies

Creative project-based and problem-solving teaching and learning strategies can be seen as vehicles to support a pathway to generative and creative thinking in students by involving various teaching approaches in which faculty will serve not as a lecturer but as a facilitator. Jackson and Sinclair (2006) most poignantly labeled this relationship a cognitive apprenticeship.

This concept ties together project-based pedagogy and self-regulated learning adding the element of coaching with a focus on cognition. This means that in a cognitive apprenticeship the process of carrying out a task is not necessarily observable (as in a craft-based task) and teacher and students have to make their thoughts known; for example, through conversations. Nurturing this thought exchange, and understanding the classroom as a learning community, requires faculty to build caring relationships between themselves and the students (Morrison & Johnston, 2003). In this interdependency, the faculty-facilitators must be creative themselves and use innovative thinking to provide stimulating learning environments that are challenging contexts, which engage and motivate students to grow beyond their assumed knowledge—ideally, reaching a state of illumination or flow (Csikszentmihalyi & Nakamura, 1989).

Achieving this type of creative state further relies on the application of learners' metacognitive strategies and is mostly driven by teamwork, the use of multimedia, creative problem-solving strategies, interdisciplinary practice, experiential learning and also, albeit sparingly, rewards for productive thinking (Bruton, 2010; Dochy et al., 2005; Karakas, 2010; Kerr & Lloyd, 2008; Morrison & Johnson, 2003). For faculty at business schools, which aim to prepare students for a competitive global marketplace that demands a more creative workforce, employing creative instructional approaches to foster creativity in students is particularly pressing (Kerr & Lloyd, 2008).

In summary, having established what is understood by creativity and creative thinking in this context—that a connection between creativity and constructivism drives learning and teaching approaches rooted in project-based learning and problem-solving strategies—the following three studies researched application attempts of such approaches that further supported the hypothesis of the need for creativity in higher education.

Three application attempts of infusing the curriculum with creativity. The studies by Bruton (2010), Karakas (2010), and Kerr and Lloyd (2008) were selected and deserve mention because they modeled creative approaches using different instructional methods in a sub-context to project-based learning. In these isolated attempts to teach creativity creatively, students operated within schemas that enabled autonomous and self-regulated learning, letting students expand their domain-specific vocabularies and create new knowledge.

Bruton (2010), in an undergraduate course about creativity and innovation, drew on the concept of grammatical design. Adopted from linguistic theory, grammatical design provides a generative system involving three elements: a vocabulary, a set of transformation rules for structures and an initial structure. In principle, the initial structure or domain will continuously be transformed by adding new structures from different domains. While student participants from various disciplines relied on their domain-specific knowledge, collaboration, multimedia use, and reflective writing pushed them to transcend their discipline driven framework and apply new rules that their team peers contributed from their disciplines. The grammatical design, or schema, provided scaffolding in which students operated autonomously.

In a similar approach, Kerr and Lloyd (2008) studied how an arts-based strategy can be applied to problem-solving for management students. The Artful Learning Wave Trajectory Model (ALWTM), which revolves through four distinct stages of the learning process (capacity, artful event, increased capability, and application/action) was linked with the so-called Management Jazz program that focuses on doing, learning and knowing by utilizing highly flexible scaffolds. For example, business students observed creative production outside their domain, witnessing how a dance troupe constructed a performance through shared ownership and reciprocal interaction between dancers and the choreographer. The business students

discussed their experience and related it to their known management theories, and then solved a management problem infused with novel approaches they derived from their experience.

Finally, Karakas (2010) used creative projects in an organizational behavior course to develop students' integrative thinking and creative brainstorming skills. The author paired Positive Management Education (PME), a multi-dimensional framework addressing flexibility, positivity, complexity, community, creativity, spirituality in business with Positive Organizational Scholarship (POS), a conceptual framework guiding students to build flourishing, life-giving organizations. The researcher (also the instructor) integrated these frameworks into faculty-guided learning platforms, or task environments, such as outdoor team training exercises or role-play, through which students developed innovative methods to transform professionals into holistic thinkers, criteria for which students had established in collaboration (Karakas, 2010).

In all three cases above, researchers provided solid evidence for increased student creativity, applying various different instructional frameworks and methods within the overarching concept of project-based learning. In detail, Bruton (2010) used the commonly applied Torrance Tests for Creativity in pre- and posttests and confirmed that students' creativity index increased significantly. Kerr & Lloyd (2008) measured the effectiveness of their approach collecting qualitative and quantitative data for three case studies. Results showed positive correlations between the program and individuals' capacity for self-creativity, increased capacity to create environments for group creativity and interactions, a higher ability to accept and deal with ambiguity and an urge to engage in exploration and discovery—all traits of creative individuals. Karakas (2010) recorded her observations throughout the semester and applied a multi-dimensional performance evaluation for each project, reporting a 15 to 35% increase in student performance and creativity throughout the course.

In summary, creative project-based learning with its many forms of pedagogical expressions can be considered effective strategy to nurture CT in students and contribute to preparing them for a future of global challenges. In addition, the variety of experimental pedagogical approaches in these case studies supported that further experimentation and research of alternative methods and strategies to foster individuals' divergent thinking and cross-domain creativity are warranted. This leads to the conclusion that the demand on faculty to facilitate learning that fosters integrative holistic creative thinking for their students is challenging faculty's own creative abilities. The three sample studies notably were isolated approaches and, regardless of their success, highlighted that despite the current discussions about creativity and its importance in educating the next generation, little is done to support faculty in that regard. Further, the studies also exemplified that faculty development must define creativity in the educational context, explore approaches to creative teaching approaches, and should model creativity in the process.

Bringing all the barriers and challenges for faculty together, and pairing them with faculty professional development aspects in the 21st century, the discussion will now investigate how universal design (UD) and technology can be utilized to motivate and engage faculty in professional development and hypothesizing that, indeed, both will not only support their growth, but also nurture their creativity.

Utilizing Universal Design and Technology for Faculty Development

In order to discuss the influences of universal design (UD) and technology in higher education and their uses for faculty development, it is first necessary to explore the nature and application of universal design in higher education, as well as evaluate the role of technology. In this context, it will also be valuable to consider aspects of self-directed learning and cognitive

load because UD and technology, if used effectively, should be promote cognitive load levels that are conducive to higher learning outcomes in all domains (Van Merriënboer, Kirschner, & Kester, 2005). Shaping faculty development based on UD principles and with technology should further break down motivational barriers, while allowing faculty to apply and try learning methods they might translate into their teaching. Accordingly, the following section will address principles of UD and faculty learning, explore pairing of UD and technology, discuss faculty perceptions of technology and the application of UD principles and technology to establish faculty learning environments and, finally, investigate structural design and approaches of content sourcing for the web-based development platform.

Principles of Universal Design and Faculty Learning

To begin the exploration of UD, it will be useful to briefly elaborate on its origin and current forms and applications. Universal design was first a concept in architecture to ensure buildings were accessible to all populations, including those with disabilities (e.g., buildings will have ramps for wheelchairs, sidewalks with curb cuts). The benefits of UD were so obvious that it did not take long before its concepts entered the education discourse among those seeking to establish inclusive learning environments. In fact, the passage of the Americans with Disabilities Act (ADA) in 1990 was the first nation-wide impetus in higher education institutions to make their campuses physically accessible (Higbee, 2009). About a decade later, the U.S. Department of Education was instrumental in formulating a recommendation that all instruction should be designed based on the UD principles (McGuire, Scott, & Shaw, 2006). The rapid development and refinement of technology since then further assisted accessibility through Internet platforms and other technological devices (like hearing aids, for example); arguably, attempting to offer increasingly flexible learning environments that are suited for diverse student populations

(Gradel & Edson, 2010; McGuire, Scott, & Shaw, 2006). Burgstahler's (2001) seven UDI principles (inclusiveness, physical access, delivery methods, information access, interaction, feedback, demonstration of knowledge) have become a widely accepted guideline to make course content available for all learners and learning styles, but particularly those with disabilities. McGuire et al. (2001) in collaboration with the Center for Postsecondary Education and Disabilities (CPED) at the University of Connecticut argued that faculty are the content experts but generally receive little if no training in pedagogy. Hence, they added two more principles to Burgstahler's (2001) original seven:

- Principle Eight: A community of learners (instructional environment promotes interaction and communication among students and between students and faculty).
- Principle Nine: Instructional climate (instruction is designed to be welcoming and inclusive. High expectations are espoused for all students).

While all nine principles are geared to provide a framework for content delivery and learning outcome assessment, principles eight and nine, in particular, should sensitize faculty to reflect on their teaching methods and to develop instructional features to proactively include all learners (McGuire et al., 2006).

Further, McGuire et al. (2006) extrapolated how these principles, originally designed to serve students with disabilities, translate into a universal paradigm, truly taking into account the learning needs of the broad range of students present at most institutions of higher education today (meaning including non-native speakers, international students, etc.). Their new UD paradigm semantically eliminated the term disability from all principles and guidelines and replaced it with broad or wide range of learners. The researchers' efforts echoed a growing popularity of UD throughout higher education to support not only equitable access for but also

equity among learners. Bremer (2004), for example, provided a list of examples of faculty's application of UD, ranging from allowing students to audio-record lectures for later review, to ensuring that course materials are posted on course management systems, or adding closed captioning to videos. Other researchers adapted the UD principles into a list of instructional strategies that should jump-start faculty new to UD concepts, such as designing course objectives that consider diverse learning styles, feature internet-based lessons, or promote interaction among students (Burgstahler, 2001; De Long, 2008; Gradel & Edson, 2010; Zeff, 2007).

Looking at these suggested applications, Higbee (2009) then asked how teaching under consideration of UD principles would be different from simply "good" teaching. Her argument brings home the discussion of what needs to happen in faculty thinking about their approach to teaching. Higbee (2009) agreed with McGuire et al. (2006) and Zeff (2007) that faculty needs to adopt a mindset that is alert to constant change, seeks divergent (and creative) thinking, and is flexible and proactive in adapting course materials. In other words, faculty must anticipate diverse learning needs of students and often quickly and creatively develop appropriate means for knowledge transmission and generation. Universal design not only provides a framework of instructional principles, but more so a fresh concept that appears to be an acceptable reason for faculty to review their teaching methods and to be receptive to professional development. In fact, getting exposed to the principles of UD arguably captures faculties' intellectual curiosity (McGuire et al., 2006; Zeff, 2007). However, this exposure is still limited at most institutions even though, as proposed in the problem statement, external pressures on higher education include the need to teach a diverse student population, challenge pedagogy to include technology, as well as call for learning outcome accountability.

Pairing Universal Design and Technology

Without a doubt technology is pervasive in our world today. Students have grown up with computers and the Internet. They are connecting through Facebook and utilizing cloud computing; in fact, as early as 2001, Prensky (2001) referred to this population as *digital natives*. Universities rely on course management systems like Blackboard. Increasingly, courses in higher education are also available in online formats. Technology dovetails well with UD because it indeed supports accessibility to learning contents for all students. While the mere use of technology or the knowledge of UD principles alone will not guarantee delivery of quality learning contents, or offer pedagogical methods in terms of teaching and learning, technology and UD together provide a strategic framework for creating and delivering learning content for diverse learners (Zeff, 2007).

Faculty perceptions of technology. As pointed out earlier in this review of the literature, barriers to faculty development are manifold, with work stress and time constraints taking on predominant roles. Thus, faculty are often resisting investing resources into course revisions when other work pressures, like service commitments or research demands, appear more imminent. These time constraints are not expanded because faculty might be technologically challenged, but rather, as a study by Schuldt and Totten (2008) proposed, because of the fact that technology increases faculty availability to students, colleagues and administrators, extending their work into a ubiquitous 24/7 playing field. The researchers, however, investigated primarily issues of connectivity via email and did not specifically look at classroom application of technology. It is necessary to also investigate the use or avoidance of technology to establish why faculty is often reproached with reluctance to change, or to adopt technology (Davis, 2003). Ajjan and Hartshorne (2008) tried to understand faculty's intention to use Web 2.0 resources

applying a decomposed theory of planned behavior. In a nutshell, this theory looks at the antecedents of attitude, subjective norms, and believed behavioral controls to reveal specific factors in behavioral intention that influence the adoption of technology. The researchers attempted to answer two research questions: (a) Is faculty aware of Web2.0 technologies, and to what extent? And (b), which factors best predict faculty's adoption of Web 2.0 applications for instruction? (Ajjan & Hartshorne, 2008, p.79). Interestingly, they found that while faculty generally believed that using technology would improve their students' learning and their interaction with them, few were actually using technology in their classrooms (such as blogs, wikis, social networks, etc.). Further, faculty attitudes towards technology were influenced mostly by ease of use and usefulness. Noteworthy was the finding that the influence of colleagues, students and superiors was positive; in other words, if the culture promotes and supports the use of technology, faculty is more likely to pursue its application. In this context, the degree of self-efficacy for using technology also played a significant role in that strong self-efficacy supports perceived behavioral control and, consequently, behavioral intention that translates into action. The results of Ajjan and Hartshorne's (2008) study delivered solid evidence that faculty needs more training to translate their perceptions of positive impacts of learning that is facilitated through technology into the classroom—leading to actively engage the learners as well as maintain an ongoing exchange with other faculty. In effect, this behavior supports sharing and creation of knowledge beyond the classroom setting itself.

Applying universal design principles and technology to support faculty learning. Based on the above discussion, it is evident that faculty development needs to be motivational, inclusive of diverse faculty learners, cost-effective under the fiscal pressures of today's economy, and employ modern technologies. Wlodkowski (2003), for example, applied

four conditions of the Motivational Framework for Cultural Responsive Teaching to faculty development that reflect UD principles in application: (a) promoting a friendly tone of inclusion to promote intrinsic motivation and respect, (b) making sure that workshop content is relevant to participants and ideally presented or modeled by peers to nurture interest, (c) engaging learners in challenging activities that lead to new knowledge and idea creation, and (d) using a variety of approaches and strategies (like problem-based learning, role-playing, etc.) that bolster faculty competence. The researcher further proposed that building in formative assessment measures with those activities can build participants' self-efficacy because they can review their performance against their own capabilities.

Kukulska-Hulme (2012) drew on many examples that support faculty learning by exposing them to learning situations that their students might be in; for example, making them the online student, or having them use mobile technologies. Robertson (2011) presented a model in great detail for how to utilize blogs for student learning that provides a conceptual framework that can be applied for faculty learning. The model helps faculty to gain an understanding of blog dynamics and the type of learning that takes place through certain activities so that they then can apply that to student blogs. Even though blogs are just one means of online learning, Robertson's (2011) exploration of the affordances of blogs served as an applicable example for some advantages of online learning. The study highlighted two elements in particular that support the argument for faculty online learning: self-directed learning and community-based learning. For example, reading and responding to peers' blog posts builds faculty's empathy for peers, triggers contemplation of their own contributions and makes them plan their continued learning. Kukulska-Hulme (2012) confirmed this applicability both among faculty peers and between faculty and students, proposing that revisiting their own learning and development

through internet-based interaction within a community of learners will foster reflection on their learning styles, their professional learning needs, and their role as an educator. Hiser (2008) further proposed that online faculty development also allows for what she termed “quasianonymity” (p. 2). More precisely, her study reported that faculty participating in online development found it easier to ask questions and were involved in discussions with colleagues from different disciplines. New faculty embraced the online environment as a 24/7 outlet not only for questions, but also for frustrations, and senior faculty felt that their participation was relieved from hierarchal pressures or having to espouse self-confidence when providing feedback to junior colleagues (Hiser, 2011).

Kukulska-Hulme (2012) further established a “High Level Development Plan for Lifelong Learning with Mobile Technology” (p. 6) that suggests that faculty must develop their own teaching, learning, research in order to develop students in these areas ultimately making them co-teachers, co-learners, and co-researchers. This concept resonates well as an example of inclusiveness with the goal to eventually make the student an equal partner in the process of knowledge generation. However, the researcher’s plan also emphasized a point generally accepted by all researchers in this review: that departmental and institutional leadership must effectively and proactively support faculty development. Across the board, faculty will be more likely to make first steps to participate in development if such programs get promoted by leadership that faculty respects and has direct contact with on a regular basis (for example, a department chair), or if such programs are developed collaboratively and soliciting faculty input and are tied to outcomes (Zeff, 2007). Arguably, these efforts have to be even stronger in research institutions where teaching skills are not as highly rewarded, or not taken as seriously by faculty themselves (Kukulska-Hulme, 2012).

An incentive to establish a faculty development program can, for example, be supported by formulating learning outcomes for faculty (Hiser, 2008). These can range from learning about pedagogy, to seeking improved student performance, to building faculty communities based on interest. Teeter, Fenton, Nicholson, Flynn, Kim, McKay, O'Shaughnessy and Vajoczki (2011) presented a case study initiated by the Center for Leadership in Learning at McMaster University (one of the top-ranked public research universities in Canada), which might serve as an example here. The university established four learning communities for faculty: Teaching with technology, teaching professors, pedagogy, and first year instructors. These provide virtual spaces for interaction as well as face-to-face opportunities, and public and non-public elements to build an environment that faculty recognize as safe to explore new ideas or to take risks in challenging legacy or conventional research, teaching, and learning approaches. This program also emphasizes alignment with institutional goals, and, in this case, foremost reestablishing a strong connection between research and scholarly teaching and learning. The team of researchers observed, guided, and participated in these communities during the first year and confirmed that the system has led faculty to connect far beyond traditional structures with colleagues from other disciplines. At the same time, they found that participants took on a heightened responsibility to exchange knowledge, discussing knowledge creation and forming a link between teaching and learning.

Adding structural design and sourcing content for faculty development. Universal design and technology can provide a conceptual platform for faculty development, and the above strategies for establishing faculty development environments demonstrate that knowledge exchange and generation is a by-product of the process itself. However, content building needs further structure and guidance and in higher education it appears applicable to derive these from

instructional theories (Clark et al., 2008; Moore et al., 2003). Merrill (2002) presented a comprehensive review of various instructional theories to explore differences and commonalities and arrived at the following five instructional design principles as most relevant across all:

- Demonstration principle: Learning is promoted through observation of a demonstration.
- Application principle: Learning is promoted through application of new knowledge.
- Task-centered principle: Learning is promoted when solving real-world problems.
- Activation principle: Learning is promoted when prior knowledge is activated to connect to new knowledge.
- Integration principle: Learning is promoted when new knowledge is integrated into the learner's world. (Merrill, 2002, p. 44-45).

Clark et al. (2008) then translated these five principles into instructional methods that can be universally applied and that should serve as implementation strategies:

- Offer clear and complete demonstrations of how to perform key tasks and solve authentic problems.
- Provide analogies and examples that relate relevant prior knowledge to new learning.
- Provide realistic field-based problems to solve.
- Insist on frequent practice opportunities during training to apply what is learned and receive feedback.
- Require application that requires *part-task* (practicing small chunks of larger tasks) and *whole-tasks* (applying as much of what is learned as necessary to solve complex problems). (Clark et al., 2008, p. 13)

The latter principle builds on the theory that simple-to-complex sequencing will allow entry points for the learner according to their level of prior knowledge, and with that diminish the risk of cognitive overload (Clark et al., 2008; Van Merriënboer et al., 2005). In the context of faculty development this means, for example, that including insights from so-called subject matter experts (SMEs) who reveal step-by-step processes in task completion can be particularly effective because it not only validates expertise (and, therefore, will be accepted by faculty), but also supports reflection and understanding of content and, arguably, will further stir faculty's curiosity, lead to divergent thinking, and the creation of new knowledge (Clark et al., 2008; Ma, 2009). The fact that faculty, domain experts themselves, can relate to the expert task analysis based on their prior knowledge allows accessing knowledge and information points according to their needs and just-in-time (Van Merriënboer et al., 2005). The only difference to the researchers' approach is that they assumed the teacher releases information to the learner when they need it, whereas, in the faculty learning-environment, self-directed learning should be the norm. In addition, in the sense of positive deviance, faculty can selectively pick from the underlying process scaffolds, for example, of a world-class scholar's or a master teacher's instructional methods, and infuse their classroom environments with these insights.

Teeter et al.'s (2011) case study of a community of practice program can serve as well-designed example for addressing the question of content and content distribution in faculty development, and how their learning can further be supported and guided by adding content based on Merrill's (2002) principles and Clark et al.'s (2008) methods. Teeter et al.'s program built on three guiding structural elements: (a) the domain, or community membership, which supports a sense of identity and ownership; (b) the community, which supports members' exchange of ideas; and (c) the practice, where members share knowledge and resources based on

their experience. This structural approach emphasized that learning is more than knowledge acquisition but evolves in social (and physical) contexts that promote a sense of belonging, responsibility and accountability. The primary thought exchange happens through asking questions about best practices and considering topical and strategic intent (for example, knowledge creation, or teaching innovation). This process is very well suited for applying limited cognitive task analysis (CTA) (Clark et al., 2008). This method uses various interview and observation strategies to expose incremental implicit and explicit knowledge from experts within or outside the learning community in order to develop learning tasks that will answer to Clark et al.'s instructional methods. Arguably, this will aid not only the acceptance of learning about teaching but will involve faculty in their community and in collaboration. Ideally, this approach will affect faculty's instructional and educational practice internally (organizing knowledge and experience and relate it to practice), externally (relating workplace experience to practice outside of the institutional setting), and, lifelong (deepening and expanding interest in topics continuously in and outside of the school environment). These three dimensions (internal, external, lifelong) all involve critical and creative thinking, problem-solving and communication abilities and require double-loop learning, no matter if in a virtual or physical environment, and engage the learner in active learning (Moore et al., 2007).

In summary, this section has explored the principles of UD and technology and their application for faculty development. Similar to the argument presented for the necessity of creativity and creative approaches to faculty development it is suggested that the faculty learner will benefit from immersive procedures that will let them explore creativity, UD, and technology so that they can translate these applications into their curricula. Further, this section also has

proposed theoretical and practical approaches to building content on the web-based faculty development platform that are derived from applicable instructional methods.

Conclusion

In conclusion, this literature review proposed that it appears timely to apply the principles of UD as well as digital media to faculty development that is geared towards learning about pedagogy. In addition, the above review has revealed that establishing an online faculty development forum (FDF) to support faculty learning about pedagogy, creativity, UD and technology should not only be feasible to break down the barriers to faculty development, but more so to motivate faculty to be actively engaged in the process to ensure their professional growth. Ideally, the FDF supports peer-to-peer exchange to support generative thought and idea development. The author of this dissertation established a web-based FDF under consideration of the current issues, the barriers, and expansion needs for faculty development and following the guiding principles outlined in this review. Accordingly, this FDF intends to provide universal access, be interactive, embed social aspects of persons' interest groups such as webinars and discussion forums. It features examples of problem-based learning modules, information about learning theories, including motivational theories, and their application and sample exercises. Further, the FDF aggregates from existing internal and external institutional sites such as centers for teaching and instruction, sites that feature issues of teaching with technology, and resource sites for universal design.

Interacting with the FDF continuously should foster the willingness of faculty to take risks and develop and employ new teaching strategies that will support creative thinking in their students and provide a stimulating learning environment that anticipates students' learning needs in our times. As mentioned earlier, Bandura's (1978) model of self-efficacy points to the

importance of efficacy beliefs in relation to motivation, claiming that it influences both the effort exerted as well as the level of persistence upheld (both internal attributes), and the belief in if an action will lead to the desired outcome—that is, the perception of the external environment and how instrumental it is in supporting the effort. Hence, the following elements should be foundational in promoting, developing and serving to foster engagement in the FDF:

- Set concrete short and long-term goals through a participatory approach—this initiates taking action and will lead to mastery experiences, which shows individuals that they have the ability to succeed (see also Arad & Erez, 1986).
- Give concrete reasons for a change, as well as the short and long-term goals. Explain the short-term challenges and the long-term values. Make clear why the change approach is necessary. Emphasize also the long-term advantage of vicarious learning (i.e., offer “best practices” modeled by other faculty).
- Provide opportunity for socializing and collaboration to create a positive mood environment, solicit feedback on action plan and give feedback on input.
- Invite a discussion about topics in teaching and learning to trigger interest and action.
- Emphasize the benefits of an action plan to faculty as they relate to personal development; make clear what individual short and long-term goals are. Consider that faculty in our society are highly individualistic types who require a degree of autonomy.
- Foster understanding of how the individual efforts will benefit personal development in the context of the department and/or school, or connecting personal interest with the benefit of realizing a common goal.

In summary, the FDF naturally is subject to constant innovation and should, in effect, take on its own life through faculty contributions—demonstrating the ability to adapt to sudden

change and ambiguities of our times and shaping learning, teaching and knowledge creation for the future of faculty, students and the institution. Chapter Three will now establish the methodology for testing if the FDF indeed will be successful in augmenting and fostering creativity and innovation in faculty at the study site.

CHAPTER THREE: METHODOLOGY

The previous chapters established why faculty development is essential and must be supported through media that utilizes 21st century technology. Chapter One described why faculty development is necessary positing that the constraints for faculty engagement in their own learning eventually might leave future graduates ill-prepared for the demands of life in the 21st century. Further, it was proposed that faculty development will be fostered and enhanced through a school-based online faculty development forum (FDF). Chapter Two explored current barriers to faculty development such as workload issues, institutional culture and how these impact faculty motivation in terms of engaging in development. It also established development expansion needs such as allowing time for reflection and, most importantly, getting inspired to learn about pedagogy and creative approaches to reinvent curricula. For example, by applying methods rooted in universal design (UD) to ultimately support their own and, ultimately, their students' creativity and a sense for innovation. Finally, Chapter Two reinforced that a web-based development platform not only will support faculty's engagement with professional development but will also be a vehicle to drive faculty learning through universal design and with technology thus preparing them to more readily implement these in their classrooms.

This chapter established the methodology for this study. Research reviewed in Chapter Two looked at both quantitative, qualitative and mixed methods approaches depending on their research purposes. In the study at hand, deductive, quantifiable survey questioning provided descriptive statistics in regards to faculty usage of and learning through the FDF. This included selected open-ended survey questions to probe for what faculty found meaningful or salient in terms of their experience and in regards to their development needs. Site usage reports supported frequencies of use overall and for different content categories. In addition, interviews delivered a

richer and deeper layer of information and complement the Likert-type scaled survey items responses by providing insights into faculty contexts and perceptions. Observations of faculty reactions and comments triggered by the site or its usage, and collected either via e-mail or through informal conversations throughout the study period, further enriched the data (Patton, 2002).

In summary, this was a concurrent transformative mixed methods study, using embedded strategy (Creswell, 2009). Its purpose was to research the following question and its sub-questions:

1. To what extent did the web-based development platform provide a universally accessible and acceptable source that effectively motivated faculty to engage in professional development?
 - 1.1 To what extent did faculty use the web-based platform?
 - 1.2 To what extent did faculty indicate interest in further learning about issues in instruction?
 - 1.3 To what extent is the web-based development platform effective in exposing faculty to multiple means of learning and instruction, such as universal design in learning and instruction?
 - 1.4 To what extent is the web-based platform effective in augmenting or fostering faculty creativity for curriculum innovation, such as project-based learning or using instructional technology?
 - 1.5 To what extent did faculty engage in thought exchange with peers on this platform?

The study included both quantitative and qualitative faculty survey data; the survey and follow-up evaluation of webinars were distributed via Qualtrics. Site usage reports of content access supplied supplemental data. Lastly, interviews were conducted in person at the school site to enrich the quantitative data.

Site and Sample Population

The results of the study helped demonstrate if and how the web-based platform succeeded in providing meaningful faculty development. This section describes the characteristics of the study site as well as the sample population.

Study Site

The study combined a physical and a virtual setting. The physical unit of analysis was the business school at a large top-tier four-year private research university in a major metropolitan area. It is the largest school on its campus with a diverse faculty and student population. The virtual unit or online site was the faculty development forum (FDF). It was populated with sourced content, selected to provide introductions to issues in teaching and learning, concepts of curriculum design, universal design, as well as featuring topic areas such as aspects of creativity and innovation. This virtual environment allowed for multiple means of participation, both interactive (e.g., discussion boards) and non-interactive (e.g., watching video-content) to motivate faculty use and participation.

In summary, the FDF at the study site was created to foster faculty development with a particular focus on teaching, learning, creativity and innovation, and universal design. The study can be considered action-research that investigated the effectiveness of this web-based form of faculty development. Since the study site is one of several schools at a larger university, it offers

an ideal opportunity for a case study that can potentially inform other schools on campus, and if they might consider developing a similar platform for their faculty.

Participant Population

This section describes the sample population for this study. The business school at this site is a professional school that employs tenured, tenure-track, non-tenure track (teaching) full-time faculty, as well as a variety of other instructors, such as part-time faculty, teaching assistants, or visiting scholars. Assuming all faculty need development opportunities, the FDF does not discriminate between those groups, even though it might offer topic or forums that are geared towards a particular population. By contrast, the study aimed to distinguish usage frequencies for the subgroups by track and years of teaching experience as shown in Table 3.1.

Table 3.1

Faculty Participant Groups

Label	Faculty
Group 1	Non-tenure track faculty: Assistant professor (year 1-3 = novice; year 4-7 experienced); associate professor (year 8 -13); full professor (year 8-13, and beyond).
Group 2	Tenure-track faculty: Assistant professor (year 1-3 = novice; year 4-7 experienced).
Group 3	Tenured faculty: Associate professor (year 8 -13); full professor (year 11-13, and beyond).
Group 4	Part-time faculty
Group 5	Others

Even though the user outcome survey was distributed to all faculty, it was assumed that not all will complete it; other feedback and data collection queried subsets of participants and content users, such as participants in a particular webinar. Purposeful sampling was used to select potential interviewees (Patton, 2009; Creswell, 2009). For example, a faculty who hosted a webinar was interviewed to learn details about their experience. In summary, the sample of

this population and its subgroups were random in size and were complemented by purposeful sampling for the interviews as faculty availability allowed.

Instrumentation

This study was designed as a concurrent transformative mixed methods study, using embedded strategy (Creswell, 2009). This means the study combined elements of the pragmatic, the advocacy, and participatory worldviews because it should lead to an understanding of the researcher's theories that faculty needed professional development but lack resources, time, and motivation and that they can be aided through the web-based platform. As such, the study explored if faculty engaged with the web-based platform, probed if they found it helpful, and assessed if it supported their learning and teaching. Furthermore, the study was considered participatory since the researcher is also a faculty member at the site and not only sourced content for the platform, but also actively took part in its forms of use (Creswell, 2009; McEwan & McEwan, 2003). This action-research is change oriented because the goal was to translate research findings into the continued improvement of the platform, and therewith the professional growth of faculty (Creswell, 2009; McEwan & McEwan, 2003; Patton, 2002) (Figure 3.1).

Figure 3.1

Study Design

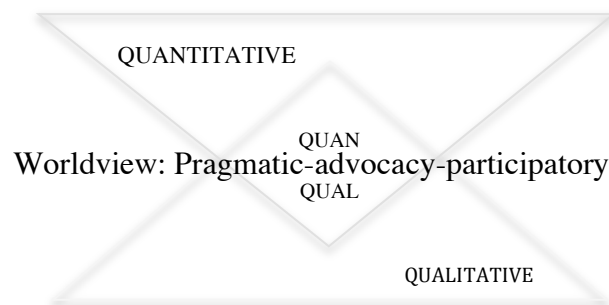


Figure 3.1 Concurrent transformational design. Embedded qualitative open-ended questions in quantifiable survey, interviews and observations.

Throughout the semester, feedback about the usefulness and effectiveness of selected FDF items was collected via brief built-in surveys, discussion board use, and other forms of observations, such as emailed comments, questions or informal conversations. This continuous informant feedback contributed to the credibility and validity of the study outcomes (Onwuegbuzie & Leech, 2007). It also provided usage and usefulness indicators that were confirmed by the more comprehensive user outcome survey at the end of the study period.

The brief webinar follow-up and user-outcome surveys were distributed via email and queried closed questions using Likert scales, eliciting quantitative information; concurrently, these were supported by qualitative open-ended questions. Likert scales are a widely used self-report tool that seeks to query attitudes, opinions, and application use (Robinson, Kurpius & Stafford, 2006; Miller, Lin & Gronlund, 2009). The quantifiable questions were deductive to test the theory at hand, while the open-ended questions were inductive and provided supportive and deeper insights into faculty needs, as well as identified potential themes that informed future development of the platform.

The user-outcome survey questions (Appendix A) were designed to represent the construct variables shown in Table 3.2, most of them repeatedly, to provide and maximize construct and face validity (Hardesty & Bearden, 2004; Trochim, 2006).

Table 3.2

Construct Variables of Faculty Engagement With the FDF

Variable	Description
Motivation	Awareness of necessity to make an active choice, persist in its execution, and the willingness to learn new things.
Reflection	Realization of importance of reflection for self-growth and to develop consideration for student learners.
Double-loop learning	Necessity to explore root causes of problems and reflect on and revise perceptions and attitudes towards self and others (peers, students).
Attribution	Influence of faculty's locus of control. External: importance of feeling valued in environment and attributing behaviors accordingly; internal level of ability assumption.
Goal orientation	Identification of goal emphasis and awareness of and alignment with departmental and school goals.
Culture	Realizing culture as shared history, values, goals, beliefs, and work processes of a specific group.
Pedagogy	Knowledge of learning theories and instructional methods, awareness of learners' learning style, importance of learning objectives and outcomes, etc., to apply in curriculum.
Universal Design	Learning about and applying multiple means of instruction.
Creativity	Understanding the concept of creativity and creative thinking and its importance in today's world and in teaching approaches. Distinguishing between divergent and convergent thinking.
Innovation	Translating creative thought into instructional method and content.
Technology	Learning with and about available technology and their classroom applications.

To demonstrate the survey's face validity and how variables were embedded and queried, it is helpful to deconstruct one survey question and response as an example. Survey question seven (Q7) will serve this purpose. It asked: "Since using the FDF, are you more aware of your

students' learning styles and needs than previously?" The question's variables were attribution, reflection, and pedagogy. Respondents answered on a scale from 1 (*Not at All*) to 5 (*To a Great Extent*). A sample response that indicates *To a Large Extent* can be interpreted as follows: Being more aware implies that the respondent must reflect on learning styles. This reflection, however, includes the realization and a degree of an understanding of the existence of different learning styles, what they are, and how the faculty has to address them in order to meet the student's learning needs. Understanding learning styles is an essential element of pedagogy. Further, an increased awareness of learning styles will contribute to positive attribution because the faculty experiences a heightened ability assumption when interacting with students. This supports the faculty's internal locus of control (feeling enabled), and should translate to their external locus of control (better classroom management). In turn, experiencing these feelings leads to stabilizing or increasing self-efficacy and feeling a worthy member of the culture the faculty is operating in (Klassen & Chiu, 2010; Weiner, 2010).

Embedding the variables in this way into the survey questions was an audience appropriate approach that served the study well. Face validity stabilizes if respondents with similar backgrounds take the survey (Nevo, 1985). The sample population, business school faculty, shares a common vocabulary by the nature of their occupation and disciplines within their particular school environment or culture. Follow-up interviews further confirmed that faculty understood the questions in a similar way or did not interpret them differently, thus maximizing the survey's construct and face validity.

Research outcomes also informed future improvements for the FDF. Table B1 (Appendix B) shows the construct variables in relation to the research questions and their respective sub-questions. Table B2 (Appendix B) sampled how overarching constructs or

themes related to the research questions and to selected FDF modules. Both tables identified if data was derived quantitatively or qualitatively.

As is common practice in product research and development, this study's instruments were based on a conceptual framework to provide a thorough evaluation that satisfied the criteria of validity (Clark & Estes, 2008). Kirkpatrick's (2006) four-level evaluation system builds the foundation for developing all measurement tools to assess if presented processes were worthwhile, if users liked the FDF and if it furthered their engagement with presented materials, or indicated where potential adaptations are necessary. In detail, Kirkpatrick's four-level evaluation system looks at the reaction (Level One), learning (Level Two), behavior/transfer (Level Three), and results (Level Four). While the first two levels primarily concern the development phase (Level One: Are the participants motivated? Do they like it? Level Two: Is the system in place effective? Do they participate and learn?), the latter two could be applied to continue evaluation of the FDF once faculty has begun using it (Level Three: Will faculty transfer, or plan to apply, any of the presented concepts? Level Four: Is the usage of the FDF contributing to enhancing faculty development? What impact does the FDF have?) (Clark & Estes, 2008). Kirkpatrick's system dovetails well with Guba's (1981) trustworthiness criteria: namely, the data's credibility (Is it believable?); transferability (Can it inform another setting?); dependability (Can data be tracked and is it the method of collection logic?); and confirmability (Can data be traced back to its original source?).

Most importantly, the varied methods of data collection established data triangulation. This was particularly important since the main instrument (the user outcome survey) was developed for this study specifically and had face validity but did not have recognized reliability or validity. However, triangulation supported construct validity (concepts were measured),

content validity (survey measured content it was intended to measure), and concurrent validity (quantitative results concurred with qualitative results) (Creswell, 2009). Further, triangulation reduced the possibility of erroneous interpretation of both quantitative and qualitative data and showed sufficient support for the hypothesis at hand (Onwuegbuzie & Leech, 2007).

In summary, this section established the methods of the study's instrumentation, its conceptual framework and how it related to the research questions. Since this research was action-oriented, the author also closely monitored faculty interaction with the platform.

Data Collection and Length of Study

This section briefly describes additional data collection specifics for this study. Information was collected throughout the fall semester and at the start of the spring term. At the start of the fall semester, an invitation to visit the FDF was sent to all faculty ($N=348$) and was reinforced throughout the semester whenever new content was added, or when topics were added to the discussion board. Follow-up mini surveys to webinars were sent at the end of each one, and the researcher responded to user inquiries on an ongoing basis via email and in person. Primarily, survey questions were constructed with five-point Likert scales when using adjectives (Meltzoff, 2010). Some questions had additional weighing to be entered on an additional scale of importance. Further, open-ended questions were added. The survey was distributed to faculty via Qualtrics. Figure 3.2 provides an overview of the study period.

Figure 3.2

Data Collection and Length of Study Overview

Fall Semester 2012 to Spring Semester 2013 (September 2012 to January 2013)				Spring Semester 2013
Early-September	Mid-October	Early-December	January 2013	Data Analysis Results Discussion
Continuous site usage monitoring and observations				
User Feedback		End-of-Study Outcome Survey	Interviews	

Because of workload and time constraints, the time-window to respond to the end-of-study survey needed to be wide enough and appropriate for its length. Accordingly, the survey was sent out during study days, between the end of classes and beginning of finals, which provided such time-window for faculty. The survey remained open over the semester break, and one final reminder was sent at the start of the new term. In addition, derived from the information value of the survey responses, a purposeful sample of faculty participated in survey follow-up interviews providing additional supportive data. Data for discussion boards could only be included in the form of access numbers, since participation was too low to be meaningful.

Demographic questions in the user outcome end-of-study survey only asked faculty to identify their group (see Table 3.1). Frequencies were derived through research questions 1.1 and 1.2 as well as through user reports generated the site’s software. Tables B1 and B2 show the variables and type of analysis for research questions and for sample FDF content modules (Appendix B). As mentioned under Instrumentation, selected interviews were conducted for breadth and depth.

In summary, data collection was embedded and concurrent. The survey response rate as well as the platform usage indicators emerging themes necessitated follow-up interviews to the

survey. All responses were reported anonymously. The Non-Human Subjects Research Application (NHSR) for the study was approved by the institution's IRB.

Data Analysis

The purpose of this study, in greater detail, was to (a) investigate faculty engagement with a newly introduced web-based platform, (b) assess how and if it leads to increased interest in pedagogy, approaches to teaching and curriculum design, an understanding of UD, (c) determine if the module succeeds to augment and foster creativity and innovation in faculty for their benefit, and (d) to query if faculty will be encouraged to develop and apply strategies that will prepare their student population for challenges in the 21st century workplace.

The first question in the end-of-study users outcome survey queried faculty's subgroup employment status (as explained in Instrumentation) to distinguish usage patterns of the FDF and establish potential differences in development needs by subgroup. As predicted, the groups differed in sample size for the main survey (assuming that not every faculty will respond each survey), and more non-tenure track faculty responded; arguably, because their first obligation is teaching, whereas tenure-track or tenured faculty focus on research.

To analyze the how and the why behind the scaled, closed-ended questions, those quantified results were compared to the qualitative data derived from open-ended survey questions, from interviews for which a coding schema was developed, as well as observations of faculty issues in relation to the site's technology its limitations (McEwan & McEwan, 2003). This triangulation added to the validity and legitimation of the study's findings because certain results emerged in open-ended as well as in closed-ended questions and was also supported by the description of observations (Creswell, 2009; Patton, 2009). Any significant conflicts

between the quantitative and qualitative responses did not arise and thus did not need to be interpreted (Patton, 2009).

Summary

This chapter explained the methodology of this study. It established the sample population, the site of investigation, and the instrumentation. Further methods of data collection and analysis were introduced. This research was conducted in the form of a mixed-methods study. The results are presented Chapter Four and discussed in Chapter Five, where the interpretation of the results relate back to the theories and the research that were established in Chapter Two.

CHAPTER FOUR: RESULTS

The purpose of this study was to explore if an online forum for faculty's professional development (FDF) can be an effective and acceptable tool to support their efforts in terms of teaching and learning. Online access should provide faculty just-in-time access to materials such as information about learning theories, teaching strategies, and instructional technologies because the pressures of their occupation might prevent them from participating in other institutional brick and mortar workshops. Thus, the FDF features materials with a focus on business school faculty, aiming to contribute to foster their motivation and engagement with issues about teaching and learning and also to provoke them to change or further develop their curricula in creative and innovative ways. Lastly, the web-based module and its webinars intended to give faculty an opportunity to use and learn about instructional technology.

The study looked at how faculty responded to the site. It investigated if and how the module succeeded in providing an environment that motivated faculty to participate in online development to learn about pedagogical concepts and potentially rethink their teaching approaches to provide equitable and engaging learning environments for students. Accordingly, the following research question and its supporting questions were explored:

1. To what extent did the web-based development platform provide a universally accessible and acceptable source that effectively motivated faculty to engage in professional development?
 - 1.1 To what extent did faculty use the web-based platform?
 - 1.2 To what extent did faculty indicate interest in further learning about issues in instruction?

1.3 To what extent was the web-based development platform effective in exposing faculty to multiple means of learning and instruction, such as universal design in learning and instruction?

1.4 To what extent was the web-based platform effective in augmenting or fostering faculty creativity for curriculum innovation, such as project-based learning or using instructional technology?

1.5 To what extent did faculty engage in thought exchange with peers on this platform?

This descriptive study used both quantitative and qualitative data collection. This chapter presents the results in a qualitative way.

Context

The following context about the FDF is important to understand the results. The site's launch was announced to all school faculty (regardless of part- or full-time) via email coming from a vice dean's office just before the start of the fall term. To attract faculty to visit the site, content valuable for the start of the semester, such as materials to support a successful first day of class, was highlighted in the announcement. Post launch, weekly new content was added and announcements for these items automatically posted to the school's internal Internet news portal, from which faculty can link to the FDF. The researcher considered this announcement feature the most adequate way to inform faculty to avoid overwhelming them with email and to reserve the email option for informing faculty about participatory events. Accordingly, a month after the launch, in late September, three FDF mid-semester webinars were announced via email to all faculty. This means that in the month of October weekly email announcements that alerted to the FDF went to all faculty. Furthermore, at the end of October, the vice dean's office sent out an additional announcement that the FDF was now accessible directly also through a link on the

school's main website. In other words, by the end of October faculty had received 11 direct emails regarding the FDF in addition to the content item announcements on the school's news portal.

The invitation to participate in the survey was sent out by the vice dean's office during study days in mid-December, which offered a time-window for faculty, and should yield a high response rate. To further incentivize faculty to take the survey, the message also included an announcement for two webinars to be held early January to stir curiosity in visiting the FDF.

In summary, site launch and study start coincided. Multiple announcements about the FDF to all faculty aimed to create awareness and create interest. This context helps explain faculty usage patterns reported in the quantitative and qualitative results below.

Population and Sample

At the end of the fall semester 2012, during study days, the user survey (Appendix A) was sent out to all, or 100%, of the school's faculty, regardless of if they had used the FDF. This equaled a total of 348, or 248 full-time (tenured, tenure-track, non-tenure track) and 100 part-time faculty. The survey's distribution was strategically timed to coincide with so-called study days, which provide a time-window for faculty between the end of classes and the start of finals and should potentially yield a significant response rate. Twenty-seven responses ($n=27$) were collected via the survey, which equaled 7.75% of the total population. This sample of a population that shares specific characteristics, such as all being members of the same professional community, can be regarded as significantly high when comparing it, for example, to the survey rationale and practices of the Gallup organization, a world-renowned opinion and behavior research institution (Gallup, 2010). They use a random sample of 1,000 adults (meaning 18 years and over) to represent the 235 million United States adult population, as

counted by the United States Census Bureau in 2010 (Howden & Meyer, 2011). This calculates to a 0.000425% sample of the United States adult population, or a sample to population ratio of 1:235,000, whereas this study's sample to population ratio is 1:13.

In addition, even though the announcement was sent to a population of 348, it could not be determined how many of those were actually active, meaning some survey recipients might be retired, away on sabbatical, or not currently teaching (for example, part-time faculty is kept on the distribution list, even though they might teach only every other semester). A conservative estimate could reduce the population to about 300, which would reflect a participation rate of 9%.

The distribution of survey participants led to a purposeful sampling of six interviewees: one tenure-track, four non-tenure track (two senior, and two junior in rank), and one part-time faculty.

Survey

In the following, the findings of the survey will be presented as they align with the research questions. Quantitative are followed by qualitative results. Accordingly, the main survey results are presented first, followed by the site usage data. The main trends that emerged from the survey results were used as basis for interview questions to seek further support for the main survey findings. The interview outcomes provided further insights to the research questions. Finally, limited observations about faculty in relation to instructional technology usage further triangulated the data, supporting its validity.

Because of the site's uniqueness, the researcher did not rely on existing instruments, but developed the questionnaire to explore its usage and effectiveness. The survey questions were composed to query all variables to support construct and face validity (see Chapter Three and

Appendix A). The survey included 25 questions (Q) total, of which 20 were quantitative, four open-ended, and one demographic. Accordingly, the first question queried a faculty's position and the second question asked if the participants had accessed the FDF or not. Fifteen of the quantitative research questions used five-point Likert scales. Possible answer choices for questions ranged from do not use to very useful, not at all to a great extent, or strongly disagree to strongly agree. Two questions were multiple-choice (mark all that apply), four solicited open-ended responses, and three queried frequencies of site access or attendance of events.

Survey Results

Research question 1 (RQ1) asked, "To what extent will the web-based development platform provide a universally accessible and acceptable source that effectively motivates faculty to engage in professional development?" This comprehensive question included a look at the qualities of the sample, such as faculty position, and number of participants per group to show who accessed the FDF, which in turn indicated by whom it was accepted. Table 4.1 shows non-tenure track and adjunct faculty (who are usually teaching faculty) were the majority of survey takers (67%), which proposed that the site is more attractive to teaching faculty; it also makes clear that of the 27 ($n=27$) respondents actually 13 (48%) had used the FDF.

Table 4.1

Faculty Positions, Number of Respondents, and Site Usage

Position	Number of Respondents	Percent	Used FDF	Did Not Use FDF
Non-tenure track	14	52%	7	7
Tenure-track	4	15%	2	2
Tenured	4	15%	2	2
Adjunct	4	15%	2	2
Other	1	4%	-	1
TOTAL	27	100%	13	14

As a comparison, the actual number of unique faculty who used the site averaged at 49 per month and was higher than the number of FDF users who participated in the survey (Table 4.2).

Table 4.2

Unique Faculty Site Users

Month	Unique Faculty
September	32
October	51
November	47
December	64
Monthly Average	49

Note. Source: Site usage reports. Unique users were identified by user name.

Assuming that 13 of 49 faculty responded to the survey, the response rate calculated at 26.5% of 49, or 3.73% of the total population ($N=348$). Eleven of 13 users reported their frequency of FDF access with seven reporting visiting the FDF more than once a month. This access pattern appeared reasonable since the FDF is not a daily news site. Table 4.3 shows faculty users' access patterns.

Table 4.3

User Access Frequencies of Survey Participant Faculty

Frequency	Participants
Less than once a month	4
Once a month	2
2-3 Times a month	3
Once a week	2
2-3 Times a week	0
Daily	0
Total Participants	11

Participants who identified as non-users in survey Q2 were prompted to indicate why they did not use the FDF. Sixty percent of the non-users reported time constraints, which confirmed the barriers to faculty development and workload issues outlined in the literature review (e.g., Ambrose, Huston, & Norman, 2005; Burke & Rau, 2005; Gappa, 2008; Jacob & Winslow, 2004; Kezar & Lester, 2009; Sorcinelli, 2007). Further, as interviewees in this study also conveyed, email invitations or announcements quickly push out of view if they are not of concrete immediate interest, which helped explain that 47% of the non-users claimed not to be aware of the FDF, despite frequent emails about the FDF (Table 4.4).

Table 4.4

Faculty Reasons for Not Using the FDF

Reasons for not Using	Number of Responses	%
I am confident in my teaching approaches	4	27%
I am well-versed in issues of student learning	1	7%
I have not had time	9	60%
I did not teach this semester	3	20%
I had trouble accessing the FDF	0	0%
I was not aware of the FDF	7	47%
Other (please indicate)	2	13%
Reply 1: Used my own survey [response unclear]		
Reply 2: Just beginning to be made aware of it.		

Further, since site usage was necessary in order to answer the site content questions, non-users were only prompted to add an open-ended comment and then end the survey. Users, on the other hand, were prompted to complete all survey questions before adding an open-ended comment, in their case particularly to see if they had any suggestions for improvement. The non-user responses summarized the overall issues that again pointed back to faculty's time limitations, or a wish for more administrative guidance. One survey participant also indicated an area of

improvement highlighting a potential problem with how the site is branded or presented. These responses were critical and supported the overall effectiveness and acceptance of the site in that it motivated faculty to reflect and articulate their concerns. Table 4.5 displays the answers of users and non-users.

Table 4.5

Users and Non-Users Impressions or Suggestions for FDF Improvement (RQ1)

Non-User	User
R1: The concept is fantastic. Wish I felt like I had time.	R6: The site generally looks very comprehensive. I look forward to examining the resources more carefully after I get my grades in for the semester and will be able to provide more specific feedback at that time.
R2: Not familiar with it.	I appreciate the extensive section on dealing with exam security issues. It may be useful to add material on plagiarism in papers and other assignments.
R3: I will start taking FDF seriously, partly as a result of this survey.	
R4: Do not have any as yet as I have not accessed it but will in the coming semester.	
R5: Until this survey, I had no idea that some of the things I did or explored were somehow connected to something called FDF. In fact, I had to look it up to figure out what it was. So FDF as a concept is very, very far down the list in terms of brand recognition. I had no idea, for example, that the webinars I participated in (and thought quite good) had anything at all to do with something called FDF.	R7: There needs to be a more coherent plan for all of our courses starting with what it is we're trying to teach at the School level, then department level, and finally individual course level. The FDF might support that if the plan was in place first and then materials were posted relevant to the various parts of the plan. As it is now, it is largely a voluntary system with each faculty member given the maximum flexibility to design any content they want for their course once the course description is approved. To my knowledge, there's no feedback look to see if what was approved is currently being taught or how multiple sections of the same course are similar or different beyond some vague guidelines. [points to a different issue]

Note. R=Response

To examine the underpinnings of RQ1, five sub-questions explored the if and how of the FDF's potential success in furthering the elements of faculty development expansion needs established in Chapter Two. In detail, they queried indicators of usage, usefulness and effectiveness of content in that faculty might show motivation to reflect on their teaching and potentially implement new ideas and processes.

Research question 1.1, "To what extent will faculty use the web-based platform?" probed the prerequisite for any other exploration of FDF content application. Interestingly, the survey question about the overall assessment of the FDF presented higher means than the more detailed questions that addressed specific content areas like instructional design or creativity. This can be due to the site's short run time. Faculty seemed to embrace the concept of the FDF and the information it offers, but had no opportunity yet to fully explore it. Table 4.6 shows the overall assessments of the FDF.

Table 4.6

Overall Assessments of the FDF (RQ1)

Survey Statement	Mean	(SD)
The FDF supports creativity in developing course content.	4.18	(0.75)
The FDF supports innovativeness in instructional approaches.	4.00	(0.77)
The FDF is a valuable tool in supporting professional growth.	4.27	(0.90)
The FDF supports a culture of learning.	4.36	(0.67)
The FDF supports community building among faculty.	4.27	(0.79)

Note. Scale = 1-Strongly Disagree to 5-Strongly Agree

Accordingly, the results for overall usefulness of content sections showed a relatively high mean ($M=3.64$) for links to external content, or instructional videos, and only a moderate mean ($M=3.18$) for content pages about subject areas. Webinars, on the other hand, which provided a space for thought exchange, were considered useful, and allowing first insights into RQ1.5 or if the platform engaged faculty in peer exchange (Table 4.7).

Table 4.7

Overall Usefulness of Content Sections (R.1, 1.1)

FDF Content Sections	Mean	(SD)
Content pages about subject areas (e.g., Instructional Design)	3.18	(1.47)
Links to resources (e.g., websites, videos)	3.64	(1.50)
Announcement features (RSS)	3.36	(1.63)
Webinars	3.36	(1.36)
Discussion board	2.27	(1.19)

Note. Scale = 1-Do Not Use to 5-Very Useful

Of the content areas, however, faculty selected Instructional Design the most (Table 4.8). This indicated that faculty is primarily interested in direct teaching approaches for their classrooms, but exploring underlying theories is of secondary concern (Clark et al., 2008).

Table 4.8

Usefulness of Content Sections About Teaching and Learning (RQ1, 1.1, 1.2, 1.3)

FDF Content Sections	Mean	(SD)
Instructional design (e.g., learning objectives, multiple means of instruction)	3.82	(1.17)
Learning theories (e.g., student goal orientation)	3.36	(1.29)
Online learning	3.36	(1.29)
Technologies to enhance instruction and learning	3.36	(1.36)
Teaching ethics in business	3.27	(1.56)
Teaching critical thinking	3.18	(1.60)
Information about creativity and creative thinking	3.18	(1.54)
Teaching the Millennial Generation	3.27	(1.62)
Templates, Guidelines, and Syllabi	3.00	(1.48)
Other [not specified]	1.67	(1.15)

Note. Scale = 1-Do Not Use to 5-Very Useful

Considering Kirkpatrick's (2006) four-level evaluation, these overall responses as well as the responses regarding the usefulness of the site and its content areas satisfied the first two levels positively, meaning overall the site was accepted and valued. The site supported a culture of learning, and faculty found it *Somewhat Useful* with a tendency to *Useful*. Webinars provided a forum for thought exchange; however, the discussion board was not valued highly, or used. Of the content areas the highest mean reflected that issues of instructional design were the most sought after. The means of the usefulness assessments showed that faculty realized their school's support for professional development through the FDF. According to Weiner (2010), This positive attribution to an external cause strengthens faculty feeling valued, which, in turn, leads to higher motivation. Survey questions six through sixteen corresponded primarily to the following three research sub-questions: "To what extent did faculty indicate interest in further learning about issues in instruction?" (RQ1.2); "To what extent is the web-based development platform effective in exposing faculty to multiple means of learning and instruction, such as universal design in learning and instruction?" (RQ1.3); and, "To what extent is the web-based platform effective in augmenting or fostering faculty creativity for curriculum innovation, such as project-based learning, or using instructional technology?" (RQ1.4). They probed faculty more intricately about issues, methods, and processes of teaching and learning or if transfer of learning contents took place and if it led to any results. These questions also provided insights into the variables of motivation (reflection, double-loop learning, attribution, goal orientation), pedagogy (teaching and learning), creativity, innovation, universal design, and technology (Table 4.9).

Table 4.9

FDF's Effectiveness Promoting Interest and Creativity in Instruction (RQ1.2, 1.3, 1.4)

Survey Questions ^a Scale: 1 (<i>Not at All</i>) to 5 (<i>To a Great Extent</i>)	Variables	Mean	(SD)
<i>Since using the FDF...</i>			
(RQ1.2/Q6) Has knowledge of teaching and learning methods and processes increased (e.g., understanding of instructional methods, learning theories)?	Motivation Pedagogy Reflection UD ^b	3.64	(1.21)
(RQ1.2/Q7) Has awareness of your students' learning styles and needs than previously?	Pedagogy Reflection	3.27	(1.19)
(RQ1.3/Q8) Have you changed or are you planning to change teaching approaches in the classroom?	Pedagogy Reflection DLL ^c Goals Creativity	3.09	(1.03)
(RQ1.3/1.4/Q9) If you plan to change existing teaching approaches, or develop new ones, will you include multiple means of instruction (e.g., instructional technologies, "flip-classroom techniques," project/problem-based learning)?	Pedagogy Reflection DLL Goals UD Technology Creativity	3.55	(1.54)
(RQ1.4/Q11) Have you or will you revise the learning objectives for a course?	Pedagogy Goals Creativity Innovation	2.91	(1.38)
(Q12/supplemental) Do you review learning objectives and outcomes with your students?	Pedagogy Reflection	4.55	(0.52)
(RQ1.4/Q13) Since using the FDF, have you modified or introduced new teaching approaches to enhance students' critical thinking skills?	Pedagogy DLL Goals Creativity	3.0	(1.41)
(RQ1.4/Q14) Have you modified or introduced new teaching approaches to enhance students' creative thinking skills?	Innovation Creativity Innovation Goals	2.73	(1.19)
(RQ1.4/Q16) Have you designed or re-designed instructional approaches to support your students' reflection on their learning (e.g., reflective journals)?	Pedagogy Reflection Innovation	2.73	(1.10)

^aSurvey questions (Q) Q6, 7, 8, 9, 11, 12, 13, 14, 16 (Q10, 15, 17 were open ended).

^bUD = Universal Design. ^cDLL=Double-loop Learning.

The higher means ($M=3.64$; $M=3.55$) in Table 4.9 proposed that faculty indeed spent time in browsing and reflecting on content about instructional methods. In other words, the elements of motivation, interest, active choice, and persistence, drove their action (Mayer, 2011). The moderate mean ($M=3.27$) indicated that faculty browsed the FDF materials on instructional design and learning theories and were slightly more aware of learning styles. A positive response to question nine further supported that faculty was prompted to double-loop learning, which is necessary to think through processes such as project based learning, or flip-classroom approaches as emphasized in Chapter Two (Argyris, 1976; Bruton, 2010; Dochy et al., 2005; Karakas, 2010; Kerr & Lloyd, 2008; Morrison & Johnson, 2003). This also indicated that knowledge in those areas increased, or was transferred; however, as the relatively low means ($M=3.09$; $M=3.0$; $M=2.73$; $M=2.73$) showed, faculty might not have applied their deepened or new knowledge in their teaching. In other words, ideas and creative thought might have been nurtured or stimulated in faculty due to exposure to the content materials, but creativity and innovation have not (yet) increased because it will take time to translate new knowledge and ideas into practice. The relatively high mean for in Question 12 cannot be attributed directly to the FDF. Even though the intention was to ask if faculty more explicitly discussed learning objectives and outcomes with their students, presumably, this confirmed it to be common procedure for most.

Survey questions 10, 15, and 17 were open-ended. Of the four responses to Question 10: “Please share any changes or planned changes to your teaching approaches,” three showed indications of reflection and attempt for innovation in the classroom, while one response (R2) clearly echoed the impressions of a senior level faculty. According to Klassen & Chiu (2010), the senior faculty response is not surprising since self-efficacy will stabilize with continued

success (Table 4.10).

Table 4.10

Changes or Planned Changes to Teaching Approaches (RQ1.3, 1.4)

Survey Responses for Survey Question 10

- R1: More on critical thinking, in class exercises, less lecture, more thought to different learners
- R2: I've been teaching at the University level for many years and before that as an executive educator and trainer so I have not felt the need for any of these materials. They seemed geared to the new instructor.
- R3: Moving more to online grading platforms with various technologies like Cengage Now or Connect Plus to flip the classroom into more of a dialogue driven event when face-to-face.
- R4: Still thinking of connections and applications to existing course materials -- but the resources are useful not only as models but to stimulate fresh thinking and come up with new activities, assignments, or approaches on our own.
-

Note. R=Response

Finally, five open-ended responses to Question 15: “Please share the greatest challenges in enhancing students' critical and creative thinking skills,” elaborated on the challenges of infusing students with critical thinking approaches against all odds, such as, “It’s hard to make them think,” or, “They are obsessed with grades.” But these responses did not yield any insights into if the materials on the FDF had made those tasks any easier and do not need to be replicated here. Likewise, responses to Question 17: “Since using the FDF have you or will you experiment with other teaching innovations not noted above?” triggered reflection about innovation, but respondents stipulated that they wanted to be innovative on a continuous basis, regardless of using the FDF or not.

Survey questions 18, 19, and 20 particularly probed for issues about culture, goal orientation, and attribution, and aimed to investigate RQ1.5: “To what extent will faculty engage in thought exchange with peers on this platform?” As established in the literature review, peer

exchange not only is a strong contributor to a positive organizational culture, but also to building a faculty's self-efficacy, which helps them clarifying or promoting professional goals (Clark & Estes 2008; Kaya et al., 2005; Klassen & Chiu, 2010; Schein, 2004). As Table 4.11 shows, notably, the high means of ($M=3.9$; $M=3.64$) indicated that the engagement with the FDF had triggered some conversations or discussion with colleagues, which in turn, supports community building and establishing a culture of teaching and learning necessary to motivate faculty in continued engagement with these issues (Schein, 2004). Concrete or conscious goal setting, on the other hand only yielded a *not sure* ($M=3.09$) response.

Table 4.11

Personal Growth and Colleague Interaction (RQ1.5)

Survey Questions 18, 19, 20	Mean	(SD)
Q18: Since using the FDF, have you set personal goals for professional growth?	3.09	(1.30)
Q19: Does the FDF support exchange among colleagues in issues of teaching and learning (e.g., webinars)?	3.90	(1.20)
Q20: Have you discussed or shared insight gained from the FDF with colleagues; for example, to seek input or collaboration?	3.64	(1.36)

Note. Scale: 1-Not at All to 5-To a Great Extent

Finally, survey question 24 asked faculty to report if and how often they had accessed school and university sites that dealt with teaching and learning, and a few external sites the FDF links to. Table 4.12 shows the access values per site (list is not exclusive, the FDF links to more sites than recorded here).

Table 4.12

Access From FDF to Other Sites

Site	Never	Once a Term	Once a Month	2-3 Times/ Month	Once a Week	2-3 Times/ Week	Daily	Total Hits	Mean
School's mentoring site	4	2	2	3	0	0	0	11	2.36
School's grant resources site	1	4	1	4	1	0	0	11	3.0
School's center for experiential learning	5	1	3	1	0	1	0	11	2.36
University's teaching support site	3	4	3	0	0	0	0	10	2.0
University's teaching with technology site	5	3	2	0	0	0	0	10	1.7
External sites:									
Edudemic	8	0	1	0	1	0	0	10	1.6
External site: Teaching Community	4	3	2	0	1	0	0	10	2.1
External site: e-Learning guild	7	2	1	0	0	0	0	10	1.4

Evidently, the school's own sites received more hits than the university's or external sites, with the site that offers information about grants being the most popular with 10 hits. Arguably, faculty chose to access their own school sites more frequently than other university or external sites, which indicated that school-based development was slightly more meaningful or applicable. This was further supported by faculty's favorable response to the usefulness of school-based webinars ($M=3.36$) (Table 4.7). This trend also emerged from responses to Question 22: "As a result of visiting the FDF, have you attended workshops provided by your school or the wider university community?" Here, five faculty (45%) reported having attended a school event,

compared to one faculty (9%) attending a workshop conducted by another university center (Table 4.13).

Table 4.13

Workshop Attendance as a Result of FDF Visit

Answer	Number of Responses	%
Attended a business school event	5	45%
Attended an event by the university's scholarly technology center	1	9%
Attended an event by the university's teaching excellence center	1	9%
Attended other university event	1	9%
Registered but was unable to attend	2	18%
Was interested, but event(s) did not fit my schedule	5	45%
I do not find workshops very helpful	0	0%
Other reasons for attending/not attending. Please indicate. R1: [empty]		
R2: Topics not relevant to my concerns	3	27%
R3: I don't really do anything 'as a result of' the FDF. It plays a supporting, not determinative, role in my teaching.		

In summary, the survey results provided support that the FDF is effective so far and succeeded in motivating faculty to engage with issues of learning and instruction. FDF Site Usage Reports, as well as the faculty interviews, and user feedback for webinars further supported the results of the survey in relation to the research questions.

Site Usage Reports

The following section will provide selected statistics of site usage, such as number of faculty users overall as well as content page visits. Records were collected on a monthly basis over a period of four months, from late August (post launch) to the end of December. As a comparison benchmark, the data from the start of the new term, or second term the site was used, is also shown, but was outside the study period. The data reflected a trend similar to that rendered through the survey when it comes to answering particularly RQ1: "To what extent will

the web-based development platform provide a universally accessible and acceptable source that effectively motivates faculty to engage in professional development?” RQ1.1: “To what extent will faculty use the web-based platform?” The data proposed that the site’s usage provided an accessible and acceptable platform. As Table 4.14 shows, on average 49 unique faculty accounted for 192 page visits per month, or four visits per faculty (this is similar to the responses of survey participant site users, see Table 4.3). Accordingly, the data suggested that the FDF motivated faculty to repeat visits. However, clearly, these usage and motivation trends are not indicative for any transfer or application of knowledge (Clark & Estes, 2008; Kirkpatrick, 2006).

Table 4.14

Unique Faculty Site Users and Number of Page Visits

Month	Unique Faculty	Total Page Visits	Average Page Visits
September	32	444	14
October	51	120	2
November	47	134	3
December	64	73	1
Monthly Average	49	193	4
January	65	95	162

Note. Source: Site Usage Reports. January added as a benchmark comparison with start of new term.

The FDF site is embedded in the school’s community portal and only permitted users can access the site. The site is not searchable by research engines or their robots. This means that any type of random visits that would embellish these usage reports were excluded. However, the usage reports allowed counting the number of faculty and their visits per month (through analysis of user names). The content page visits were accounted for by content area. The general usage trend revealed in Table 4.15 showed that at launch fewer faculty visited more often, whereas towards the end of the term, more faculty visited less often. While the higher content page visit numbers are indicative of initial browsing, the higher number of faculty accessing the

site towards the end of the semester pointed to increased site recognition and faculty targeting more specific content.

Table 4.15 displays a closer look at the content area usage that corresponded to the areas queried in the survey.

Table 4.15

Number of Page Visits Grouped by Content Areas and Term (RQ1, 1.1, 1.2)

Content Areas (Selected)	Start Term	Midterm		End Term	End Term Mean	Start Term
	Sep	Oct	Nov	Dec	(4 months)	Jan ^a
Pedagogy						
Instructional Design	71	13	6	13	26	13
Learning Theories	55	6	13	5	20	13
Online Learning ^b	-	-	45	18	32	-
Instructional Technologies ^c	60	2	22	0	21	-
Relevant Topics						
Teaching Ethics in Business	53	9	6	10	20	5
Creativity, Critical & Creative Thinking ^d	74	6	5	4	22	24
Teaching the Millennial Generation	49	11	6	3	17	-
Resources						
Templates, Guidelines, and Syllabi	46	9	4	8	17	11
Faculty Resources (Grant Opportunities)	17	8	0	0	6	1
Announcements	17	16	23	12	17	6
Interactive Forums						
Webinars ^e	-	29	0	0	-	16
Discussion Board	2	11	4	0	4	6
TOTAL/month	444	120	134	73	193	95

^aJanuary added for comparison only (start of new term). ^bSection was added in November. ^cDirectly linked to school's internal teaching and technology site as of November. ^dCombined into one FDF content area but queried separately in survey. ^eWebinars were held in October.

The number of page visits displayed in Table 4.15 further confirmed in more detail the general usage trend. Evidently, after the FDF was launched, a surge in initial faculty visits occurred. This first wave and its subsequent drop can be explained by two factors: (a) the site was new and stirred interest, (b) faculty sought inspiration at the start of a new term and still

might have been in the process of designing course sessions and approaches, but will not return to such activities once they finalized their lesson plans. Even though usage dropped in October and November, it stabilized. This can most likely be attributed to a constant flow of announcements about the FDF as content or a new section was added. For example, the FDF webinar series was announced repeatedly in late September and October. At the same time, vice deans initiated and announced a new section about online learning and a comprehensive school syllabi depository. All such announcements always included a special “Visit the FDF” invitation. Two other areas that were not specifically included in the survey received a comparatively high number of hits. On a four-month average, “Current Issues in Higher Education” was accessed 16 times, and “Instructional Videos and Tech Guides” eight times, further supporting the site’s effectiveness and faculty engagement.

In summary, the site usage reports provided quantitative support for the FDF’s accessibility and showed faculty usage primarily explored in Research Questions 1 and 1.1. The usage pattern provided an impression that as more content was added in month two and three coupled with frequent email announcements, faculty awareness and use of the FDF increased mid-semester. A drop of usage at the end of the semester in December, on the other hand, was not surprising.

Interviews

Interviews were an important data collection method to allow deeper, richer insights into understanding the responses collected in the survey (Patton, 2009). The outcomes supported the triangulation of data and the credibility of the study in relation to the research questions. Here, the focus was on expanding insights into how faculty used the FDF, if it had exposed them to new materials, and if they had engaged in thought exchange and/or applied any of the new

insights gained; for example, insights about pedagogy, creativity and innovation, or universal design (UD). The outcomes of the six interviews provided qualitative insights into the FDF's effectiveness. Even though responses were to specific questions, deducted from the survey results, inductive analysis of responses revealed a few selected themes that enriched the quantitative results thus far.

Interviewees

The six interviewees were selected to represent members of each faculty group that had responded to the survey. Except for one tenure-track interviewee, all others were non-tenure track faculty, which mirrored the trend of survey respondents. No tenured faculty was available at the time the interviews had to be scheduled. Table 4.16 represents the selection.

Table 4.16

Faculty Interviewees

Group	Faculty Type	Faculty Label	Years of Experience
Non-tenure track	Assistant professor (years 1-7)	Jack	6
	Associate professors (years 8-13)	Kate, Tim	10, 12
	Full professor (years 13+)	Hans	20
Tenure-track	Assistant professor (years 1-7)	Sally	3.5
Part-time	Adjunct professor	Carol	2

Note. Names are pseudonyms.

In other words, interviewees were at various stages in their careers and from different disciplines within the school (accounting, marketing, organizational behavior, communication). One interviewee (Tim) had conducted a webinar. Lastly, all interviews took place in person in the respective faculty's office in January.

Interview Questions

Interview questions were derived deductively from the survey results; particularly, responses that yielded means above ($M=3.3$) deserved deeper inquiry, because these showed support of the hypothesis that school-based online faculty development can be effective. For example, the survey results had proposed that faculty used the content about instructional design and learning theories (Table 4.7), which indicated that they were motivated to enhance their knowledge in pedagogy. Another interesting aspect was that faculty had responded that they thought the FDF supported exchange among colleagues about topics in teaching and learning, with webinars providing one way of doing so. Since these aspects are primary indicators of the FDF's effectiveness, they deserved deeper investigation.

Interview Outcomes

The interviews supported quantitative results. They showed that faculty engaged with the FDF and reflected on its contents. Responses also pointed to a need for institutional guidance. To some extent themes overlapped and informed more than one research question (RQ), indicated in parenthesis after each heading.

Theme one: Interest to increase knowledge in pedagogy (RQ1.2). At the start of the interview, participants were asked: “What is your experience in relation to teaching—do you have a background in pedagogy, and what is your interest in it?”

None of the interviewees claimed a background in pedagogy or any type of formal teaching training. Instead Hans, for example, relied on “having taught for a number of years” and Sally came from a family of educators. However, all had participated in some form of professional development seminar over the years. Two faculty, Hans and Carol, reported having taught at teaching colleges before, such as a community college. Sally, the tenure-track faculty,

replied to take teaching seriously and elaborated that she thought teaching has a lot to do with personality, knowledge and enthusiasm about the subject matter; however, the main focus of her job description was research. She also indicated that teaching had stigma among her peers, because a focus on teaching might divert from a mandate on research. Nevertheless, all interviewees conveyed an understanding of importance pedagogy and a curiosity about it. Jack pointed to finding new approaches to teach today's youth, while Tim emphasized a need to better understand how teaching graduate students differs from teaching undergraduates.

In summary, these responses supported the survey results that indicated an increase in understanding of issues in pedagogy. They showed the faculty interest in learning about pedagogy that had been established in the literature review (e.g., Gappa, 2008; Kaya et al., 2005).

Theme two: Exposure to content showed interest and motivation (RQ1.2/1.3).

Interviewees were asked, "Did any of the content inspire or motivate you to research and learn more about pedagogy to understand your current practices or make changes?"

This question addressed exposure to content, its usefulness, and faculty motivation. Five interviewees reported that they had looked at the information about learning objectives, instructional design, and learning theories, which further supported a need-based interest in the subject matter. Jack commented that he had investigated the content about the Millennium generation. His response also revealed that he explored selected "Tech Guides" featured on the FDF. All others reported that they enjoyed browsing and discovering content that might be helpful to their teaching endeavors. The topics they named spanned from materials on ethics to those on technology. Kate also pointed out that she welcomed the announcements that pop up through the school's internal community platform whenever new content is posted. Another aspect, according to Hans, was that a recent program revision had necessitated a more

pedagogical development approach, which prompted him to visit the site. Hans had been looking for materials on the FDF to provide new and junior faculty with teaching tips. Carol, the part-time faculty, elaborated on her ad-hoc access on a need basis. For example, she said, “I have a diagnostic that they [my students] have to write (...) but my cases are too long. And I go to the FDF and there are brief video cases from [name omitted] business school. There are also ethics cases (...).”

These various trigger points for faculty for accessing the FDF exemplified how their development needs differ, and that truly, one size does not fit all, further confirming this study’s hypothesis established in Chapter 1.

In terms of making changes in their teaching, it became clear that implementing change is a longer process. For example, Kate claimed:

I probably wouldn’t say that I made specific steps to change something in the classroom, but I find the FDF very useful in sharpening my way of thinking about how I teach and what I do in the classroom (...) it [the FDF] changed the way I think about teaching.

And Carol posited, “It’s a resource you use on your own motivation (...) if I don’t know how to do something [in the classroom], I know to go to the FDF to see if there’s something to help me.” The other interviewees made similar comments.

In summary, this again proposed that the brevity of the FDF’s existence could not confirm Kirkpatrick’s (2006) Level Four (i.e., outcomes of engagement with FDF not yet noticeable), but faculty had started to think about their teaching approaches and contemplated potential changes (i.e., they started transferring content), which corresponds with Kirkpatrick’s Level Three. Even more importantly, these replies proposed that faculty was actively reflecting on their practices, which also became evident in replies to the next question.

Theme three: Exposure to content spurred reflection (RQ1.3/1.4). In an attempt to investigate the FDF content areas further, but also to probe respondents' knowledge about universal design (UD), they were asked, "Do you think the FDF can be effective in inspiring faculty to innovative and creative teaching approaches, such as using technologies, project-based learning and considering the principles of universal design?"

Even though most could not point their finger to a particular content item in the categories of creativity, or UD, the tenor was that browsing had made them think about what they do in their classes, or how they responded to or involved students.

Only Tim had investigated the materials about UD and found information about project-based learning helpful. All interviewees related to the UD concepts when prompted, but did not feel they needed a framework for what they understood as a learner-centered approach. This can be explained with a strong emphasis on learner-centered teaching at the school, which is necessitated also by an extremely diverse student population (including a high percentage of international students). Interestingly, Sally, the tenure-track interviewee, reported that she actually asked students if they knew what type of learner they were. However, she said: "I will investigate the materials on UD hoping to be able to send students more prescriptive information about how they should approach a task."

In summary, responses noted under Theme Two and Three ("Exposure to content showed interest and motivation"; "Exposure to content spurred reflection") confirmed that faculty was actively engaged in reflection through the materials on the FDF. This type of reflection is fundamental to fostering intrinsic motivation, generative and creative thinking, and double-loop learning (e.g., Argyris, 1976; Bolman & Deal, 2008; Bensimon, 2005; Smith 2011). In addition, the engagement with the FDF allowed faculty to learn about issues they might not openly admit

to or seek out otherwise, but exposure through repeated and continued visits ultimately should lead to higher creativity in faculty (Hiser, 2008).

Theme four: Engagement nurtured culture and community (RQ1.5). The survey results pointed to the fact that faculty thought the FDF promoted a culture of learning and a community building among their peers (Table 4.5). Consequently, participants were asked: “Did the material on the FDF trigger that you personally engaged in conversations about teaching and learning with others?”

Interviewees Tim and Hans had participated in one of the webinars, and Tim had been leading one. He was particularly enthusiastic and said that, following the webinar, he “had more contact with school faculty outside of my department (...) the common denominator is that we all share the same students (...) I think it [the FDF] has spurred an interest.” Tim and Hans connected this participation to continued conversations with peers beyond the webinars, or its particular content. Hans also observed that the webinar offered an opportunity to meet with faculty from different departments discussing a content issue, like teaching ethics, and learn about their perspectives about approaching such topic. Hans said:

I think learned some new things about how other faculty, who had a similar interest in increasing the emphasis on ethics in the curriculum, how they were going about doing that in their particular classrooms (...) so for me to encounter or learn about how he [another faculty] might approach ethics, but not necessarily in the context of a communications class, was interesting and valuable for me.

Other interviewees commented that they engaged with peers for different reasons. For example, two were course coordinators, which by the nature of the task leads to discussions about teaching issues but they now could point faculty to the FDF. Carol, the part-time faculty,

related that she frequently engages with her mentor and her part-time colleagues, and that these conversations had increased because topics she saw on the FDF gave her “something to talk about.” And interviewee Kate made the following statement:

I think it creates a teaching community, not necessarily a community of colleagues.

Given the fact that we have tenure-track faculty who are primarily doing research and yet there is a huge pressure on them to teach while in the classroom. I think that this online presence helps to create the teaching community that is not necessarily a social group but it's a more mental unified framework that we might all begin to share.

This beginning of sharing, or in the case Carol, increase in sharing, however, is essential in creating a common culture and community. Even if conversations happened not because of the FDF, it seemed that the FDF, in particular the webinars, contributed to building a common understanding that issues in teaching are important and valuable. In agreement with the literature, this must strengthen faculty's self-efficacy as well as it positively impacts attribution since peers feel to be part of a community that shares these values (Weiner, 2010). Heightened self-efficacy and arguably positive attributions about their peer community transposes into the metaphor of the classroom, in which the professor assumes peer support that allows him or her to experiment and, for example, to become facilitator rather than be the dominating lecturer (Achinstein & Barrett, 2004). In addition, as Tim reported, insights like seeing how faculty in disciplines differed from their own approach of a related topic can lead to a better understanding of multi-layered student perspectives, and to tailoring teaching methods accordingly.

In summary, the responses supported the impression that engagement with the FDF contributed to a strengthening of a sense of community among faculty. This underscored also the importance of shared values to support self-efficacy in faculty.

Theme five: Need for time and institutional support (RQ1). The responses so far had supported the effectiveness of the FDF, showing that broad effects like engagement with content and culture building were emerging. The participants were also asked, “What would be most effective in supporting your teaching efforts?”

This question triggered an unanimous response by all interviewees: “More time.” Generally speaking all interviewees appreciated that the information was available and that they had “earmarked” (Sally) certain content areas to revisit when they had time. Except for Carol, all gave a sweeping testimony that goal setting for and engagement in development was severely hindered by a lack of time. For example, Jack deferred further exploration of pedagogical issues to “The summer, when I get to things.” Kate responded regretfully: “With our workload, I’m barely keeping abreast of what I need to do.” While these answers validated the hypothesized value of the just-in-time aspect that the FDF tried to serve, it was also an indicator of an imbalance between workload and the job requirement to engage in development. At the same time, however, Jack and Hans shared that they could probably “make time” if they felt that they could receive some sort of acknowledgement, or incentive for professional development in teaching by being able to include this with their annual merit reviews or workload projections. Jack mentioned, “There is no place to enter such information”; for example, to include development activities such as workshop participation (no matter if through the FDF, or another workshop), or simply “time spent” with reading materials for the purpose of developing of new course materials or teaching approaches. Hans shared the same concern that development in teaching and instruction was difficult to tie-in with workload projections or the merit review. This seemed to be an issue on a departmental level, since the other participants did not share those concerns. However, what the other participants did share was that they thought some sort

of directive by administration to review and discuss FDF materials would support and increase their use of the site. Kate, for example, commented:

I had a comparison between, uh, the FDF and the [school internal departmental community page (SICP)]. When we started putting documents on the [SICP], which was probably four or five years ago, I absolutely rejected this system. I just would *not* go there. And I would come to our faculty meeting with no faculty agenda because it happened to be posted on [it], and I just didn't want to both and go there and print it myself. And, I have a very different attitude now, primarily because my hand was twisted, to the point—when additional documents that I needed began being posted on the [SICP], so the traffic to the [SICP] was increased through external [leadership] pressures.

This was an indication that even though school leadership supported the FDF and encouraged engagement with professional development in teaching, faculty was looking for an incentive or reward for doing so.

In summary, while a sense of community might strengthen among faculty, these responses indicated disconnect between leadership and faculty goals. As delineated in the literature review, these responses reflected a misalignment of institutional and personal goals that Gappa (2008) and Kaya et al. (2005), among others, investigated and found to be a main reason for lack of faculty engagement.

Theme six: Need for development guides (RQ1, 1.3). Finally, respondents were asked, “How could the FDF be improved?” implying also to solicit comments answering to “What does not work?” Respondents Tim, Kate, Sally, and Carol commented again that they liked the site and were not sure what potential improvements could be. Respondents Jack and Kate suggested

including an index of topics and materials, as well as a guideline for different level faculty to set goals for themselves. For example, a junior faculty should “start with the learning objectives and review syllabi” (Jack), and an advanced faculty should explore “a guide to a successful promotion” (Kate). Kate also proposed to establish a self-assessment tool for faculty to be able to identify which content might be valuable for them based on their prior knowledge. Lastly, Sally suggested, similar to the desire for an index, that the FDF should be searchable—especially, as its depository of content grows. This desire for indexing or a search function again indicated that while some faculty liked browsing, others do not have time or the desire to do so and have a concrete need for specific content. All participants mentioned the webinars again indicating that they would like more topics covered.

In summary, the interview outcomes further substantiated the survey results and the site usage reports. They provided an impression that faculty thought the FDF was an effective and accessible tool for their development needs. It had exposed them to various issues in teaching and learning, as well as it contributed to their sense of a growing community of teaching and learning. However, despite their personal engagement with the platform, they also pointed to a potential impediment for using the FDF due to faculty’s lack of time and institutional incentive to engage in professional development, or lack of articulated learning outcomes for faculty (e.g., Hiser, 2008; Kaya et al., 2005; Kukulska-Hulme, 2012).

Observations: Faculty and Use of FDF Instructional Technology

This section briefly describes and interprets observations about faculty’s use of the site’s technology throughout the semester allowing more insights into RQ1.4 that queried, among others, faculty’s exposure to and use of instructional technology. In addition to the just-in-time argument, and the fact that the school did not have a site dedicated to teaching and learning prior

to the FDF, it also serves to inform faculty about instructional technologies—however, in hopes, too, that using the FDF itself would provide an opportunity for faculty to try web-based learning—in other words, modeling the principles of UD and facilitating accessibility with the help of technology.

Several issues need to be highlighted in regards to faculty participation in webinars and the discussion board and in terms of limitations of the FDF site technology.

Webinars

The concept of webinars was comparatively successful. Even though the participation number was relatively small for each event—between four and nine participants—it should be noted that a higher number (12 to 14) of faculty RSVP'd to the seminars but did not sign-in at the time of the session. Participants communicated in various ways that they liked the webinars (via brief webinar user follow-up surveys, in person and via email to the organizer, on the study's survey, in the interviews, through emails regretting not being able to participate and inquiring about recordings). For example, the brief follow-up surveys to the three webinars during the study-period asked faculty participants on a scale from one (*not valuable*) to five (*very valuable*): “How valuable was this webinar for you?” Faculty participants replied with *valuable* or *very valuable* in all cases. However, since the number of participants was relatively small, such numerical assessment appeared non-relevant. A more significant indicator for success were the short answers to the question, “What would you like to know more about in relation to today's topic?” Here participants revealed that they wanted to know more, or suggested different approaches for the same topic. They also indicated a desire for more webinars on different topics when prompted for future topics. The consensus was that the web events were a great way to interact with peers, and faculty were asking when the next webinar would be scheduled.

None of the webinar presenters had conducted such a session before. Not only did they provide modeling for peers, but they also participated in experiential online learning, even though they might not have labeled it as such. Each presenter met with the organizer for a virtual test-run on the webinar platform. The same was true for some webinar participants. Many were not sure if they could handle the technology and contacted the organizer prior to the session for guidance. One of the interviewees (Tim), who had led a webinar, commented on the technology:

I wouldn't 've been able to pull it off on my own. And I, and I found that, it just—from my perspective, a new-to-me environment of a webinar, that it was much easier for me to try to respond to participant comments and questions that were being raised by virtue of the fact that you [the organizer] were here to take me through it. And I just, uh, got the impression that, even for a sophisticated user, having *two* hosts there, I think lends a lot of support and a lot of confidence to either of them, uh, and so I just thought that that the clinging effect of working together was a very effective way to pull it off (...) I was just struck by the complexity that the multitasking in which you had to engage in order to keep it in real time, in order to keep it a functioning and alive environment.

However, the participants in these events realized quickly how easy to use these technologies are and enjoyed the conversations. The fact that they were conducted on a school basis, arguably also provided a *safe* environment, where glitches were acceptable. During the first webinar, for example, the sound failed for about two minutes. The presenter did not notice that participants were typing in the chat box, “I can't hear.” This disruption, however, was met with patience and the conversation continued when the sound was fixed.

In addition, and in alignment with UD principles, recordings of webinars are available via the FDF. Lastly, as the interview outcomes confirmed, these webinars showed potential also to support a sense of community beyond a faculty's home department, and potentially encourage faculty to use this type of technology for teaching purposes.

Discussion Boards

The site featured discussion boards that invited faculty to share their thoughts on common topics like "student cheating" or "how to get students to read," and an open forum that should have served for anyone to share thoughts, ideas, articles of interest, and so forth. However, despite periodic invitations to participate, faculty did not engage in these discussions. That the discussion board still received hits can be explained with faculty reading the initial entries of one or two persons, or so-called lurking (Preece, Nonnecke, & Andrews, 2003; Schneider, von Krogh, & Jäger, 2012). Presumably, faculty is reluctant to expose their opinion in an environment where, after all, their contribution is published, permanent, and peer reviewed (whereas an oral comment in a webinar appears fleeting), or, possibly, topics were not of concern. Research confirmed not only that about 90% of online community members are passive, but also suggested a variety of reasons for non-participation in discussion boards, among them the desire to remain anonymous, no requirement to post, and the fact that for many browsing suffices (Preece et al, 2003; Schneider et al., 2012). Another reason for the lack of participation might be that the discussion board was not moderated and asynchronous, and no immediate response to a posting could be expected (Carbonaro, King, Taylor, Satzinger, Snart, & Drummond, 2008).

In summary, the webinars provided a small step in engaging faculty, who had reportedly not participated in webinars before, in experiencing instructional technology. The discussion boards, however, did not succeed in the first months of the FDF's existence.

Summary

This chapter delivered the results of this mixed-methods study. They suggested a positive outcome to the research questions. In other words, faculty accepted the school-based online platform for professional development in terms of teaching and learning; it exposed them to content about pedagogy and multiple means of instruction, and engaged faculty in thought exchange with their peers to some extent. Chapter 5 will summarize the findings, discuss its limitations, address how results can further inform faculty development, and, lastly, provide thoughts on how this study can inform future research.

CHAPTER FIVE: DISCUSSION

This chapter discusses the findings of the study, identifies its limitations, suggests implications for practice, and points to future research in faculty development. Triangulation supported construct, content and concurrent validity, and findings agree with and expand on faculty development issues that were established in the problem statement and literature review. The interpretation of results will inform continued expansion of the site as well as research about faculty development.

This study hypothesized that faculty in a business school will be effectively served by an Internet-based professional development platform that is customized to their needs, involves their learning about and use of technology, and provides a creative space for knowledge and idea exchange with peers as well as experts on demand or just-in-time—in other words, when faculty need it or have time to engage in it, and not only when development opportunities are offered through the university, their school, or unit. The purpose of this study was to explore the extent to which an online forum for faculty's professional development (FDF) can succeed as an effective and acceptable tool to support faculty efforts in terms of teaching and learning and provoke them to change or further develop their curricula in creative and innovative ways—ultimately, to better serve the students in today's rapidly changing learning environments. Accordingly, the research questions aimed to assess if a web-based development platform provides a universally accessible and acceptable source that effectively motivates faculty to engage in professional development. In detail, the study queried:

1. To what extent did the web-based development platform provide a universally accessible and acceptable source that effectively motivated faculty to engage in professional development?

- 1.1 To what extent did faculty use the web-based platform?
- 1.2 To what extent did faculty indicate interest in further learning about issues in instruction?
- 1.3 To what extent is the web-based development platform effective in exposing faculty to multiple means of learning and instruction, such as universal design in learning and instruction?
- 1.4 To what extent is the web-based platform effective in augmenting or fostering faculty creativity for curriculum innovation, such as project-based learning or using instructional technology?
- 1.5 To what extent did faculty engage in thought exchange with peers on this platform?

Findings

The study confirms the hypothesis that school-based online faculty development is effective in motivating faculty to engage in professional development. The findings suggest that faculty welcomes the opportunity for online professional development. They show interest in exploring learning theories, creativity, innovation and equitable instruction approaches, and related applicable frameworks. This agrees with findings of other researchers, such as Sorcinelli et al. (2006), that the advantages of deeper knowledge in pedagogy are receiving increased acknowledgment from faculty while staying abreast of developments in their disciplines. Further, the results also pointed to a community building effect of the FDF among faculty. However, at the same time a need for individualized development plans and stronger institutional support emerged.

FDF Builds Faculty Motivation and Community

The main research question was to investigate if the FDF, or online faculty development, provides an accessible and acceptable source that effectively motivates faculty to engage in professional development. One of the prerequisites for engagement and acceptance is realizing the value of doing so, and the establishment of the site alone supported the idea that teaching is respected at the school. The high means of faculty's overall assessments of the FDF suggest that the online platform is recognized as a valuable source and forum to learn about pedagogical issues. It therefore validates the importance of learning about pedagogy and makes the FDF a positive symbol that learning about instruction has value. According to Vygotsky's (1934/1987) social-cultural theories, individuals interpret the sign and symbols of their environment and adapt to it. In fact, the study's results further pointed to a community building effect of the FDF. Just as the overall value that faculty attributed to the FDF, this, too, be interpreted as a sign of acknowledging the value of pedagogical knowledge. In that sense, the study confirmed that the FDF contributes to building what researchers labeled a "healthy" culture (Schein, 2004; Sharma & Jyoti, 2009). This supports the impression that the use of the site leads to positive attribution in faculty, a necessary element to motivation (Weiner, 2010). Further, in agreement with Teeter et al. (2011) these results suggest that learning communities for faculty, such as the fledgling FDF community, are of high value. Participants not only expand their connections beyond their immediate circles but also demonstrate an increased responsibility to discuss issues of teaching and learning with colleagues.

In addition, the FDF triggered thought exchange among peers. This supports community building and stabilizes faculty's self-efficacy because they feel validated in their engagement and actions (Clark & Estes 2008; Kaya et al., 2005; Klassen & Chiu, 2010; Schein, 2004). Even in

the absence of clear institutional or departmental development goals, and even given the fact that goal setting for faculty yielded a *not sure* response, one might argue that exchange with peers causes faculty to formulate or explain their goals. In turn, this stabilizes faculty's internal locus of control and, consequently, they might seek to clarify departmental and institutional goals to see how they align or need to be changed (Weiner, 2010). The alignment of these goals is an essential element in faculty motivation and performance (Gappa, 2008; Kaya et al., 2005). Ultimately, clarifying goals also means the willingness to take charge, a first step to becoming transformational leaders (Bolman & Deal, 2008).

In summary, the FDF presents an acceptable platform for faculty learning. It motivates faculty to engage in professional development but needs a stronger institutional framework to increase faculty buy-in and effectiveness.

FDF Supports Faculty Reflection

One of the most notable results of this study is a clear indication that faculty who used the FDF are more consciously engaging in reflection about issues in pedagogy such as learning theories or multiple means of instruction. Even if this reflection does not result in immediate action, reflection is the primary prerequisite for faculty's path of self-discovery (Davis, 2003; Schön, 1987). For example, the above average mean ($M = 3.64$) in the response to the survey question if their knowledge of teaching and learning methods and processes had increased implies that learning about those issues cannot happen without reflecting on prior knowledge in these areas. The benefit of this type of self-regulated learning is that mental effort happens within the individual's zone of proximal development (ZPD), thus, preventing cognitive overload and leaving mental room for creativity (Johnson & Sinclair, 2006; Mayer 2011; Vygotsky, 1934/1987). Vygotsky's (1934/1987) concept of the ZPD offers a theoretical

construct for the learning processes of all ages. Particularly in regards to the faculty learner, Tinsley and Lebak (2009) expanded on Vygotsky's construct (and other theoretical frameworks) establishing the concept of the zone of reflective capacity. In application this means that faculty upon reading and reviewing content about pedagogy, will quickly be able to assess content value in relation to their prior knowledge. Not only will faculty know to extract the information they need to expand their knowledge, but also to which degree—for example, reading about multiple means of instruction on the FDF faculty might decide that it suffices for them to understand the general concepts for their current instructional application needs. Making this judgment shows their ability to self-regulate the degree of learning, avoiding cognitive overload of studying concepts in great detail at this time. Instead faculty can utilize their working memory to match the general concepts with course specific content and learning activities for students—which is a creative process. Reflecting on their application experience, and if faculty realizes they have a knowledge gap in the concepts they studied, faculty may decide to return to particulars of those pedagogical concepts and explore them more in depth.

Ultimately, this type of reflection contributes to building inner strength and motivates faculty to grow professionally (Bolman & Deal, 2008; Tinsley & Lebak, 2009). At the same time, this triggers generative and creative thoughts, and with it double-loop learning that sets faculty on a path to risk tolerance and adapting or altering their instructional methods (Argyris, 1976; Bensimon, 2005; Moore et al., 2007; Smith, 2011). The study results indicate that participants were planning to change their instructional methods and even if they were not sure yet to which degree they would implement change, or how they would do it, they began thinking about it.

In summary, the study confirms that the FDF was successful in exposing faculty to learning about multiple means of instruction on their own time. Most importantly, faculty reflected on these issues as well as on their own practice, and, consequently, on how they best reach their students. The results of the study, however, did not support that faculty had indeed started to implement any changes in their classes. This is not surprising since developing new approaches or content does not happen ad hoc, but needs adequate time.

FDF Supports Faculty Learning About Multiple Means of Instruction, Creativity and Innovation

Results showed that faculty visited the FDF content page about instructional design the most, and faculty indicated planning to include multiple means of instruction. Browsing these content areas and expanding on their knowledge promotes lateral thinking in faculty, a fundamental criteria for creative and innovative thought (Boden, 2011; Powell, 2007; Sobehardt, 2011). One interviewee made a point that the exchange during the webinar exposed him to multiple means of instruction just by listening to and discussing other faculty's teaching approaches. This agrees with the proposals of Bruton (2010), Csikszentmihalyi (2006), and others that this type of problem-based or collaborative learning is generative, producing new knowledge in the learner. This ties back to the community building aspect of the FDF and suggests that continued exchange is necessary to find ways to translate generative thought and innovation into the classroom environment. In fact, faculty experiencing caring relationships among themselves will positively influence their relationships with the students (Morrison & Johnston, 2003). Not only will this prepare faculty to more readily realize students' different learning styles, but will also aid faculty to be more self-efficacious in applying innovative approaches to provide stimulating learning environments that will push students into expanding

beyond their current knowledge levels. Thus, the study results suggest that the FDF provides elements of Csikszentmihalyi and Nakamura's (2006) systems approach of teaching strategy that include the teacher, the student, the environment and the field of study.

In summary, the results suggest that faculty expanded their knowledge about multiple means of instruction, creativity and innovation in relation to teaching. However, the study could not confirm any concrete translation of those concepts into action. Course development and strategic changes in teaching take time. Even if faculty conceived new teaching approaches, they did not have enough time to implement them.

FDF Usage Confirms Current Problems in Faculty Development

To understand the findings, it is necessary to relate them to the larger context in which faculty at institutions of higher education operate. Overall, this study's findings are indicative of the current professional profile for faculty within the school, or, for that matter, within the environment of higher education where institutional goals and faculty objectives often are not aligned. This is not a new problem. For example, Bensimon and O'Neil (1998) and Sorcinelli et al. (2007) confirmed conflicts between individual and school needs, suggesting that the lack of support leads to faculty's reluctance of engagement. Interview results in this study indicated that faculty would use the FDF more if their engagement with it—or, for that matter, professional development—could be recorded in some form in annual merit reviews or integrated with workload projections more explicitly. A number of researchers have alerted to the need of not only publishing school or institutional goals but also, when setting goals, considering how faculty will be able to fulfill them, how goals can be translated for the individual faculty, and how achievement can be rewarded (e.g., Gappa, 2008; Kaya et al., 2005). In addition, Hirst, van Knippenberg and Zhou (2009) proposed a strong correlation of performance goal orientation and

creativity in employees, where a lack of attainable individual goals is counterproductive to generating ideas and creative problem solving.

In other words, it will be helpful if development goals were clarified for faculty and how they could work towards them with the help of the FDF. While the FDF is a medium that shows the school's effort to foster faculty development, it has so far neither been tied to a recognition system for participation nor to a goal setting tool for faculty. Discussions about the FDF's future expansion, thus, should include these considerations.

In accordance with other researchers, workload issues limited faculty engagement with the FDF (e.g., Ambrose, Huston, & Norman, 2005; Burke & Rau, 2005; Gappa, 2008; Kezar & Lester, 2009; Sorcinelli, 2007). This was not only reported in the interviews but also in the relatively low number of FDF users and survey responses, which are indicative of time issues. Survey responses of Non-FDF users named *time* as the number one reason for not visiting the site. Another indicator was that many more faculty RSVP'd to webinars, but only few ended up participating. Some emailed the organizer that they regretted not having time, were teaching, or were just beginning to be aware of the FDF and would participate next time.

While these results confirmed a lack of time, on the positive side, the fact that faculty did respond also supports that they are interested and understand they need development in pedagogy—especially in light of the rapid development of new instructional technologies (Postareff et al., 2006). The webinar presenters, for example, were curious and excited to find out how to present in an online environment and felt they could do so in a safe environment. They might now be encouraged to use this technology with their students.

Despite reported interest in pedagogy, striking a balance between which area of development to focus on remains difficult and, given pressures to stay abreast in their disciplines,

faculty mostly allocates the time to expanding their domain knowledge. Looking at approaches on how to teach is still secondary (Freund et al., 1990). In other words, there is little debate that the scholarship of teaching should be equitable with the role of research (Sorcinelli et al., 2006), but translating this developing mindset into active choice, mental effort and persistent engagement—or motivating faculty in this regard—remains a challenge that necessitates multi-level efforts on part of the school's leadership. In the worst-case scenario, or with no further support from the administration, this might lead to negative attribution, to feelings of resignation and, according to Bourdieu (1973), to faculty not being able to change their habitus or live up to demands of the 21st century educational environment. However, considering the benefits of reflection mentioned in the literature review and reported above, faculty's continued engagement should eventually foster transformational leadership abilities (Achinstein & Barrett, 2004; Moore et al., 2007; Tinsley & Lebak, 2009).

In summary, the results of the study showed that online faculty development provides access and exposure to engage in learning about instructional methods, such as UD, and many other topics concerning pedagogy or teaching approaches. It supports a community of teaching and learning and gives faculty an opportunity for thought exchange in the quasi-anonymity of the online environment. It offers opportunity for those seeking leadership and community, or, conversely, allows for autonomy in choosing what content to access, when and how to use it (Bensimon & O'Neil, 1998; Hiser, 2008).

Limitations

Even though the results above are encouraging, several issues in regards to sample size as they relate to FDF usage barriers limit the study. For that matter, and to help explain these limitations, characteristics of the product (FDF) and faculty usage cannot be decoupled. To

some extent, limitations have to do to with the novelty of the site and the brevity of its existence. Also, the fact that the researcher conceptualized and started the site single-handedly, but not collaboratively, needs to be considered. In addition, technical issues impacted faculty trying to access and use the FDF, or at least were not conducive to quickly growing the number of users. Accordingly, the points below provide insights into reasons for these limitations and their effects on the study.

First, faculty lacks awareness of FDF. The FDF was not an established development site that faculty was familiar with, but its launch coincided with the study's start. Even though the school had promoted a higher emphasis on teaching and learning as part of their strategic mission and supported the establishment of the FDF, faculty was not prepared for this new product or aware why they should use it. For example, faculty was not surveyed prior to the study or launch of the FDF about what their development needs are. A survey might have let them investigate the site to see if their demands were answered. Rather, the need for the just-in-time school-based online development site was established in the purpose and literature review of the study, which provided the framework for actually building the FDF. The time-span since the site's launch served as a type of user acceptance or beta testing to determine how to improve the site. Arguably, four-months is not long enough for the site or similar products to show their full potential (Davis & Venkatesh, 2004). In addition, desired or conceived multimedia opportunities through the site were limited to webinars, discussion boards, links to videos and other websites. The FDF did not include, for example, some type of online learning game or a "shopping cart" for faculty that would let them pick content according to a development plan.

Second, faculty's FDF use was limited due to a lack of collaborators—and collaboration is undoubtedly an important element to foster active participation. For example, Zeff (2007) and

Sorcinelli et al. (2006) confirmed that faculty development programs will be more successful if they are developed collaboratively soliciting faculty input, and if programs are tied to outcomes. The author of this study created the FDF single-handedly (with the help of two technical support staff), assuming the role of a subject matter expert and populating the site with a variety of content such as materials in learning and instruction, creative and critical thinking, and teaching with technology. Foundational intentions of the site's purpose, such as offering an open discussion forum to discuss development needs or to share ideas about methods of instructions were initiated but need more time to develop to draw participation. This means, that even though a participatory approach was promoted and faculty was repeatedly encouraged to contribute to discussion boards, source material, or host webinars of their topic choice, few did. Most likely, this is due to a lack of faculty time for development or reluctance to spend time with no tangible reward such as service credit. In addition, research has suggested that online communities have about 90% passive users, or lurkers (Schneider et al., 2012). However, a higher number of site visitors or contributors will promote the site through word-of-mouth. In other words, collaboration during site creation and throughout the study period theoretically could have yielded a higher percentage of faculty site users and drawn a larger number of survey participants, allowing deeper insights into its effectiveness.

Third, FDF access is not user friendly and presents a challenge for many faculty. As mentioned earlier, the site is embedded into an internal school faculty portal that provides information about many different administrative issues, allows users to directly access library databases, view their email, see their files on the school server, and more. One section here is dedicated to "Community" under which the FDF is located. Faculty has to log in to the portal first, but the community sites then require further authentication. In short, users have to go

through several clicks to actually access the FDF. In addition, many faculty have two user names (one for the university and one for the school) and often were not sure which one to use, even though they were prompted to use their school username. Despite the fact that each announcement included instructions and even hyperlinks to log in, a number of faculty reported (mostly via email to the site organizer) having difficulty doing so. In faculty meetings, faculty voiced their frustration with not remembering under which link they would find the site, having to click too many times, and having problems logging in.

Ajjan and Hartshorne (2008) proposed that ease of use influences faculty attitude about technology. Internet users today expect ease of access, usefulness and immediacy, or *plug and play*. Considering time restrictions of faculty, and for some arguably a low self-efficacy in use of technology, if access attempts remain unsuccessful or are complicated interest drops and can lead to performance avoidance, meaning no additional log-in attempts will be made (Hirst et al., 2009). In other words, the three contributing elements to motivation (active choice, persistence, mental effort) could not be satisfied. Faculty wanting to log in did so out of *active choice*; however, persistence and mental effort were stifled. Except for the few who sought help with log-in, the actual number of failed log-in attempts could not be determined due to the researcher's level of access to this type of data and the fact that it was not included in site-usage reports. The log-in problem continued throughout the semester even though in mid-semester a direct link from the school's website as well as from the school's mentoring site were added. Either option reduces the number of clicks for faculty; however, they still have to use their log-in credentials.

Fourth, navigating the FDF differs from common use websites. Browsing the FDF is non-intuitive, which can cause user frustration, and prevent them from returning to the site. The

FDF has a basic framework and features three columns of information or links to content areas. Once in a content area, faculty needs to use the browser's *Back* button in order to continue to stay on the FDF, or get to its homepage. If they close the content they are viewing, their FDF session automatically ends. This means that to continue browsing faculty has to log in again. Due to software limitations, it is not possible to include a *Home* or even a *Back* button on the site itself. However, Internet users are familiar with such buttons or symbols; in fact, most users have mental models associated with them and their locations—a *Home* button, for example, is usually in the left upper corner of a site (Roth, Tuch, Mekler, Bargas-Avila, & Opwis, 2013). Thus, trying to get back to the home page but being logged out instead is an impediment, can cause frustration in users, and prevents them from returning to the site. Likewise, as three interviewees in this study noticed, the site does not have a search function to help identify specific content.

In summary, sample size due to infancy of the product, lack of opportunity for a long-term pre-launch promotional phase, and technical issues limited the study—arguably, to faculty who are engaged and interested in development and to those who realize the opportunities of technology. On the other hand, this study of online faculty development via the FDF can be categorized as user acceptance testing and is a valid pathway to discover faculty's perspectives of their needs (Davis & Venkatesh, 2004). The fact that results showed that FDF users embraced the opportunities the online forum offers indicates that its concept and effects are aligned with faculty needs. Further, as faculty gets accustomed to the FDF log-in patterns and navigation, the site's content usefulness will counter-balance log-in and navigation issues until the platform software is upgraded to a more user-friendly version. In addition, in the future the FDF will be hosted as a collaborative faculty project with the support of school leadership.

Implications for Practice

Many researchers have successfully made arguments for online faculty development (e.g., Diaz et al, 2007; Teeter et al., 2011; Wlodkowski, 2003; Zeff, 2007). Across the board the importance of equating the scholarship of teaching with the scholarship of research has been recognized—and takes on a heightened urgency as faculty increasingly realizes the need to employ instructional technologies (e.g., Sorcinelli et al., 2006; Postareff et al., 2006). Because time-constraints are not likely to disappear in the university work environment but become more fluid or ubiquitous with increased online-learning, faculty must become more agile and mobile in their access to support materials for their professional needs. This further validates the just-in-time online approach and also promotes experiential faculty learning situations that mirror those of the students (Diaz et al., 2009; Kukulska-Hulme, 2012).

While web-based faculty development is a preferred medium for a variety of reasons established in this study, it remains difficult if not fruitless to establish a habit of participation in faculty with online development in isolation. This means that online development should not be the only option but rather be in concert with mentoring, physical workshops and so on. However, in light of mobile and web-technologies that are new integral parts of the classroom, online faculty development, in particular, should be framed by an institutional vision that clearly supports learning about pedagogy utilizing 21st century technologies. This type of development offers multiple means of engagement and learning but it also allows for a simpler, more direct way to ensure accountability for engaging with professional development.

Accordingly, based on this study, the recommendation for individual schools at institutions of higher education is to collaboratively expand existing faculty development

initiatives, or to establish new ones, with a focus on online options. To approach these tasks, the following criteria can serve as guide:

- Determine what faculty perceives as development needs.
- Analyze how faculty development needs and school goals align.
- Establish clear expectations and goals for engagement with issues of learning and instruction (or make existing ones more transparent and accessible).
- Create or clarify development guidelines for faculty at different levels to reach set expectations (or make existing ones more transparent and accessible).
- Tie participation in and engagement with professional development in terms of pedagogy to workload projections and annual merit reviews (e.g., establish a point or badge accountability system aligned with a goal plan that translates into the merit review).
- Establish thematic learning communities in support of faculty.
- Initiate faculty collaboration and leadership for online professional development.
- Involve instructional designers to support a resource depository with interactive and experiential multimedia content.
- Conduct qualitative and quantitative data collection and research, such as follow-up surveys or an analysis of faculty teaching evaluations, in order to continuously assess site's effectiveness and to make necessary adjustments.

These criteria are prerequisites for faculty, given their work-pressures, to engage beyond what is necessary to fulfill their job duties. This means that institutions must make a strong effort to align program, departmental, course and faculty development goals to form generative and synergetic learning environments (Gappa, 2008; Kaya et al., 2005). As this study suggests, faculty need support mechanisms as well as clear guidelines and incentives so that they utilize

online development. For example, the online platform is the ideal medium to publish interactive faculty guidelines translated from previous paper-based documents. Such multimedia or interactive content also exposes faculty to using instructional technology. Consequently, they develop a better understanding and level of comfort of media and its use for instruction. In addition, technology staff, instructional designers, and faculty can collaborate to design multimedia features and to ensure up-to-date cutting-edge content to meet the needs of faculty's diverse learning styles.

One way of approaching these tasks from an institutional perspective is to use the UD framework as a guiding principle. The advantages of using the UD framework are to aid institutions in focusing their goals in pursuit of a common goal: to generate the best education for their populations. For faculty development, Burgstahler's (2001) original seven UD principles (inclusiveness, physical access, delivery methods, information access, interaction, feedback, demonstration of knowledge) should be supported by McGuire et al.'s (2006) additional principles that underscore the importance of a learning community and the instructional climate to promote a healthy culture. More than 30 years ago, Bandura (1978) suggested that culture is an essential element of the reciprocal relationship between the individual, their behavior and their environment. In other words, school initiatives must aim to create an open atmosphere where faculty feels supported to take creative and innovative risks in instructional approaches, and to narrow the gaps between teaching and research faculty and administration.

Future research is necessary to explore if, how, and to what extent institutions and their schools adopt online faculty development under consideration of above-mentioned criteria and the principles of the UD framework. Further, it will be interesting to see if fostering development through such media will affect change in faculty's approach to teaching and will

increase their creativity and innovation in that regard. In addition, research into the degree of effort and collaboration between school leadership and faculty when creating and growing such professional development sites should provide insight into if and how the level of engagement will support and augment the success of online faculty learning communities.

Conclusions

This case study explores the effectiveness of online faculty development and can inform efforts at other schools inside or outside the institution about approaches to support faculty's professional growth. The FDF was constructed under consideration of the principles of UD, specifically relying on Wlodkowski's (2003) suggestions how to translate these into application for faculty. Application steps include, for example: (1) inviting faculty respectfully to participate (inclusion), (2) making sure that webinar and all other content is relevant to participants and ideally presented or modeled by peers to nurture interest, and (3) offering or facilitating technical support. In addition, the FDF aims to present content and motivate faculty involvement according to selected elements of relevant instructional design methods that Merrill (2002) labeled the Five Star System and which Clark et al. (2008) applied to instructional methods. This means that the concept of and content on the FDF builds upon the demonstration, application, task-centered, activation, and integration principles. Content items, for example, feature brief descriptions labeled "What is this?" to allow the user to set the content into context. The researcher made an effort to source a variety of comprehensive materials on the FDF that offer clear and complete examples of how to translate theories, instructional design methods, and much more to allow faculty to discover content that builds upon their level of prior knowledge. This sourcing is in accordance with Clark et al.'s instructional methods that focus on the deconstruction of content or tasks. However, faculty's application of new knowledge or the

completion of part-tasks on their way to making changes in their classrooms is left to them. Ideally, they return to the FDF for further support or thought exchange with peers.

Content success and effectiveness was confirmed on the level of faculty having accessed and reflected on materials such as instructional methods, issues of creativity and innovation in education, and the importance of creative thinking. The study exemplifies that exposure to these issues confirms the value of engagement with pedagogy for faculty and motivates them to further explore those issues. In addition, this study substantiates advantages of just-in-time online faculty development because faculty have autonomy in choosing when to access it when they are motivated to do so.

The limitations of this study were prohibitive, however, in attesting to if transfer of knowledge into action has taken place. In other words, it was not possible to assess all aspects of Kirkpatrick's (2006) four-level evaluation system and confirm if the FDF has contributed to faculty's application of creative and innovative instructional methods in the classroom. Future studies can provide insights in this regard.

The study also confirms that external or school-based initiatives that pertain to goal setting and alignment and to a heightened awareness for faculty development are necessary. The school at the study site is working to further expanding the FDF as a result of the findings and recommendations of this study. This expansion must include clarification, support, and alignment of long and short-term goals for the school and its individual faculty. This will foster faculty's active involvement in learning about pedagogy, including utilizing or experimenting with instructional technologies that translate into both physical and virtual classrooms.

In summary, continued development will deepen faculty's generative thinking, augment their ability to transfer knowledge, and stabilize their self-efficacy. Online development forums

such as the FDF contribute to the wellbeing of faculty, support their active involvement in their community and, ultimately, will empower them to provoke change. This engagement will reflect in their teaching practices and gives faculty the background and flexibility to inspire diverse student populations to embark on a path of guided discovery, experience knowledge generation, and prepare to address the challenges of our age in innovative, creative and equitable ways.

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Appendix A

End-of-Study User Survey

Dear Colleague:

Thank you for your participation in the Faculty Development Forum (FDF) survey. This survey will investigate the use and effectiveness of the online Faculty Development Forum (FDF), or what impact you think it had (if any) on your teaching. Your input is extremely valuable and the results of this survey will be used to further develop and improve the FDF. All responses are anonymous and strictly confidential.

Please allow 5 to 10 minutes to complete this anonymous questionnaire.

Thank you for your participation!

Q1. Which faculty group do you belong to?

- Non-tenure track
- Tenure-track
- Tenured
- Part-time faculty
- Other

Q2. Did you use the FDF this semester?

If “Yes” participants continued with MAIN SURVEY (Q4)

If “No” participants continued with (Q.3) and then jumped to (Q26) since their replies about FDF content were not applicable.

Q3. Please indicate why you have not used the FDF. Mark all that apply.

- I am confident in my teaching approaches
- I am well-versed in issues of student learning
- I have not had time
- I did not teach this semester
- I was not aware of the FDF
- I had trouble accessing the FDF
- Other (please indicate).

MAIN SURVEY

Q4. How useful are the FDF's featured content areas? Mark all that apply.

Scale: 1 (Do not use); 2 (Not useful); 3 (Somewhat useful); 4 (Useful); 5 (Very Useful)

- Content pages about subject areas (e.g., Instructional Design)
- Webinars
- Announcement features (RSS)
- Links to resources (e.g., websites, videos)
- Discussion board
- Other (please indicate)

Q5. How useful is the FDF content about teaching and learning? Mark all that apply.

Variables: Content effectiveness; attribution.

Scale: 1 (Do not use); 2 (Not useful); 3 (Somewhat useful); 4 (Useful); 5 (Very Useful)

- Instructional design (e.g., learning objectives, multiple means of instruction)
- Online learning
- Teaching ethics in business
- Information about creativity and creative thinking
- Templates, Guidelines, and Syllabi
- Learning theories (e.g., student goal orientation)
- Technologies to enhance instruction and learning
- Teaching critical thinking
- Teaching the Millennial Generation

Issues, Methods, and Processes of Teaching and Learning

Q6. Since using the FDF, has your knowledge of teaching and learning methods and processes increased (e.g., understanding of instructional methods, learning theories)?

Variables: attribution; pedagogy; universal design; double-loop learning; reflection.

Scale: 1 (*Not at all*); 2 (*To a slight extent*); 3 (*Not sure/neutral*); 4 (*To a moderate extent*); 5 (*To a great extent*)

Q7. Since using the FDF, are you more aware of your students' learning styles and needs than previously?

Variables: attribution; reflection; pedagogy.

Scale: 1 (*Not at all*); 2 (*To a slight extent*); 3 (*Not sure/neutral*); 4 (*To a moderate extent*); 5 (*To a great extent*)

Q8. Since using the FDF, have you changed or are you planning to change teaching approaches in the classroom?

Variables: innovation; pedagogy; reflection; motivation; goals.

Scale: 1 (*Not at all*); 2 (*To a slight extent*); 3 (*Not sure/neutral*); 4 (*To a moderate extent*); 5 (*To a great extent*)

Q9. If you plan to change existing teaching approaches, or develop new ones, will you include multiple means of instruction (e.g., instructional technologies, “flip-classroom techniques,” project/problem-based learning)?

Variables: pedagogy; technology; universal design; motivation; double-loop learning; goals.

Scale: 1 (*Not at all*); 2 (*To a slight extent*); 3 (*Not sure/neutral*); 4 (*To a moderate extent*); 5 (*To a great extent*)

Q10. Please share any changes or planned changes to your teaching approaches.

Variables: pedagogy; innovation; creativity; motivation; goals.

Short answer (may skip):

Q11. Since using the FDF, have you or will you revise the learning objectives for a course?

Variables: pedagogy; motivation; goals.

Scale: 1 (*Not at all*); 2 (*To a slight extent*); 3 (*Not sure/neutral*); 4 (*To a moderate extent*); 5 (*To a great extent*)

Q12. Do you review learning objectives and outcomes with your students?

Variables: pedagogy; double-loop learning; goals.

Scale: 1 (*Not at all*); 2 (*To a slight extent*); 3 (*Not sure/neutral*); 4 (*To a moderate extent*); 5 (*To a great extent*)

Q13. Since using the FDF, have you modified or introduced new teaching approaches to enhance students' critical thinking skills?

Variables: pedagogy; innovation; creativity.

Scale: 1 (*Not at all*); 2 (*To a slight extent*); 3 (*Not sure/neutral*); 4 (*To a moderate extent*); 5 (*To a great extent*)

Q14. Since using the FDF, have you modified or introduced new teaching approaches to enhance students' creative thinking skills?

Variables: pedagogy; innovation; creativity.

Scale: 1 (*Not at all*); 2 (*To a slight extent*); 3 (*Not sure/neutral*); 4 (*To a moderate extent*); 5 (*To a great extent*)

Q15. Please share the greatest challenges in enhancing students' critical and creative thinking skills.

Variable: reflection.

Short answer (may skip).

Q16. Since using the FDF, have you designed or re-designed instructional approaches to support your students' reflection on their learning (e.g., reflective journals)?

Variables: pedagogy; innovation; creativity; reflection.

Scale: 1 (*Not at all*); 2 (*To a slight extent*); 3 (*Not sure/neutral*); 4 (*To a moderate extent*); 5 (*To a great extent*)

Q17. Since using the FDF, have you or will you experiment with other teaching innovations not noted above?

Variables: creativity; innovation.

Short answer (may skip).

Personal Growth and Colleague Interaction

Q18. Since using the FDF, have you set personal goals for professional growth?

Variables: attribution; double-loop learning; goals.

Scale: 1 (*Not at all*); 2 (*To a slight extent*); 3 (*Not sure/neutral*); 4 (*To a moderate extent*); 5 (*To a great extent*)

Q19. Does the FDF support exchange among colleagues in issues of teaching and learning (e.g., webinars)?

Variable: culture.

Scale: 1 (*Not at all*); 2 (*To a slight extent*); 3 (*Not sure/neutral*); 4 (*To a moderate extent*); 5 (*To a great extent*)

Q20. Have you discussed or shared insight gained from the FDF with colleagues; for example, to seek input or collaboration?

Variable: culture.

Scale: 1 (*Not at all*); 2 (*To a slight extent*); 3 (*Not sure/neutral*); 4 (*To a moderate extent*); 5 (*To a great extent*)

Overall Assessment of the FDF

Q21. Please indicate your overall assessment of the FDF for each statement below.

Scale: 1 (*Strongly disagree*); 2 (*Disagree*); 3 (*Neither agree nor disagree*); 4 (*Agree*); 5 (*Strongly agree*)

The FDF supports creativity in developing course content.

Variables: pedagogy; multiple means of instruction; technology.

The FDF supports innovativeness in instructional approaches.

Variables: innovation; pedagogy.

The FDF is a valuable tool in supporting professional growth.

Variables: goal setting; attribution.

The FDF supports a culture of learning.

Variables: culture, pedagogy.

The FDF supports community building among faculty.

Variables: community, culture.

Q22. As a result of visiting the FDF, have you attended workshops provided by Your School or the wider university community? Mark all that apply.

Query variable: motivation.

- Attended a School event
- Attended Center for Instructional Technology event
- Attended Center for Teaching Excellence event
- Attended other University event
- Registered but was unable to attend
- Was interested, but event(s) did not fit my schedule
- I do not find workshops very helpful
- Other reasons for attending/not attending. Please indicate. (Short answer)

Access Frequency to FDF and Linked Sites

Q23. How often have you accessed the FDF?

Variable: motivation.

Scale: 1 (*Less than once a month*); 2 (*Once a month*); 3 (*2-3 Times a month*); 4 (*Once a week*); 5 (*2-3 Times a week*); 6 (*Daily*)

Q24. When browsing the FDF, how often have you accessed sites listed below?

Variable: motivation.

Scale: 1 (*Less than once a month*); 2 (*Once a month*); 3 (*2-3 Times a month*); 4 (*Once a week*); 5 (*2-3 Times a week*); 6 (*Daily*)

- School's Mentoring Site
- Edudemic
- Teaching Community
- e-Learning Guild
- School's Faculty Resources (info about grant opportunities)
- School's Experiential Learning Center
- University's Center for Teaching Excellence
- University's Center for Instructional Technology
- Other (enter choice)

Q25. Please share your impressions of the FDF or suggestions about how it could be improved to meet your needs (e.g., content areas you wish to see).

Short answer (both users and non-users of the FDF).

Thank you again for taking the time to complete this survey!

Appendix B

Tables for Chapter Three

Table B1

Variables and Type of Analysis for Research Questions

Research Questions	Variables	Type of Analysis		
		F ^a	QN ^b	QL ^c
1. To what extent will the web-based development platform provide a universally accessible and acceptable source that effectively motivates faculty to engage in professional development?	(all)	X	X	X
1.1 To what extent will faculty use the web-based platform? (Descriptive) (Active choice/acceptance: Will they accept it as a tool for professional growth?)	Motivation; Attribution	X	X	X
1.2 To what extent will faculty indicate interest in further learning about issues in instruction? (Also open ended questions, usage reports)	Pedagogy; Reflection; Motivation Goal orientation		X	X
1.3 To what extent will the web-based development platform be effective in exposing faculty to multiple means of learning and instruction, such as universal design in learning and instruction?	Universal Design; Technology; Motivation		X	X
1.4 To what extent will the web-based platform be effective in augmenting or fostering faculty creativity for curriculum innovation, such as project-based learning, or using instructional technology?	Innovation; Creativity		X	X
1.5 To what extent will faculty engage in thought exchange with peers on this platform? (Descriptive) (Active choice, mental effort, persistence=motivation; discussion board usage)	Motivation; Double-loop learning; Culture		X	X

^aF = Frequencies. ^bQN = Quantitative. ^cQL = Qualitative.

Table B2

Constructs, Sample FDF Content Modules, and Type of Analysis

Constructs and corresponding research questions (RQ)	Module 1: Introduction to universal design	Module 2: Integrating ethics with your teaching	Module 3: Teaching GenY	Type of Analysis	
				QN ^a	QL ^b
Motivation (participation in FDF activities; planning to change; etc.) (all RQs)	x	x	x	x	x
Pedagogy (RQs 1.2, 1.3, 1.4)	x	x	x	x	x
Universal design (RQ 1.3)	x	x	x	x	x
Creativity and innovation (RQ 1.4)	x	x	x	x	x

^aQN = Quantitative: site usage reports; built-in surveys; outcome survey.^bQL = Qualitative: open-ended survey questions; outcome survey; interviews.