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Abstract: Business disciplines have traditionally been undertaken within the quantitative paradigm however, mixed methods has recently been introduced and utilised within applied business research. The purpose of this paper is to map the experience of introducing the teaching of mixed research methods in an international Doctor of Business Administration (DBA) curriculum within an Australian University. This paper begins with a professional reflective piece on the experience of introducing the teaching of mixed methods. This is followed by a brief overview of the literature on mixed methods as a third methodological movement. The paper will then present empirical data into the use of mixed methods in DBA theses. Future considerations and directions for the teaching of mixed methods for capacity building are then posited for applied business research.

Keywords: mixed methods, business and management research, DBA theses, teaching mixed methods

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Abstract: Business disciplines have traditionally been undertaken within the quantitative paradigm however, mixed methods approaches have recently been introduced and utilised within applied business research. The purpose of this paper is to map the experience of introducing the teaching of mixed research methods in an international Doctor of Business Administration (DBA) curriculum within an Australian University. This paper begins with a professional reflective piece on the experience of introducing the teaching of mixed methods. This is followed by a brief overview of the literature on mixed methods as a third methodological movement. The paper will then present empirical data into the use of mixed methods in DBA theses. Future considerations and directions for the teaching of mixed methods for capacity building are then posited for applied business research.

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Introduction

The Southern Cross University Doctor of Business Administration (DBA) program was established in 1996 and was one of the first business-related professional doctorate research programs offered in Australia. Since its establishment, the program has received many external acknowledgments. For example, the National 2005 and 2006 Graduate Careers Australia Reports of the Postgraduate Research Experience Questionnaire that is aimed to provide a national picture of selected aspects of graduates' research experience to allow comparisons of educational quality among the 39 Australian universities, ranked Southern Cross University postgraduate research candidates (includes both DBA and PhD graduates), in the top three research programs (rated one in 2005) in Australia for overall satisfaction.

Unlike most of the other DBA programs in Australia, the program is classified by the Department of Education, Employment and Workplace Relations (DEEWR) as a research higher degree, i.e. as having a research component of at least two-thirds of the course. As most of the candidates entering the program do not have research training (for example an honours or research masters qualification), the program provides candidates with compulsory qualitative and quantitative research methods training on entry to the program. The research methods training is delivered as two separate coursework subjects.

The two research methodology units aim to comprehensively introduce candidates to the field of business research design and methods, a necessary prerequisite to undertaking a doctoral thesis research project, while promoting a general philosophy that there are many ways that a research problem might be investigated, each with its own strengths and weaknesses and that no one particular paradigm, is superior to another.

Over recent years, it was noted by the Director of the program that many, if not most research projects in the program, were not adopting a purely quantitative or qualitative research design but rather a mixed methods approach with both quantitative and qualitative aspects in the research design. In some studies, the two approaches were utilised with similar weighting while in other studies; one approach was dominant, with the other supporting. As it became evident that mixed methods approaches were the dominant form of design being adopted in the business research projects, it was deemed necessary to introduce into the research training units, a more formal curricula and supporting literature on mixed methods research designs, including the existence and utilisation of mixed methods 'typologies'. Doctoral supervisors and examiners were also noting over recent years that, while business doctoral candidates from many universities were attempting to utilise mixed methods in their theses, in the main to achieve a triangulated approach to their data collection, many candidates did not properly articulate a mixed method design in their thesis or even appreciated that their study fitted into established typologies from various authorities in the field.

This paper will review the literature relevant to the emergence of mixed methods as a methodology and the use of mixed methods in certain discipline areas of business before presenting the empirical data from the DBA theses study. A discussion on the implications of this for the teaching of mixed methods in this particular postgraduate programme will follow.

Literature review

Mixed method research is becoming an increasingly popular methodological choice for many academics and researchers from across a variety of discipline areas. Most notably in the fields of education, health and nursing and the social and behavioural sciences. Creswell and Plano Clark (2007, p.5) define mixed methods as follows:

> Mixed methods research is a research design with philosophical assumptions as well as methods of inquiry. As a methodology, it involves philosophical assumptions that guide the direction of the collection and analysis of data and the mixture of qualitative and quantitative data in a single study or series of studies. Its central premise is that the use of quantitative and qualitative approaches in combination provides a better understanding of research problems than either approach alone.

Creswell and Plano Clark (2007) have also mapped a brief history of mixed methods research and its evolution to date and have posited four, often overlapping, time periods in the evolution of mixed methods. These four time periods are the; Formative period (1950s - 1980s); Paradigm debate period (1970s - late 1990s); Procedural development period (late 1980s – 2000); and the Advocacy as a separate design period (2000+). Buchanan & Bryman (2007, p. 486) in reference to organisational research, conclude that:

> The paradigm wars of the 1980s have thus turned to paradigm soup, and organisational research today reflects the paradigm diversity of the social sciences in general. It is not surprising that this

> epistemological eclecticism has involved the development of novel terminology; innovative research methods; non traditional forms of evidence; and fresh approaches to conceptualization, analysis, and theory building.

The evolution of mixed methods research as a third methodological movement has been evidenced by recent studies of the use of mixed methods in the fields of: counselling (Hanson, Creswell, Clark, Petska & Creswell 2005); qualitative research conducted in Switzerland (Eberle & Elliker 2005); social and human sciences (Bryman 2008; Plano Clark 2005); evaluation research (Greene, Caracelli & Graham 1989); and business research (Cameron 2008; Hurmerinta-Peltomaki & Nummela 2006; Molina-Azorin 2007). These studies provide empirical evidence of the extent of utilisation of mixed methods in contemporary research across a variety of discipline fields. Creswell and Plano Clark have concluded that 'today, we see cross-cultural international interest, interdisciplinary interest, publication possibilities, and public and private funding opportunities for mixed methods research' (2007, p. 18).

Several authorities have been emerging as mixed methodologist researchers and theorists (Bazeley 2003; Bergman 2008; Bryman 2008; Creswell 2003; Greene and Caracelli 1997; Mertens 2005; Mingers and Gill 1997; Plano Clark & Creswell 2007; Tashakkori and Teddlie 2003). The interest in mixed methods has seen the recent emergence of several publications including academic journals, chapters within research texts (McMillan & Schumacher 2006) and research texts themselves that are dedicated to mixed methods. The most comprehensive publication of mixed methods to date has been the edited *Handbook of Mixed Methods in Social and Behavioural Research* (Tashakkori & Teddlie 2003). In January 2007 the first issue of the *Journal of Mixed Methods Research* was published and this was followed by the first issue of the *International Journal of Multiple Research Approaches* in October 2007. In 2009 a new online journal, *The International Journal of Mixed Methods in Applied Business and Policy Research* will publish its first issue. Several texts solely dedicated to mixed methods research have recently been published (Andrews & Halcomb 2009; Bergman 2008; Creswell & Plano Clark 2007; Greene 2007; Teddlie & Tashakkori 2009).

There is also a small but slowly growing body of literature on teaching mixed methods. The most notable being Bazeley (2003); Creswell, Tashakkori, Jenson and Shapley (2003) and; Earley (2007). Collins, Onwuegbuzie, and Sutton (2006) compiled thirteen steps of the mixed research process which could be very useful in designing a mixed methods curriculum. Collins and O'Cathain (2009) developed ten points about undertaking mixed methods research for novice researchers to consider and Halcomb and Andrew (2009) have addressed the practical considerations for higher degree students undertaking mixed methods projects. Ivankova (2007) has developed a set of learning outcomes for a course in mixed methods offered through the School of Education at the University of Alabama Birmingham. This course in mixed methods is one of seven mixed methods courses listed on the Bridges web site (Mixed Methods Network for Behavioral, Social and Health Sciences, Florida International University). The mixed methods courses listed include courses for the discipline fields of nursing, education, educational psychology, sociology and an institute for social research. Six of the universities are based in the USA and one is a

Norwegian university. The International Journal of Multiple Research Approaches has a Special Issue on Teaching mixed methods for release in 2010.

In the field of management research, Mingers (1997) and Mingers and Gill (1997) have been strong advocates for multimethodology or pluralism, as has Bazeley (2003). There is a small but growing body of research that is researching the use of mixed methods across business disciplines. Rocco, Bliss, Gallagher and Perez-Prado (2002) explored how mixed methods was approached in the fields of human resource development (HRD) and adult education and Mingers (2003) reviewed the information systems literature in reference to the use of multimethod research. Hurmerinta-Peltomaki and Nummela (2006) reviewed articles from four major journals in international business from 2000 to 2003 and Molina-Azorin (2007) studied the use of mixed methods in the field of strategic management and in particular Resource Based Review research. Cameron (2008) undertook a methodological scan of conference papers from the 2007 conference of the Australian and New Zealand Academy of Management (ANZAM).

A large study by Bryman (2008) of published social science journal articles from 1994 to 2003 that utilized mixed methods found that just under half of those that used mixed methods did so by presenting the qualitative and quantitative data in parallel and only 18% of the articles genuinely integrated the two sets of findings. The studies by Hurmerinta-Peltomaki and Nummela (2006) and Cameron (2008) found similar findings. Hurmerinta-Peltomaki and Nummela (2006) analysed mixed methods in international business journal articles from 2000-2003 and found that the majority of these (60%) used both qualitative and quantitative data collection but analysed these within their own tradition (ie quantitative data analysed using quantitative methods and qualitative data analysed using qualitative methods). Cameron (2008) reviewed conference papers from the 2007 conference of the Australian and New Zealand Academy of Management (ANZAM) (n=281). Quantitative papers represented just under one third of the papers (32%), followed by conceptual papers (30%). Qualitative papers represented 28% of the papers and mixed methods represented 10%. The conference papers were then categorised as either conceptual or empirical (qualitative, quantitative and mixed methods). This process identified a total of 197 papers with an empirical research design. Of these empirical studies 28 (14%) utilised a mixed method. The majority of mixed method type papers were in the classification (n=22 or 78%) that analyzed qualitative data qualitatively and analysed quantitative data quantitatively.

The study of the use of mixed methods in strategy research by Molina-Azorin (2007) reviewed literature in the Resource Based Review (RBV) published between 1984 and 2006. In addition to this articles from all issues of the *Strategic Management Journal* between 1984 to 2006 was conducted. Molina-Azorin (2007) utilised the mixed method design categories of Morse (1991, 2003) to group mixed methods research designs in his study. The findings from this study point to the dominance of the qual→ QUANT design in RBV mixed methods studies. This is a sequential research design where the quantitative research is dominant and is preceded by less dominant qualitative research. In respect to these studies Cameron (2009) concludes that there is an over reliance of mixed methods research approaches which maintain the divide between quantitative and qualitative methodologies and this inhibits the use of more integrated mixed method designs. What remains as a major challenge for business and

management researchers wishing to use mixed methods and those who build research capacity, is the issue of integration between qualitative and quantitative methods that such research achieves or claims to achieve.

In summary, mixed method research is a growing area of methodological choice for many academics and researchers. In business disciplines it appears that the adoption of mixed methods is somewhat delayed when compared to other social science disciplines. This study aims to investigate the following research questions:

1. *What percentage of postgraduate business research candidates utilise a mixed methods approach?*

2. *What are the most frequently used data collection methods and combinations thereof in DBA research?*

3. *Is the concept of triangulation explicitly articulated in DBA theses?*

The remainder of this paper will address these research questions by presenting the results of the methodological study of DBA theses and discussing the findings with reference to the usage of mixed methods research and its impact on the teaching of research methods generally.

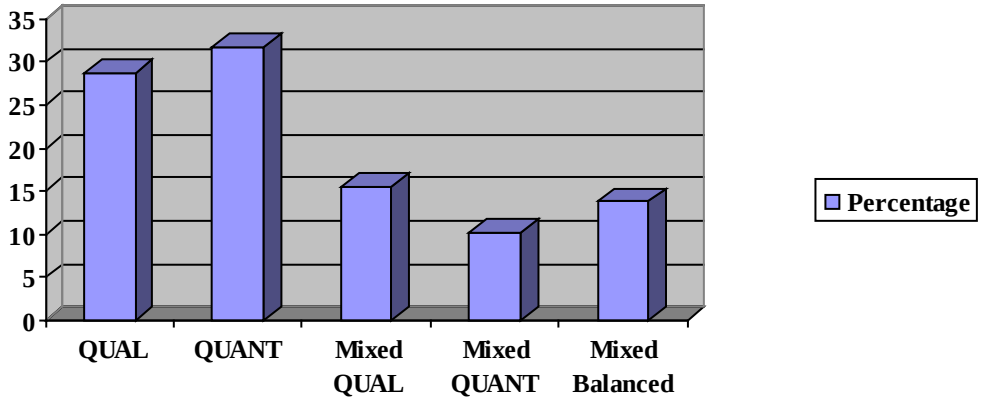
Research design

The empirical evidence collect for this paper derives from a research study that utilized a systematic content analysis of qualitative secondary data sources. The sample being Doctor of Business Administration theses at Southern Cross University (SCU) from 1997 to 2007 (n= 186) (Cameron 2009). Demographic data was collected (gender, ethnicity and culture) as well as other relevant information (Culture & Ethnic group codes; Australian Field of Education codes; Research Fields, Courses & Discipline Classification codes; Socio-Economic Objective Classification codes). Data was also collected on supervisors, research design, triangulation and research methods employed. The qualitative data was coded and entered into SPSS which allowed for basic descriptive numerical analysis.

Empirical evidence

One hundred and eighty six theses were analysed and coded against the following methodology categories: Quantitative; Qualitative; Mixed but predominantly Qualitative; Mixed but predominantly Quantitative; Mixed with a balance between quantitative and qualitative. Of the total number of theses only one had explicitly utilised a mixed method research design. Figure 1 provides frequencies for the methodological approach employed in this sample.

Graph 1 Methodological approach employed in DBA Theses at Southern Cross University from 1997 to 2007



Source: Cameron (2009)

This graph illustrates that DBA theses that used a pure quantitative methodology represented 32%. Those who used a qualitative data methodology represented 29% and a total of 40% used a mixture of both quantitative and qualitative methodologies. The mixed methods figure is the total of three categories (Mixed with predominantly qualitative [16%]; Mixed with predominantly quantitative [10%]; and Mixed with a balance between the use of both qualitative and quantitative [14%]) (Cameron 2009). The coding of these three categories is open to subjective interpretation and issues of inter rater reliability had to be addressed during the study. This was achieved through descriptives of each category and a comparative analysis between the two raters using a sample of twenty theses.

The DBA theses were also coded for research design and actual data collection methods used. The research design categories were based on the research design types refereed to by deVaus (1995) and research strategies described by Saunders, Lewis and Thornhill (2007). The coding of the actual data collection methods used involved multiple response coding, as for many of the research studies more than one data collection method was employed. Table 1 depicts the findings from preliminary data analysis on the frequencies of research design types and the three highest scoring data collection methods for each research design type.

Table 1 Research Design Type and Methods Used: DBA theses

Research Design Type	**Three highest scoring methods used (multiple response coding)**			**TOTAL Research Design Types**
	Highest reported method	**Second highest reported method**	**Third highest reported method**	**Total number = 145**
Exploratory	Survey	Interviews	Case Study	82

	57	*55*	*30*	
Case Study	Case Study *55*	Interviews *54*	Survey *33*	68
Descriptive	Survey *33*	Interviews *19*	Case Study *9*	39
Explanatory	Survey *9*	Interviews *7*	Case Study *5*	13
Action Research	Action Research *6*	Interviews *5*	Observation *3*	11
Experimental	Survey *6*	Experimental; Observation *4 each*	Interviews *3*	7
Grounded Theory	Interviews *6*	Case Study *3*	Survey; Grounded Thy; Focus Groups *2 each*	6
Longitudinal	Survey; Case Study *2 each*	Interview; Content analysis *1 each*		3
Quasi Experimental	Survey *1*			1
Mixed Methods				1

Source: Cameron (2009)

Table 1 illustrates that the exploratory, case study and descriptive research design types were the most popular in DBA research with the most frequently used methods being: survey; interviews and; case study. However, the projects were methodologically diverse with some projects utilising grounded theory, action research, ethnography and post-structuralism.

Data was also collected on whether the DBA candidate explicitly utilized the concept of triangulation. Of the 186 DBA theses, 20 articulated the use of triangulation. This represents 11% of all DBA theses in this study. Examination of the frequency distribution of these 20 theses across overall research approach results in no quantitative theses articulating the use of triangulation, 8 qualitative theses and 9 mixed methods theses articulated the use triangulation. Three of the theses that utilized the concept of triangulation were not able to be classified under the categories used.

Discussion and findings

The reported findings address each of the three research questions identified at the conclusion of the literature review. Each of these questions is addressed in turn before overall conclusions are drawn.

Research Question 1 asked, *What percentage of postgraduate business research candidates utilise a mixed methods approach?*

The results from the DBA theses study indicates that mixed methods is being utilised by postgraduate business research students. Mixed methods DBA theses represented 40% of the SCU sample.

The data demonstrates that mixed method projects are increasing in frequency and that doctoral candidates are mixing methods in their research. However, they are not consciously expressing this through explicit articulation of research design. Recent presentations at Doctoral symposia indicates that current DBA candidates are showing an appreciation and understanding of the conceptual frameworks underpinning mixed methods designs and are beginning to articulate these frameworks in their symposia presentations. It is anticipated that this trend will manifest itself explicitly in future DBA theses due to the inclusion of mixed methods within the DBA curriculum and Doctoral symposia workshops.

Research Question 2 asked, *What are the most frequently used data collection methods and combinations thereof in DBA research?*

The data analysed from the DBA theses study demonstrates that exploratory, case study and descriptive research design types are the most popular designs in DBA research, with the most frequently used methods being: survey; interviews and; case study. The results are consistent with what might have been expected by intuitive logic as these research projects are usually aimed at the exploration of business phenomena or to describe and explain business activity. However, the projects were methodologically diverse with some projects utilising grounded theory, action research, ethnography and post-structuralism.

Research Question 3 asked, *Is the concept of triangulation explicitly articulated in DBA theses?*

Only 11 % of the DBA theses in the study explicitly utilised the concept of triangulation. This included qualitative (n=8) and mixed methods (n=9) studies. This might be viewed as a disappointing result for those concerned with methodological issues in doctoral theses and in particular, for those interested in the importance of articulated research design in doctoral theses generally.

The results of the studies indicate that increasingly, DBA research is being conducted using mixed methods research designs and if the trend continues, mixed methods designs may become the dominant form of design for doctoral work in business disciplines into the future.

Anecdotal evidence from approximately 20 doctoral thesis examiners who examine theses for a large number of Australian universities has demonstrated a trend where a large percentage of candidates do not properly articulate the research design of their project, preferring to only articulate in the thesis the methodologies undertaken. Thesis examiners therefore need to include in their examination report, a recommendation that the candidate clearly articulate the research design before

expanding on the methodologies utilised in the project. Accordingly, it would appear that the answer to these questions is in the negative.

The empirical evidence presented hints at a mixed methods 'transitional creep' within business disciplines. The 'transitional creep' of mixed methods being perceived as a periodic reflection of the evolution of mixed methods as a third methodological movement. It will take time to achieve a level of acceptance and awareness of the literature and research around mixed methods across business based research. And it will take time for mixed methodologies to penetrate business and management disciplines to the extent it has in other disciplines like education and health and nursing. Leech and Onwuegbuzie (2009) refer to research as a continuum. At one end of the continuum are monomethod (exclusive use of either qualitative or quantitative data collection techniques) designs and at the other end, fully mixed method designs. 'Once a study combines quantitative and qualitative techniques to any degree, the study no longer can be viewed as utilizing a monomethod design' (Leech & Onwuegbuzie 2009, p. 267). Perhaps this period of' 'transitional creep' is causing a large section of this continuum to be occupied by research that implicitly uses mixed methods but rarely explicitly articulates mixed methods conceptual frameworks and research designs. If we (the faculty) are not explicitly teaching mixed methods as a legitimate part of the research training curriculum then how can we expect this section of the continuum to reflect a fuller understanding of mixed method conceptual frameworks and research designs that are now available to the postgraduate researcher. Today's researcher needs to be multi-skilled in qualitative, quantitative and mixed methods research techniques.

Onwuegbuzie and Leech (2005) appear to support the proposition that doctoral candidates need to be proficient at both quantitative and qualitative research methodologies to prepare them to be pragmatic and competent researchers. However, they contend that the best way to accomplish that goal is to replace quantitative research methodology and qualitative research methodology courses from research curricula with research methodology courses that teach both quantitative and qualitative techniques within a mixed methodological framework simultaneously.

It may be that the teaching of research methods for doctoral candidates in the traditional form of teaching quantitative and qualitative methods subjects separately needs to be re-examined. It may also be that the attempt made by the university in this study to introduce mixed methodologies as a component of the research training units, might also be re-examined.

Perhaps the way forward is to reframe the teaching of research design and methodology courses for research students generally. It may well be that the suggestion of Onwuegbuzie and Leech (2005) to cease the teaching of quantitative and qualitative methodology courses as separate courses and to teach research design and methodology within a mixed methodological framework is the appropriate approach for the future.

Conclusion

Further qualitative analysis needs to be undertaken to determine whether the mixed methods research reported is multiple methods as opposed to mixed methodologies. It was noted that this could be a periodic reflection of what has been termed as 'transitional creep'. In other words, what is being presented implicitly or explicitly as mixed methods in contemporary DBA research is a reflection of a transitional period in the development of mixed methodologies as a third methodological movement and the associated levels of awareness, acceptance and penetration it currently has across business and management disciplines.

The introduction of mixed methods literature and training for doctoral research candidates is only the first step to ensuring that candidates are properly trained in the rigours of research design. While teaching mixed methods as a part of qualitative or quantitative research training is supported, there is now sufficient literature, techniques and tools to justify teaching mixed methods as a stand-alone unit or as the framework for the teaching of research design and methodologies at Universities to ensure quality and rigour in research training. However, there is a need to be cautious that mixed methods does not be seen as a compulsory approach to be adopted by researchers in business and Universities need to promote a general philosophy that there are many ways that a research problem might be investigated, each with its own strengths and weaknesses and that no one particular paradigm, is superior to another.

Due to organisational structural changes and a recent review of the DBA Programme the Qualitative and Quantitative Research Units are to be reviewed. A separate Mixed Methods Unit is being contemplated and the possibility of a Visiting Research Fellow grant is being explored with this end in mind. More comprehensive Mixed Methods Workshops are also being considered as a precursor to future Doctoral Symposia.

Those academics involved in the teaching and supervision of the DBA programme seem to be very open to mixed methods, if not still unsure about certain contentious issues that remain. Nonetheless, there are also those who hold to the view that pure approaches, especially pure quantitative approaches are more rigorous. Patton (1990) refers to the 'paradigm of choices' and rejects methodological orthodoxy or methodological appropriateness. This too is the position held by the authors of this paper. The research problem, context and question/s in combination with the researcher/s paradigmatic preferences and research skills will ultimately determine the appropriate research approach and it is the responsibility of the researcher to rigorously defend the methodological choices made. The authors anticipate major shifts in the approaches to building research capacity in applied business research in the future. This may include a combined approach that involves both observing developments in those discipline areas taking the lead in venturing towards more inclusive approaches to teaching mixed methods, along with testing and exploring more innovative approaches to teaching research methods that goes beyond the traditional qualitative, quantitative divide.

Future research is planned to map the use of mixed methods across a broader range of business disciplines and preliminary research has found that for certain discipline areas the frequency of published research utilising mixed methods is highest for doctoral theses, as opposed to journal articles. Creswell (2009, p. 106) in a recent editorial for the *Journal of Mixed Methods* noted: 'We will look back in several years and see that it was the graduate students who promoted mixed methods research and

who taught their faculty the importance of this approach to inquiry and the value of not adhering strictly to either quantitative or qualitative approaches'. A research question for the future may well be: Is the main impetus for mixed methods in business research coming from the doctoral candidates themselves?

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