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# **Qualitatively Different Conceptions of Research: Implications for Adult Education Research**

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## **Introduction**

Research, like teaching and learning, is central to academic life. Yet the process of research has not traditionally been a subject for investigation. While there is now well established research on conceptions of learning and teaching in higher education, empirical work on the ways in which research is experienced is hard to find. Consequently, there are many unanswered questions concerning the experience of doing research and a great deal of debate about the nature of academic research, including assumptions about how and why it is changing, most of which is uninformed by empirical studies. Among academics there appears to be agreement that research is characterised by disciplinary differences and that increased pressure to find funding and to publish is bringing about the "commodification" of research. These ideas are, however, without empirical foundation.

## **Background**

In discussing the relevant literature it is necessary to distinguish investigations about the experience of research (such as the one discussed here) and research projects (which may be investigations of any kind in any discipline area). Among the very few studies which are examples of the former are Startup (1985) who researched academics' ideas about the impact of changes in higher education on how they viewed their research, and Bruce and Bahrlick (1992) who looked at psychologists' perceptions of past research. Some accounts about how researchers carry out their research detail historical studies of famous researchers and research institutions.

Other, closely related areas are the sociology of science literature including ethnographic studies. Latour and Woolgar (1986) in their study, for example, show how scientists generate scientific facts. Their study confirms Feyerabend's (1975) contention that positivism (the tradition of inquiry which characterises conventional academic research) is an idealised description of what researchers actually do. Yet what is known about the process of research mainly comes, not from empirical studies, but from the theoretical literature on research methodology. Traditional inquiry characterised by positivism has come under question during the course of this century from many quarters. Questions about what counts as knowledge and what counts as an appropriate method for generating it, are now known to be intimately bound up with questions of power (Lyotard 1993). There are now many attempts to define research methodologies which transcend traditional rules. These include feminist research, participatory inquiry, action research and critical ethnography. In many new forms of inquiry, variously labelled "post-positivist" and "post-modern," there is a tolerance of multiple perspectives. There is also the assumption

(empirically unsubstantiated) that these ideas are having a significant impact on academic research.

Other areas of research literature related to this project include the relationship between research, teaching and scholarship; research policy issues; research output and the nature of the academic profession. Much of this work focuses on the outputs of research rather than on the process of doing it (Brew and Boud 1995). For example, in the extensive literature on the relationship between research and teaching a range of mechanistic research indicators such as number of publications, citation score, membership in research societies, judgments of departmental heads and research grants received are used. Such research would benefit from the articulation of qualitatively differentiated conceptions of research (Brew & Boud 1995).

## Research Design

The methodology for this project drew from phenomenography and from cooperative inquiry. Phenomenography differentiates qualitatively different conceptions through the iterative analysis of qualitative data. In this project, it was used to examine qualitatively different conceptions of research. Thirty University of Sydney academics were interviewed in the first phase of the study. These researchers were all holders of highly competitive, large, Australian Research Council (ARC) grants. There is evidence that a high level of seniority is required to acquire such grants (Bazeley et al 1997). Participants were chosen to reflect Habermas' (1987) three knowledge constitutive interests and were thus from a spread of traditional academic disciplines. In phase two of the study, a similar number of academics engaged in a wider range of research and from other institutions was interviewed.

The findings were built upon by using the technique of research cycling derived from cooperative inquiry (Heron 1996). Initial findings were fed back to the participants for discussion and their comments informed further analysis.

## Findings

The intention in phenomenography is to represent the "outcome space" (Dahlgren 1997) which characterises the views of participating researchers. This study has resulted in the identification of four qualitatively different conceptions of research. These have been labeled the domino, the trading, the layer and the transformation conceptions respectively.

**Conception 1: Domino Conception.** In this conception research is viewed as involving separate phenomena. It is described as a series of separate tasks, events, things, activities, problems, techniques, experiments, issues, ideas or questions each of which is viewed as distinct. More often than not the aim is to solve distinct practical problems. For example:

My interests are in industrial drying technology, but that covers quite a large number of different sub-areas and techniques. That includes the use of computational fluid dynamics techniques and also the use of process flow sheet and techniques, together with advanced optimisation techniques so there's quite a wide range of techniques ... on a range of different problems. ... [ARC07]

Just as dominoes are separate, but can be combined in a number of patterns, so too, separate elements of research are conceptualised as illuminating other elements. However, in describing separate things, researchers with this conception often focussed on the activity of linking them. The task may be conceived as firstly identifying a problem or question and breaking it down into a number of sub problems and then working on these. Solving one problem or finding an answer to one question can set up a chain reaction in regard to other problems or further questions like in a "domino effect" where dominoes are lined up and each falls in turn. A number of reactions in different directions and on different levels may occur.

If you find an answer then there are subsidiary questions that stem from that and then eventually you find questions that don't have a good answer in the literature and those are the ones that we tend to pursue ... If you look at it as a tree, here's one question and answer, then off that comes various understandings that pin on that one. Then as you go up that dendrogram ... the number of possible questions is proliferating as you go up from those levels. So if you answer a basic question then you essentially open doors in a whole series of other directions ... [ARC19]

The domino conception also includes the idea that while the researcher acquires knowledge, skills, facts and techniques in the process of doing research, these are essentially separate from the researcher as a person. Research is not thought to impact on their life or change the researcher in any significant way.

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Conception 2: Trading conception. What is quite remarkable in this conception is the way in which researchers always came back to the idea of the finished product and how the researcher was going to be seen at the end of it. Research here is for an audience and is essentially viewed as a social phenomenon; as an arena for social interaction. The trading idea here parallels a village fair where research outputs and ideas are commodities which are exchanged in social discourse. Research outcomes, (publications, research grants or the achievement of objectives), provide a constant reference point.

you go and give papers and that sort of thing, ... by giving papers you talk to other researchers in the field, the main body (of work) is there. You interact with others through email as well. [ARC11]

While there are echoes of the domino conception, because frequently outcomes are viewed as separate entities, in the trading conception, not only are research activities described in social terms, but ideas and projects are also presented as the ideas and activities of people (research assistants, collaborators and other researchers in the field) i.e. as located in a social context. Researchers demonstrating this conception present themselves as being part of an international community of past and present members and stress the importance of being valued by that community:

I'm sure in most fields there is a very strong sense of ... those people who have worked before you. ... [a] very powerful sense of great personalities, ... academic

fields are very much stamped by these ... there's a great feeling that you're actually up there with them ... [ARC01]

Conception 3: Layer conception. It is helpful to think of this conception as describing two or more layers. Reality is presented as a surface and the researcher is concerned with illuminating, bringing to light or uncovering the phenomena, descriptions or explanations lying beneath that surface.

research is about finding out something that you ... and other people didn't already know ... trying to get at another level of what people were doing ... So.... adding another dimension ... [ARC20]

While superficially the layer conception appears to have similarities with interpretive research, it is not tied to such methodologies. Embodied in this conception are different ideas about the ontological status of findings.

We thought, as a hypothesis that a mangrove growing in very deep water that has to store a lot of oxygen and therefore has to ventilate a lot when it's exposed compared with a mangrove living high on the shore where it's nearly always exposed and therefore can get oxygen all the time. We thought that we would have a different structure, ... but, as it turned out, the mangrove appears to be preprogrammed, at least in it's first few years of life, so they know they are going to form that much root, that much air space, that many peg roots, and that's it. So that was unexpected [ARC08]

In this quotation there is a sense that what is being sought is a correct description of a reality that exists. It has a sense of discovery about it. However, the task of examining the layer underneath may rest on the idea that there actually is no such thing as a correct explanation nor that it is possible to describe it. What is being sought is simply a "better" explanation. There is, in addition, the idea of research as an artistic process; meaning is created, not discovered. Yet in all of these variations there is still the sense of illuminating an underlying layer:

I think of it sometimes like painting where you're working with a palette knife and you're constantly touching it up, jumping back into earlier parts of what you've written, adding new data, it's just a constant ... creative process. .... [ARC01]

Conception 4: Transformation conception. In the fourth conception, research is experienced as personally transformative. There is frequently the idea of a personal journey and an emphasis on the assimilation of research into one's own life and understanding. In the transformation conception intellectual activities in which the researcher engages, whether or not they appear to have a direct bearing, are viewed as relevant to the research because they inform the life issues which underpin the research questions. The researcher is transformed by this. The topic of the investigation is merely a vehicle for exploring the issues and is less important than the underlying questions posed.

the whole field work experience is a much deeper basis than simply collecting a bunch of data, it actually has major transformative effects on the personality. [ARC09]

There is the idea that the issues have been explored over a long period of time and are intimately bound up with a person's career and, indeed, life.

For me, research is a kind of transcendental therapy, that's the best way to express it. ... a kind of Tantra. It transforms one through the process of engaging in it. ... It's the most intensive form of psychotherapy you can do [ARC09]

### Implications for Adult Education Research

Academic disciplines or subject areas are often used in policy documents and discussions to provide an explanatory framework for differences in research. What we see in this study is that researchers' underlying conceptions provide a much more satisfactory explanation of differences. While scientific and technical disciplines tend to be represented more in the domino conception, this is not exclusively so. The humanities and social science disciplines are also represented. On the other hand, while there are more examples of humanities research in the transformation conception, again, scientific disciplines are also represented. In the trading and layer conceptions there is similarly a spread of discipline areas. Interestingly, researchers from any one discipline can be represented in any or all conceptions. It is therefore to be expected that adult education researchers would be represented in all conceptions.

By demonstrating qualitatively different ways in which research is experienced, this framework provides a basis for understanding a number of phenomena relating to adult education research which have hitherto been insufficiently understood. For example, they provide a way of understanding difficulties with or non-completion of research degrees due to incompatible conceptions of supervisor and student. Further, it is possible, on the basis of a knowledge of the conceptions, to predict future research output of colleagues; for some conceptions are more likely to lead to publications than others. The trading conception for example primarily focusses on publication. This is not the case with the transformation conception.

Perhaps more importantly, however, these conceptions are important in relation to debates about the ways in which research is changing and about the effects of research policies. As such they elucidate dilemmas experienced by adult education researchers. The focus on publication enshrined in government funding policy, for example, in the UK and in Australia, may be interpreted by researchers as emphasising the trading conception of research. Indeed it would appear from this study that the emphasis on the trading conception within such policies has had a more significant impact on changing research than the broad shifts in the intellectual climate mentioned earlier. Such policies place the transformation and to some extent the layer conceptions under threat. This is particularly worrying in the field of adult education where research is often used as a vehicle for personal learning and transformation and where researchers may be endeavouring to establish new forms of research within institutional, social and political constraints.

When researchers with different conceptions met in the cooperative inquiry phase of this investigation, it was found that they were unable to communicate effectively. They shared the same language and endeavoured in meetings to find common ground, but essentially talked at cross purposes. It was possible to explain their miscommunications by reference to the differences in their conceptions. Usher and colleagues (1997) point to the difficulty experienced by the field of adult education in negotiating its way through different research traditions in the conditions of postmodernity. Different conceptions of research provide ways to understand different orientations in adult education research. They are therefore important for anyone trying to make sense of different methodologies, and in particular for those new to research. Being clear about one's own way of viewing research provides a basis for making sense of others'. However, it must be recognised that some of the conceptions may preclude an understanding of the others. Qualitatively different conceptions of research each lead to different research discourses. Faced with those different discourses we can, with a knowledge of the different conceptions, analyse debates anew. They can thus provide a basis for analysis and decision-making.

### Conclusion

This research has begun to elucidate a neglected field of inquiry, namely, the way academic research is experienced. Future work could include extending the study to a comparison of established researchers' conceptions with those of novices, a comparison between the conceptions of males and females and researchers with different cultural backgrounds and work to integrate conceptions of research, conceptions of teaching and conceptions of learning. In addition, further research is needed to elucidate how stable these conceptions are over time and whether or not they are likely to change from one research project to another. Whether a person's conception is a consequence of doing research of a particular kind and on a particular topic, or whether researchers choose the research topics they do because they have particular conceptions of research is also an interesting area for future research. In studies of students' conceptions of learning, some students were shown to exhibit different conceptions in different circumstances (Ramsden 1997). Further empirical work is needed to establish if this is also true of researchers.

Whenever a process of inquiry is talked about or engaged in, what is said and done is dependent upon underlying conceptions about the nature of research. These influence the types of projects researchers feel comfortable pursuing, the choice of methodology, the questions, ideas and issues pursued and the ways in which the work is carried out. Further research is clearly needed to elucidate the relationships between conceptions and what researchers do. The findings which have been reported in this paper, however, have thrown light on aspects of research which are often hidden from view but which influence research at every level. They represent a first step in explaining differences in researcher orientations and practice.

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