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## **A Systematic Approach to the Assessment of Impact in a Professional Doctorate**

Swapna Kumar

University of Florida

Abstract

This article presents one approach to the measurement of impact in a professional doctorate in education that encompasses discipline-based coursework and practice-embedded research. Quantitative and qualitative data on the impact of the doctoral program was collected at regular intervals, with a focus on students' application of program content in their professional practice and on students' professional growth. The research design and the findings are discussed in the context of the larger debate surrounding the measurement of doctoral impact and the value of online doctoral degrees for practitioners.

### **Introduction**

The increase in the number of professional doctorates awarded in recent years has been accompanied by literature about the design and impact of such programs (Bourner, Bouden and Lang, 2001; Kot and Hendel, 2010). Professional doctorates differ based on the discipline, university, workplace, and country. Some are based solely on work-based projects or research conducted in the workplace and supervised by university faculty, while others include coursework and a discipline-specific dissertation. Previously, benefits and returns of such programs, namely, their impact, have been measured as impact for the learner and impact for the

organization (Halse and Mowbray, 2011; Lester and Costley, 2010). This article presents a systematic approach to the collection of data about the impact of a professional doctorate in education that was offered largely online and included both discipline-based coursework and a practice-embedded dissertation in its design. The impact of the professional doctorate in education is discussed in the larger context of the debate surrounding online professional education and the value of professional doctorates for students' professional practice and personal development. Given the scarcity of research on the impact of online professional doctorates, this article will be useful to educators interested in defining and measuring impact in professional doctorates and in online professional practice programs.

### **The Impact of Professional Doctorates**

The operational definition of impact in doctoral education in the past has focused on the “outcomes, benefits and returns that include, but are not limited to, economic returns” (Halse and Mowbray, 2011, 514). Traditionally, impact in doctoral education has focused on the employability, placement, patents, publications and innovations of graduates from doctoral programs and on students' knowledge and personal growth (Halse and Mowbray, 2011). Impact in professional doctorates, where the doctoral candidate is usually employed and where the research often takes place in professional organizations, is defined as impact for the learner and for the organization (Lester and Costley, 2010). Research in professional practice can have high impact because it connects practitioners, universities and organizations (Lee, Green and Brennan, 2000), constitutes projects that are real-world and is aimed at improving practice. Doctoral candidates report increased expertise, confidence, recognition, responsibility, and stature in their workplace following their participation in professional graduate programs (Costley and Stephenson, 2008; Lester and Costley, 2010; Nixon *et al.*, 2008; Rhodes and Shiel, 2007). For

organizations, employees' participation in professional doctorates leads to "increased professionalism and motivation" (Lester and Costley, 2010, p 568) and organizational changes in terms of learners' job role or responsibilities within the organization.

There is no question that the quality of doctoral education, whether in a traditional or professional doctorate, impacts the future career, professional approach, and direction taken by doctoral graduates (Ehrenberg *et al.*, 2009). Halse and Mowbray (2011) asserted that the doctorate should be conceptualized "as both a process and a product, and that attends to the diversity of individuals, organizations and institutions participating in various phases of the doctorate" (p 514). Knowledge "formed and performed" during doctoral education is not always visible and measurable, because the doctoral student is an "enterprising self" that both acquires and generates knowledge (Tennant, 2004, p 431). To this effect, this study highlights the importance of exploring impact at different points of a doctoral program, because in a professional doctorate the link between knowledge gained in the program, the students' development, and the application of program content in practice exists from the beginning to the end. It is therefore important to measure impact *during* a professional doctoral program, before as well as after students begin their dissertation research, and after students graduate. While it is clear from the literature that a professional doctorate can have impact for learners and for their professional contexts, the goals of a specific program, the discipline and the design of the program (e.g. coursework and a dissertation, only a dissertation, or a portfolio of projects) influence its impact for the learner and his/her context. In this study, a new doctoral program was developed and implemented with a large online component. We thus found it important to be aware of predefined metrics in the literature to measure impact, but took an open-ended approach to the definition and measurement of impact. This article thus highlights the importance of

defining impact in new professional doctorates, developing metrics to measuring that impact, and consistently and systematically measuring impact at various points in a professional doctorate.

### **Design of the professional doctorate in Educational Technology**

The professional doctorate described in this article was developed based on the guidelines of the Carnegie Project on the Education Doctorate (CPED) to prepare stewards of practice (Perry and Imig, 2008) ‘from principals to curriculum specialists, to teacher-educators, to educators...who will creatively generate new knowledge, critically conserve valuable and useful ideas and responsibly transform those understandings through writing, teaching, and application’ (Shulman, Golde, Conklin, Bueschel, and Garabedian, 2006, p 26-27). This section describes the signature pedagogy (Schulman, 2005) used to design the online professional doctorate in educational technology, that consists of three dimensions: a deep structure or a set of beliefs about knowledge acquisition; an implicit structure or beliefs about professional attitudes, values and dispositions; and a surface structure that represents teaching and learning (Shulman, 2005).

The goal of the professional doctorate in educational technology was to prepare practitioner scholars who could identify educational problems, apply theory and research to problems of practice, and be ‘agents of change’ in the lives of individuals, families, schools, and communities (CPED, 2010). The *deep structure* of the program is thus grounded in situated and transformational adult learning that is embedded within students’ professional contexts (Brown, Collins and Duguid, 1989; Lave and Wenger, 1991; Mezirow, 2000). Students are expected to acquire foundational knowledge in the field of educational technology but also deep knowledge in a particular niche that corresponds to their professional practice or professional interests. Initial courses in the program thus introduce students to basic theories and research in the field

but students can negotiate their own purposes and goals based on their professional practice. All activities and interactions in the program emphasize the relevance of instructional content and its applicability to real-world environments (Butterfield and Nelson, 1989; Knowles, 1984) so student work often stems from problems of practice. Further, the cohort structure of the program provides students opportunities to engage in reflective discourse about their foundational knowledge and niche (Mezirow, 2000).

The *implicit structure* of the program reflects the beliefs, attitudes and values of the contexts in which graduates of the educational technology program work, which are currently curriculum development, teaching, online education, technology integration, professional development and faculty or trainer development in K-12, higher education, corporate and non-profit contexts. Enculturation into a community of practice in this field (Wenger, 1998) involves the development of scholarly habits of mind (Costa and Kallick, 2008), a data-driven decision making approach and familiarity with professional educational technology organizations. Authentic learning experiences, expert modeling and mentoring, and exposure to current research and issues in educational technology were integrated in both course assignments and non-course activities to facilitate student development in these areas and build a strong professional community (Dawson *et al*, 2011). Surface structure in signature pedagogy operationalizes the deep structure and implicit structure. *Surface structure* in the professional doctoral program was based on the Community of Inquiry (COI) framework for online learning because the program was mainly offered online with yearly 5-day on-campus meetings. The COI framework (Garrison, Anderson and Archer, 2000) encompasses a) teaching presence or “the design, facilitation, and direction of cognitive and social processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes” (Anderson, Rourke,

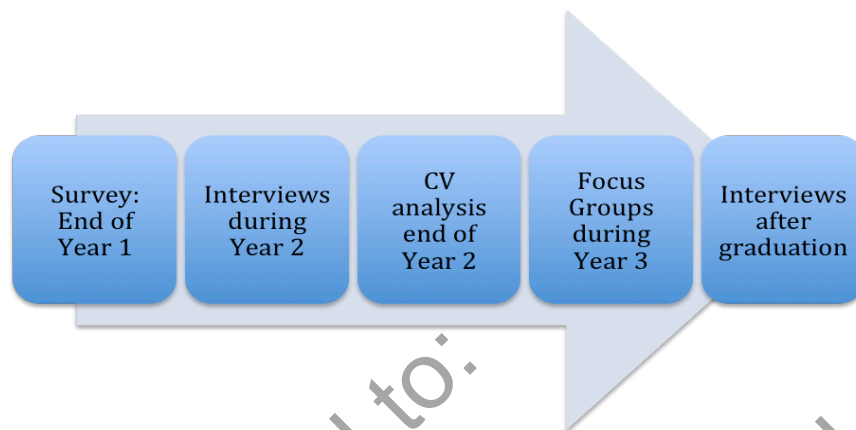
Garrison and Archer, 2001, p 5) b) social presence or the ways in which online learners portray themselves online, and c) cognitive presence or the application of meaning by students using sustained reflection and discourse (Garrison, Anderson and Archer, 2000). Teaching presence in the online program was reflected in required online coursework, asynchronous and synchronous interactions, mentoring, and the structuring of support structures for learners. Social presence centered around multiple forms of interaction and opportunities for reflection that could facilitate community-building among students who move through the program as a cohort. Cognitive presence was defined as the development of scholarly habits of mind, and the application of knowledge, skills and new approaches to change educational practice (Kumar, Dawson, Black, Cavanaugh and Sessums, 2011).

Educational technology is interdisciplinary in nature, so students come to the program from various disciplines and do not always have prior degrees in educational technology or education. The first two years of the program thus include intensive online coursework aimed at orienting students to doctoral studies, theories and research essential to the field, instructional design, and quantitative and qualitative research. Simultaneously, students identify their niche and use learning activities in the above courses to learn more about research, theory, and policy in their niche, sometimes also taking electives in their area of specialization (e.g. online teaching and learning, educational gaming). At the end of the two years, students take qualifying exams following which they work on their dissertations. No collaborations with employers or specific organizations exist, therefore research projects originate from problems of practice that are identified by students, or from their professional goals and interests.

## **Methodology**

The assessment of program quality and impact began in 2009, a year after the first cohort

enrolled in the program. The surface structure of the program, or the ways in which deep structure and implicit structure were operationalized, was assessed using an adapted Community of Inquiry survey (Kumar *et al.*, 2011), student interviews and faculty interviews (Kumar and Dawson, 2012a). Changes to the program for subsequent cohorts were implemented based on the results (Kumar, 2013). This paper presents the assessment of implicit structure and deep structure in the professional doctorate in educational technology, to determine whether students (a) were applying knowledge acquired in practice to their professional environments, and (b) experienced changes or transformation in their thinking, behavior or actions as a result and (c) integrating into the field of educational technology. This was a new program, so detailed metrics for impact were not defined beyond these broad areas that were identified from the conceptual framework. It was assumed these metrics would become clearer after assessing the first offering of the program. It was also considered important to collect data at multiple points, during the program, before the dissertation, and after completion of the dissertation, about various aspects of the program. Data were collected from the first cohort enrolled in 2008 (n=19) using a survey at the end of the first year and open-ended interviews during the 2<sup>nd</sup> year. Students' curriculum vitae were then analyzed at the end of the 2<sup>nd</sup> year corroborate students' self-reports about how the program impacted their thinking and practice. Focus groups were conducted during the 3<sup>rd</sup> year, and final interviews again when they graduated from the program at 3.5-4.5 years (Figure 1).



### **End of 1<sup>st</sup> year survey**

The survey created to assess the surface structure consisted of three sections - Faculty Instruction and Feedback, Support, Learning Environments and Community-Building and Application of Learning and had an internal consistency reliability of .88 (Kumar *et al*, 2011). The results of the Application of Learning items (n=16) in the survey are reported here, because they pertain to students' professional growth or the deep structure of the program.

### **Student interviews during Year 2**

During the second year of the program, 19 of 24 students voluntarily participated in 20-40 minute semi-structured interviews on the phone or in-person about students' professional growth and the impact of the professional doctorate on their practice. Open-ended interview questions were based on deep and implicit structure (application of knowledge, changes in behavior, and integration into the field of educational technology). The interviewer, a new faculty member, probed for knowledge that was both 'formed and performed' (Tennant, 2004, p 431) during the first 1.5 years of the program. Follow-up questions were asked about impact specific to learning from the program because of students' professional expertise when they entered the program (Kumar and Dawson, 2012a; 2012b).

### **Students' curriculum vitae**



In order to triangulate students' self-reported visible impact, the curriculum vitae of the 19 students interviewed were analyzed for professional activities in educational technology and changes in job roles. These data were entered into an Excel spreadsheet and used to corroborate students' assertions during interviews.

### **Focus Groups during Year 3**

Four focus groups were conducted with 18 students on-campus at the end of the 2<sup>nd</sup> year about all areas of the signature pedagogy - their experiences with qualifying exams, the sense of community in the program, their professional growth and the impact of the doctorate on their practice. Faculty from another program conducted the focus groups. Data pertaining to students' professional growth and perceived impact of the program are shared in this article.

### **Post-program student interviews**

All thirteen students who graduated from the first cohort of the program within four years of beginning the program were contacted and a researcher not involved with the professional doctorate interviewed nine students about their dissertation experiences. Finally, they were also asked professional growth and achievements as a result of the program.

### **Data Analysis**

Data from the interviews and focus groups were first coded separately. An inductive and interpretive approach (Hatch, 2002) was adopted for analysis of each set of qualitative data where participants' description of a) application of learning from the program, b) integration into the field of educational technology, and c) changes in their behavior, thinking or work was coded and their explanations, e.g. of feelings of confidence or success, used to make inferences and attach significance. Themes from each set of data for these three areas (that correspond to deep and implicit structure) were identified and consolidated.

For the interview data, excerpts were used to conduct member checks to ensure students' views were accurately represented (Merriam, 1988; Miles and Huberman, 1994). To further increase trustworthiness, the data from CVs were used to triangulate and corroborate students' statements in their interview themes related to professional growth and integration into the field, such as the attending of conferences or changes in job roles within an organization. Individual e-mails were sent to clarify any questions that arose.

The focus group data, in contrast, was completely anonymous, therefore member checking and CV corroborations were not possible. To increase trustworthiness, data from two focus groups were thus also coded by a researcher unrelated to the program, and the themes discussed with the main researcher for discrepancies. A fourth theme emerged strongly from the focus group data, that corresponded to the implicit structure of the conceptual framework but had not been explicitly addressed in the interview and focus group questions, namely, students' use of research for decision-making.

The themes from both the focus group and interview data were finally compared and consolidated to identify major themes where it was not possible to isolate themes according to deep structure or implicit structure, students' application of knowledge in their practice and the field and their changes in behavior or thinking were intertwined and led to their professional growth. The qualitative data is thus presented here according to students' application of knowledge to professional practice (quantitative data, their use of research, their creation of innovative curriculum using technology) and students' professional growth (their integration into the field and professional growth at the work place). Finally, data from post-graduation interviews where students reflected on their growth during the program are included.

### **Findings: Application of knowledge to professional practice**

In the survey at the end of Year 1, students were asked to rate several items pertaining to the application of learning in the program to their professional practice on a scale of 1 to 5, with 5 being strongly agree. Students' mean rating for the items "I have applied knowledge or skills gained from Year 1 of the program to my practice/work environment," "I have shared knowledge or skills gained during Year 1 of the program with my peers or colleagues outside the doctoral program," and "Year 1 of the program has contributed to my professional growth" were high at 4.33, 4.31 and 4.31 respectively. Students also agreed that the first year had been relevant to their professional goals (M= 4.19) and that they now had a better understanding of their role as an educational practitioners (M=4.06). Their mean rating for "I have changed how I approach my work responsibilities" was understandably low at 3.62, given that students had been in the program only for one year (Kumar *et al*, 2011).

Data from student interviews, focus groups and students' curriculum vitae indicated that all 19 participants who participated in interviews and focus groups had applied learning from the program to their work environment within the first two years of the professional doctorate. They reviewed, used and shared research and integrated new technologies to create innovative curriculum.

### **Reviewing, Using and Sharing Research**

During interviews, seven students explained that as a result of reading research in the doctoral program, they had begun "bringing literature to meetings," and perceiving themselves as "one of the few liaisons that our (professional practice) has with the boarder world of research". They had begun using research when taking decisions in their practice about buying, adopting or implementing new technologies and introduced research to validate their point of view in meetings at their colleges or schools (Kumar and Dawson, 2012a). Reviewing and using the

research that was reviewed was also the largest theme that emerged in the focus group data collected during Year 3. Several students mentioned that following their participation in the program, their first step when faced with taking decisions was to review research on the topic. One student stated, “I think that this approach can be used to any field.... what does the research say and how can we implement it?” Two other students working in K-12 and at the college level provided examples of their use of research reviewed:

Our principal said... all this technology is cool but it doesn't help students if they don't know how to write and I said, 'well how can the technology help them how to write?' Being able to take that research and pivot it has been powerful.

Now when I share things with my colleagues, I now present the literature or research to support my statements, arguments, etc. When I talk with my administrators about needing technology, I can really use research and data to support my arguments. This gives me more creditability with my administrators.

In addition to being able to use research for decision-making, students reflected that they were able to now critically analyze research, share it with colleagues who might not be able to distinguish between good and “weak” research, and use innovative ideas from the research in K-12 and virtual school environments. Citing research made students feel more confident and their colleagues or leaders increasingly approached them to be part of grants or to provide advice on decisions. Three students reported conducting action research projects in their own classrooms or for K-12 teacher development, while others had introduced new methods of evaluation in K-12, college of corporate training environments.

### **Creating innovative curriculum with new technologies**

All 19 students who were interviewed reported using new technologies such as interactive white boards, social media, simulations, or “research-based” strategies in higher education, high school science and math, middle school social studies, and elementary

classrooms. Their examples included the implementation of a new LMS, creation of a professional learning community, online and blended curriculum, and increased scaffolding for students using technology. By the end of the second year in the program, twelve of 19 students had conducted professional development for colleagues; seven had made presentations about technology integration at the school, county, or district level; six had created new courses, programs, or modules; and two had acquired educational technology grants (Kumar and Dawson, 2012b). During the focus groups, students attributed these achievements to courses in the program such as instructional design, technology integration, and online teaching and learning. Five students emphasized the value of activities in the program that encouraged them to relate course projects to their practice. An instructional designer and K-12 teacher made the following comments:

I always felt when I did a project (in the program) that how cool is this... I am able to use what I am doing with my work. Our professors did a great job of saying that do things that are useful to you, not just for your assignment. Therefore when I spent all this time in creating a website with embedded video and multimedia and giving and receiving feedback, now I can send my designers/training coordinators there and say this is out there.. and use it. This is a real strength.

I have done a couple of professional development for faculty at the school. I also started a wiki for teachers in the school as part of my project for ... The program has given me more confidence, I know more and can share it. I had no interest in professional development whatsoever before. Now I am more confident, I have the knowledge and that I have something worth sharing, have something valuable, I would like to be more involved.

### **Findings: Professional Growth in the field and at the workplace**

In two years in the program, 15 of 19 students had presented their projects and scholarship at regional or national conferences and ten students had joined educational technology professional organizations (Kumar and Dawson, 2012b). Given their diverse backgrounds, integration into the field of educational technology was important to students'

development as scholars. Exposure to scholars in the field made students feel more confident and consider new perspectives or new goals, as evidenced in the interview comments of two students who were K-12 teachers:

I went to ISTE last summer. That was a very good experience. I was sitting next to a professor at University of \_\_\_\_\_. He gave me some ideas, and he was like, maybe you'd be a good professor. I was like, I don't think so, but maybe down the road, we'll talk about it.

My goals have totally changed. When I started I thought I would just use the experience in the \_\_\_\_ grade classroom, but now I have a long-term goal to teach adults technology integration like junior teachers just coming in or at adult community college.

Students began contemplating new career goals and ten of 19 participants took on leadership roles in their professional practice during the first two years of the program. Students' new responsibilities involved professional development, technology-related decisions at the school and district level, and increased involvement in local educational institutions (Kumar and Dawson, 2012b). Students' participation in the program made them consider roles and responsibilities beyond their immediate contexts, as reflected in the following comments by K-12 teachers who took up leadership roles in and outside their schools:

I did not realize... I knew I would grow professionally in the program. I don't think even then I realized that the impact where I worked would be so great, because I'm very shy and timid. But I see myself as a leader big time now, and I, I don't know. It's helped me to do that in my school, and I've done conferences and stuff, too. But I don't think I expected for there to be such an impact in my school. I thought maybe I'll still teach. Maybe I'll do some teacher ed courses, but I didn't realize how it would affect my encouraging others to change their practices. But now it really is how many kids can I impact. Because I feel like I can now, where before I didn't realize I could really make a big difference out of just my classroom, and now I see that I can. I never would have done that even a year ago.

Every class made me a better teacher or teacher leader. I learned to do research and share it beyond the walls of what I am doing now. That's really an obligation to the educational society that I feel I owe.

During the focus groups, students attributed their new responsibilities to the impact that their work from the program had on their work environment and that they were able to complete the program online. For instance, one student got a promotion because her projects improved workflow processes and generated revenue. They also claimed that the program had helped them “to think outside the box” and that their involvement with like-minded peers had increased their morale and motivated them. One student stated,

I am used to what it is like to be a teacher in the classroom surrounded by negativity and complacency and to have that extra injection of challenges and excitement, curiosity and intellectual debate is really motivating.

### **Findings: Reflections after Completion**

Students’ professional growth as a result of the program was not the main focus of interviews conducted with nine students who had graduated from the program. The four main themes that emerged from questions about the impact of the program on students’ professional practice were similar to the themes that had emerged during the program – increased confidence, appreciation and usage of research, increased credibility in their practice, and changes in professional roles.

Students reported increased confidence in themselves and in their ability to research and communicate in a scholarly manner. One student stated, “I feel I have something to say... you know, not only can I contribute but I can make a change” while another said, “I feel so much more empowered.” Students continued to read peer-reviewed literature after completing the program and reported an analytical and critical approach as well as data-driven decision-making as inherent to their practice following the program. Having now conducted research themselves, they asserted they were more discriminate about consuming and using research in their practice, and were able to communicate with multiple stakeholders based on data. Six of nine students

intended to continue conducting research in their professional practice, publishing their work, and attending conferences.

All nine students had experienced changes in their professional roles either at their own organization or had moved to new organizations. Four had been promoted, one had moved to a district-wide role, two had begun teaching as adjunct professors in higher education, and two were interviewing for professor positions. In general, students reported changes in others' perceptions of their capabilities. They claimed that others now perceived them as experts in educational technology, respected their views, and that the degree had lent them credibility.

## **Discussion**

This article is based on data collected at various points of a professional doctoral program through student interviews, focus groups and curriculum vitae. Many of the participants lived in the Southeastern United States, 74% of participants worked in the K-12 environment, and the program was designed to prepare leaders in educational technology. While it is difficult to generalize the findings to other environments, the open-ended and systematic approach to measuring impact at various stages of the doctoral program can be useful to others developing and directing professional doctorates.

The findings indicate that professional doctorates that enable students to study at a distance while embedded in practice can contribute to students' professional growth and bring about change in their local environments. All nineteen students who participated in this research reported applying learning from the program to their practice and growing professionally. As in prior research (Costley and Stephenson, 2008; Lester and Costley, 2010; Nixon *et al.*, 2008; Rhodes and Shiel, 2007), students reported more confidence in themselves and their abilities,



new responsibilities at work and improved employment as a result of knowledge gained in the professional doctorate in educational technology. Furthermore, students had begun relying on research, had adopted a data-driven approach to decision-making in their practice, were sharing research with peers, and implementing research in their practice. They found that their credibility had increased and their expertise valued by others. These findings reinforce the deep structure of signature pedagogy in the doctoral program that was successful in facilitating transformational learning for the students who were working professionals. Students' increased involvement in the educational technology community and their new research-based approach to their practice are indicative of the implicit structure of the program to enculturate them into a scholarly community of practice. Finally, the surface structure that operationalized the deep and implicit structure in terms of learning activities based on adult learning theory and building a scholarly community can be termed as having succeeded.

Although possible metrics of impact were identified based on the research reviewed, an open-ended approach to data collection was adopted in this research in order to document impact as perceived by the participants because educational technology is interdisciplinary and impact could differ based on students' work environments. Self-reports of impact by students encompass tacit impact of which researchers might not be aware. The areas listed above and identified in these findings will be used as a starting point for exploring impact with future cohorts of students in the program, but the open-ended approach will be retained because of the diversity of students and changing nature of technology-rich environments in which our students work. While professional doctorates have certain common features, the discipline, the format (dissertation or dissertation and coursework), and the design of curriculum and activities (e.g. whether they require students to connect program content to practice) can influence the types of

impact for students and their workplace. In this context, it is crucial that faculty or researchers assessing such programs not only identify certain areas of impact based on prior literature in the discipline and the individual program's goals but also allow for the collection of qualitative data that might reveal impact not anticipated by the researcher.

This research focused on students' growth and professional application during each year of the professional doctorate, mirroring Halse and Mowbray's (2011) emphasis on measuring impact during various phases of the doctorate. The use of multiple instruments and the collection of data each year was beneficial for several reasons. This was a new program, therefore the findings from the first year reinforced the program design based on the conceptual framework and students' perceptions that their feedback mattered and that their individual progress was important to the faculty. Impact in the area of data-driven decision-making or students' use of research in their practice was not anticipated before the dissertation, but emerged as a secondary theme within the first year of the program and as the main theme in the second year of the program, leading to minor changes in the timing of the research courses offered during future iterations of the program (Kumar, In Press). While these benefits may differ for other programs, systematic data collection on the impact of a professional doctorate provides valuable insight into the ways in which practitioners who are students, their academic experiences, and their workplace intersect. If conflicts or tensions exist in the intersection of these three areas, for instance in the implementation of data collection for a dissertation, those can be resolved more easily if identified earlier in a professional doctorate. With respect to data collection, partnerships with faculty in other programs or with doctoral students interested in various aspects of online programs were valuable in the implementation of this research. Collaborations with individuals or groups not involved in program design or implementation can provide objectivity

and new perspectives in the assessment of doctoral programs.

## **Conclusion**

The impact cited by students in this research about their individual transformation or changes in self-perception was of particular interest in this professional doctorate because the design focused on each student growing in their professional context. The fact that the program is offered online enables students to continue working in those contexts while interacting and progressing within an online community in the program. This paper presents one approach to explore the types of impact that various phases of a professional doctorate have for professional students, their growth and their workplace. The documentation of impact in new professional doctorates modeled on the CPED (2010) in the United States is important to support efforts to redefine the education doctorate and to identify experiences that not only promote academic rigor but also further the goals of professional practitioners. In the international context, the renewed interest in professional doctorates in the last decade and the rising number of online doctoral programs present a need for research that assesses the effectiveness of program design as well as its impact.

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