MEANING-MAKING IN QUALITATIVE RESEARCH: ISSUES OF RIGOUR IN A TEAM-BASED APPROACH

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ABSTRACT

This paper explores processes of meaning-making and modes of knowing in a largely qualitative, industry-based study of competency-based training, conducted by research teams throughout Australia. Implications of differing epistemological perspectives of researchers are examined and suggestions for enhancing the rigour of team-based qualitative research studies are made.

Introduction

Qualitative studies are relative newcomers to the fields of adult and vocational education and training research. Quantitative methods, located within a positivist, or postpositivist, paradigm (Guba & Lincoln 1998, 210), have been considered more rigorous, scientific and objective than qualitative studies, thus providing the only important source of valid, reliable and generalisable knowledge. However, it is increasingly recognised that many significant research questions, for example, those that do justice to the complexities of educational contexts, can only be addressed adequately through qualitative methods (McIntyre 1995). The analysis of a social practice such as education is seen to require hermeneutic, interpretive and ethnographic approaches, in addition to those studies that attempt to map the field through measurement (Garman 1996, 14; Usher et al. 1997, 181). How to assess and enhance the rigour of such studies, while providing a more appropriate epistemological framework in which to conduct them, has preoccupied scholars for a number of years (Lincoln & Guba 1985; Gorman 1996; Denzin & Lincoln 1998).

This paper describes the methodology and some of the research practices of a largely qualitative, industry-based, national project, funded by the National Centre for Vocational Education Research (NCVER), and conducted in 1998 to evaluate the contribution of competency-based training (CBT) to outcomes in vocational education and training (VET). Seven research teams throughout Australia, including one in Victoria, were managed from the Victorian base by the two authors of this paper. Ways in which parts of the study were conducted to enhance rigour under such circumstances are outlined. However, the apparently divergent epistemological perspectives of some interviewers employed within the research teams led, at times, to different interpretations of the kind of information the study was designed to elicit. While influencing only comparatively small amounts of data, such differences, nevertheless, reduced opportunities for analysis. Since collaborative structures appear to be highly favoured in VET research, attention to such issues within the VET community appears warranted.

In this paper, we briefly discuss the research paradigms usually associated with qualitative and quantitative approaches to research and compare criteria for rigour seen as relevant within each paradigm. The nature of the research teams and the study design and its purposes and assumptions are then described, together with ways by which rigour was sought within the study. Apparent differences in epistemological perspective exhibited by two different interviewers are then discussed and, by way of illustration, sections of two records of interview are contrasted. Lastly, different approaches to meaning-making or modes of knowing are explored and suggestions for conducting more rigorous team-based, qualitative research are made.

Research approaches and paradigms

For the purposes of this paper, and at the risk of gross over-simplification, two basic paradigm positions are contrasted: a positivist and/or a postpositivist position and a critical and/or a constructivist position (Guba & Lincoln 1998, 195-220), the latter being adopted by the authors who designed and managed the project. The former position assumes an ‘objective, external reality’ that

can be 'discovered' by research, even if only imperfectly and probabilistically, and is often associated with the deployment of quantitative approaches – nevertheless sometimes enriched by the collection of qualitative data. The purpose of research within this paradigm is usually to establish and measure cause-effect linkages between variables, thus producing law-like generalisations said to hold true across the field. The latter position, on the other hand, assumes socially produced or socially (and experientially) constructed realities, and relies, for the most part, on qualitative methods. Here, the purpose of research is either to critique and transform the social world or to develop 'more informed and sophisticated reconstructions' (ibid, 210). Thus social processes are emphasised and phenomena are interpreted 'in terms of the meanings people bring to them' (Denzin & Lincoln 1998, 3).

Rigour in constructivist research studies

Lincoln and Guba (1985) describe four criteria for rigour (or trustworthiness) in qualitative studies within a critical or constructivist paradigm, not to be universally prescriptive or exclusive, but to provide useful provisional guidelines for the qualitative researcher. These parallel criteria for rigour in positivist/postpositivist studies and are labelled 'credibility' (compared with internal validity), 'transferability' (compared with external validity), 'confirmability' (compared with objectivity) and 'dependability' (compared with reliability).

In relation to credibility, constructivists believe that 'there is no ultimate benchmark to which one can turn for justification' (Lincoln & Guba 1985, 295), that is, no one reality that the researcher must represent truthfully. However, the analysis and report need to 'ring true', or exhibit verisimilitude (Garman 1996, 19). Similarly, in relation to transferability, constructivist research explores situated patterns within particular cases, rather than producing externally valid generalisations. Transferability to other contexts is then assessable by those who read the reported cases, given sufficiently detailed description and interpretation in the research accounts presented.

In relation to confirmability, it is assumed that the value-free, objective enquirer is a myth, but that researchers should be reflexive and open about their positioning, foregrounding personal and cultural values and the theoretical and epistemological stances from which the research is undertaken (Usher & Edwards 1994, 147-153). The research report should also present a construction grounded in the 'tangible realities' of the case, such as what was said, written or observed. Lastly, in relation to dependability, it is recognised that replicability of findings, no matter what values and purposes are adopted by the researchers, is impossible. However, it is expected that, if researchers engage in a particular study, among the same community of research participants at a similar time, then 'data sets' obtained by these researchers, and thus emergent understandings, will be largely comparable. It is this last criterion for rigour, and the difficulties in meeting it to the degree the authors wanted, that are described in this paper.

Research strategies to enhance rigour and trustworthiness in studies include the following methods pertinent to this evaluation. Obtaining data from different sources and by different methods allows cross-checking, or triangulation (Lincoln & Guba 1985, 305), not to converge on a singular 'truth' but to provide sufficient evidence with which to build credible, dependable constructions. Maximum variation sampling (ibid, 233), to obtain redundancy of information, also ensures inclusion of many possible perspectives. Careful documentation of data ensures referential adequacy and confirmability (ibid, 313), while member-checks with research participants and other stakeholders (ibid, 314) assess verisimilitude. Reflexive journalling explores problematic issues in data selection and analysis (ibid, 327) and 'thick description' in the research account enhances transferability (ibid, 329). This study was designed with the above criteria and strategies in mind, together with a concern for ethical issues, including fairness to all 'voices' (Lather 1991).

The research design

The study was designed in two main stages. The first stage comprised investigative telephone interviews with approximately 200 training managers (or associated personnel) in companies throughout Australia. This was the largely 'technical stage' of the project. The second stage required detailed in-company case studies to be undertaken, one in each State and Territory, and each involving extensive observation of CBT in context and in-depth interviews with a number of different stakeholders of the training. This was the largely 'critical and socio-cultural stage' of the project, where cultures of training could be thoroughly explored.

This design required that seven research teams be established, each consisting of at least one qualitative researcher (whose values and research approach corresponded to those of the project managers and authors), and usually one or two research assistants recruited by the researcher. The research assistants were to take primary responsibility for the telephone interviews, while the researchers were to undertake and write the case-studies. It was the telephone interviews that were problematic in relation to the interpretation of the research task and therefore only the first stage of the study is discussed in this paper.

In this first stage of the project, to provide maximum variation sampling, those interviewed were drawn from large, medium and small companies in both urban and regional Australia, in the four industry sectors of Manufacturing, Services, Construction and Agriculture, Forestry and Fishing. In general, we wanted to ascertain the type of CBT programs being undertaken in each company, and the reasons for adopting either national or enterprise standards. How CBT was being deployed, how effective it was perceived to be, for whom and why, and its purported disadvantages and benefits for the industry, enterprise, trainers and trainees were also to be investigated.

An interview protocol was therefore devised. It contained several questions (1-9) requiring fairly factual answers. These concerned the nature of the workforce employed in the enterprise, the nature of the training being delivered, who was being trained, where, according to what standards, for what purpose, and any particular issues arising for the enterprise or individuals. Were there any differences (and, if so, why did they develop) in the use of CBT for casual or permanent staff, for example, or in the understandings of competency in largely feminised or masculinised workplaces? Other questions (shown as 10-12 in the data presented), sought to explore the advantages, disadvantages and overall effectiveness of CBT. These latter questions, perhaps especially, required an assessment of the problematic, as well as the useful aspects of CBT, inviting detailed opinions to be expressed and justifications given.

Indeed, the purpose of these interviews was to obtain a rich, enterprise perspective on CBT, from a diverse group of training managers. It was not to undertake a quantitative survey to measure and generalise about the effectiveness of different aspects of CBT for different types of enterprise. Rather, similarities and differences among the opinions expressed were to be explored and any patterns, and counter patterns (Lather 1991, 67), sought firstly across all enterprises, and subsequently within sub-groups of enterprises, according to ‘objective’ differences. Numbers of interviewees (approximately 30 in most States or Territories) were sufficiently large to provide triangulation of sources within each sub-category of enterprise.

Working with research teams

Researchers were requested to instruct assistants in arranging a suitable interview time for each training manager, offering to mail or provide a faxed copy of the interview protocol and project description (including confidentiality provisions) in advance. Interviewers were asked to elicit a ‘lived sense’ of the company, even if limiting the interviews to fairly focussed questioning. Twenty minutes was established as an appropriate interview length, given the straightforward nature of most of the questions. It was thought this would allow sufficient time to explore particular issues in depth. Answers were to be recorded in writing during the interview, with verbatim statements being indicated clearly. The final interview report was then to be written.

A vast body of writing (concerning theoretical and epistemological assumptions, as well as practical issues) was sent to each research team. However, at no time was the whole group brought together to discuss the research purposes, and many difficulties were experienced initially in accessing training managers. In addition, as project managers, we perhaps over-emphasised procedural instructions at the expense of underlying frameworks and purposes, which are harder to communicate simply, particularly in writing. Interviewing well within a critical or constructivist paradigm involves understanding both the interviewee’s experience and the purposes of the research, as well as technical skills (Seidman 1998), and interview protocols are always open to interpretation. Indeed, in asking for advantages, disadvantages and overall effectiveness of CBT as perceived within each company (questions 10-12 respectively) - rather than asking what positive (or negative) changes had taken place as a result of CBT - the interview protocol itself may have invited a generalised rather than a descriptive response.

Differences among interview reports

We had expected reports of interview of different length. Some interviewees are particularly forthcoming; others are more reticent with their opinions. However, it appeared that certain research assistants were consistently producing much longer reports than others. For example, the average length of the records of interview conducted by one interviewer (as measured by the number of lines of answers produced when entered into the computer program 'Ethnograph') was 210 whereas, for another interviewer, it was 54.5. For the former interviewer, the record of interview lengths varied between 141 and 283 lines, while for the latter interviewer, the variation was between 43 and 84 lines. (For other interviewers involved in the study, the mean lengths of interview records were 138, 80.5, 80, 78, 65 and 64 lines).

Such quantitative data is open to many interpretations. Perhaps some research assistants allowed a limited time only for each interview and were determined to maintain their schedule as arranged. A more plausible reading, however, is that variations arose for two main reasons. Firstly, there was insufficient recognition by at least one research assistant that an exploration of opinions was needed and/or secondly, details were seen as less important than summaries within the interview report presented.

For example, the record of interview for one large company training manager, responding to questions 10-12 (dealing with advantages, disadvantages and effectiveness of CBT, respectively), reads as follows:

> Q:10 Continuous monitoring of progress. Provides good benchmarking. Trainees know exactly what they have to do.
>
> Q:11 Time in administration and assessment. Need for a dedicated staff person to coordinate. Lack of experiential factor in programs.
>
> Q:12 Generally very effective.

While the above report makes mention of some key themes throughout the data, how to interpret each comment is somewhat unclear. What, for example, is the 'experiential factor' to which the interviewee/interviewer refers? It might relate to the importance of practice in the development of embodied skills, or the significance of experiential knowledge in enabling further learning to occur. Alternatively, it might refer to the lack of opportunity to engage in 'hands-on' work or authentic experience during the CBT program. All these issues were mentioned elsewhere in the data provided by other interviewers.

In addition, one might imagine the answer to question 12 as a response to a Likert scale, in which the respondent is asked to tick a box among those ranging from 'not effective' to 'very effective'. Indeed, many of the answers reported for this interview give only tantalising hints about how CBT is 'lived' within the company. One way of using such data might involve counting the number of occasions on which phrases like 'time for administration' or 'time for assessment', for example, appear. These numbers might then be expressed as a percentage of the total number of companies and generalisations about these issues across the board could be made. Yet just what is implied within these simple phrases remains ambiguous. Possible meanings include loss of work time in taking assessors off the job in order to train them as assessors or to engage in the assessment process, and time taken in assessing recognition for prior learning (RPL) and/or in documenting competencies achieved. However, such phrases do incorporate 'abstract' categories that might well form the basis of two quantitative survey questions.

On the other hand, the record of interview for a second large company training manager, interviewed by another research assistant, reads as follows:

> Q:10 CBT is advantageous as "each skill is documented, trained on and assessed, that's the whole key to it". The interviewee feels that "the old system" involved learning by rote, which was not always transferable to work. CBT is a "hands-on do program". In designing CBT training this organisation "hasn't gone down the path of reams of manuals …[they use] the best manual of all – the machine itself". There are lots of diagrams and pictures in the training materials that are used and this company hopes to put a lot of this onto CD-ROM with a future goal of moving to on-line training.
>
> Q:11 "You can make robots of people" with CBT training and the interviewee is "looking to put brain food in there" so that people can manage their work more effectively. Brain food

might include teamwork, conflict resolution skills and so on. Another issue is retention of competencies. “Once a person is deemed competent, it’s not, I’ve passed and that’s it”. Staff need to be constantly reviewed to ensure that their skill levels remain adequate. CBT assessment was compared to receiving a driver’s license. “Once you’re given a license, you continue to get better or worse, so you need to be monitored”.

Q:12 Overall the company “had no problems with it [CBT], but a little more fine tuning” would be advisable. CBT was considered “good and effective”. This company is moving towards a philosophy of Human Resource Development, that is, “the overall training and development is tied into the strategic development of the company”. CBT “is not the be all and end all, but it’s a good operation”.

Here the interviewer paints a detailed picture of CBT in practice. Indeed, elsewhere in this interview, short vignettes are provided to illustrate the issues raised. This is a ‘storying’ approach, in which detailed aspects of workplace culture are elicited. Opinions are often recorded verbatim, with particular attention being given to the interviewee's metaphors, such as ‘brain food’ and a ‘driver’s license’. A quite complex view of competence emerges from this interview: one incorporating the ‘soft’ skills of communication and team-work, together with the capacity to develop further, that is, using competence as a ‘driver’s license’ with which to proceed. The report displays a narrative form, rich in the interpretations of the interviewee, but also indicating the predilections of the interviewer (and the project managers), to explore, for example, the concept of competency.

Approaches to meaning-making and modes of knowing

Garman (1996, 13) contrasts definitional and discursive knowing, the former relating to precise and abstract definitions providing the ‘perimeters of concepts’, the latter to the development of meanings as found in discourse over time. Sacks (1985, 85-90) notes that ‘the mental processes that constitute our being and life are not merely abstract and mechanical but personal as well. These processes involve not just classifying and categorising but also constant judging and feeling’. He expresses concern that ‘by a process of verbal reductionism, the abstract has been separated from the phenomena themselves’.

Similarly, Belenky *et al.* (1986, 100-130) contrast separate and connected ways of knowing. In the former, meaning-making is impersonal and ‘feelings and beliefs are rigorously excluded’ (ibid, 109). A dispassionate stance is taken to events, observing problems from a pragmatic, strategic or technical point of view. ‘Disinterested reason’ (ibid, 110) is what is important. Connected knowing, on the other hand, involves learning through empathy and taking an interest in the other’s point of view. In constructed knowing, however, these two positions are integrated into an understanding that ‘All knowledge is constructed, and the knower is an intimate part of the known’ (ibid, 137).

Incorporating such contrasts, Bruner (1986, 11) describes two modes of knowing and thinking or ways of ‘ordering experience and constructing reality’, the paradigmatic and the narrative. He writes (1984, 7): ‘The narrative smells of daily life: value-laden, particularistic, its meaning riddled with cultural negotiations. The paradigmatic is of the domain of science and technology, formal, highly abstract, aspiring to be context-free and independent of intention’. Though complementary and necessary if enquiry is ‘to capture the rich diversity of thought’, each has its own operating principles and ‘criteria for well-formedness’ (Bruner 1986, 11). In similar vein, Verran (1995, 103) contrasts ‘representationalist’ and 'performative or enacting' modes of knowing. The former assumes knowledge to be universal, accurately representing a 'discoverable' reality, whereas the latter assumes knowledge to be ‘specifically embodied’, or ‘located’, and embedded within practical contexts.

In positivist or postpositivist research, a paradigmatic or representationalist mode of knowing appears to predominate, while in critical or constructivist research, it is likely that a narrative or performative mode prevails. However, in positivist or postpositivist projects, abstract categories that form the basis of survey questions may well be extracted from rich narrative data (Garman 1996, 12-13). On the other hand, in critical or constructivist projects, in ordering and making meaning from qualitative data, theoretical and abstract categories are frequently employed. The form and substance of the research story is also ‘created’ by the chosen ‘facts’ of the case, that is, by tangible, observable and even measurable realities, and by the implicit or explicit theoretical framing of events.

In this study, signs of both paradigmatic/representationalist and narrative/performative modes of knowing were recognized in the interview records of all research assistants. In relation to the former, general categories were used as short-hand, a way of summarising many of the complexities involved in interviewees’ answers. In relation to the latter, reporting was discursive, using a narrative form and

making a deliberate effort to connect with interviewees' experiences. Research assistants seemed to move constantly between these modes of knowing, thus managing the tension between them, but in somewhat different ways. Yet, one research assistant, in particular, appeared to privilege paradigmatic or representationalist knowing to an excessive degree for the purposes of this research - thus compromising the dependability of the data from this region. Interview records, submitted by this interviewer, provided limited opportunities only for developing an understanding of reported categories. Thus many of the experiences and opinions of certain training managers were lost to the research story.

As Harris (1996, 318) points out, 'the choice of research method is influenced by the assumptions the researcher holds about the social world and its inhabitants, as well as the nature of the study required'. Similarly, it appears that whichever mode of knowing is privileged and whichever masked will also depend upon the epistemological assumptions of the researcher.

Conclusion

If different investigators across qualitative research teams operate according to different research paradigms, and thus privilege different modes of knowing, aspects of rigour and trustworthiness are likely to suffer. How then can project managers of qualitative studies attempt to manage the tensions between different viewpoints so that a trustworthy product emerges? More explicit attention to communicating about and developing understanding of these issues within and across research teams appears essential.

For example, in the absence of face-to-face contact across research teams, a sample record of interview might be sent to each research team as a 'model' for reflection and discussion. This could engage people in 'anticipatory learning' (Candy & Matthews 1998, 13), or rehearsal, about how they might respond to certain interviewees' answers and to what purpose. The 'model' would also show the degree to which the inclusion of narrative detail is desirable in records of interview, as appropriate to a particular study. It would 'perform' the knowledge required for interviewing in a way that procedural instructions could not. Without imposing a rigid template, such a 'model' could also be a starting point for reflexivity - about one's epistemological position and values - and the purposes of the research. This understanding could then inform those judgements that are constantly exercised during interviewing and reporting. Thus trustworthiness and rigour are likely to be enhanced and the processes of meaning-making extended and deepened.

With hindsight and time to be more reflexive on our work as project managers, it appears that we, too, privileged a paradigmatic or representationalist mode of knowing, in many of the materials that were provided for the research teams in this study. The greater use of narrative and performative methods of communicating across research teams would thus seem to be desirable in qualitative studies. Moreover, as qualitative, team-based research becomes more widespread in VET, the issue of rigour and trustworthiness, associated with diversity in the values and perspectives of different researchers, would appear to merit further investigation.

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REFERENCES

Candy, P and Matthews, J 1998, Fusing learning and work: Changing conceptions of workplace learning. In D Boud (Ed) *Current issues and new agendas in workplace learning.* National Centre for Vocational Educational Research Ltd., Leabrook, South Australia.

Belenky, M F, Clinchy, B M, Goldberger, N R and Tarule, J M 1986, *Women's ways of knowing: The development of self, voice and mind.* Basic Books, New York.

Bruner, J S 1986, *Actual minds, possible worlds.* Harvard University Press, Cambridge.

Bruner, J S 1984 Inaugural address to the Centre for Applied Cognitive Science at the Ontario Institute for Studies in Education, *Interchange,* 15(3), 1-8.

Denzin, N K and Lincoln, Y S 1998, Entering the field of qualitative research. In N K Denzin & Y S Lincoln (Eds) *The landscape of qualitative research: Theories and issues* (1-34). Sage Publications, California.

Garman, N 1996, Qualitative inquiry: meaning and menace for educational researchers. In P Willis and B Neville (Eds) *Qualitative research practice in adult education* (11-29). David Lovell Publishing, Ringwood, Victoria.
Guba, E G and Lincoln, Y S 1998, Competing paradigms in qualitative research. In N K Denzin and Y S Lincoln (Eds) *The landscape of qualitative research: Theories and issues* (195-220). Sage Publications, California.
Harris, R 1996, Reflection on the role of an evaluator. In P Willis and B Neville (Eds) *Qualitative research practice in adult education* (313-324). David Lovell Publishing, Ringwood, Victoria.
Lather P 1991, Getting smart: Feminist research with/in the postmodern. Routledge, New York.
Lincoln, Y S and Guba E G 1985, *Naturalistic inquiry.* Sage Publications, California.
McIntyre, J 1995, Research in adult education and training. In G Foley (Ed) *Understanding adult education and training* (121-133). Allen and Unwin, St Leonards, NSW.
Sacks, O 1985, *The man who mistook his wife for a hat.* Picador, London.
Seidman, I 1998, *Interviewing as qualitative research: A guide for researchers in education and the social sciences.* 2nd Edition. Teachers College Press, New York.
Usher, R and Edwards, R 1994, *Postmodernism and education.* Routledge, London.
Usher, R, Bryant, I and Johnston, R 1997, *Adult education and the postmodern challenge.* Routledge, London.
Verran, H 1995, Imagining ownership: Working disparate knowledge traditions together', *Republica,* 3, 100-107.