

# An academic perspective on research and being a researcher: an integration of the literature

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**ABSTRACT.** This article provides an integrative review of the developing body of literature investigating academics' ways of understanding research. The resulting review highlights implicit variation between different studies in the focus they have taken to addressing this research question, varyingly emphasising academics' research intentions, questions, processes and/or outcomes. It is suggested that these four foci represent different dimensions of academics' understandings of the nature of research. The review is followed by the report of an empirical study that brings these dimensions together in an integrated way by clarifying relationships between academics' experiences of: research intentions (who is affected by the research), research outcomes (the anticipated impact of the research), research questions (the nature of the object of study), research process (how research is undertaken), and researcher affect (underlying feelings about research). The last dimension, researcher affect, has not been found in previous studies. This may be due to the focus taken in this study on ways of understanding "being a researcher", rather than ways of understanding "research" per se.

**KEYWORDS:** *Academic research, Being a researcher, Literature review, Research affect, Research methodology*

## Introduction

There is now a substantial body of literature investigating how academics experience and understand teaching and being a university teacher (Samuelowicz, Bain, 1992; 2001; Kember, 1997; Pratt, 1998; Prosser, Trigwell, 1999, chapter 7; Wood, 2000; Åkerlind, 2004). However, there is relatively little equivalent literature addressing academics' understandings of research and being a researcher. In a climate where there is increasing emphasis on measurement and accountability of academic research activity, in-depth exploration of the ways in which academics experience research, and of their underlying

intentions in being a researcher and undertaking research, become important.

Many of the studies of ways of understanding academic teaching have been conducted from a phenomenographic perspective. Following this tradition, there have also been a number of recent phenomenographic studies looking at academics' experiences of different aspects of research (Brew, 2001; Ingerman, Booth, 2003; Bruce, Pham, Stoodley, 2004; Bowden et al. 2005; Pham, Bruce, Stoodley, 2005; Prosser et al., 2008), indicating a growing interest in this area of investigation. In addition, there is a developing body of (non-phenomenographic) literature exploring research student and supervisors' conceptions of research (Bills 2004; Kiley, Mullins 2005; Meyer, Shanahan, Laugksch, 2005).

The aim of this article is to integrate current research findings on academics' ways of understanding research. This is achieved in two ways: by highlighting common themes and patterns in the existing literature through an in-depth literature review; and by exploring the relationships between the different themes and patterns that emerge from the review in an empirical investigation of academics' understandings of what it means to be a researcher. In this way, this article provides the first attempt to synthesise and consolidate what is currently a series of isolated studies into what is becoming an emerging and integrated strand of research for the future.

### ***Review of the literature***

To date, there have been 10 key studies of academics' ways of understanding research. The outcomes of each of these studies are described briefly below, including an analysis of common elements and integrative themes running across the studies (see Tables 1-3).

Table 1.

Common themes running across the studies, and the relevance of each theme to the categories that emerged in the studies (Brew, 2001; Bruce, Pham, Stoodley, 2004; Bowden et al., 2005)

	<b>Brew</b>	<b>Bruce et al.</b>	<b>Bowden et al.</b>
Who is affected by the research:			
The researcher	2 & 4	1	1, 2 & 4
Colleagues, institution	3?	2 & 3	3
The wider world	1?	4 & 5	5
Nature of the impact:			
Academic products, academic careers	2	1 & 2	2, 3 & 4
Personal interest, enjoyment, learning	4	1	1 & 2
Knowledge and understanding	1 & 3	3 & 5	5
Benefits to the wider field or society	4	4	5

Table 2.

Common themes running across the studies, and the relevance of each theme to the categories that emerged in the studies (Ingerman, Booth, 2003; Prosser et al., 2008)

	<b>Ingerman, Booth</b>	<b>Prosser et al.</b>
Nature of the research question:		
Uni-structural	1	
Multi-structural	2	1
Relational	3	2 & 3
Extended relational		4

Table 3.

Common themes running across the studies (Meyer, Shanahan, Laugksch, 2005; Kiley, Mullins, 2005; Bills, 2004)

	<b>Meyer, Shanahan, Laugksch</b>	<b>Kiley, Mullins</b>	<b>Bills</b>
*This is more obvious in the qualitative analysis than the quantitative analysis.			
How research is conducted:			
Gathering information and collecting data	X		X
Being methodical and systematic in one's methods	X*	X	X
Answering questions and solving problems	X		
Creating new knowledge		X	X
Achieving conceptual/theoretical insight and understanding	X	X	X

### ***Phenomenographic studies of academics' understandings of research***

The first five studies described here were all conducted using a phenomenographic research approach, based on interview data. Brew (2001) and Prosser et al. (2008) investigated *conceptions of research* amongst academics in research-intensive universities, Brew with a focus on academics with a substantial track record in terms of publications and research grants. In contrast to the cross-disciplinary approach adopted in these two studies, Ingerman and Booth (2003) looked at *physics* researchers only, with participants in the study ranging from doctoral students to professors, and selected from both a research-intensive university and a university of technology. Bowden et al. (2005) took a somewhat different focus to the previous studies, investigating academics' views of *success in research*. Unlike the studies above, their sample of academics came entirely from a university of technology, with a relatively short history of research activities. Bruce, Pham, and Stoodley (2004) investigated similar academics' experiences of the *significance and value of research*, but took a disciplinary-specific focus on *information technology* academics.

Turning now to the outcomes of each of these studies, the common themes that emerge are striking given the variation in sampling, ranging from research-intensive to new universities, from specific disciplines to a broad cross-section of disciplines, and from senior researchers with an established track record to early career researchers.

Bruce, Pham, and Stoodley (2004) found that information technology (IT) academics varyingly experience the significance and value of research projects in terms of the extent to which their projects:

1. contribute to the attainment of academics' personal goals, in terms of their personal interests and/or career goals;
2. generate positive outcomes for the research team, in terms of providing funding to employ researchers or the continuation of a research centre;
3. are academically sound and of high quality, leading to a contribution to existing knowledge;
4. provide benefits to end-users, leading to an overall beneficial impact on the world;

5. address real-world problems and are directed towards finding solutions to such problems.

Across these five categories, we can see variation in how significance and value in research is experienced in terms of an expanding impact of research, from impact on the individual researcher, to the research community, the end-user and the world. In addition to variation in the breadth of impact, the perceived nature of significance and value in research varied from personal interest and career advancement, including research “currencies” such as publication, prestige and funding, to extending knowledge and solving problems in the larger field or world. It is also relevant to mention here an associated study of the ways in which academics experience IT research (Pham, Bruce, Stoodley, 2005). However, this study is not included in the literature review as it focused more on the nature of IT than the nature of research.

Bowden et al. (2005) found that academics varyingly experience success in research projects in terms of:

1. how satisfying or enjoyable the research is for them personally;
2. how well they have managed the project and brought it to completion;
3. the extent to which further research and career opportunities are created for the research group and their institution;
4. the number and prestige of publications;
5. the extent to which the research outcomes are useful and make a difference to the world.

As with Bruce, Pham, and Stoodley (2004), we see that a key theme in the variation in experience of success is an expanding impact of the research, from impact on the individual researcher, to their broader peer group and the wider world. The variation in the perceived nature of successful research is also reminiscent of Bruce, Pham, and Stoodley’s findings, ranging from personal satisfaction or enjoyment, to career advancement, publications and other products of research, and real-world usefulness.

Brew (2001) found that senior academics varyingly experienced research in terms of:

1. a series of separate tasks and ideas that are synthesised to

- 1. solve practical problems or extend understanding;
- 2. a kind of social marketplace where the products of research (publications, grants and networks) are exchanged for money, prestige or recognition;
- 3. a process of discovering underlying meaning and bringing to light ideas and truths lying in the background;
- 4. a personal voyage of discovery for the researcher, possibly leading to transformation in personal and/or theoretical arenas.

As with the preceding studies, variation in the desired breadth of impact of research was a key theme in Brew's outcomes. The outcomes of research were varyingly experienced in terms of products of research and/or career outcomes, extending knowledge and understanding, solving problems and personal transformation. Consistent dimensions of the outcomes of these studies are summarised in Table I.

So far, although the particular categories or understandings of research that emerged from each study are different, there is a substantial overlap in the dimensions of variation in understanding found within each study. However, the next two studies introduce an additional dimension *not* emphasised in the previous three; that is, the extent to which the components of research are seen as relatively atomistic (as a series of separate components) or as integrated in a more holistic way. Although not emphasised by Brew, the issue of separate versus integrated tasks nonetheless appears in her categories, most conspicuously in category one.

Ingerman and Booth (2003) found that physics researchers varyingly experienced their research in terms of:

- 1. a sharply delimited focus on one aspect of a problem;
- 2. a multiple focus on different aspects of a problem, juxtaposing physical and technical perspectives on their research;
- 3. a contextualised focus on a problem and how it relates to other approaches to the same sort of problem in different situations.

The variation in understanding of research described here forms an interesting contrast to Brew's outcomes in particular, as Brew was also exploring how academics experienced research *per se*. Ingerman and Booth's outcomes appear to focus on academics' experience of their object of study in research, whereas Brew's

focus appears to be more on the intentions and expected outcomes of research activity. The variation highlighted by Ingerman and Booth's study may be described in terms of the complexity of the structure of the research question, varying from a uni-structural, to a multi-structural to a relationally structured question (borrowing from the structural terms used by Biggs and Collis (1982). Similarly, Prosser et al. (2008) also looked at academics' experiences of research per se, and found that they varyingly experienced research in terms of:

1. a series of self-contained projects that draw on disciplinary knowledge but do not in themselves extend that knowledge - the intention is to benefit the profession/society;
2. the ongoing development of a series of coherently linked field of study issues or procedures - the intention is to add to or expand the field;
3. the application or development of theory within the boundaries of a field of study - the intention is to further develop the field;
4. the development and change of understanding about a field of study, by bringing together ideas external to the field - the intention is to change the field.

Prosser et al.'s outcomes again focus on academics' experience of their research question, and variation in the structure of their object of study. They describe this variation in terms of a shift in research focus from the study of independent parts in isolation, to independent parts in relationship to the field of study, to a primary focus on the field of study itself, to a focus on the field of study in terms of how it is related to other fields (see Table 2).

### ***Studies of research student and supervisors' conceptions of research***

In addition to these five studies of academics' ways of understanding different aspects of research, there is a recent group of studies looking at research students' and research supervisors' conceptions of research. Meyer, Shanahan, and Laugksch investigated the views of *postgraduate students* qualitatively and quantitatively, in the form of a content analysis of student written comments followed by the design and distribution of an inventory, with subsequent factor

analysis of the items (Meyer, Shanahan, Laugksch, 2005). Kiley and Mullins also conducted a content analysis of written comments, but their focus was on the views of *research supervisors* (Kiley, Mullins, 2005), and Bills looked at the views of *supervisors*, but took an ethnomethodological perspective to analysing the discourse of a focus group of supervisors (Bills, 2004).

Based on their combined qualitative and quantitative analysis, Meyer, Shanahan, and Laugksch (2005) found five different conceptions of research (in addition to a set of views that they labelled as “misconceptions”), with research varyingly viewed as:

- the gathering of information or collection of data;
- the discovery of truth;
- an insightful process of exploration and discovery, leading to a deeper understanding of the topic;
- the uncovering of what has been hidden, through reinterpretation or “re-search”;
- finding solutions to problems or answering questions.

Kiley and Mullins (2005) found four conceptions based on their analysis of the comments of individual supervisors, with research being seen as:

- Technical - a scholarly process characterised by the rigorous application of systematic methods;
- Creative/innovative - the creation of new knowledge and innovative approaches to the discovery of that knowledge;
- Integrating complexity - bringing together complex knowledge or data in new ways;
- New ways of seeing - research results in new ways of seeing the world, oneself or a problem.

Bills (2004) identified a number of dimensions in supervisors’ discourse about research, with a distinction being drawn in particular between university and non-university, or big “R” and little “r” research. This led to a view of university research as having a number of characteristics, including:

- being rigorous and methodical;
- situated within a theoretical or conceptual tradition;

- moving knowledge further;
- involving explaining, arguing and conceptualising; and
- theorising, thinking deeply and developing insights.

These dimensions may be contrasted with views of non-university research, which was positioned as either fact-finding, with the collection and reporting of information, or as finding out something interesting, but that is not necessarily new or systematically investigated.

As shown in Table 3, the outcomes of these three studies have much in common.

#### ***Comparison of the studies***

While the outcomes of these three studies have much in common, they show little overlap with the outcomes of the previous five studies. The only study amongst the three to raise the issue of the breadth of impact of research was the one by Kiley and Mullins, where one of their categories referred to new ways of seeing the world, a problem or oneself. On the other hand, Brew's categories do indicate a varying focus on research as solving practical problems (category 1), discovering underlying meaning (category 3) and potentially leading to theoretical transformations (category 4). Two of Bruce, Pham and Stoodley's categories highlighted research as being academically sound (category 3), involving a contribution to knowledge (category 3) and providing solutions to problems (category 5). Plus, three of Prosser et al.'s categories referred to the development of new knowledge (category 2), theory (category 3) and deeper understanding (category 4). However, there is little consistency in this overlap.

Although the first five studies described in this review took a phenomenographic research approach, and the last three studies did not, it seems that the difference in outcomes is not so much a product of methodological differences in the research approach, but implicit differences in the focus of both interviewees and researcher - in other words, implicit differences in the data collected and the research question being put to the data. In a similar way to the distinction noted earlier between the first three phenomenographic studies (those by Brew, Bowden et al. and Bruce, Pham and Stoodley) and the next two (by Ingerman and Booth, and Prosser et al.) - where the last two appear to focus primarily on academics' experience

of the *object of study* of their research, whereas the first three appear to focus more on academics' *intentions* and the anticipated *outcomes* of undertaking research - so, these last three studies (by Meyer, Shanahan, and Laugksch, Kiley and Mullins, and Bills) appear to focus primarily on academics' and students' experience of the research *process*, with some attention to outcomes.

In effect, there is an implicit variation in the nature of the research question between the different studies, with some authors investigating academics' views of research primarily in terms of different views of the *outcomes* or products of research, others focusing on different views of the research *process*, others on different views of the purposes of or *intentions* underlying research, and others focusing on different views of the *object of study* in research. However, most of these studies have positioned themselves as simply looking at different views of "research". The different *foci* taken to the investigation of this question have been left implicit. It is only in bringing the outcomes of these studies together in this article that these different dimensions of academics' ways of thinking about research have become explicit.

The dimensions of research highlighted by the three tables may now be brought together as delineating different aspects of academics' views of the nature of research:

- Research intentions - who is affected by the research (Table 1);
- Research outcomes - the anticipated impact of the research (Table 1);
- Research questions - the nature of the object of study (Table 2);
- Research process - how research is undertaken (Table 3).

It is relevant at this point to describe the outcomes of Neumann's study of senior academic administrators. Neumann was looking for a common view of research, rather than variation in views, and summarised her sample's understanding of research as including three components (Neumann, 1993):

1. the creation of new knowledge;
2. the pursuit of a sustained line of inquiry;
3. the dissemination of research results through publication.

In many ways, these three components can be seen as reflecting a

focus on research (1) intentions, (2) process and (3) outcomes, thus reinforcing the significance of these three dimensions of academics' experience of research. However, the other studies described in this article would indicate that Neumann's focus on commonality in views obscures much of the complexity that is highlighted by a focus on variation in views.

This literature review has identified four different dimensions of academics' experience of research; that is, academics' research intentions, questions, processes and outcomes. This review provides a context for the study described below, which brings these four dimensions together in an integrated way by highlighting relationships between them.

## **Methodology**

In line with much of the literature reviewed, this study was conducted from a phenomenographic research perspective (Marton, Booth, 1997). Empirically, this involves a search for variation in ways of experiencing a phenomenon, accompanied by a search for structural relationships between the different ways of experiencing that emerge (see Åkerlind, 2005a for a more detailed description of phenomenographic principles and practices). For this study, the sample group consisted of 28 academics, all on teaching and research appointments at a research-intensive university in Australia. The selection of a research-intensive university ensured that all of the academics sampled were likely to identify with the concept of "being a researcher", which might not have been the case in other institutions. Given the phenomenographic focus on exploring variation in ways of experiencing a phenomenon, within the limits of being drawn from one institutional context, the academics interviewed were selected to represent as much variation as possible in areas likely to be associated with different experiences of being a researcher. The sample included academics from varied disciplines, cultural backgrounds and gender, with varying levels of experience as an academic, and on varying conditions of appointment. The sample also included academics appointed from Levels A to C of the Australian Academic Classification range of A to E. Levels A and B represent academic career-entry appointments (though promotion from A to B is also possible), and Level C typically represents a

mid to final career appointment. Levels D and E, which were not sampled, represent senior and prestigious appointments that only a minority of academics can hope to attain during their career.

Data were collected by semi-structured interview, asking participants what being an academic researcher meant to them, how they went about it, what they were trying to achieve, and why they did things that way, but working primarily from examples of research activities volunteered by the interviewees during the course of the interview. Unstructured follow-up questions were used to encourage further elaboration or to check the meaning that interviewees associated with key words that they used. However, the aim at all times was to provide opportunities for the interviewees to reveal their current experience of the phenomenon as fully as possible, without the interviewer introducing any new aspects not previously mentioned by the interviewee.

Interviews were recorded and transcribed verbatim, then analysed in an iterative manner, involving repeated readings of the transcripts in search of the underlying foci and intentions expressed in them, comparing and contrasting transcripts for similarities and differences, and looking for key structural relationships that related as well as distinguished the transcripts to and from each other. As key themes and dimensions started to emerge, the analysis shifted to an iterative process of alternating between the emerging analytic outcomes and the original transcript data, looking to confirm, contradict and modify emerging hypotheses about meanings and relationships with respect to the data. This continued until a consistent set of categories eventuated, with repeated iterations leading to no further refinements.

Initially, I focused my analysis on an open search for variation amongst academics in their ways of experiencing (or understanding) being a researcher, and dimensions of variation associated with that. This led to the emergence of the four key dimensions of researcher intentions, processes, outcomes and feelings (reported in Table 4). However, it was only after finalising my review of the literature (above) that I realised that the dimensions emerging in my study acted to integrate key themes emerging from previous literature, mapping relationships between academics' understandings of these research intentions, processes and outcomes, while adding the new dimension of researcher feelings about their research. At the same time, there was one dimension that had emerged

from the literature review that did not spontaneously emerge from my initial analysis, i.e. academics' understandings of the nature of the research question or object of study. Consequently, after completing the review, I re-analysed the data, searching for variation in understandings of this aspect of research, and how that variation might integrate with variation in understandings of the other aspects of research. The combined outcomes of this two-stage process are described below.

Table 4.  
Key aspects of the range  
of variation in ways of  
experiencing being a university  
researcher

Dimensions	Categories			
	1. Fulfilling requirements	2. Establishing oneself	3. Developing personally	4. Enabling change
Researcher intentions	Fulfil academic role	Become well-known	Solve a puzzle	Make a contribution
Research process	Identify and solve a problem	Discover something new	Investigate an interesting question	Address community issues
Anticipated outcomes	Concrete products	Academic standing	Personal understanding	Benefits to community
Object of study	Independent research questions, bounded by a field of study	Integrated research questions, related to a field of study	Integrated research questions, related to field and personal issues	Integrated research questions, related to field/social issues
Underlying feelings	Anxiety to satisfaction	Frustration to joy	Interest and enthusiasm	Passionate engagement

## Outcomes

Four qualitatively different ways of understanding being a university researcher were constituted from the interview data. The primary focus of each way of understanding may be briefly represented as the following four categories, indicating a varying view of being a university researcher as:

1. fulfilling academic requirements, with research experienced as an academic duty;
2. establishing oneself in the field, with research experienced as

- a personal achievement;
- 3. developing oneself personally, with research experienced as a route to personal understanding;
- 4. enabling broader change, with research experienced as an impetus for change to benefit a larger community.

The ways in which the different dimensions of research that emerged from the literature review are integrated within each way of understanding being a researcher are summarised in Table 4. In addition, there was a different range of feelings associated with each way of understanding being a researcher, which emerged as an additional dimension of the research experience *not* found in previous studies. This may be due to the focus taken in this study on the experience of being a researcher, rather than the experience of research *per se*.

Each category is described in more detail below, with a brief illustration of key aspects of the categories through verbatim quotes from relevant interview transcripts. As will become apparent, these different ways of experiencing are seen as related to each other through an expanding hierarchy of inclusive awareness, which I also attempt to illustrate through the selected quotes.

#### ***(1) Being a researcher as fulfilling academic requirements***

In this category, research is seen as part of academic job expectations. The primary intentions underlying being a researcher are extrinsically focused on keeping one's job and/or being seen to appropriately fulfil one's role as an academic. Research is seen as involving a process of identifying and solving a problem, using a set of specific research procedures or skills - it is only in this category that interviewees describe the particular steps involved in undertaking a research project as part of their experience of research. Academics focus on a specific research project, and in working out whether it is a viable project they need to be aware of the larger field; however, the focus of their research is not on contributing to that field but on completing the project. This is then seen as leading to concrete outcomes, such as the solution of a problem or completion of a grant, doctorate, publication, etc.

Unlike the following categories, where it is important for the researcher to be able to set his/her own research topic, there is little concern in this category with whether the research topic is

defined externally, through particular project funding for instance, or by the researcher him/herself. With respect to publication of research, there is again a focus on the extrinsic benefits that may arise, such as establishing credibility, meeting job requirements, and increasing one's chances of receiving external funding. Feelings associated with being a researcher range from anxiety about possibly not meeting requirements to a sense of satisfaction associated with doing a good job.

To illustrate:

“Oh well, doing a good job in research is generating lots of papers. So, I think you need to meet that criteria to stay in your job. ... let's say that I have a grant for three years, an ARC [Australian Research Council] grant in one area. So, doing a good job is basically planning ahead, planning ... and getting the job of reading done and writing the final report at the end, so that you establish your credibility for the next time you ask for funding for research. So, completing what you promised to complete, basically”. (Engineering, male, Level A)

“I think the basic aim is to keep my job. OK? I won't keep my job if I don't get external funding. Then the problem for me is identifying a problem that we can do, that needs to be done, and that has enough sex appeal to attract funding ... How I would identify such a problem would be to read as much literature as I could, in a broad sense, a lot of review articles. And then try to chase down one particular aspect, a problem that has been addressed inadequately for one reason or another. I have to judge that we can address that problem with this facility and answer that problem in a year, as that is probably the most that you can ever get. Then I would chase down the particulars of that problem and see what's been done before and see if there's a way around the technological limitations”. (Physics, male, Level A)

## ***(2) Being a researcher as establishing oneself in the field***

The primary focus in this category is on the personal discovery of something new in the academic's disciplinary area that leads to becoming known and recognised in their field. This might include a relatively modest discovery, or something so excitingly new and substantial that it would make the academic famous in their area. Whilst acknowledging that research is an academic requirement (as in the previous category), unlike the previous category, the primary intentions underlying the conduct of research are to create a sense of personal achievement. Thus, there is perceived to be a mixture of intrinsic and extrinsic benefits from engaging in research.

Academics focus on their research in terms of how it impacts upon the larger field, however, not for the sake of the field but for their standing within it. Feelings associated with being a researcher vary from frustration and uncertainty to satisfaction and joy, depending on the individual's perceptions of their chances of making the desired discoveries and impacts. Publication of research is undertaken for extrinsic reasons, in order to carve out their particular research territory, make their research known to others and gain academic standing amongst other researchers in the field.

To illustrate:

“I must admit that my ego is tied up at the moment very much in trying to get a book contract. If I get a book, I will feel a sense of achievement about that. But I'm also very suspicious about that, because I know that there is an emotional element which will mean that I've got somewhere. The book will represent something ... But it's also on another level just the fun of it, just the thrill of it, the joy of it. As well as thinking that if you have got a book then that research is “out there”.

*Interviewer: Why do you want it “out there”?*

“Because it tells a story that's not well known. And some historians go searching for something and they don't find it. So, part of doing the job is to get that out ... to shift the concept in the debate. It has an impact on the debate. ... and that's my voice, that's my bit. That's the bit out there already

through articles, and that's the bit that you have got to carve out as your own territory, otherwise you get squashed. So, the happiness it gives you is linked to this. If you don't get the book out, you miss out, and you lose your territory". (History, female, Level B)

"First off, it's part of my job description. Secondly, I believe that it will be good for my promotion prospects ... I think my research is more important [than teaching] to my long term prospects of being able to work. [This indicates awareness of the focus taken in the previous category.] And it's an ego thing as well. Partly because I want to be famous, I think, in my own particular neck of the world, which is my area. ... So, I've enjoyed both coming up with the new ideas and, more than that actually, having people adopt it and recognise my name in the research". (Computer science, male, Level A)

### ***(3) Being a researcher as developing oneself personally***

In this category, there is a more intrinsic focus to the experience of being a researcher. Research is primarily seen as the investigation of questions of personal interest to the researcher, with the underlying intention of progressing an issue that has been puzzling her/him. While this involves discovering something new, as in the previous category, the perceived outcomes of research are more focused on the personal. There is a primary focus on satisfying the researcher's curiosity and enhancing their personal understanding of an issue, with accompanying feelings of enthusiasm and interest in the research. The focus on personal understanding might also form part of a long-term sense of personal growth or development over time. This focus is also reflected in the perceived purpose of publications, which, in contrast to previous categories, is seen primarily in terms of gaining feedback from peers to improve the academic's research and understanding of the issue.

To illustrate:

"For me personally it has got to do with puzzle solving. If you look at certain puzzles, for example the puzzle I tried to address in my PhD ... [described]. So, this is the kind of puzzle I thought was interesting there, but it kind of addresses the

general area I am interested in, which is interactions between people ... So, they are almost like personal existential puzzles which I try to solve in a research way. The other area I am thinking of getting into is ... [described]. This is just something that puzzles me about people ... And I am looking at maybe getting into that for my personal research. And that to me is just something I am very curious about". (Psychology, male, Level B)

"Well, the main reason is probably just the interest, just my personality. That probably goes back to childhood. Since I was a child, I was very curious about things ... Maybe it was the environment, I was called "the doctor" when I was a kid. It was a nickname for me ... I would love to be recognised around the world for the area that I am interested in ... I would love to be able to pursue new knowledge as I progress. Also, I would love to be recognised for what I have achieved". [This indicates awareness of the focus taken in the previous category] (Engineering, male, Level C)

#### **(4) *Being a researcher as enabling broader change***

This category continues the focus on intrinsic benefits from research, in terms of enhancing personal understanding, but extends this to include a more altruistic focus on benefits to a larger community. The primary intention underlying the conduct of research is to make a contribution to a larger disciplinary or social group. This might include advancing a particular social cause in line with the researcher's personal ideology and values, for instance, encouraging conservation, combating racism, etc., or a more traditional focus on advancing the discipline. Research is seen as a means of addressing broader social or disciplinary issues of importance to the researcher's field or to society.

Within this way of experiencing, academics approach their research with a sense of passion, hoping to produce material of value to a particular research or social community that will lead to significant resolutions of problem areas within that community. The perceived purpose of publications is to spread the message and encourage change amongst the research/social community. In line with this, there may also be a focus on non-academic publications, designed to reach a broader audience.

To illustrate:

“What I am interested in is, and I have to step back a little to explain the broader rationale of my research, which is, I think I came to study corporations because I was interested in the workings of capitalism. And I came into it as somebody who had the, I was probably a Marxist in many ways. So, I was interested to understand capitalism and how it works [This indicates awareness of the focus taken in the previous category] and particularly to understand corporate law because corporate law to me is a very critical part of how capitalism works” ... to look at how corporate law affects or creates power relationships within groups of people”. (Law, female, Level C)

“For me, personally, it means that I have the freedom to pursue lines of inquiry ... It’s both being able to pursue lines of inquiry that are of interest and relevance, and trying to perhaps change, being able to practise your discipline in a way that will change the paradigms or parameters of the way your discipline is practised - the world view. Which might be an ideology of practice which you try and follow ... Well, one of the things I do do is ... work with an Aboriginal community. And my research questions are partly driven out of my interests, but also driven by community interests ... to try to break out of that imposition of a research model and a research method on Aboriginal people - who did not ask me to come there in the first place ... Part of the community-based approach is that you feed back material in a form that people can use in the community ... I think that it’s a two way thing ... the information goes in two directions. It goes back to the host community in one form and it will go back to the research community in another form. They are related and they all add up to a body of work”. (Archaeology, female, Level B)

### ***The distinction between understandings and activities***

This study has described academics’ ways of experiencing being a researcher, not the activities they engage in as a researcher. Indeed, it is important to distinguish between these, as the same activity can

be understood in very different ways. For instance, in all four ways of understanding being a researcher, academics described publishing papers as part of being a researcher, however, the perceived purpose of publishing was strikingly different. In category one, the intention underlying publishing is to produce a concrete research outcome in order to satisfy academic requirements. In category two, the intention is to make one's research known to others and to gain academic standing, or even fame, amongst other researchers. In category three, the purpose of publication becomes more intrinsic, and is seen primarily as a way of gaining feedback from others to improve the academic's research and understanding. In category four, the purpose of publications is to spread the academic's research message and encourage change amongst a research or social community. In line with this, there may also be a focus on non-academic publications, designed to reach a broader audience.

## Discussion

The detailed literature review undertaken in this article highlighted four dimensions of academics' views of the nature of research:

- Research intentions - who is affected by the research (Table 1);
- Research outcomes - the anticipated impact of the research (Table 1);
- Research questions - the nature of the object of study (Table 2);
- Research process - how research is undertaken (Table 3).

The empirical study reported here has explored the ways in which these four dimensions may be integrated within different ways of thinking about being a university researcher, with the addition of a fifth aspect in acknowledgement of an affective dimension, that is, researcher feelings about their research (Table 4).

Based on the integration of these five dimensions of the experience of being a university researcher, four qualitatively different categories of experience were constituted. The four different ways of experiencing being a researcher are seen as related in an inclusive hierarchy, from categories one to four, of increasing breadth of awareness of what being a researcher can mean. Illustrations of the sort of empirical evidence regarded as providing support for the inclusive hierarchy proposed was presented with

the description of the categories, while Table 4 is seen as providing logical evidence for the proposed hierarchy. As can be seen from the table, the expanding awareness across categories is reflected in each of the five dimensions of being a researcher highlighted. This demonstrates a shift between categories 1-4 from more limited to more expansive research intentions, processes, outcomes, objects of study and feelings.

With category one, *being a researcher as fulfilling academic requirements*, there is a solely external focus on the experience of being a researcher, in terms of satisfying external requirements and producing discrete, concrete, external outcomes. Emotionally, there is often limited engagement in the research process, primarily involving the possibility of a sense of satisfaction arising from the perception of a job well done and anxiety over the possibility of not fulfilling requirements.

While category two, *being a researcher as establishing oneself in the field*, is also limited to a primarily external focus on the experience of being a researcher, the intentions underlying the experience expand beyond merely meeting requirements to allowing for making substantial and integrated discoveries through research. There is more emotional engagement in the research process, in the sense that the academic's self-esteem seems to be involved. This is evident in the expressions of frustration and self-doubt associated with the prospect of *not* making substantial discoveries, and expressions of joy and self-assurance associated with the prospect of making such discoveries.

With category three, *being a researcher as developing oneself personally*, the external foci apparent in categories one and two are still apparent, but move more into the background of awareness. At the same time, a focus on internal interest in and benefits from being a researcher is foregrounded. Research is seen as facilitating the academics' own integrated understanding of issues, and there is an associated emotional engagement by way of personal interest and enthusiasm for the research.

With category four, *being a researcher as enabling broader change*, the mixture of external and internal foci that mark category three is also apparent, but at the same time there is a strong focus on altruistic aims and outcomes of research that go beyond any particular research topic. The primary intention underlying being a researcher is to make a contribution to a disciplinary or social

community that will lead to substantial change in the area. There is often a strong ideological commitment to such change, which leads to passionate engagement with the research activity.

Combined now with the studies described in the literature review, it seems that common themes in academics' ways of thinking about research occur consistently across all categories of academics: those from research-intensive and non-research-intensive universities; early, mid and late career researchers; and junior researchers and prestigious senior researchers. There also appears to be consistency in these themes across disciplines, with related themes emerging from studies sampling academics across disciplines, and those focused on specific disciplines, such as physics and information technology. However, while the *range* of variation in understanding appears consistent across different disciplines and categories of researchers, this is not to imply that the *frequency* of each way of understanding is also consistent. Frequency is not an issue that has yet been examined in the literature on this area.

Another issue stands out for further investigation. There is an anomaly between the relationship Prosser et al. (2008) found between an intention to benefit the profession or society and a multi-structural object of study (their category 1), and the relationship found in this study between an intention to benefit the discipline or community and an extended relational object of study (my category 4). Further research may help to resolve this anomaly.

At the start of this article, I suggested that increasing accountability requirements is one reason why investigation of the different ways in which academics think about their research is important. Following on from this, the variation in views reported here has implications for the ways in which different academics may react to different accountability requirements. In Australia, for instance, a new Research Quality Framework (RQF) for assessing academic research is being introduced in 2007/8 (Department of Education, Science and Training 2005). The RQF is modelled on the UK Research Assessment Exercise (RAE) and was developed by an advisory group chaired by the UK's Sir Gareth Roberts. Key features of the RQF include a focus on the international *quality* of research, as determined by expert disciplinary panels, and (unlike the RAE) the broader *impact* of research on society and end-users.

Based on the key themes of variation described in this article, one can expect very different views amongst academics of the relevance

of impact to research assessment, as well as different views as to what constitutes impact and what constitutes quality. For instance, those who see research outcomes as primarily impacting upon the researcher, in terms of their career, reputation and/or personal interest and learning, may be bemused or even outraged by the idea of the broader impact of their research being part of a research assessment framework. At the same time, even amongst those academics who do agree on the value of measuring impact, differences in what underlies this agreement may be hidden. The studies presented here show that academics may have different intentions underlying a desire for their research to have an impact, that is, to benefit themselves by extending their own career or reputation, or to benefit others by extending the research field and/or social outcomes.

Even quality may be understood differently by different academics, in terms of research that addresses uni-structural, multi-structural, relational or extended relational questions; and in terms of increasing productivity of research or increasing sophistication of research. This variation in views is likely to occur, not just amongst academics being assessed, but also amongst academics making up the assessment panels, as Brew (2001) found just as much variation amongst prestigious senior researchers as other studies have found amongst junior researchers. In this way, such differences between academics may also provide some explanation for the striking variation that can sometimes occur between peer reviews of the same in-submission journal manuscript.

What can make these differences most troublesome is the typically hidden nature of the variation. It is always easy to assume that academics of similar prestige and seniority in similar disciplines must hold a similar view of the nature of research and quality in research. The literature review and empirical findings of this article question that assumption.

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## Sintesi

*Cosa significhi essere ricercatore e quali compiti e obiettivi siano connessi a tale ruolo, in un mondo accademico sempre più attento alla misurabilità della ricerca, sono gli interrogativi a cui la National University australiana cerca di rispondere attraverso un approccio misto di ricerca qualitativa e quantitativa.*

*L'analisi della letteratura sull'argomento e la raccolta di interviste semi-strutturate e non strutturate a ricercatori di alcune università australiane a vocazione di ricerca hanno evidenziato la presenza di una gamma di elementi ricorrenti nel modo di concepire l'attività di ricerca. Tuttavia, il range delle variazioni e delle sfumature sia qualitative che quantitative emerso è notevole e si traduce in una lettura complessa del concetto stesso di ricerca.*

*L'analisi della letteratura più recente che si occupa di definire a livello concettuale la ricerca e il significato dell'essere ricercatore è stata, infatti, incrociata con i risultati di uno studio fenomenografico sulle opinioni di un gruppo di ricercatori di alcune università australiane, e ha portato alla definizione di determinate caratteristiche trasversali della ricerca, comuni al modo di concepire il proprio essere ricercatore da parte di docenti di discipline diverse e con diversi livelli di carriera. Spostando il focus dell'analisi sul modo in cui i ricercatori concepiscono la ricerca, piuttosto che sulla ricerca in sé, è stato possibile estrapolare elementi caratteristici del ruolo di ricercatore universitario e dei compiti, sentimenti e aspettative connessi a tali attività. Lo specifico punto di vista adottato ha lasciato emergere temi trascurati dalla*

letteratura sull'argomento, il cui focus è normalmente orientato alla definizione di cosa sia "ricerca", piuttosto che a cosa sia "essere un ricercatore".

A partire proprio da questa domanda, è stato possibile individuare cinque dimensioni della ricerca che includono: "intenzioni del ricercatore", "processo di ricerca", "risultato atteso", "oggetto dello studio" e "sentimenti" che sottendono tali attività. A loro volta, queste dimensioni dell'attività di ricerca scientifica si incrociano con quattro macrocategorie qualitative di esperienza che indicano una progressione della consapevolezza di cosa possa significare essere un ricercatore: "soddisfare dei requisiti", "affermarsi professionalmente", "svilupparsi a livello personale" e "favorire il cambiamento". La tabella 4 fornisce uno sguardo sinottico delle ipotesi e visioni emerse. Se quindi la categoria "soddisfare dei requisiti" a livello di processo si traduce nella fase di identificazione e soluzione di un problema, la stessa categoria, a livello di "affermazione professionale", significa per i ricercatori "scoprire qualcosa di nuovo" poiché la ricerca innovativa è percepita come fonte di autorevolezza professionale. D'altro canto, l'oggetto di studio è inteso variabilmente a seconda che sia considerato sotto la categoria dell'affermazione professionale - un tema di studio rilevante nell'ambito di una data disciplina - o sotto quella della crescita personale - un tema di studio rilevante nell'ambito degli interessi personali di ricerca. Le possibilità di variazione sono notevoli, sebbene molti temi siano comuni a campi di studio diversi. La variazione e la frequenza delle opinioni riscontrate, pur all'interno di un orizzonte costante, rappresenta la frontiera di future ricerche in questo settore. Sarebbero in particolare auspicabili ulteriori studi sulla variabilità dei dati in base alle differenti tipologie di ricercatori; nonché sulla definizione di qualità e impatto della ricerca, due elementi comunemente sentiti come prioritari. In definitiva, la forte variazione nei modi in cui i ricercatori sperimentano il proprio ruolo permette di definire meglio il concetto di ricerca, anche sotto l'aspetto della partecipazione emotiva del ricercatore, ma al contempo mette in discussione il comune assunto che implica l'omogeneità delle opinioni degli accademici sulla qualità e sulla natura stessa della ricerca scientifica.

