Research note:
Cross-national comments on postgraduate education in research methods
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There is considerable international debate about how well we are preparing the next generation of researchers. Questions about the study of research methods arise within this debate, especially regarding how well the doctoral degree prepares emerging researchers (e.g., Henson & Williams, 2006; Shulman, Golde, Bueschel, & Garabedian, 2006; Walker, Golde, Jones, Bueschel, & Hutchings, 2007). British (e.g., Emery & Metcalfe, 2009) and Australian (e.g., Kiley & Liljegren, 1999; Malfroy, 2005) universities are including more courses or workshops in research methods to prepare emerging researchers. In the United Kingdom, preparation in research methods is viewed as crucial for the creation of “world class researchers” in higher education, research institutes and industry (Vitae, 2014).

Following the Bologna Accord, European Union countries have changed their doctoral education to include more specific instruction in research methods (see Bitusikova, 2009). According to the head of the European University Association Council for Doctoral Education, Thomas Jørgensen (2014), in the past two decades the European doctorate has moved away from the Humboldtian model, with its almost exclusive focus on a thesis. There is now more coursework in the beginning period, including study of research methods, making the European doctorate more similar to the United States (U.S.) doctoral degree.

Good research preparation is not typical of all U.S. doctoral programmes, however. Shulman et al. (2006) refer to problems in U.S. doctoral education as “chronic and crippling” (p. 25), with a confused purpose of preparing both scholars and practitioners. Usually the latter have only minimal training in research methods. On the other hand, U.S. students within scholarly doctoral programmes take extensive coursework in research methods, though with limited experiential practice in applying their knowledge. Newly minted PhDs are instead expected to learn application of research methods on the job when they become academics or professional researchers.

The extent of the knowledge base in statistics, measurement, evaluation and research methodology in U.S. doctoral programmes has been documented through periodic surveys of research methods (e.g., Henson & Williams, 2006). Henson and Williams found that most PhD degree programmes in social sciences, excluding programmes for research professionals, required an average of four courses, with most students opting to take only one extra methods course beyond those required, thus missing courses in advanced, new methods.
Research training in U.S. doctoral programmes for those intending to be professional researchers is much more extensive. Students typically take seven statistics courses, two measurement courses and four general courses on research methods, with elective courses available in programme evaluation, test construction and specific qualitative methods. Despite this extensive training, many students have little direct experience of research. It is questionable whether students can integrate and retain knowledge of methods, much less develop confidence in their application, without more extensive hands-on practice with relevant projects.

New Zealand has been slower than Australia and Europe to move towards mandatory research preparation within doctoral studies. An informal survey of current university calendars by the first author indicates that most New Zealand universities require only one or two courses in research methods within either the education or social science research masterate or the doctorate. Instead, students may receive specific tutoring from supervisors, or attend workshops conducted for both academic staff and doctoral candidates.

In summary, critical issues have been raised about the extent of the availability and usefulness of research methods in the preparation of emerging researchers, in particular of doctoral researchers. The present study of preparation in research methods can provide useful information for the debate in New Zealand. Much of the speculation about adequacy of research preparation comes from opinions of university faculty and not from the graduates themselves. The research reported here gives an initial indication of the adequacy of research preparation from the viewpoint of a small sample of professional education researchers in the two countries: New Zealand and the United States.

There has been little investigation of students' research methods experiences in New Zealand. The present study reports the results of a small qualitative interview study about adequacy of preparation in research methods from professional educational researchers. The cross-national aspects of the study add another dimension, providing an initial comparison between the New Zealand and U.S. postgraduate curricula regarding research preparation in postgraduate education.

**Method**

In order to investigate researchers' views of the relevance of their postgraduate research preparation, a semi-structured interview schedule was devised to be given to samples of professional researchers in the U.S. and New Zealand. Interview questions were designed to gain insight into participants' experiences of their study of research methods. Ethics approval for the study involving participants from New Zealand and the U.S. was granted by the Institutional Review Board of the University of Denver, Colorado, U.S.A.

The qualitative analysis also involved review of curricula and degree programme documents that outlined courses in research methods available across three universities in New Zealand and a doctoral degree in research methods at one U.S. College of Education in many ways typical of graduate offerings for research professionals across the U.S..
Participants

Eight professional educational researchers took part in the study, divided equally in number across the two countries. Purposive sampling focused specifically on experienced researchers through professional research networks. The four U.S. participants were from three different states. All had achieved doctoral degrees within the past eight years that had included study of research methods. The four New Zealand participants were from three different cities, and had masters or doctoral degrees achieved in the past 10 years. Two U.S. interviews were held as face-to-face meetings; all other interviews were by telephone. All interviews were carried out by the first author, recorded with a digital device and transcribed.

There were three women in each of the national subgroups. Because of confidentiality issues regarding the small size of the samples, the analysis below employs the third person plural (“they”) rather than identifying participants by gender.

Interviews

Semi-structured interviews were conducted so that there could be open-ended discussion about general issues surrounding research methods. In addition to general demographic questions about their study of research methods in their degrees, participants were asked: (1) Do you think you were well trained in terms of research methods during your postgraduate studies? (2) What do you think the best form of learning about research methods might be (e.g., online, workshops, lectures)? Interview responses were analysed for information about participants' views of the importance of research and of their perceived capability as researchers.

Findings

Type and adequacy of study of research methods

All four U.S. participants expressed positive views of their study of research methods in their degrees and its relevance for their work. This may indicate positive response bias, since U.S. participants had found full-time research jobs in industry and academic settings.

Two New Zealand participants who had taken only one research methods course were not satisfied with this level of study, though one respondent said that they “did not take opportunities” at that time in life because they had not foreseen a career in research. This person's comment suggests that they felt responsible for choosing a lower level of study of research methods. A third New Zealand participant, who was positive about their past study, had extensive qualitative research methods experience in the United Kingdom, followed by study of quantitative methods during the doctorate in New Zealand. The fourth New Zealand participant had a science education background that had offered a range of methodologies. These last two New Zealand participants also stated that the study of research methods experienced during their advanced masters or doctoral study provided a good foundation for their current work in research.
A key feature of relevant research study for two participants involved the chances they had to take part in actual research projects during their study. One U.S. participant said that they had “many opportunities to work as a student on different projects analysing data.” This participant was already employed as a researcher, with fees paid by their workplace; this person was able to make direct connections between what they were learning in class and the kinds of analyses needed in their work. This participant's view was that lectures provided the knowledge needed “in order to do a lot of hands-on experience practising” the methods. Incidentally, this participant mentioned being able to provide a multiple regression analysis to a local government body in order to successfully reduce their property taxes; this seemed to the participant to demonstrate just how useful research methods could be in everyday life as well as work.

One New Zealand participant had been employed, during postgraduate study, as a contract researcher on government-funded research. This experience was seen as crucial for allowing the participant to “cut my teeth and know what doing research is really like.” There was a lot to be gained “doing research where the outcomes really do matter to someone else and you've got stakeholders... that actually have some kind of interest and ... worldwide consequences.” This experience was contrasted with coursework that might not seem as relevant for students.

The U.S. participants all agreed that their training had been a “good starting point” (as one put it), but also expressed the desire to have had some additional initial study. One wanted more detailed knowledge about “cutting edge methods” and how to handle missing data. Another thought it important to be exposed to “all different types of research methods because as a researcher we're never going to be using just one method or if we're only trained in one method we will be really limited.” This participant also expressed the desire to be involved in “real projects” during training, giving weight to this factor mentioned above.

One of the New Zealand participants mentioned the usefulness of working across disciplines, applying a methodology that might be used somewhat differently from one discipline to another because “it makes you really think about what is the essence of this particular methodology... if it takes you past just following rules.” Another New Zealand participant mentioned the importance of quantitative methods being compulsory.

I think if had [compulsory quantitative aspect] not happened I would have just avoided quantitative research and I never would have really engaged with it I don't think.

The implication of this comment, combined with comments from another New Zealand participant, was that quantitative methods were not as popular or common as qualitative methods in educational research. The lack of study of quantitative methods was viewed as limiting opportunities for the use of mixed methods.
Views of ongoing development of research expertise

Most participants had been involved in further study of research methods since graduation, through workshops or seminars run by research training organisations or software developers. One New Zealand participant mentioned a week-long workshop run by a professional research association as particularly helpful. Another mentioned that it is difficult to attend workshops run by universities because these are often at times or places difficult to juggle with working life.

United States and New Zealand participants differed in their views about the effectiveness of online courses in research methods. Two U.S. participants had not considered online learning, and another had “heard of challenges” regarding such learning. In contrast, New Zealand participants were positive about online learning. One said that “delivery mode, that’s not as important as what goes into the mix” regarding the learning components. Another New Zealand participant had extensive experience of online learning and considered that “you’ve actually got more room to manoeuvre when you work online” because you have more time to seek help rather than having to be adroit enough to ask questions “on the spot.” Online courses allow for “asymmetrical” discussion between peers and with the instructor at different times during the week. This participant further suggested that a “blended” approach might be good. A fourth New Zealand participant thought that people had to be “motivated ... to learn the stuff.” This participant considered that the online learning could “become kind of peripheral to what you’re doing unless you’ve got some sort of connection with the community that you’re working in in the first place.”

Discussion

This study was limited by the small sample of participants chosen purposively; the responses of these groups may not be representative of either country.

This small study provides some confirmation of the popular view in New Zealand that the PhD process in the two countries (the U.S. and New Zealand) are at two ends of the coursework spectrum, with the U.S. providing greater exposure to coursework (in lieu of sole focus on a long Humboldtian thesis) and in New Zealand lesser exposure (due to greater emphasis on a thesis). What has emerged from this study, however, is the view that both extremes have their disadvantages. Just as there has been soul-searching in the U.S. about the relevance of the doctoral programme (Walker et al., 2007), there have also been moves in Europe to strengthen coursework as part of the doctoral curriculum (e.g., Emery & Metcalfe, 2009; Krull, 2010).

Preparation in research methods for research professionals in the U.S. and New Zealand differs in that only the U.S. has highly structured, multiple, sequenced mandatory courses at doctoral level. The motivation for learning differs between the U.S. and New Zealand, with motivation in the U.S. centring on stepping through requirements to earn a degree rather than gaining skills directly needed to undertake and complete a particular research project. For this sample of U.S. participants, perceptions of research preparation were strongly positive though there was a perceived absence of “cutting-edge” skills. New Zealand participants perceived their
research preparation as minimal, with need for additional training sought from different sources, from one-off workshops to intensive tutoring by those highly skilled in the method they wanted to use for their research.

In summary, while the New Zealand PhD graduates in education considered that they had achieved in-depth knowledge of research using a particular paradigm, some viewed their limited knowledge of alternative methods as a restriction. In contrast, the U.S. graduates described a breadth of knowledge with, however, less real experience in applying research to particular projects. The dissatisfactions expressed by both U.S. and New Zealand participants suggest that a middle way might be more productive, one involving both complex coursework in research methods and extensive, in-depth, hands-on experience of independent research.

Two implications are worthy of further study with a larger sample. The first comes from comments of both U.S. and New Zealand participants that much is to be gained from engaging in research that is “real,” and using multiple methods across disciplines. As one U.S. participant put it, “research is really hard and kind of complex ... and there’s no way to really shortcut that learning”. So engaging in “real” research, while it may be frustrating, could point the way to what is needed. The New Zealand participant happiest with their pre-doctoral research preparation had worked as a research assistant on large funded research projects. The practice of involving postgraduate students in research projects appears to be common in both countries for high-achieving students who have direct personal, professional relationships with senior staff. Such practice is common in science doctorates in New Zealand, since many doctoral topics require external funding for their feasibility, meaning that students may need to be involved on their supervisors' projects. Further scrutiny of these opportunities and their current distribution among doctoral candidates would be timely.

A second implication for doctoral study in New Zealand is that the current level of coursework does not appear to be adequate for the high level skills required to carry out the innovative research expected of the PhD. In contrast, the named doctorate such as the EdD, has provision within current NZQA regulations to include considerable high-level coursework that could encompass one-third of the content of the degree. Alternatively, there may be ways to support greater opportunities for research students around the country to learn about advanced research methods through online means, presented from within the country or possibly from international sources. Such openness could lead to a laissez-faire approach to researcher development if there were neither clear guidelines about the appropriateness of the curricula nor any monitoring of the quality of the online offerings (see Gorman, 2011). The present study asked professional researchers to raise questions about the perceived adequacy of their own earlier study of research methods. Clearly more research and reflection are needed to decide on the critical research skills needed both for the independent research of the thesis and for the doctoral graduate’s ongoing career in building the capacity of the next generation of researchers.
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References


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