

Reflections on conceptions of research methodology among management academics

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REFLECTIONS ON CONCEPTIONS OF RESEARCH METHODOLOGY AMONG MANAGEMENT ACADEMICS

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Abstract

Taking as its premise that the role of academics as instructors is crucial in forming students' conceptions of research methodology, we consider differences in conceptions are held by academics involved in its teaching and reflect on associated implications. Drawing on a web based questionnaire data collected from purposive sample of 190 predominantly European Management academics with an expressed interest in research methodology, we reveal differing conceptions about the nature of research and research methodology that are likely to be practically significant; differences between those with qualitative and quantitative expertise being the most salient. Finding fault with one methodology on the basis of the epistemological and ontological beliefs of the other does little to promote understanding or appreciation of qualitative, quantitative and mixed methodologies. Rather, we argue, academics involved in management research methods and methodology teaching need to adopt a pluralist stance in which the legitimacy of different methodologies is both recognised and actively acknowledged.

Introduction

The aim of this reflective piece is to consider differing conceptions of research methodology held by those academics involved in its teaching and reflect on the associated implications for the teaching of research methodology within Management. Over the past decade there have been a number of calls within the social sciences for the teaching of research methodologies and methods to be undertaken in an integrated manner (Tashakkori and Teddlie 2003) that removes the barriers between quantitative and qualitative traditions (Onwuegbuzie and Leech 2005), originally highlighted in the paradigm wars of 1980s (Denzin 2010; Hammersley 1992). Pedagogic review articles on teaching research methodologies and methods, although invariably broad in focus, have highlighted that students' perceptions of methodology are influenced by their instructors (Wagner et al. 2011). Whilst the origin of these calls, including those cited earlier, has in some cases originated from those advocating the use of mixed methods research; they have, along with pedagogic review articles, highlighted two inter-related aspects that are crucial to management research. These are, firstly the centrality of the research question (or problem) in determining the research design, and the need for that design to enable the question to be answered; and secondly a positive attitude to both qualitative and quantitative methodologies, alongside the (implicit) need for students to be able to utilize and appreciate both traditions.

Positivism and associated quantitative methodologies are recognised generally as dominant within the social sciences (Burrell and Morgan 1979; Crotty 1998). For the field of management, although Europe has been recognised as being strongly orientated to qualitative methodologies and alternative perspectives, the overall dominance of quantitative methodologies and its positivist North American core is argued to have strengthened since the turn of the millennium (Grey 2010; Üsdiken 2010). At the same time, the importance of academics as instructors in breaking down barriers between quantitative and qualitative methodologies has been emphasised, highlighting their responsibility to prepare students who appreciate and recognise the utility of both (Lamont and Swidler 2014; Onwuegbuzie and Leech 2005; Tashakkori and Teddlie 2003). Within this, a need has been identified for academics who have depth of experience and breadth of perspective (Wagner et al., 2011), possess a positive attitude to both traditions (Onwuegbuzie and Leech 2005), and can enable students to be comfortable working across a range of methodologies (Tashakkori and Teddlie 2003). Yet, researchers also note a reality in which academics, as instructors, may not be adept at both quantitative and qualitative methodologies (Tashakkori and Teddlie 2003; Wagner et al. 2011). This raises the possibility of methodological tribalism (Lamont and Swidler 2014) reflecting qualitative and quantitative orientations, in which academics give preference to one at the expense of the other and, perhaps, of misinformation resulting in student recognising only one conception of research methodology.

A separate and reasonably well developed stream of research reports the notion of student misconceptions regarding research. This relates to the utility of specific methods and, in particular, techniques associated with statistical analyses (Huck 2009). Such research suggests misconceptions also encompass both the nature of research (Meyer et al. 2005)

and qualitative methodologies (Eby et al. 2009; Harper and Kuh 2007). These have been argued to hinder students' meaningful learning, impede research progress and interfere with the decision making processes (Eby et al. 2009; Huck 2009), advice being offered regarding how to anticipate and address issues relating to specific techniques in the classroom (for example: Smith 2011). Yet their reporting as misconceptions depends upon epistemological arguments regarding what constitutes warrantable knowledge and, at least in some instances, whether the author has chosen not to adopt a pluralist position in relation to methodology. Invariably, the nature of interventions to address what are considered misconceptions also depends upon the epistemological and ontological position of those involved in their delivery, the extent to which they adopt a pluralist position, rather than seeking to privilege a particular epistemological standpoint (Symon and Cassell 2004), and their awareness and understanding of the subject matter. Yet, despite the interest in students' methodological misconceptions, we have been able to find very little research within the social sciences, let alone management, that explores such conceptions held by academics, particularly those involved in the teaching of research methodology and methods.

In this reflective piece we take as our starting point Onwuegbuzie and Leech's (2005) assertion that it is the responsibility of academics as instructors to prepare students to recognise and appreciate the utility of both qualitative and quantitative methodologies. We commence with a brief consideration of the nature of conceptions and misconceptions and the role of academics within this debate. Invariably, this necessitates a consideration of methodological divisions and whether a unified or pluralistic methodological prescription is best for social sciences and, in particular, (Business and) Management studies (Knudsen 2003). This is followed by a discussion of the literature on misconceptions of research methodology in which we offer points of reflection regarding, first the nature of the research and, second research practice. Within this we adopt a pluralistic position, neither favouring qualitative nor quantitative research at the expense of the other and, like Van Maanen (1995) argue for tolerance between methodologies. We then outline our method, in which data were collected from a critical case purposive sample of predominantly European Management academics, with an expressed interest in research methodology. Within our reporting of the findings and subsequent reflection we give particular attention to differences in conceptions in relation to academics' stated methodological expertise. We conclude with a consideration of the implications of these findings for the teaching of research methods and methodology.

The nature of *misconceptions* and the role of academics as instructors

Within the research methodology literature, misconceptions are often framed as views or opinions that are incorrect due to faulty thinking or misunderstanding. They are argued to arise from prior learning or interacting with the social and physical world and are reflected in contextualised beliefs, ideas or understandings of those engaged in research (Meyer et al. 2005). Misconceptions might therefore equally be considered as deviations from widely accepted norms and conventions. Whilst some misconceptions are grounded in human intuition and unorthodox assumptions, others are generated by inconsistencies in textbooks as well as in oral presentations in classrooms (Huck 2009), including those

by academics. When deeply engrained in students' underlying knowledge base they "represent knowledge that is functional but has been extended beyond its productive range" (Smith et al. 1993, 152).

For students, determination of what are considered the norms and conventions of research is dependent, at least in part, upon their instructor (Huck 2009). Consequently, what might be considered incorrect or faulty thinking by one instructor (a misconception), might be considered valid by another instructor (a conception). To emphasise this dependence we italicise the first syllable of *misconception*. Wagner et al. (2011), reviewing existing literature, recognise the benefits of involving both early career and senior academics in students' learning of the norms and conventions of research. In particular, they emphasise the importance of depth of experience, breadth of perspective and flexibility in the conception of methodology within instructors. This we would argue, in conjunction with Vermunt's (2005) contention that a division into distinct methodological camps (or tribes) hampers students in their construction of a coherent idea of research methodology, suggests the importance of a pluralist perspective amongst those teaching of research methods and methodology. This perspective recognises the co-existence of multiple conceptions of methodology (Knudsen 2010), advocates (for example Lamont and Swidler 2014; Van Maanen 2005) emphasising the importance of tolerance of, and openness to, different traditions in improving exchanges and understanding within research.

Some researchers have argued that successful instructional confrontation can replace *misconceptions* with new expert knowledge in a short period of time (Brown and Clement 1989). Kawulich et al. (2009) demonstrated that asking graduate students to explicitly articulate their constructs made them conscious about their conceptions of research; and this both helped change certain conceptions over the course of a graduate research class and improved teaching of research methods. The implication of this finding for management researchers is that "being clear about one's own way of viewing research provides a basis for making sense of others' conceptions" (Brew 2001, 282). In other words, it is important that students are aware of their own (and others) epistemological and ontological assumptions and the implications of this for how they conceptualise research.

Others have shown that, where deeply engrained, further instruction (particularly with regard to statistical analysis) is not sufficient to overcome *misconceptions* (Mevareck 1983). In such instances, *misconceptions* are often so strong and resilient, that students are unwilling to alter their opinion even when confronted with contrary evidence (Garfield 1995). This assumes that academics as instructors will confront students' *misconceptions*. Yet, where academics have limited or fragmented ideas regarding methodology (Mutonen and Lehtinen 2005) that are passed to the students, it is likely that the problem will pervade, students' *misconceptions* being generated and supported by statements uttered or written by their mentors (Huck 2009). Consequently it is also important that academics are aware of their own methodological positions, the implications of this for their and others' conceptions of research, and the impact of these upon their students.

Conceptions of research methodology

Conceptions regarding the nature of research

Within the social science methods and methodology literature, definitions of research abound, particularly in textbooks. Whilst it is not our aim in this reflective piece to review or debate definitions of research, those used within current Business and Management methods textbooks suggest considerable agreement emphasising consistently that it has clear purpose. Purpose is operationalised as answering a question or solving a problem (Bryman and Bell 2015; Saunders et al. 2016), finding out more about something. Research is defined as comprising systematic data collection and interpretation of data, being based on logical relationships rather than beliefs (for example Ghauri and Grønhaug 2010; Saunders et al. 2016) and can involve distinct and alternate perspectives when solving these problems (Thorpe and Holt 2008). Although presenting research as a series of linked stages, such texts warn in varying degrees of detail that research is rarely a linear process, emphasising data analysis may result in contradictory and unclear findings which can be subject to multiple interpretations dependent upon the theoretical lens or lenses used (Saunders et al. 2016). They remind the reader to be aware of their own and others' biases providing examples of how these can impact on the research (Bryman and Bell 2015).

Literature relating to conceptions regarding the nature of research, with the notable exception of Mutonen and Lehtinen's (2005) special edition of the *Scandinavian Journal of Educational Research*, is sparse, although studies (focussing mainly on students) highlight what are referred to as *misconceptions*. Within the special edition, Meyer et al. (2005) report a mixed methods study asking Australian and South African post-graduate students from a variety of social science and physical science disciplines to answer five open ended questions related to research. Using factor analysis, eight misconceptions were identified. Although there is very limited discussion as to reasons for these *misconceptions*, Meyer et al. (2005, 237) highlight the possibility of students' conceptions being at variance with those of their instructors, referring to the need to support those "experiencing such difficulties". In particular, they noted students misconceived research as being about gathering data to support preconceived ideas, and about collecting data which backed up arguments. They found students believed correctly followed research procedures would always yield clear results, when conducted properly would never yield contradictory findings, and that when undertaken by qualified people (such as academics) would always produce unbiased results. A significant proportion of students agreed it was acceptable to alter research data, that there was only one way to interpret research findings, and that research became true after it was published. Meyer et al. (2005) argue these are misconceptions expressing faulty views, no justification being given as to why these views should be considered 'faulty'; although as we discuss in the next section differences may be related to the expertise of the academic. Not surprisingly, the converse of each is, as indicated earlier, reflected in the contents of many of the mainstream European Business and Management research methods and methodology textbooks (for example Bryman and Bell 2015; Easterby-

Smith et al. 2012; Ghauri and Grønhaug 2010; Gill and Johnson 2010; Saunders et al. 2016) and to a lesser extent those from North America (for example Cooper and Schindler 2010; Sekaran and Bougie 2013). Given the above, our first point for reflection is:

the extent management academics with different research expertise hold differing conceptions of the nature of research

Conceptions of research practice

Literature emphasises Management research adopts a range of philosophical perspectives (Cassell and Lee 2011), authors highlighting an increasing epistemological and methodological plurality in the field (Buchanan and Bryman 2007) despite the strengthening of positivism and associated quantitative methods in recent years (Grey 2010). Similarly, mainstream research methods textbooks usually adopt a pluralist perspective covering what are often referred to as quantitative and qualitative research traditions (for example: Bryman and Bell 2015; Easterby-Smith et al. 2012; Saunders et al., 2016) alongside the role of theory, epistemological issues and ontological concerns. Within such texts the quantitative tradition is likened often to research in the natural sciences emphasising measurement and quantification and, usually, employing a deductive approach to the testing of theories. In contrast, the qualitative tradition is argued to employ a different methodology to that of the natural sciences emphasising non-numeric data (often words), tending to a more inductive approach and theory development rather than testing.

Yet, despite the pluralist perspective outlined above, the reality of coexistence of quantitative and qualitative research traditions remains in question. As we noted earlier, Management research practice is argued to be dominated increasingly by North American and, in particular a quantitatively orientated positivistic tradition (Adcroft and Willis 2008; Grey 2010; Stablein and Panoho 2011; Üsdiken 2010). For some, particularly those at the forefront of the paradigm wars, quantitative and qualitative traditions are so different in their epistemological and ontological assumptions as to be incompatible. The quantitative tradition, argued to incorporate the practices of positivism (Bryman and Bell 2015), is according to Robson (2011) claimed by some as the only way to conduct serious research, these claimants implying others' conceptions are misconceived. Researchers in the quantitative tradition ascribe that it offers precision of measurement, control through experiments and generalisability (Eby et al. 2009). Conversely within the qualitative tradition, many advocates have rejected the practices of positivism emphasising the importance of context and openness and receptivity rather than objectivity; the latter being considered to distance the researcher from participants (Robson 2011) and be unobtainable. They argue that the qualitative tradition offers has greater ecological validity, rich insightful accounts and the ability to make sense of complex organisational realities (Eby et al. 2009). An extreme advocate of research from either of these two traditions might therefore, when acting as an academic as instructor, consider research in the other tradition misconceived.

For others, the status of quantitative/qualitative distinction is ambiguous, there being on-going debate as to whether it is crucial or simply false (Bryman and Bell 2015). Alongside the paradigm wars there has been a growing recognition of the value of both quantitative and qualitative traditions as well as combining them in multi-strategy or mixed methods research (Bryman 2006). This combination of traditions often adopts a pragmatist view being methodologically eclectic, selecting qualitative, quantitative or the combination of both considered most appropriate (best) to answer the research question or solve the problem be it theory testing or theory generation (Teddle and Tashakkori 2010). The focus is therefore on the research question or problem, drawing upon the practices of different philosophical positions and using both inductive and deductive logic (Lamont and Swidler 2014; Teddle and Tashakkori 2010). Within this, there is often a need for compromise, and a presumption that advocates are open to a variety of methodological practices, being less likely to consider conceptions of other research traditions as misconceived (Teddle and Tashakkori 2010). Hence our second point for reflection:

the extent management academics with different research expertise hold differing conceptions of research practice

Harper and Kuh (2007, 6), whilst focussing on qualitative assessment of students' work, highlight 10 key differences between quantitative and qualitative traditions focussing upon what they term "common misconceptions" about qualitative methodologies. These reflect the epistemological and ontological differences between the quantitative and qualitative traditions, such as objectivity and subjectivity and associated superiority of quantitative (or qualitative) methodologies, the focus on generalisability rather than transferability of findings, the need for and role of numbers in research, and alongside these the overall ease of use of associated methods.

Similar aspects are considered by Eby et al. (2009) in their refuting of commonly held beliefs about qualitative research relating to the use of scientific method, methodological rigour in relation to validity of findings, and the utility of the research findings. Based on an evaluation of 241 articles in nine top journals in applied psychology, management and social psychology, they argue that the key steps of scientific method (observation and description) are always present in quantitative, qualitative and mixed methods research designs whether inductive or deductive logic is used. Internal or descriptive validity, whilst not explicitly assessed, are considered of concern to qualitative researchers. Subsequently they argue that, although qualitative research does not provide evidence for construct validity in the same form as quantitative research, evidence is provided in other ways such as data and method triangulation. Drawing upon this, Eby et al. (2009) conclude that like quantitative research, qualitative research also contributes to the advancement of knowledge.

Method

Data were collected from Management academics with an expressed interest in research methodology using a Web questionnaire. Although only one of the social sciences,

academics within Management are drawn from a wide variety of social science disciplines (Cassell and Lee 2011). Interest was signified by membership of the Research Methodology Special Interest Groups (RM SIGs) of either the British Academy of Management (BAM) or the European Academy of Management (EURAM), or by attendance at the European Conference on Research Methodology (ECRM) at least once over a two year period. As a consequence, respondents can be considered to be a purposive sample comprising critical cases (Saunders, 2012) likely to have greater understanding of research methodology and methods. Consequently if this sample with their greater understanding holds a variety of conceptions of the nature of research or differing conceptions of research practice, other Management faculty are also likely to hold them (Patton, 2002).

Design

The questionnaire was operationalised using the SurveyMonkey online software tool. Following information about the survey (including assurances of anonymity) and a question requiring potential respondents to indicate consent, the main survey contained 35 randomly ordered standard Likert-style five-point items ranging from strongly disagree to strongly agree. These comprised 13 statements about the nature of research (Table 1) and 22 statements of conceptions about quantitative and qualitative traditions (Table 3). Statements about the nature of research included the eight statements of misconceptions identified by Meyer et al. (2005), a definition of research (derived from Saunders et al. 2012) and five statements (derived from Meyer et al.'s factor analysis) capturing additional aspects not included in the definition. The 22 statements offering conceptions of quantitative and qualitative traditions included: 15 statements based on Harper and Kuh's (2007) 10 common misconceptions, amended to avoid conflating two concepts in one statement; five further statements derived from Eby et al.'s (2009) research, as well as Bryman and Bell's (2011) assertion that there is no universally superior research design. Following pilot testing, a further statement contrasting the utility of secondary and primary data (derived from Cowton 1988) was added at pilot respondents' request. The final section contained six closed questions requesting personal information including highest academic qualification, expertise in methods, and involvement in research methodology and methods teaching.

Procedure

The questionnaire was distributed via an email invitation with a Web link to 540 people on the two RM SIGs electronic mailing lists as well as 196 past ECRM conference attendees compiled from the delegate lists, there being 18 non contacts. For the RM SIGs, the invitation was circulated by their membership secretary, whilst for past conference attendees, it was emailed by one of the researchers. Subsequently, each potential respondent received a personal follow-up/reminder re-emphasizing the deadline for returns and restating the Web link. Respondents were able to amend their responses until the questionnaire was 'done', the software allowing one respondent per workstation, thereby helping prevent multiple completions. The questionnaire took approximately 10 minutes to complete.

Participants

A total of 224 academics responded. Of these, 34 chose not to take the survey despite consenting online to take part, their responses being discarded. The remaining 190 questionnaires (26.5% response rate) formed the basis of the analysis. 118 respondents (62.1%) were members of the at least one RM SIG while the remaining 72 (37.9%) had attended the ECRM. All respondents were educated to at least masters' degree level, 66.3% being in possession of a doctoral degree. 92.3% of the sample were involved in research methods teaching, over half (58.4%) as project/dissertation supervisors for taught **Master's** degree programmes. Over three quarters (78.8%) of the sample who gave their country of work were based in a European higher education institution, less than five per cent working in North America. Given the increasing dominance of qualitative research in Europe (Üsdiken, 2010; Williams and Sutton 2011) it is not surprising that more respondents (37.4%) considered their expertise was in qualitative than quantitative (16.8%) methods; the remaining respondents (45.8%) considering their expertise was in mixed methods.

Data Analysis Procedure

To address our reflective points, we first generated a frequency report and descriptive statistics using the median and the interquartile range for the 35 ordinal statements. All outliers and extreme values were retained in the analysis, since these scores represented valid observations in the population (Hair et al. 1998). Subsequently, we used the Kruskal Wallis H test to determine whether significant differences (based on mean ranks) existed in the responses of academics who considered their expertise was either in qualitative, quantitative or mixed methods. Where the Kruskal Wallis H statistic was significant, the Mann Whitney U test was used as a post hoc test to distinguish between the three groups, with the Bonferroni correction being used to counteract for the problem of multiple comparisons among subgroups inflating the Type I error (Miller 1991), effect size *r* being computed to determine the magnitude of observed significant effects (Cohen 1988; Ellis 2010).

Management academics conceptions

Conceptions of the nature of research

Our first reflective point is concerned with: “the extent management academics with different research expertise hold differing conceptions of the nature of research”. Variations in academics' responses (Table 1) highlight clear differences for statements outlining the focus of research; in particular “research is basically a tool about answering questions”, “research means finding out more information about something that is already there”, “research is about finding solutions to problems” and “research is the systematic collection and interpretation of data with a clear purpose, to find things out.” The presence of outliers confirmed that some management academics provided responses that deviated markedly from those of others, further emphasising differences in their conceptualisations of research. In particular the outliers indicated marked differences regarding whether “good research specifically gathers data that will support the researcher's preconceived ideas” and “if followed correctly research procedures will always yield clear results.”

[Ideal place for Table 1]

Kruskal Wallis H tests revealed significant differences in mean ranks between academics with quantitative, qualitative or mixed methods expertise for only two statements (Table 2). These were: “When academics do research, the results are always unbiased” and “research is the quest for truth”, statements which relate to epistemology and ontology. Post-hoc analyses revealed that for the former, the overall significant difference in mean ranks (as reported by the Kruskal Wallis H test) could not be attributed to any two groups. However, those with quantitative expertise agreed more strongly overall that “research is the quest for truth” than those with qualitative expertise; the value of r (0.35) indicating the effect size, and therefore likely practical implications, were medium.

[Ideal place for Table 2]

Conceptions of research practice

Our second reflective point considers: “the extent management academics with different research expertise hold differing conceptions of research practice”. As with statements regarding the nature of research, responses ranged from strongly disagree to strongly agree (Table 3). Responses varied least for the generic statements: “qualitative research contributes little to the advancement of knowledge”, “there is no universally superior research method” and “qualitative methods are too cumbersome to be practical for students’ assessed work”; and indicated opinions about both quantitative and qualitative methodologies were, at the generic level, positive. In contrast responses to statements about specific epistemological and ontological differences between were more varied; in particular “objectivity is the gold standard in research”, “the perspectives of few do not represent many”, “qualitative research lacks construct validity”, “qualitative research does not utilize the scientific method”, “qualitative methods are too labour intensive to be practical for students’ assessed work”, “only research findings that are generalizable can inform policy and practice” and, “quantitative data are useful only when corroborated by qualitative data”, and “subjectivity compromises accuracy”. Such variability indicates not all management academics hold positive views regarding both quantitative and qualitative methodologies (Table 3).

[Ideal place for Table 3]

Statistical analyses (Table 4) revealed that, for eight statements, there were significant differences in mean ranks between academics with different expertise. Specifically there were significant differences between the responses of academics with quantitative expertise and those with qualitative expertise. For five statements, the practical implications of differing conceptions indicated at least medium effect sizes: “objectivity is the gold standard in research” ($r=0.43$), “qualitative research contributes little to the advancement of knowledge” ($r=0.39$), “qualitative research lacks internal validity” ($r=0.38$), “qualitative data are useful only when corroborated by numbers” ($r=0.33$) and

“qualitative research lacks construct validity” ($r=0.30$). For the remaining three statements the practical implications of differing conceptions indicated by the effect size ranged from small to nearly medium: “qualitative research lacks methodological rigour” ($r=0.27$), “subjectivity compromises accuracy” ($r=0.27$), and “there are no universally superior research methods” ($r=0.26$). For two of these statements responses between academics with mixed methods expertise also differed significantly from those with qualitative expertise, the practical implications indicated by the effect size r statistic being small to medium: “objectivity is the gold standard in research” ($r=0.29$), and “subjectivity compromises accuracy” ($r=0.26$). Academics with qualitative expertise disagreed more strongly with these statements than those with mixed methods expertise, relative effect sizes indicating that the differing conceptions were more pronounced between academics with qualitative and quantitative expertise than between those with qualitative and mixed methods expertise. There were no significant differences in the statement responses of academics with mixed methods expertise and those with quantitative expertise.

[Ideal place for Table 4]

Reflections

Our analysis provides empirical evidence of the prevalence and practical significance of differing conceptions regarding the nature of research and research practice among predominantly European Management academics with an expressed interest in research methodology. In their study, Meyer et al. (2005, 236) argued that despite the high level of engagement of the student sample in postgraduate and doctoral research, their responses did “not exhibit a uniform approach to conceptualising research or the research process”. They further add that it would be helpful to identify students who are dissonant with their supervisors. However, given the findings of our study, could it be that the students reflect the dissonance amongst their research methods instructors?

In relation to our first research reflective point regarding differences in conceptions of research, we consider it noteworthy that there were a range of opinions regarding whether “good research specifically gathers data that will support the researcher's preconceived ideas”, “it is quite acceptable to alter research data if it does not look exactly right”, “when academics do research the results are always unbiased” and “research becomes true after it is published”. Although these differences were not related to academics' expertise in methods, they contrast with most management textbooks, which present a relatively unified view regarding the conception of research. Responses to the statement “research is the quest for truth” appear related significantly to academics' expertise in methods; suggesting that conceptions of the nature of research (and truth) depend, in part on the epistemological and ontological lenses used (Saunders et al. 2016). It seems likely that if academics with a special interest in research methodology hold differing conceptions, other academics are also likely to hold them.

With regard to our second reflective point, responses to eight of the statements regarding conceptions of research practice were related significantly to the academic's research expertise. This lends weight to the claim that research practice depends upon the epistemological and ontological lenses used (Saunders et al. 2016) and the meta-theoretical assumptions that underlie the research (Weber 2004). The most salient differences emerged between academics with either qualitative or quantitative expertise. Particularly evident was the contesting of commonly held beliefs about qualitative research by those with expertise in quantitative research (Eby et al. 2009). In particular those with quantitative methods expertise were more likely to agree that "qualitative research contributes little to the advancement of knowledge", "qualitative research lacks methodological rigour", "qualitative data are useful only when corroborated by numbers", "objectivity is the gold standard of research design", and "subjectivity compromises accuracy". Given the expressed interest of our predominantly European sample in research methodology, it would seem likely that these conceptions will be strong and resilient and unlikely to be easy to alter.

Such differences imply that, as instructors, some Management academics may also be methodologically tribalistic, preferencing one methodology at the expense of another. From our pluralist position we would argue that if repeated in instruction, the 'finding fault' with one approach on the basis of the standards of another represented by such responses does little to promote student understanding. Consequently it is important that management academics involved in the teaching of research both recognise and express actively the legitimacy of the different traditions.

We also note that what might be conceived as *misconceptions* of qualitative and quantitative research traditions are likely to be less pronounced by those who use mixed methods. Mixed-method researchers may draw upon the practices of more than one philosophical position (Teddle and Tashakkori 2010).

Conclusion

We have provided clear, albeit limited, evidence of the prevalence of differing conceptions among Management academics. At a general level those management academics responsible as instructors for developing future researchers appear mainly pluralist or methodologically tolerant, recognising the value of both quantitative and qualitative methodologies. Yet responses to statements particularly regarding conceptions of research practice show less tolerance; some academics appearing tribalistic in terms of their own expertise. The most salient differences occurred between academics with a preference for qualitative and for quantitative research and in relation to statements highlighting specific epistemological and ontological differences; academics with quantitative expertise being less tolerant of other traditions. Differences in conceptions of research between those with either qualitative or quantitative and mixed methods expertise were usually less pronounced. Whilst we recognise that an academic holding a different conception is not the same as giving preference to one tradition over another as instructors, it is an indicator that this may be the case. Given the strengthening

dominance of quantitative methods amongst management academics this millennium, enabled by the growing importance of ‘global’ rankings, league tables and citation indices (Grey 2010; Üsdiken 2010), our finding that academics with such expertise appear less tolerant of other is therefore a cause for concern.

For students, understanding both the nature and practice of research is essential if they are to develop their own research skills. Management academics involved in their teaching invariably hold both differing conceptions about the nature of research and differing conceptions regarding methodology, dependent upon their preferred methodological tradition. Consequently students’ *misconceptions* may, as suggested by Huck (2009), be generated and supported by their mentors. Where one particular conception is given preference by instructors, this may interfere with their learning of concepts (Smith et al. 1993) related to one or more of the other traditions. We would therefore argue that it is essential that those involved in methodology instruction need to be able to articulate the reasoning behind both their own and others’ conceptions of research within quantitative, qualitative and mixed methods traditions, recognising the legitimacy of each. We are not arguing for methodological relativism, summarised by Lamont and Swidler (2014, 69) as “everything goes, yours is as good as mine”. Rather, academics as instructors should ensure students receive methodologically pluralist instruction, both in lectures and supervision. This would expose students to quantitative, qualitative and mixed methods rather than being heavily focussed towards one tradition. We believe acknowledging all research methodologies have their strengths and weaknesses, and that within Management research there is no one superior research methodology, would help reduce students’ *misconceptions*. Management, as a discipline with a variety of methodological traditions, is by its very nature pluralistic. Instruction and development of future researchers needs to reflect this, supporting the recognition and understanding of different methodologies and “strengthening cohesion among all forms of research methodology” (Kelly and Kaczynski 2007, 31), rather than sustaining the divisions between them.

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Table 1: Academics' conceptions regarding the nature of research

Statement	Level of Agreement (%) (N=190)					Descriptive Statistics	
	strongly disagree	disagree	neither	Agree	strongly agree	Md	IQR
Research is the systematic collection and interpretation of data with a clear purpose, to find things out	2.1	10.0	12.6	44.2	31.1	4	1.25
Research is basically a tool about answering questions	8.9	19.5	22.1	40.0	9.5	3	2
Research means finding out more information about something that is already there	11.1	26.8	32.1	25.8	4.2	3	2
Research is not the quest for truth*	14.7	32.6	29.5	11.1	12.1	3	1
Research provides a deeper insight and understanding of a particular topic	.5	3.2	4.7	33.2	58.4	5	1
Research is about finding solutions to problems	4.2	16.3	32.1	36.8	10.5	3	1
Good research specifically gathers data that will support the researcher's preconceived ideas	49.5	26.3	8.9	6.8	8.4	2	2
It is quite acceptable to alter research data if it does not look exactly right	73.2	15.8	7.4	2.6	1.1	1	1
Research becomes true after it is published	46.8	39.5	7.9	4.7	1.1	2	1
There is one way to interpret research findings	65.3	25.8	5.8	1.6	1.6	1	1
If followed correctly research procedures will always yield clear results	10.5	49.5	16.3	16.3	7.4	2	1
If research is conducted properly then contradictory research will not occur	27.4	51.6	11.6	7.9	1.6	2	1
When academics do research the results are always unbiased	51.1	39.5	6.3	2.6	.5	1	1
Research is about collecting data which back up your argument	26.3	36.8	17.9	13.2	5.8	2	2

*question reverse coded from "Research is the quest for truth"; Descriptive Statistics measures: Md = median, IQR = inter quartile range. Percentages may not sum to 100 due to rounding.

Source of items: Meyer et al, (2005), except for first item -Saunders et al., (2012)

Table 2: Aspects about the Nature of Research - Post-hoc test output

Statement	Kruskal Wallis H Test		Mann Whitney U Test		
			Qualitative vs. Quantitative	Qualitative vs. Mixed	Quantitative vs. Mixed
	χ^2 (<i>df</i> = 2)	Sig.	<i>U</i> (<i>z</i>)	<i>U</i> (<i>z</i>)	<i>U</i> (<i>z</i>)
When academics do research the results are always unbiased	6.53	0.04	894.5 (-1.96)	2489.5 (-2.23)	1392.0 (0.00)
Research is the quest for truth	13.91	<0.01	648.0 (-3.59)*	2519.0 (-2.07)	1021.0 (-2.30)

* statistically significant at $p < 0.017$ (Bonferroni correction applied)

Table 3: Academics' conceptions of research practice

Statement	Level of agreement (%) N=190					Descriptive statistics	
	strongly disagree	disagree	Neither	agree	strongly agree	Md	IQR
Subjectivity compromises trustworthiness ^d	22.1	25.8	28.4	16.3	7.4	3	1
The perspectives of few do not represent many ^d	7.4	21.1	35.3	25.3	11.1	3	2
There are superior research methods* ^a	65.3	27.4	4.7	1.1	1.6	1	1
Organisational decision makers respond only to numbers ^d	15.3	38.9	26.8	15.8	3.2	2	1
Objectivity is the gold standard in research ^d	20.5	23.2	24.2	21.6	10.5	3	2
Subjectivity compromises accuracy ^d	17.9	30.5	28.9	18.4	4.2	3	1
Qualitative research lacks internal validity ^c	49.5	28.9	13.2	5.3	3.2	2	1
Qualitative data are easy to collect; Anyone can do it! ^d	61.1	24.2	7.4	3.2	4.2	1	1
Qualitative research lacks construct validity ^c	40.0	34.7	18.9	5.3	1.1	2	2
Qualitative data are easy to analyse; Anyone can do it! ^d	67.4	22.6	6.3	2.1	1.6	1	1
Qualitative research contributes little to the advancement of knowledge ^c	70.0	22.1	4.2	2.6	1.1	1	1
Qualitative research does not utilize the scientific method ^c	28.4	44.2	19.5	5.3	2.6	2	2
Qualitative methods are too labour intensive to be practical for students' assessed work ^d	28.4	44.7	19.5	6.8	0.5	2	2
Qualitative research lacks methodological rigour ^c	55.3	32.1	8.9	2.1	1.6	1	1
Only research findings that are generalizable can inform policy and practice ^d	30.0	43.2	15.3	8.4	3.2	2	2
Qualitative methods are too cumbersome to be practical for students' assessed work ^d	27.4	47.4	17.4	6.8	1.1	2	2
Qualitative data are useful only when corroborated by numbers ^d	40.0	38.9	12.6	6.3	2.1	2	1
Self-reported data are unreliable ^d	23.7	34.7	31.6	8.4	1.6	2	1
Quantitative data are useful only when corroborated by qualitative data ^d	31.1	28.4	21.1	15.3	4.2	2	2
Secondary data are mere substitutes for 'better' primary data ^b	21.6	53.2	16.3	6.8	2.1	2	1
Quantitative methods are too labour intensive to be practical for students' assessed work ^d	30.5	48.4	16.3	4.2	.5	2	1
Quantitative methods are too cumbersome to be practical for students' assessed work ^d	28.9	54.2	13.2	2.6	1.1	2	1

*question reversed coded from "There is no superior research method"; Descriptive Statistics measures: Md = median, IQR = inter quartile range. Percentages may not sum to 100 due to rounding.

Source of items: ^a Bryman and Bell (2011); ^b Cowton (1988); ^c Eby et al. (2009);

^d Harper and Kuh (2007).

Table 4: Conceptions of Research Practice - Post-hoc test output

Statement	Kruskal Wallis H Test		Mann Whitney U Test		
			Qualitative vs. Quantitative	Qualitative vs. Mixed	Quantitative vs. Mixed
	χ^2 (<i>df</i> = 2)	Sig.	<i>U</i> (<i>z</i>)	<i>U</i> (<i>z</i>)	<i>U</i> (<i>z</i>)
Qualitative research lacks internal validity	15.74	<0.04	637.5 (-3.88)*	2496.0 (-2.29)	1029.0 (-2.30)
Qualitative research lacks construct validity	10.05	<0.01	736.5 (-3.02)*	2678.0 (-1.54)	1039.5 (-2.22)
Qualitative research contributes little to the advancement of knowledge	15.66	<0.01	702.5 (-3.91)*	2611.5 (-2.20)	1052.0 (-2.37)
Qualitative research lacks methodological rigour	7.78	0.02	791.5 (-2.76)*	2735.0 (-1.41)	1121.5 (-1.78)
Qualitative data are useful only when corroborated by numbers	12.02	<0.01	702.0 (-3.34)*	2445.2 (-2.42)	1171.5 (-1.40)
Objectivity is the gold standard in research	23.16	<0.01	539.5 (-4.36)*	2074.5 (-3.64)*	1109.0 (-1.75)
Subjectivity compromises accuracy	12.51	<0.01	772.0 (-2.69)*	2199.5 (-3.21)*	1373.5 (-0.12)
There are no universally superior research methods	6.71	0.04	828.5 (-2.60)*	2879.5 (-0.91)	1121.5 (-1.88)

* statistically significant at $p < 0.017$ (Bonferroni correction applied)