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INTRODUCTION

Distance education has a long history of providing learning and training across a comprehensive range of fields and educational sectors for children, adolescents, adults, and the elderly. One small, but significant, part of this provision has been in doctoral education, the most advanced area of university study. However, the distance education literature has made little reference to this field, although interest is emerging in this area, especially as more mid-career professional people undertake doctorates, whether PhDs or so-called professional doctorates. Evans (2008) reported, “a review of the literature on distance education shows that doctorates have rarely been a topic of consideration [and] the literature on doctoral education shows that distance education has rarely been a topic within it” (p. 304). Little has changed since Evans conducted his review. While research, data, and writing on both distance education and doctoral education grow and become increasingly easier to access (due, in no small part, to online data sets and reports), the two fields have not yet merged. However, in practice, a symbiotic connection between distance education and doctoral education has taken place over in the past two decades or more. This chapter reviews the issues and practices surrounding doctoral education at a distance, especially for those in major professional fields of study—education, library, and information science, and nursing, for example—and considers the future implications for what appears to be a growing aspect of distance education practice. This review draws particularly on our experiences, research and writing on U.S. and Australian practices in distance-based professional doctoral education. These are illustrative of the two major North American and British traditions of doctoral education in the English-speaking world.

In order to review this field, it is important to be clear about what is included as doctoral education for this purpose. We are influenced by international standards and discussions on these matters and include graduate programs leading to the award of a doctoral degree based solely or substantially on original research and scholarship that is deemed to have made a significant and original contribution to knowledge. This includes
PhDs, of course, and those many professional doctorate courses that require, as part of their courses, original research and scholarship for professional or workplace, rather than disciplinary, purposes. In this sense, the UK Council of Graduate Education argued that, "Professional Doctorates need to be seen and treated as research degrees that produce doctoral thinkers and doers in specified areas of professional practice and by different means" (Powell & Long, 2005, p. 27). The importance of research in all doctorates is seen as fundamental in many parts of the world, although in the United States this is less the case for professional doctorates; in some U.S. professional doctorate programs research is not seen as fundamental and research training is limited and not practiced (Archbald, 2011; Offerman, 2011). For example, the American Association of Colleges of Nursing articulates a distinction between professional and research-focused doctorates.

The DNP is designed for nurses seeking a terminal degree in nursing practice and offers an alternative to research-focused doctoral programs. DNP-prepared nurses are well-equipped to fully implement the science developed by nurse researchers prepared in PhD, DNSc, and other research-focused nursing doctorates. (AACN, 2011b)

The above contrasts with international policies on doctorates. For example, the European University Association (EUA) asserts, "the most predominant and essential component of the doctorate is research" (2005, p. 8). The League of European Research Universities (LERU) recommended to the European Commission and others that they "Acknowledge the distinctiveness of doctoral training, which is intimately tied to the research process" (2007, p. 14). This is also the case in Australia where the Government's Australian Qualifications Framework (AQF) states that a doctoral graduate "... will have systematic and critical understanding of a complex field of learning and specialised research skills for the advancement of learning and/or for professional practice" (AQF, 2011, p. 61). Likewise, the Council of Australian Deans and Directors of Graduate Studies (DDOGS) argues: "The Council considers that research is the fundamental substance of a doctorate. It does not accept that a best practice doctorate can be earned solely or substantially on the basis of coursework" (DDOGS, 2008, p. 3).

For this chapter, however, the importance of a significant research element in a doctoral course rests on its implications for distance education practice. That is, doctoral coursework at a distance may be seen as an extension of many other areas of distance education coursework practices in terms of curriculum and educational design, assessment etc.; whereas, facilitating, supporting, advising/supervising and examining students' research at a distance require different understandings and practices from those of "conventional" distance education.

These different understandings and practices are not radically different from some particular areas of distance education practice, for example, those where students are supported and supervised to complete individual projects or fieldwork practice. The doctoral students' experiences are, however, necessarily individual and original during their research and dissertation (thesis) writing; therefore, distance educators and their universities need to develop and adopt particular practices to ensure each student undertakes research appropriately, ethically, and of a substance and standard to be worthy of a doctorate. In this chapter we have separated the discussion into a review of the background to doctoral education at a distance and then a discussion of its future.
THE BACKGROUND OF DOCTORAL EDUCATION AT A DISTANCE

Doctoral Education Research for Part-Time Students

Professional people undertaking doctorates typically (but not exclusively) do so part-time; that is, they usually work in their professions while undertaking their doctorates as a secondary activity. The notion of part-time doctoral study is quite precise in some nations, and somewhat less so in others. For example, in Australia "part-time" and "full-time" doctoral candidature (as it is termed) are defined and used by government, universities and other agencies in their funding, reporting and resource allocations. Specifically, the Australian Government funds tuition for full-time domestic candidates for four years maximum, whereas domestic part-time candidates are funded at half the annual rate but for twice as many years (eight) (Evans, Evans, & Marsh, 2008). Universities report their numbers of candidates each semester to the responsible government department together with key characteristics, including full-time or part-time candidature, and whether candidates are enrolled on-campus or off-campus. These data are made available publicly and, as one might expect, most off-campus candidates are also part-time and, in the terms of this chapter, are "distance students." However, the doctoral candidate population exhibits considerable diversity (see, Evans & Pearson, 1999; Pearson, Cumming, Evans, Macauley, & Ryland, 2008, 2011; Pearson, Evans, & Macauley, 2008), and even the "simple" matter of what it means to be a part-time or full-time candidate or an on-campus or off-campus candidate is not always easy to assume. (For example, Evans has advised doctoral candidates who are enrolled formally as part-time and off-campus, although they are also full-time staff members working at the university for whom their doctoral study is also part of their work.)

In North America, where federal, state, and provincial governments partially fund university education, categories related to full-time and part-time doctoral study vary, as evident in data provided by the U.S. National Center for Education Statistics (Choy & Cataldi, 2011; Hussar & Bailey, 2011; Snyder & Dillow, 2011). In some instances, such distinctions do not exist for government funding and administrative purposes, although the practical consequences are part of universities' departmental doctoral processes and courses. American graduate students rely upon their own resources—current earnings, savings, and employer and family contributions—to meet their expenses. Grant aid, a major form of financial assistance from federal, state, institutional, or private sources, may be awarded in various forms, such as "grants, scholarships, fellowships, traineeships, tuition waivers, or tuition reimbursement by an employer" (Choy & Cataldi, 2011, p. 14). Many doctoral students rely upon stipends available through research, teaching, or administrative assistantships; usually full-time enrollment is a prerequisite for graduate stipends. In the United States, assistantship recipients are customarily chosen by academic departments, which, in many instances, receive federally funded research grants that support such assistantships.

Part-time doctoral study itself is not often discussed in the literature on higher education or distance education. Neumann and Rodwell (2009) see that such students are "invisible" in the institutional and policy sense. Typically, U.S. data sources categorize distance enrollment, part-time enrollment, and numbers of doctoral students separately (Choy & Cataldi, 2011; Hussar & Bailey, 2011; Snyder & Dillow, 2011). However, where numbers of doctoral students enrolled in online or hybrid programs are reported from the institutional, regional, or national level, we infer that the majority of these students...
are part time. There is more literature, however, on related topics where part-time doctoral study is an explicit or implicit feature. In particular, this is the case where individual doctoral programs are reported, especially those in professional fields to which we turn in the next section. Barnacle and Usher (2003) and Evans (2002) have addressed the features of part-time study in terms that show the potential benefits to society from having professionals undertake research training through doctorates focused on topics that are directly related to professional practice. Evans (2010a, 2011) has written specifically on how students can manage part-time doctoral study around their work and family commitments that are important matters for most mid-career professional people. He has also written for supervisors (advisors) on how to understand and work productively with such students.

**Doctoral Education in Professional Contexts and Disciplines**

Coursework-based doctorates and higher-degree-by research (HDR) doctorates in several disciplines are well suited for delivery at a distance, either partially (as in hybrid or blended programs) or entirely. American doctorates require a substantial period of taught coursework, followed by an original research project, whereas "the research project dominates and defines Australian doctorates" (Green, 2009, p. 12). With the growth in professional doctorates, taught coursework is becoming increasingly more common in Australian doctoral work. The fields of education, nursing, and library and information science (LIS) offer germane examples of doctoral programs that have successfully incorporated distance education models. Doctoral programs in education, nursing, and LIS are customarily populated by professional adults, typified as practitioners who seek, "a university-based foundation for their practice" (Archbald, 2011, p. 11). In these and other professional fields, work experience is highly valued (Lee, 2011) and sometimes "required before the doctorate is awarded" (Thurgood, Golladay, & Hill, 2006, p. 21).

**Education**

The doctorate in education is customarily linked to the profession of teaching, although doctoral students and graduates cover an array of topics and practices related to education and its management (see, for example, Leonard, Becker, & Coate, 2004; Malfroy, 2011). In both nations, described in this chapter, the doctorate in education broadly spans two degrees, the discipline-based PhD and the practitioner-oriented EdD. The Australian PhD and EdD are more research-intensive (Green, 2009; McWilliam et al., 2002). Candidates in U.S. and Australian doctoral education programs often enter doctoral programs as experienced, professional teachers and educational administrators. The median age of the U.S. doctoral candidate in education is 41.5 years of age, the highest median among fields of study measured by the U.S. Department of Education (Snyder & Dillow, 2011); in Australia the mean is 45 years (Pearson et al., 2008). These students commence research with known and immediate problems found in professional practice on which they can build applied research that is significant and relevant to their students, colleagues, and the profession at large (Beutel et al., 2010; Green, 2009; Offerman, 2011).

Education is a large enterprise, "a sprawling field of study, broad reaching and multidisciplinary" (Richardson, 2006, p. 245). The field has produced "more doctorates every year from 1962 to 1999 than any other major field" (Thurgood et al., 2006, p. 15). During 2007–2008, "15 percent of doctoral students were working on a Ph.D. in education,
Doctor of Education (EdD), or other education doctorate" (Choy & Cataldi, 2011, p. 5); many, if not most, continued to teach or otherwise work while enrolled as doctoral students. Addressing the tendency of education doctorates to continue working while attending school part time, Richardson (2006) notes that a large number of these doctoral students must either support themselves through graduate school or rely upon workplace funding; education doctoral candidates are enrolled part time and continue to work while studying. In response, many schools of education schedule classes at night or on weekends (Richardson, 2006) and offer hybrid or fully distance-based programs. Compared with enrollees in other graduate degree programs during 2007-2008, a greater proportion of U.S. students pursuing a doctorate in education worked full time while enrolled (72%), and fewer (25%) were enrolled full time. Twenty-one percent of doctoral education students, a relatively large percentage when compared with other disciplines, received financial assistance from their places of employment during 2007-2008 (Choy & Cataldi, 2011). These data shed light on the negotiations that doctoral students, particularly those in education and other practitioner-based fields, must make in their working, personal, and academic lives.

Currently, U.S. schools of education are adopting online modalities at a rate slightly higher than graduate schools of other disciplines. Between 2004 and 2008, schools of education offering online courses grew steadily in number each year. In 2006, 71% of these schools reported offering one or more credit-bearing online courses at the undergraduate or graduate level. Institutions known for their online programs reported the largest numbers of conferred doctorates in education for the 2004-2005 year: Nova Southeastern University, 432 (ranked first for doctorates earned); Capella University, 167 (ranked second); Argosy University, 136 (ranked fifth) (Edunventures, 2008). Capella and Argosy are for-profit universities and members of a cohort of educational institutions that invest heavily in distance learning. Nearly two-thirds of U.S. for-profit institutions indicate that online learning is critical to their long-term planning (Allen & Seaman, 2010).

Teachers, administrators, and other practitioners enrolled in doctoral education programs appreciate the need for research that contributes to both professional knowledge and practice. These learners focus on locating and appropriating the intersections between practice and scholarship, practice and theory, practice and research (Green & Macauley, 2007). “When they engage with information and information systems, they seek efficiency, effectiveness, ease and appropriateness, and, above all, customization to their personal learning styles and research interests” (pp. 322–323). Although these findings target doctorate in education students, their attributes as intentional learners are widely observable in other professional doctorate students.

Nursing

As professions and academic fields, “education and nursing demonstrate a reciprocal relationship of practice and research. [Doctoral research within both fields] is actualized in professional practice where it is also evaluated” (Green 2009, p. 136). Like the doctorate in education, Australian and American nursing doctorates fall into the research-heavy PhD (and DNPSc) and the professional doctorate. The “prof-doc” counterparts of the DNP in the United States are the DN, DNurs, and DM in Australia (Green, 2009). In the United States especially, curricula for both the professional doctorate and the PhD emphasize didactic learning. In both countries, the professional nursing doctorate
requires a higher level of experiential and clinical competencies than does the PhD, reflective of practitioners-students' imperative to contribute to disciplinary knowledge as well as patient and community well-being. "DNP-prepared clinicians [are expected to] develop culturally appropriate, data-driven, innovative programs that address stakeholder concerns while building on previous research to effect organizational and societal change" (Brown-Benedict, 2008, p. 454).

Of all fields, nursing acutely demonstrates a critical linkage between the doctorate and the profession. The nursing workforce shortage is widespread internationally, and the literature points to an urgent need for nurses, especially doctorally prepared nursing faculty, to train practicing nurses. Nursing programs are seriously short of faculty, and impending faculty retirements within the next decade are expected to exacerbate this lack of qualified instructors (Candela et al., 2009). Efforts to increase the numbers of nursing graduates and doctoral programs are hindered by low enrollments, high attrition rates, and, consequently, low graduation rates. Student age plays a role as well, for nurses who choose to undertake a doctorate “often do so late in their careers” (Effken, 2008, p. 557), leaving less time to develop fully as nursing educators. As are their U.S. counterparts, Australian nursing faculty are increasingly pressured to undertake doctoral level preparation, and “many are seeking doctoral studies on a part-time basis while continuing to be employed as academics” (Redman, 2007, p. 62). The nursing profession continues to respond aggressively to the need for doctorally prepared nurses.

Recently, the American Association of Colleges of Nursing (AACN, 2011a) announced an encouraging trend upward in nursing program enrollments overall, fueled in part by a growth in distance-based doctoral coursework and programs. In the United States, the professional doctorate is growing quickly; the numbers of DNP programs increased from 20 in 2006 to 153 in 2010; 106 programs are in the planning stages. During the 2009–2010 academic year, 533 research-focused doctorates and 1,282 practice-focused doctorates in nursing were awarded (AACN, 2011a). Similarly, longitudinal research into Australian doctoral education (Evans & Macauley, 2010) has identified a marked growth in nursing doctorates relative to other professional doctorates.

In 2006, the U.S. Department of Health and Human Services announced that it had prioritized the training of health educators in new technologies and distance education methods, with critical implications for professional and advanced health education delivered at a distance. As the number of doctoral nursing programs increases, delivery of such programs is shifting noticeably toward partial or complete online formats (Candela et al., 2009). Like most adult professionals who elect to undertake doctorates at a distance, nursing candidates respond to the flexibility, convenience, and ways of accessing instructors and academic resources that no longer require close proximity. These are especially relevant factors for graduate students who must juggle multiple responsibilities (Candela et al., 2009; Green, 2009; Offerman, 2011).

Library and Information Science

The PhD is the only doctoral degree in Library and Information Science (LIS); there is no professional LIS doctorate. In Australia, Charles Sturt University offered a professional doctorate in the field using distance education, however, enrollments were not sufficient to sustain the program. The Masters degree dominates the field of library and information science as the terminal degree in many nations and is conferred in greater numbers than PhDs. The U.S. PhD in LIS follows a traditional curriculum that includes
coursework, a comprehensive examination preliminary to dissertation research, and the completed dissertation; a practicum may also be required. Since 1926, when the first doctorate in library science was offered at the University of Chicago, 38 North American universities have offered doctoral degrees in LIS. During decade spanning 1998–2007, 841 LIS doctorates were awarded by American universities (Sugimoto, Russell, & Grant, 2009). Wallace (2009) reports 998 students enrolled in doctoral programs accredited by the American Library Association in 2008. Typical of most data retrieved for this chapter, distinctions among part-time, full-time, distance-based, and on-campus enrollment are not available. Twenty-seven of Australia’s 39 universities produced 114 LIS-related PhDs, earned by LIS educators, researchers, and practitioners between 1962 and 2006 (Macauley, Evans, & Pearson, 2010). However, these figures do not necessarily mark a growth in the numbers of LIS educators who hold PhDs in library and information science. Australian and American researchers alike have noted a declining percentage of LIS faculty earning a PhD in library science as, increasingly, members of the LIS professoriate are reported to hold doctorates in computer science, education, and other disciplines (Jaeger, Golbeck, Druin, & Fleischmann, 2010; Macauley et al., 2010; Sugimoto et al., 2009).

Not surprisingly, librarian practitioners and LIS educators are among the earliest adopters of educational technology. Since the 1980s, college and university libraries have provided the first campus sites, both physical and virtual, for 21st-century information tools (Macauley & Green, 2008). The library profession and LIS education in the United States, Australia, and Europe whole-heartedly embrace the movement toward online education, its practices, pedagogies, and technologies. In 2005, a number of LIS schools and other academic units with tracks in education, communication, informatics, information technology, and information science united to form the iSchools caucus, an international organization dedicated to promoting the information field throughout the 21st century and broadly concerned “with questions of design and preservation across information spaces, from digital and virtual spaces such as online communities, social networking, the World Wide Web, and databases to physical spaces” (iSchools, 2011). Practicing librarians and information specialists seeking advanced degrees “generally comprise the largest enrollment base of these schools” (Harris, 2009, p. 171). iSchools institutions dominate the list of most productive LIS-related doctoral programs, and the caucus has been termed a “phenomenon.” Even so, the LIS and information community have yet to engage in substantial dialogue regarding implications of the iSchools approach (Sugimoto et al., 2009), a virtual embodiment that challenges and extends the potential for professional doctoral education across multiple disciplines.

**DOCTORAL EDUCATION AT A DISTANCE**

Evans (2008) reports that Nova University in Florida appears to be the first university to formally offer a doctoral program mainly at a distance in the early 1970s (http://www.fischlerschool.nova.edu/experience-fse/history-and-growth). However, the Nova doctorates are based substantially on coursework together with a small applied research dissertation. White (1980) argues that such doctoral programs at a distance were criticized from outside of distance education largely, it seems, on the basis that “real” doctorates can only be undertaken as full-time students nestled within the academy. Pearson and Ford (1997) show that the academy in Australia has actually accommodated doctoral
research that has been off-campus and part time for many years, indeed since the first PhDs at the University of Melbourne in 1948. Simpson (2009) notes that there were similar practices in the UK, especially through the University of London’s external programs and relations with colleges and fledgling universities in the UK and in the British Commonwealth (pp. 222–223). In effect, there were people enrolled as PhD students who undertook their study off-campus and part time while engaged in employment; sometimes this was in a research position in a government or business organization, or in a professional occupation, such as, a veterinarian or agricultural officer.

Although these latter types of doctoral programs were rarely considered as “distance education” in the sense that this term was used from the 1970s, the practices and procedures are ones that provide the basis for more contemporary doctoral work with part-time candidates. In Australia, for example, Evans (2008) reports that external (distance) study (almost entirely part time) has been a formal part of Australian university practices since the 1980s when the government recorded such enrolments. The major Australian universities offering doctorates at this time were Deakin University and the University of New England, which were the major distance education (dual-mode) universities at the time.

The doctoral enterprise has proven highly successful in both countries, and the trend toward steadily increasing enrollments in American and Australian doctoral programs (and distance-based doctoral instruction) continues into the 21st century. Australian universities awarded 5,796 research doctorates in 2009, approximately a 380% increase since 1991 (Macauley et al., 2011). Graduate enrollments in the United States during the last half of the 20th century have soared and continue to increase steadily (Archbald, 2011). A total of 63,712 doctoral degrees were earned in American universities during the 2007–2008 academic year, a 38.5% increase over the prior decade. The U.S. Department of Education predicted that approximately 97,900 doctoral degrees will be earned at U.S. institutions in 2019–2020, a 54% increase (Hussar & Bailey, 2011). Furthermore, when all disciplines are represented, the projected numbers of American doctorates earned by men will increase by 39%, while a 68% increase for women is anticipated. This prediction alone has a broader implication for growth in numbers of women achieving doctorates across all disciplines, via all forms of delivery.

The 2000 report Re-envisioning the PhD (Nyquist & Wulff, 2000) emphasizes the need to increase doctoral students’ exposure to technology and prepare doctoral students for a wider variety of professional options. The U.S. PhD has long been considered an elite, advanced degree awarded to privileged students “for extended study as they prepared for careers as scholars and researchers” (Nettles & Millett, 2006, p. 1), most of whom resided on campus and studied full time. These assumptions have nearly reached obsolescence as forces from within and external to higher education reshape doctoral education. Technological developments, changes in workforce composition, global economies, commodification of higher education, and competition for students (Altbach, Gumport, & Johnstone, 2001; Archbald, 2011; Livingston, 2009; Thurgood et al., 2006) have profoundly influenced the intention, design, and delivery of the doctorate in Australia, North America, and worldwide. Simultaneously, technological developments which are “altering forever the ways in which we utilize information and communicate with each other” and widely varied methods for delivering distance learning “affect teaching and learning (including research) at all levels” (LaPidus, 2001, p. 275). Those in the growing population of professionals seeking an advanced degree recognize that personal and
professional circumstances preclude students leaving their current employment, relocating, or undertaking a lengthy commute to campus. Administrators and educators have responded, and “graduate education is now being designed in more systematic ways to reflect clearer links between one’s education and career” (Livingston, 2009, p. 27).

Online study now assumes a major role in doctoral education worldwide. Consequently, “the mid-career adult wanting to advance in his or her present field, enter a new field, or embark on a journey of intellectual growth and enrichment” now has enhanced accessibility to doctoral faculty, courses, and academic resources (Archbald, 2011, p. 13). As the pool of nontraditional students continues to grow, distance education provides an appealing venue for attracting and retaining new students in doctoral programs (Christensen, Anakwe, & Kessler, 2001; Livingston, 2009). A recent review of the research on distance education reported in North American doctoral dissertations for the decade 1998–2007 found that the earlier studies in their sample focused on distance education as an educational phenomenon; much of the research set out to compare traditional to online learning modes and technologies (Davies, Howell, & Petrie, 2010). By 2007, a shift toward research interest in learners’ and instructors’ experiences with, and perceptions of, distance education was noted. Conceivably, the decrease in studies that compare face-to-face instruction with distance-based instruction signals a greater acceptance of distance learning as an integrated, viable means of education (Davies et al., 2010).

**THE FUTURE OF DOCTORAL EDUCATION AT A DISTANCE**

*Advising / Supervising*

International, national, and institutional documents and policies are slowly recognizing that PhD programs are not (just) apprenticeships for academic appointments, i.e., the destination for about 40% of PhD graduates in most industrialized nations. In 2005, the European University Association produced a report entitled *Doctoral Programmes for the European Knowledge Society* in which it noted:

> With changing demographic trends in Europe, doctoral training may be seen as part of “life-long learning” in line with the Lisbon objectives. This, however, requires a more flexible approach with regard to both the organisation and duration of doctoral studies for part-time candidates. (EUA, 2005, p. 24)

Furthermore, a UNESCO report on postgraduate education—*Trends and Issues in Postgraduate Education: Challenges for Research*—acknowledged that doctorates “in high demand often focus on specific work-related fields as they can lead to professional advancement” (2007, p. 7). The European University Association reached similar conclusions.

... (A) doctoral candidate was, in most cases, a person with a deep interest in research and a future career in academic research and teaching. This is not true anymore, although society still tends to maintain the stereotype of people with doctoral degrees as scholars living on the isolated worlds of academia ... there (is) a growing number of students who pursue doctoral training for professional; knowledge and skill development (for) industry, government and administration, medical and health provision, legal and financial services, NGOs, etc. There are
many students who (undertake) doctoral training for personal development ... and to widen their employment opportunities ... The doctoral candidate today is a very diverse figure. Doctoral ... programmes are reflecting and tackling this reality through finding the right balance between research, which remains the core element of doctoral education, and the necessary orientation to the wider labour market. (EUA, 2005, pp. 26–27)

These circumstances require that advisors and supervisors adopt approaches to supervision that reflect the professional qualities and seniority of their students. They also require understanding that the research being conducted is often fundamentally concerned with the students' professional lives and careers which produces both positive and negative tensions that advisors and supervisors need to recognize and accommodate (Evans, 2010a, 2010b). It is important that part-time professional students are not "invisible" (Neumann & Rodwell, 2009) to advisors and supervisors and are valued as professionals (Lee, 2011). Distance educators have wrestled with many of these types of problems over the years and have deployed correspondence, radio, television, telephone, and now online media to give students a place in the academy. The potential for fruitful conversations is high between experienced distance educators and doctoral advisors, supervisors, coordinators, and deans of graduate studies. The judicious use of online and social media could well produce highly productive doctoral networks connecting universities and the professional contexts in which their doctoral students are located (Evans, Hickey, & Davis, 2005). Of course, the fundamental goal is the achievement of a timely and good quality doctorate, but other goals may be achieved, such as, (future) collaborative applied research, product and service development, and community engagement. Advising or supervising a doctoral student in a professional field can be seen as developing a productive relationship with a nascent "ambassador" for the university and its research.

Information Gathering and Literature Reviewing

Macauley and Green (2008) observed that the proliferation of research sources in digital formats has brought about a fundamental shift in information- and literature-seeking behaviors. Students across all disciplines, at all levels of study, behave as distance learners when gathering literature sources, regardless of whether they are enrolled on campus or online. Academic libraries worldwide provide Web-based library catalogs and databases, full text journal and monograph collections, and electronic tutorials for their distance learners; in doing so, libraries have opened more opportunities for students in any geographic location. "The student reading an online journal in the physical library experiences the same interaction and engagement with information as a colleague who accesses the same journal at a site away from campus" (Macauley & Green, 2008, p. 373). Given the escalation of online collections, resources, and instructional modes conveniently accessible from anywhere, at any time, students are increasingly inclined to seek information from the virtual environment rather than visit the physical library (Green, 2009; Macauley & Green, 2008). Information seeking in this manner requires and accommodates learner autonomy, characteristic of students who undertake professional doctorates at a distance. These practitioners "are accustomed to handling large amounts of information, then decoding, filtering, and synthesizing for others" (Green & Macauley, 2007, p. 325). The fields of education, nursing, library and information
science, and other professions require that practitioners exhibit advanced proficiencies in gathering, evaluating, and applying evidence-based literature. Many professional doctorate students arrive at the doctoral process having consumed research actively throughout their careers. Consequently, as Green and Macauley put it, "their familiarity with the literature and research of their profession[s] inclines them toward seeking, organizing, and evaluating practice-oriented information" (p. 325).

The literature reviewing process is central to the doctoral enterprise, common to doctorates in the United States and Australia, across all disciplines. Whether doctoral candidates enroll in research-intensive or practice-oriented programs, they can expect to be inducted into the discursive norms, as well as, "the canonical, epistemological and craft knowledge of their disciplines" (Green, 2009, p. 19) by engaging with the literature. At the same time, professional doctorate candidates commence their explorations of the literature intending to investigate a problem related to their professional practice (Offerman, 2011). U.S. and Australian doctoral students often receive different orientations into the literature and literature reviewing practices. Those studying in U.S. doctoral programs are acculturated "more gradually via extended coursework, deliberate instruction and formal training" (p. 96), which takes place in the physical or virtual classroom. A significant proportion of content-based and applied knowledge, as well as theoretical, epistemological, and ontological foundations of the disciplines, is learned through taught coursework. Much of this coursework is specific to the discipline, while other taught courses may concentrate more broadly on research methods; this is the case in the social sciences and health sciences especially. Research methods courses that incorporate advanced information literacy and literature review instruction are often offered early in doctoral program as a means of grounding incoming students in disciplinary language, norms, and practices. These courses are well suited to online delivery or a blended format, and they may be co-taught by a faculty member and specialist librarian (Green, 2006, 2009). In some American graduate programs, early courses such as these focus on the process of associating of literature reviewing with formulating research questions for doctoral investigation. Students are explicitly taught the essential skills of appraisal and critical analysis of the literature, developing in these students the "capacity to negotiate research literatures ... required for disciplinary participation and, ultimately, disciplinary (re)production" (Green, 2009, p. 108).

Because Australian doctoral curricula require little or no coursework, students must commence reviewing the literature intensely and independently during the earliest days in order to establish research and disciplinary foundations. Where programs do incorporate seminars and learning activities shared by an intact cohort, new doctoral candidates are introduced to information literacy work and literature reviewing in the first academic terms. Within this framework, students are initiated into disciplinary literatures and discourse, while forming learning communities and receiving support for academic progress (Beutel et al., 2010; Green 2009).

Successful doctoral students inevitably reach the point of focused gathering, reading, appraising, then writing from and about the literature specific to their topics, at which time the status of being on-campus or off-campus, full time or part time becomes indistinguishable. In essence, the concentrated activities necessary for preparing one's self and for conducting original, advanced research simultaneously individualize and segregate doctoral learners. Green (2009) finds that, in some instances, students can
ameliorate the sense of isolation endemic to doctoral work by becoming attuned to the dialogue held with the literature and positioning themselves within those conversations.

Supporting Doctoral Students

Distance education has often been highly proactive in the provision of forms of support for its students, and the work of Mills and Tait is notable in this regard (see, for example, Tait & Mills, 2003). The emergence of internet-based means of communication over the past two decades, and especially educational and social software of the past decade, has provided new scope and opportunities. For example, Rapanotti, Barroca, Vargas-Vera, and Minocha (n.d.) describe how their part-time research students at the UK Open University are supported via a Second Life entity that they have created for these purposes. In New Zealand a network to support Māori doctoral students has been established which addresses their needs whether on-campus or at a distance (Kidman, 2007). It supports Māori graduate students wherever they are in the world through a Web-based service (http://www.mai.ac.nz/). Again, the potential is high for blending good distance education policies and practices with the needs of doctoral education for professional people.

Educators and learners now have decades of experimentation, experience, and growth on which to continue building and improving off-campus programs. The body of best practices that have proven successful over time is seen in an array of recommendations and strategies, many relevant to the means by which doctoral students communicate with each other, academic faculty and staff, and research mentors. The cohort model is common in the United States and, increasingly, Australia, particularly in professional doctorate programs in education and nursing. Members of doctoral cohorts experience an enhanced sense of community—academic, professional, and personal—that, in turn, accommodates cooperation and reciprocity. Increasingly, cohorts are formed as elements of hybrid programs, those in which face-to-face instructional sessions complement learning activities that occur at a distance, in real time or asynchronously. Instructional designers and distance educators are attuned to the value of active learning strategies and authentic activities that recognize diverse learning styles, facilitated by Web 2.0 technologies, social networking, and Web-based communication applications such as GoogleChat and Skype (Broome, Halstead, Pesut, Rawi, & Boland 2011; Candela et al., 2009; Effken, 2008; Offerman, 2011).

CONCLUSION

In many respects the future for doctoral education at a distance, especially in professional contexts, seems assured. The growth in demand from Masters qualified professional people who wish to extend their knowledge and expertise as applied researchers in their fields has been high. Other than due to the vagaries of economic circumstances and government policies, there is no reason to expect this demand to decline, especially in the developed nations. The pursuit of new knowledge in these knowledge-based economies calls for people who are able to produce (and apply) such new knowledge to contemporary problems, concerns and demands. This suggests that the future is good for universities that are able to offer doctoral programs to professional people who need to study part-time and who wish to focus on topics and applications related to their professions. Much of this provision needs to draw on distance education expertise in order
to be successful, although one may expect that forms of blended provision (on-campus, online seminars, residential schools, etc.) could be most common. As has often been the case in good quality distance education, a focus on students' contexts and needs is paramount. In the case of doctoral students working in professional fields, this involves seeing them as more than "mere students" and as highly experienced and highly educated people with considerable expertise in their fields who need guidance and mentoring to develop their research skills through doctoral research projects. It is largely about a supervisory / advisory pedagogy of respect—respect for what they know and can do, rather than a dismissiveness of such.

Because doctoral work may be seen as contributing significantly to national, social, and economic benefit, then such doctoral work represents a worthwhile investment for the future. This chapter considers the particular institutional investments that are required to provide high quality distance education experiences and support for doctoral students in their professional contexts. It draws on the related literature from both distance education and doctoral education to support its propositions for good policy and practice.

REFERENCES


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