

**Best practices and program-based research in an online
professional practice doctorate for educational technologists**

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Introduction

Educational technology leadership is critical in supporting faculty, administrators, instructional designers and students in the integration of various technologies in the teaching and learning process (Albright & Nworie, 2007). People in these positions must be able to apply research-based knowledge, generate contextually based knowledge to improve and advance practice and help others implement this knowledge. Given these needs, we developed a new online Ed.D. program in Educational Technology aligned with Carnegie Project on the Education Doctorate (CPED, 2007) principles for professional practice doctoral degrees. This degree is distinctive from our Ph.D. program in that it enrolls students working full-time in professional practice settings. These students complete a rigorous cohort-based program designed to support research and practice within their professional practice settings.

In this presentation we describe how this online program for educational practitioners (cohorts admitted in fall 2008, fall 2010 and fall 2012) has evolved based on both best practices in the literature and our research with each cohort. We use various sources of data and make changes to the program based on our findings for each incoming cohort. Our goal is to maintain the quality of online teaching and learning in the program (Bourne & Moore, 2004) and ensure its relevance to our students, who are professionals in the dynamic field of educational technology. Our description of the

evolution and continuous improvement of an online doctoral degree at a brick and mortar research institution that already offers an on-campus traditional research doctoral degree (i.e. Ph.D.) could be useful to others engaged in online doctoral education or in innovative programs for professional adults. Preparing practitioners to view scholarship through a critical lens and to conduct their own research can be challenging in the online environment where students can easily feel disconnected from their educational institution and peers. Given the marked increase in e-learning initiatives world-wide, the sharing of a) research conducted in various areas of the online program, b) its implications for design, and c) its educational impact is important to the identification of best practices in online doctoral education.

Program Design

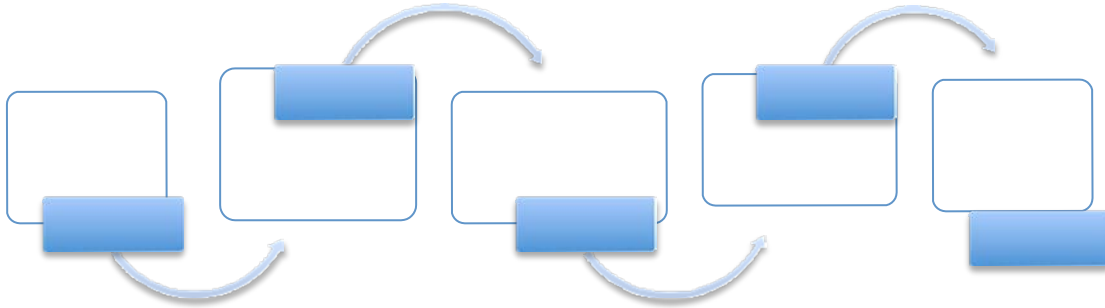
In addition to the guidelines for the professional practice doctorate (Schulman et al., 2006; CPED, 2007), the design of the Ed.D. in Educational Technology at the University of Florida is guided by situated and transformational adult learning theories (Brown, Collins & Duguid, 1989; Lave & Wenger, 1991; Mezirow, 2000) and the Community of Inquiry framework for online learning (Garrison, Anderson & Archer, 2000).

The Carnegie Foundation for the Advancement of Teaching put forth four areas of emphases for Ed.D. programs that are distinct from the Ph.D. - the scholarship of teaching; the identification of a 'signature pedagogy' to guide the work; the creation of 'laboratories of practice;' and new capstone experiences in which future practitioners can work together to produce outstanding demonstrations of their proficiency (CPED, 2007). In the Ed.D. program in educational technology, the three dimensions of signature pedagogy – deep structure, implicit structure, and surface structure – were conceptualized as the integration of university learning and professional contexts, the enculturation to a

community of learners, and the development of habits of mind, foundational knowledge, and specialized knowledge (Dawson, Cavanaugh, Sessums, Black & Kumar, 2011). All the students in this program are working professionals and adult learners, therefore learning was designed to be embedded within their context. Students are required to apply the content and assignments in courses to their professional environments by identifying problems of practice and attempting to improve their professional contexts (Barab & Plucker, 2002; Brown, Collins & Duguid, 1989). Students move through the program as a cohort, engaging in reflective discourse with each other about theory, research and the implementation of educational technology in their practice (Lave & Wenger, 1991; Mezirow, 2000). Authentic learning experiences, interactions, mentoring, and expert modeling are integrated in both course assignments and non-course activities to facilitate student development of scholarly habits of mind and research application skills early in the program (Costa & Kallick, 2008; Dawson et al., 2011). The design of online components of the program was guided by the Community of Inquiry (COI) framework comprising teaching presence, social presence and cognitive presence (Garrison, Anderson & Archer, 2000). Extrapolating from the COI framework for online courses, a combination of required online coursework and asynchronous and synchronous interactions were structured to facilitate teaching, social and cognitive presence in the online program (Kumar, Dawson, Black, Cavanaugh & Sessums, 2011). All the faculty members in the program had prior online instructional design and teaching experience, therefore activities were designed to include multiple forms of interaction, frequent opportunities for reflection and various formats for assessment (Ainsworth & Loizou, 2003; Mayer & Moreno, 2003; Moore & Kearsley, 1996).

Research Design

Figure 1: Program Design and Research



Three cohorts cohort of full-time professionals in K-12, corporate, and higher education environments enrolled in the program in fall 2008, fall 2010 and fall 2012. To improve the quality and impact of this program for subsequent doctoral students, formative research is conducted in the program at regular intervals. Figure 1 depicts the timing of this research in the last four years and revisions to the program. Student surveys, interviews, and focus groups; faculty interviews; and the analysis of students' curriculum vitae and projects are used as data sources. Research findings are integrated into subsequent iterations of the program for continuous improvement. This paper provides a synopsis of four research areas that resulted in revisions to the program. Specifically, we discuss:

- 1) Teaching and learning online: This included student surveys and faculty interviews to study student and faculty perceptions of individual program components and community-building in the online program.
- 2) Information literacy support: Pre- (needs assessments) and post-surveys of students' skills were used to design information literacy and research support for doctoral students at a distance.
- 3) Program Outcomes and Impact: Student interviews, focus groups and curriculum vitae analysis provided information about how students were applying program content in their practice, and about the impact on their professional growth.
- 4) Online Mentoring: Interviews with program faculty and students who have

graduated were conducted to understand best practices and challenges of mentoring students online from proposal writing through the completion of their dissertations.

Teaching and learning online

At the end of the first year of the new online program, an anonymous online survey was developed based on the Community of Inquiry framework and was completed by 16 of 24 students in the first cohort. The internal consistency reliability of the survey was 0.88. Survey items pertained to students' satisfaction with program components and their perceptions of learning and relevance. It also included open-ended items about the

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strengths of the program, the challenges students faced, and their suggestions for improving the program (Kumar, Dawson, Black, Cavanaugh & Sessums, 2011).

Simultaneously, a new faculty member who had not been involved in the first program implementation interviewed four faculty members who had participated in the development and implementation of the first year. Interviews lasted 20-45 minutes and questions related to the strengths and challenges of the new program, and how the first year could be improved (Kumar & Dawson, 2012a).

On a scale of 1-5 in the survey, student ratings for faculty instruction in the online environment (teaching presence) fell at 4 or above and 94% stated that their expectations were met during the first year. In open-ended survey responses and the interviews, students highlighted faculty expertise in online instruction, faculty support, and the relevance of program activities to their professional practice as program strengths. Over 85% of students reported applying their learning from the first year of the EdD program to their practice and agreed that the program had contributed to their professional growth (Kumar et al., 2011; Kumar & Dawson, 2012a).

Social presence and the building of community among the online students at a program level are very important to faculty in the program. In addition to online coursework and a yearly one-week on-campus summer session, several non-coursespecific online interactions were planned in the EdD program in the form of an online group, monthly synchronous sessions, and inquiry groups (Dawson et al., 2011). Student and faculty satisfaction with community-building in these areas was low in the first cohort with students citing lack of time as an obstacle to participation and faculty believing that students did not appreciate the value of peer interaction or communitybuilding because it was not associated with a grade. At the same time, 100% of students rated the on-campus session as most valuable for community-building. Several changes were made to these areas of the program for the next cohort based on this research, e.g. the introduction of a campus-based orientation, student-leadership of synchronous sessions and the use of a different technology to host the online community (Kumar et al., 2011; Kumar & Dawson, 2012a).

The Community of Inquiry survey (Arbaugh et al., 2008) was adapted, revised to include items specific to an online program, and validated for use with the second cohort of students (n=18) in 2011. On a scale of 1-5, the mean for all items about faculty online instruction and feedback for student learning was over 4.2. Consistent with the first cohort, over 80% of students reported sharing new knowledge and applying their learning from the EdD program to their practice (Kumar & Ritzhaupt, In Press). With respect to community-building, student ratings for the changed design were higher for synchronous sessions and inquiry groups than in the first cohort. However, students were not satisfied with the orientation session and made several suggestions for improving it with respect to content, timing, and activities that were implemented with the third group that entered the program in 2012. Students' own qualitative research about work-life balance with their

peers in the program contributed greatly to the building of community and the creation of a Facebook group (Coughlin et al., 2012). During focus groups conducted at the end of the first year, students also emphasized the value of the student-created Facebook group for community-building and peer support in the program (Kumar & Kenney, In Press), leading to the introduction of such a group for the third cohort.

Student Information Literacy Support

Over 75% of the first cohort (n=16) were satisfied with administrative, technical, and library support in the first year of the program (Kumar et al., 2011). At the same time, 33% of students suggested that an orientation and support for library services be provided. Information literacy instruction was thus systematically designed for the second cohort in collaboration with the education librarian. A needs assessment survey about students' prior experiences with library instruction, various databases and citation styles, and their perceived confidence, anxiety and expertise was distributed before students (n=24) began the program and informed the content and design of information literacy instruction (Kumar, Ochoa & Edwards, 2012). Based on the results, instruction about disciplinespecific databases and peer reviewed resources was provided at specific times and in carefully identified courses over the course of a year in the online program. In an end of year survey about student satisfaction and the impact of library instruction, students reported that the instruction had improved their skills and confidence and the management of their research. They also made suggestions for the timing of instruction that are being implemented with the third cohort in the EdD program. This research highlighted the importance of supporting online doctoral students to use academic databases, peer-reviewed resources, and bibliographic tools if they are to succeed in their doctoral endeavors (Kumar & Ochoa, 2012).

Program Impact for students and their professional practice

The goal of the Ed.D. is to prepare practitioner-scholars who bring about theory and research-based change in their educational environments, therefore it was necessary to assess the outcomes of the program to determine if these goals were being fulfilled. Nineteen students in the first cohort participated in 20-40 minute semi-structured interviews with a new faculty member about their professional growth and the impact of the program on their work environment during their second year in the program. Furthermore, student's curriculum vitae submitted during qualifying exams at the end of the second year were analyzed to triangulate students' assertions about program impact (Kumar & Dawson, 2012b). Finally, students were interviewed after they graduated to understand their perceived growth as researchers and scholars during the Ed.D. program. Data from the final interviews is currently being analyzed.

All 19 students in the first cohort reported applying program content to their practice – they had integrated new technologies at work, taken data-driven and research-based decisions, and disseminated knowledge in formal and informal contexts in their professional practice. For instance, twelve had designed and implemented new online or classroom professional development initiatives for teachers and 15 had presented at national and international conferences by the second year. Ten students had taken on new responsibilities and five had changed their jobs or job roles, all of which they attributed to their learning in the Ed.D. program (Kumar & Dawson, 2012b). Data collected from students' curriculum vitae corroborated these claims by participants. Semi-structured focus groups conducted by external faculty members with the second cohort (n=18) at the end of the first year included similar questions along with questions about students' development as researchers. The findings revealed similar areas of application with a stronger impact in the area of research projects, data-driven decision-making, and scholarship.

Online mentoring of dissertations

Following the graduation of eleven students from the first cohort of the online Ed.D. program in late 2011-2012, interviews have been conducted with them about their perceptions of online mentoring from proposal writing to their completion of the program. All the faculty members who mentored these students have also been interviewed by a researcher not involved in the program. Initial themes in the data currently being analyzed are best practices using online technologies for mentoring and the challenges faced due to online communication in online mentoring.

Discussion and Conclusion

The process of offering an online professional practice doctoral degree in a program that already offers an on-campus traditional research doctoral degree needs careful planning. Regular research and continuous assessment can enhance the quality of such a program and help assess its impact for professional practitioners as well as the academic institution that offers the program. This paper provided insight into how systematic research in one such online program helped to improve program quality for educational leaders and increase our understanding of online education for professional adults. The focus of our research has changed as we have enrolled new cohorts and implemented changes to program design based on our research results. Our research on teaching and learning, student support, and mentoring in the online environment has improved the quality of the program. We have thus begun to focus research efforts on online doctoral students' development as scholars and on students' critical thinking, writing, and research abilities. These areas in doctoral education have been researched often in traditional Ph.D. programs or professional doctorates that are offered face-to-face, but are as significant when assessing quality in online doctoral education.

In the context of the conflicts between research, the procurement of external

funding, teaching, and program development faced by professors, systematic research in this program was made possible by the fact that it comprised the research agenda of one faculty member who leads and coordinates the program. The recruitment of external researchers for data collection and analysis and the sharing of our findings with educators in the field enhances the quality of our research and provides external lenses to our thinking about program design. Given the marked increase in online programs in the United States (Allen & Seaman, 2009) and e-learning initiatives world-wide, we believe it is valuable to implement research and evaluative processes in programs that ensure consistent quality, and to share the planning process, research conducted, and resulting design with others engaged in similar online endeavors.

*For further information about the Ed.D. program in Educational Technology at the University of Florida, please visit <http://education.ufl.edu/educational-technology/onlineed-d/>.

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