

Editorial

Stephen Gorard, Karen Roberts and Chris Taylor

Welcome to the second issue of this new journal devoted to helping build capacity in the UK educational research community. This issue contains six main articles.

In the first article, Andrew Pollard reminds readers of the remarkable diversity of the educational research endeavour. Therefore, he argues, it is important that we welcome, and are prepared to debate, new ideas of the kind presented in this issue of the journal.

Ken Prandy argues that we should be more sceptical about our use of numbers in social science, to avoid what he terms 'pseudo-quantification' based on neither theory or qualitative observation. Stephen Gorard argues that the notion of statistical testing is over-used, and over-represented in traditional research training, leading to an equivalent under-emphasis on collecting high quality data.

Amanda Coffey reminds us of the seven 'moments' of qualitative research describing a series of developments that have taken place in social science, and warns educational researchers of the need to engage with the wider debates these moments engender. Neil Selwyn describes the very considerable advantages of using computers as research tools (to mediate a survey or conference, for example). But he also reminds us of

the changes this entails in terms of audience, power and ethics.

Peter Tymms and Carol Taylor Fitz-Gibbon have written a response to the lead article by Laurence Moore in the first issue (*BRC* 1, January 2002). They argue that his account of trials over-emphasises the prior role of theories. Rather, the history of science suggests an important place for hunch, insight, and serendipity. The key issue is to test these ideas rigorously, however they were generated.

Laurence would agree with much of their argument in the context of simple trials, and as a description of how research has progressed. However, it should be noted that his article concerned *complex* interventions, particularly in health education, where straightforward trials are not always possible and have, in retrospect, sometimes been shown to be naive. It is also interesting to compare this response with the points made about the primacy of theory in the role of even simple measurement in the first article. Where do you stand? Please tell us what you think.

The back page contains RCBN News, including an update on our nearly completed research skills consultation exercise, news about our website of capacity building resources, and details of forthcoming

training events.

This journal welcomes articles, responses and debates on all issues relevant to building research capacity. If you wish to contribute an article to the journal then please contact one of the editors at the RCBN. In particular, we are looking for articles that address a particular issue or debate (methodological and/or theoretical) currently within teaching and learning research, articles that outline new and innovative methods or thinking in teaching and learning research, and articles that reflect upon your own experiences of research which may be useful to share with other teaching and learning researchers.

Contents

- Page 2 The challenge of *Building Research Capacity*
Page 3 Measuring quantities: the qualitative foundation of quantity
Page 4 What do statistical tests signify?
Page 5 Reflections on the history of qualitative research in education
Page 8 Using computer-mediated communication in educational research
Page 10 Theories, hypotheses, hunches and ignorance
Page 12 RCBN News

The challenge of *Building Research Capacity*

Andrew Pollard

Director TLRP, University of Cambridge

Tony Becher's *Academic Tribes and Territories* is one of my favourite books. The title, combined with a few contrastive examples of educational research and recollections of some of our debates in recent years, highlights an important element of fascination and challenge. We know then, that there are a great many perspectives and traditions in the field, which in their own terms have both strengths and integrity. This diversity can be seen as a reflection of the complexity of educational processes and is therefore an important contribution to understanding education. Indeed, the Steering Committee of the Teaching and Learning Research Programme (TLRP) has affirmed that:

(The Committee) recognises the validity of many perspectives and does not privilege any particular discipline or methodology. It is satisfied that the complexity of educational phenomena requires a range of forms of enquiry. (Phase III specification document)

Beyond the technical arguments, there are also value issues, for these approaches are undoubtedly associated with particular approaches to the relationship between individuals and society, to social order and to change. However, in the TLRP we come together with one over-riding value commitment to *the improvement of educational outcomes for all learners in the UK*. With the unprecedented investment now available, this as an incredible opportunity both to do something extremely worthwhile and to engage in a sustained processes of development for our field as a whole.

In recent years, the public challenge to educational researchers has been to demonstrate utility, and there is also not much doubt that significant processes of structural change are continuing in the aca-

demic world. When primary school teachers faced comparable challenges in the 1990s, there was a range of responses from conformity through to rejection and resignation. Perhaps the most successful though, was 'active mediation' (see Osborn et al 2000) through which teachers collaborated to regain some initiative, to interpret external requirements and to develop their existing expertise and achieve new forms of professionalism.

In a sense, we could see TLRP as institutionalised enabler of 'active mediation' as we adapt to meet new challenges. Together, the educational research community has an opportunity to develop new processes of empirical enquiry, new forms of user engagement and new strategies for impact. It is imperative that we seize these opportunities wholeheartedly.

To respond effectively we need to value existing perspectives and expertise whilst also being open-minded in relation to new ideas. Above all, we need to work to understand and respect the contributions that each research approach can make. On behalf of the whole of the UK, the TLRP's Research Capacity Building Network (RCBN) has a key role. The Cardiff University School of Social Sciences takes this responsibility very seriously and offers access to around 100 researchers including internationally recognised experts in qualitative, quantitative and combined approaches. RCBN's Director, Stephen Gorard, with colleagues Chris Taylor and Karen Roberts, is leading discussion of many key issues, including that of the nature of the 'warrant' that we can offer to support our findings. The Executive Group of Ray Crozier, John Furlong, Stephen Gorard, Laurence Moore, Ken Prandy and Gareth Rees provides an interdisciplinary perspective, whilst also embodying particular strength in structured re-

search designs and methodologies. This *is* appropriate, for there is a broad consensus that the recognised strength of many educational researchers in qualitative approaches could helpfully be augmented through the development of research capacity involving other forms of expertise. In the years to come, this broadening of research capacity should enable us to tackle a wider range of research questions, and to have a greater impact on policy and practice.

RCBN thus has a vitally important UK-wide role and will be developing its ways of working with and for the whole of our research community. For example, the TLRP Steering Committee recently endorsed RCBN proposals to:

1. Affirm and draw on the expertise of senior TLRP researchers and other UK specialists, to share capacity across the Programme and beyond.
2. Target support for mid-career researchers working towards becoming grant applicants and project leaders in the future, particularly concerning research design and project management issues.
3. Target support for more junior contract research staff, particularly to broaden and deepen understanding and skills in research techniques.

RCBN also plans to draw more TLRP researchers onto its Advisory Group and, following completion of the initial survey of research expertise, will be preparing a detailed strategy and associated workplan. They will continue to consult widely on this.

The challenge of ***Building Research Capacity*** thus involves us all. We should embrace it because it will make our work more effective
(Continued on page 3)

(Continued from page 2)

and more convincing. Of course, we may have a few misunderstandings and disagreements along the

way, but these must not be allowed to get out of proportion, for the goals that we are working towards are far more significant.

Becher, T. (1989) *Academic Tribes and*

Territories, Buckingham: Open University Press

Osborn, M., McNess, E. and Broadfoot, P. (2000) *What Teachers Do*, London: Continuum

Measuring quantities: the qualitative foundation of quantity

Ken Prandy

Cardiff University School of Social Sciences

Everyone knows that measurement is about "the assignment of numbers". What we measure are quantities and they are, well, quantitative, and that means they must involve numbers.

The idea in the statement above underlies much of what is taught and believed in the social and behavioural sciences. It has its roots in the work of the natural sciences, and in most everyday dealings with the material world. Unfortunately, it involves a basic misunderstanding of the idea of quantity and leads to widespread practices that can only be described as pseudo-quantification. The most notorious example of this is IQ and the claim that 'intelligence is what IQ tests measure'. The problem, though, is not, as is usually argued, whether IQ tests measure intelligence, but whether they really *measure* anything at all, in the sense of establishing a *quantity*?

Fundamentally, a '*quantity*' is based on relations defined by a *quality*, in the sense of a qualitative observation. Take the simple example of measuring length. This is central to our understanding of the material world in which we exist. 'Space' and associated terms also serve as a metaphor for much of our conceptualisation of that world. For clarity's sake, let us imagine away all we think we 'know' about length, distance and so on. We may, therefore, start with only the vaguest intuition, that we might have as a result of experience (our 'theory'), that objects have a property of 'longness'. If we collect together a set of objects – it is easier if these

are relatively simple objects in 'longness' terms, like sticks (and this idea of 'simple' in relation to a putative quantity gives us a clue as to the relative intractability of the 'objects' of social science.) Our intuitive 'theory' suggests that 'longness' involves one object projecting beyond another when they are placed side-by-side. This is our qualitative observation; and it is important to note its crucial relation to theory.

If we then compare all of these objects pair-wise, in each case we can note which one projects beyond the other. Remember, we must not make any assumptions. 'Longness' is still only an idea. We cannot, for example, decide which is 'shortest', compare it only with the next 'shortest' and so on. Of course, in reality we know that would work, but that knowledge depends on our prior understanding of length and an ability to make, at least crude, quantitative judgements. If we start (as we should) with the objects in a random order, then the result of all the pair-wise comparisons is an apparently complex set of interrelations, showing which objects stick out beyond which other objects.

However, it is possible to sort the objects in such a way that at one end is the one that projects beyond all the others, and at other the one that is projected beyond by all the others, while those in between have the property that they project beyond all those to one side and are projected beyond by all those to the other. (We could also do this conceptually by setting up a table with

the objects represented by its rows and columns. Cells are either 0, if row object *i* is projected beyond by column object *j* or 1 if the converse. It is then possible to sort the rows and columns to get a neat triangular pattern.) Another useful way of looking at this is that objects close together in the ordering are, with respect to the 'projecting beyond' property, most alike to one another, while those further apart are most unlike.

So, starting from a qualitative comparison and an apparently complex set of relations we are able to produce a simple relation of order. We have established a quantity! Of course this is only a beginning. 'Longness' is only a quantity with respect to the particular set of objects and we cannot be sure yet that it would extend to others. Moving from this point to length involves additional complications, as does extending the concept to include distance. However, the procedure described is basic to the measurement process. Quantities as simple as this are found even in the natural sciences, where the Moh scale of the hardness of materials, based on the qualitative observation of scratching, is still used.

It is true that the ordering of objects that is associated with a quantity has a parallel with the ordering of numbers. This can be very useful, because it is usually more convenient to work with numbers than with objects: dividing six by two is easier than sawing a six-foot length of log in half! However, quantities and number systems are two quite dis-

(Continued on page 4)

(Continued from page 3)

tinct structures; the utility derives from the fact of the *parallel* between the two, their isomorphism. However, it is the establishment of a quantity that assures the isomorphism, *not* the assignment of numbers; no amount of 'quantification' will, by itself, establish a quantity.

What are the lessons of this for measurement in social science? First, forget about numbers; with luck, they will come back in, but only in their function as a parallel. Second, concentrate on theory as the source of the qualitative observations that are at the heart of quantities. Third, look at the relations between objects that are created by these qualitative observations.

A major problem in social science is that, unlike sticks, say, human beings and their social creations are extremely complex objects. Answering yes to a question, being a member of a group, engaging in an activity and so on may well be elements of a putative quantity, but they are also likely to be influenced by other individual characteristics. As a result, as observations these events are subject to random variation or 'error'. Nor is it possible, as with the natural world, to create objects like the standard metre that enable quantification to go far beyond the simple ordering that we established.

The fact that the objects of natural and social science differ is an argument for being sceptical about attempts by the latter to ape the form of quantification found in the former,

but it is not an argument for rejecting quantitative thinking altogether. For example, every cross-tabulation, even of categorical variables, is an implicit assertion of some kind of theoretical relationship. There are now available techniques that allow us to represent cross-tabulations in spatial form, making it possible to assess how, and with respect to what, categories are ordered and how close or distant they are from one another. Rather like sticks, in fact.

A practical example of this line of thinking is the Cambridge scale of occupations (now CAMSIS), developed by the author and his colleagues. Full details can be found by exploring the links from the CAMSIS website:

<http://www.cf.ac.uk/socsi/CAMSIS>

What do statistical tests signify?

Stephen Gorard

Cardiff University School of Social Sciences

This brief article is for novice researchers, and their mentors, faced with the challenge of learning 'how to do stats'. Recent UK initiatives, perhaps most prominently the new funding arrangements for ESRC PhD students, have been designed to encourage a wider awareness of statistical techniques among social scientists. While welcome, there is a consequent danger for educational research that we simply revisit all of the debates about statistics that have taken place in other disciplines since at least 1994. Part of what this article tries to do is show that standard approaches to significance testing, currently the cornerstone of many 'quantitative' methods courses, should no longer have automatic pride of place. There is a pressing need for more general awareness of the relatively simple role of numbers in those common social scientific situations for which probabilities are not relevant.

Statistical testing has many historical roots, although many of the

tests in common use today, such as those attributable to Fisher, were derived from agricultural studies. They were developed for one-off use, in situations where the measurement error was negligible, in order to allow researchers to estimate the probability that two random samples drawn from the same population would have divergent measurements. In a roundabout way, this probability was then used to help decide whether the two samples actually come from two different populations. For example, vegetative reproduction could be used to create two colonies of what is effectively the same plant. One colony could be given an agricultural treatment, and the results (in terms of survival rates for example) compared between the two colonies. Statistics would help us estimate the probability that a sample of scores from each colony would diverge by the amount we actually observe, assuming that the treatment given to one colony was ineffective. If this probability is very small, therefore, we might conclude

that the treatment appeared to have an effect. That in a nutshell is what significance tests are, and what they can do for us.

In light of current practice, perhaps equally important is a simple description of what significance tests are not, and cannot do for us. Most simply, they cannot make a decision for us. The probabilities they generate are only estimates, and they are, after all, only probabilities. Standard limits for retaining or rejecting our null hypothesis of no difference between the two colonies, such as 5%, have no mathematical or empirical relevance. They are only arbitrary. A host of factors (see below) might affect our confidence in the probability estimate, or the dangers of deciding wrongly in one way or another. Therefore there can, and should, be no universal standard. Each case must be judged on its merits. However, it is also often the case that we do not need a significance test to help us decide this. In the agricultural ex-

(Continued on page 5)

(Continued from page 4)

ample, if all of the treated plants died and all of the others survived (or vice versa) then we do not need a significance test to tell us that the probability is very low (and precisely how low depends on the number of plants involved) that the treatment had no effect. If there were 1,000 plants in the sample for each colony, and one survived in the treated group, and one died in the other group, then again a significance test would be superfluous (and so on). All that the test is doing is formalising the estimates of relative probability that we make anyway in everyday situations. They are really only needed when the decision is not clear-cut (for example where 600/1000 survived in the treated group but only 550/1000 survived in the control), and since they do not make the decision for us, they are of limited practical use even then.

It is also important to emphasise that the probabilities generated by significance tests are based on random samples. If the researcher does not use a random sample then inferential statistics are of little use since the probabilities become meaningless. Researchers using significance tests with convenience, quota or snowball samples, for example, are making a key category mistake. Similarly, researchers using significance tests on popula-

tions (from official statistics perhaps) are generating meaningless probabilities. It is possible that a trawl of educational, psychology or sociology research journals would reveal very few, technically, correct uses of significance tests. Added to this is the problem that social scientists are not generally dealing with variables, such as plant survival rates, with minimal measurement error. In fact, many studies are based on latent variables, such as attitudes, of whose existence we cannot even be certain, let alone how to measure them. Added to this are the problems of non-response and participant dropout in social investigations, that also do not occur in agricultural applications. All of this means that the variation in observed measurements due to the chance factor of sampling (which is all that significance tests take into account) is generally far less than the potential variance due to other factors. The probability from a test contains the unwritten proviso - assuming that the sample is random with full response, no dropout, and no measurement error. The number of educational studies meeting this proviso are very small indeed. To this must be added the caution that probabilities interact, and that most analyses in the IT age are no longer one-off (for more on this more complex issue see Gorard 2001). Most analysts start each probability calculation as though nothing prior is

known, whereas it may be more realistic and cumulative to build the results of previous work into new calculations (as in meta-analysis, and in Bayesian models).

In conclusion, while it is important for novice social scientists to be taught about the use of significance tests, it is equally important that they are taught about the limitations as well (and alternatives, such as confidence intervals, effect sizes, and graphical approaches will be addressed in future issues of this journal). Significance tests have a specific valuable role to play in a limited range of research situations. Statistics cannot be used *post hoc* to overcome design problems or deficiencies in datasets. If all of the treated plants in our example were placed on the lighter side of the greenhouse, with the control group on the other side, then the most sophisticated statistical analysis in the world could not overcome that bias. It is worth stating this because of the current push for more complex methods of probability-based analysis when a more fruitful avenue for long-term progress would be the generation of better data, open to inspection through simpler and more transparent methods of accounting.

Gorard, S. (2001) *Quantitative methods in educational research: the role of numbers made easy*, London: Continuum.

Reflections on the history of qualitative research in education

Amanda Coffey

Cardiff University School of Social Sciences

This paper considers the role of 'qualitative' work within educational research, and addresses the capacity of such work to respond to contemporary developments and debates. Qualitative research in education has been the subject of some criticism in recent years. Debates about the generalizability of qualitative evidence and the role of

political motivation in qualitative studies have both been well rehearsed in the education literature (Foster *et al* 1996). These issues are not confined to qualitative research in education, nor are they new to qualitative scholars more generally. They have, however, played a key part in dialogues about the quality and standards of

educational research. For some commentators this has led to a call for the confining of qualitative work to the outskirts of educational research – and to an argument that qualitative data should primarily be used for anecdotal and illustration purposes (Tooley 1997). The consequences of such a position for

(Continued on page 6)

(Continued from page 5)

educational scholarship are profound. In the opinion of the author, this position ignores the distinctive contribution that qualitative research has made to the understanding of teaching and learning processes. It also tends to dismiss the long and distinguished history of qualitative methods within the human sciences, and poses a crisis for the significant proportion of educational researchers who continue to work within an interpretist qualitative approach. Moreover such a position discourages an informed and systematic scrutiny of the use and development of qualitative methods in educational research in comparison to other cognate disciplines and other empirical areas. These recurrent debates (about generalisability and politics) have been more about 'paradigms' and methodological stances than the appropriate application of qualitative methods in education. They have forced qualitative researchers within education into a rather defensive position, which has made it potentially difficult, and indeed risky, for educational qualitative researchers to engage with the more innovative and contemporary developments in qualitative methods. Hence, the capacity of educational researchers to engage with contemporary qualitative research practice has remained limited.

The authoritative, historical framework developed by Lincoln and Denzin (2000) offers a means of comparing the development of qualitative methods across disciplines and methodological areas. In their original schema Denzin and Lincoln (1994) identified 'five moments' of qualitative research, each associated with both a particular period in time and a specific theoretical paradigm. The first moment was identified as part of a positivist programme of research, and was sustained by the myth of the heroic, lone fieldworker. This moment, the time of 'traditional' qualitative research, spanned 1900 to the Second World War and was concerned with 'offering valid, reliable, and ob-

jective interpretations' of the social world (Denzin and Lincoln, 1994: 7). The second moment (1950-70), was located within modernism, and marked by both enhanced creativity and attempts to formalize qualitative research methods (through studies across a range of empirical areas, including education, as well as the introduction of the qualitative methods texts).

The third moment, that of 'blurred genres' was marked by a new multiplicity of theoretical orientations and alternative paradigms for qualitative research, alongside the development of new strategies for data collection and analysis. This era (1970-1986) saw the publication of what came to be definitive texts on qualitative methods (including Lofland (1971) in the USA; Hammersley and Atkinson (1983) and Burgess (1984) in the UK) as well as the establishment of a range of qualitative journals. Geertz (1973 & 1983) called for 'thick description', and began to open up debates about the nature of cultural representation.

The ensuing fourth encompassed and responded to the so-called crises of legitimation and representation in qualitative research (Atkinson and Coffey, 1995). Here the received canons of truth and method were challenged, not least through the critical examination of textual practices. This moment was signalled by the publication of *Writing Culture* (Clifford and Marcus, 1986), and questioned both the textual products of qualitative work, and claims to authority by the researcher. One of the main consequences of the fourth moment has been variously termed the linguistic turn, the interpretative turn and the rhetorical turn (the fifth moment). The result of this has not been a wholesale damning of qualitative approaches, but rather an enhanced appreciation of the construction and creation of all research texts and 'stories'. Hence the revisiting of qualitative accounts and analyses have taken place, in order to grapple with issues such as legitimacy, authority and the con-

ventionality of texts. This has heralded the movement of qualitative research into new directions and representational territories.

Denzin and Lincoln have added two further moments - a sixth 'messy' moment, capturing the postmodern discourses of the late 1990s, and a future seventh moment - where qualitative inquiry is consolidated and imagined as 'simultaneously minimal, existential, autoethnographic, vulnerable, performative and critical' (Lincoln and Denzin, 2000: 1048).

In the opinion of the author there is little doubt as to the general existence of the multiplicity that Denzin and Lincoln identify, and their characterization certainly captures the development and diversity of qualitative research. We might wish to argue that their 'moments' are too neatly packaged, and that contrasts between earlier and later eras too starkly drawn (Delamont, *et al*, 2000). Nevertheless, the model offered by Denzin and Lincoln is a widely rehearsed one, and provides a useful platform from which to scrutinize qualitative research in education.

There was remarkably little qualitative educational research during the early traditional era. Certainly in the UK, qualitative studies of educational settings did not really begin until after the 1950s. However some of these first educational ethnographies have been enormously significant to the development of systematic educational research and to our understanding of teaching and learning processes (Hargreaves 1967, Lacey 1970, Lambert 1977). Arguably the golden age of qualitative research in education in the UK has taken place since the 1970s. There has been a multitude of studies, from a variety of theoretical positions (see Atkinson *et al* 1988). This growth in qualitative educational research gained impetus from those trained in the 1960s and their students, rather than by virtue of the incorporation of blurred genres. This period

(Continued on page 7)

(Continued from page 6)

can be conceptualized as one of consolidation rather than revolutionary change. In this period the demarcation between anthropological and sociological work in education remained stark. In the US and Canada, anthropological work on race and culture continued to dominate. In the UK, (and Australia) social class remained a key preoccupation (Ball 1981, Connell 1985). During this time of substantial qualitative work some scholars also began a critique of (qualitative) educational research. For example Becker (1971), an American sociologist, Wolcott (1981), an American anthropologist and Young (1971) a British sociologist, all argued that researchers were taking too many features of schooling for granted.

The more recent history of qualitative educational research, however, bears little relation to the recent moments articulated by Denzin and Lincoln. Response to the crises of representation and legitimation within qualitative educational research has been slow and uneven. The majority of qualitative educational researchers have failed to engage with debates about analysis, writing and the position of the researcher in the research process (an exception to this is Fordham 1996). Few have responded with technological, analytical or representational innovation. There has been no volume of educational research essays that addresses the issues raised by Clifford and Marcus and no edited collections in which qualitative researchers reflect upon educational texts. Equally the various collections of papers that have been inspired or provoked by Clifford and Marcus (see for example James et al 1997, Behar and Gordon 1995) do not contain contributions from qualitative educational researchers.

There have been many educational ethnographies published since 1986, a fact that recognizes the relatively recent growth of qualitative approaches within the discipline. However, very few of these

have shown signs of critical engagement with the fourth, fifth, sixth or seventh moments. Indeed qualitative research in education has shown a remarkable stability of form (not to mention topic area), in spite of the methodological and epistemological debates that have ensued within qualitative research more generally. This is in contrast to other empirical areas such as science, medicine and social welfare, where textual and analytical innovations have taken place. This failure to respond is not just a failure to respond to innovative texts. Perhaps more worryingly it signifies a failure to address the debates about data collection, data analysis and the authority of researchers/texts that have inspired these new developments.

In conclusion then it is important to note that qualitative research in education is now firmly established and indeed has made a valuable contribution to our understanding of educational processes, institutions and practices. However, in many ways such research has failed to respond to the debates, innovations and developments that have been taking place among qualitative scholars more generally. These developments have addressed a set of critiques that have also been levelled at qualitative research from 'outside' – the nature of evidence, the authority of the researcher and the text, ethical and political stances, the possibilities for generalization, and the role of the self in the research process. The conclusion from those working within qualitative approaches, though, has not been the dismissal out-of-hand of qualitative approaches and methodologies, or a revision (downgrading) of the value of qualitative data. Rather there have been calls for a more critical, self-conscious, reflexive and innovative social science. If we are to enhance the capacity of qualitative research within education there needs to be a more critical engagement with these debates from within the research community. Moreover a case could be made that these issues – for example of authority,

representation, legitimacy and positionality (if not the solutions that some qualitative researchers have invoked) should be central considerations for all educational researchers, and not just for those who favour qualitative methods.

For those who wish to engage further with the debates and developments introduced in this paper the second edition of the *Handbook of Qualitative Research* (Denzin and Lincoln 2000) is a good place to start. The *Handbook of Ethnography* (Atkinson et al 2001) has a specific chapter on qualitative research within education, as well as a number of chapters on issues of analysis and representation. There have also been attempts to develop a genre of educational research that is more responsive to calls for new forms and textual practices. This is, perhaps, most visible in the international journal *Qualitative Studies in Education* (QSE)

References

- Atkinson P and Coffey A (1995) Realism and its discontents: the crisis of cultural representation in ethnographic texts, in B Adam and S Allen (eds) *Theorising Culture*. London: UCL Press. pp. 103-39
- Atkinson P, Coffey A, Delamont S, Lofland J and Lofland L (eds) (2001) *Handbook of Ethnography*. London: Sage
- Atkinson P, Delamont S and Hammerley M (1988) Qualitative research traditions, *Review of Educational Research* 38(2): 231-50
- Ball S (1981) *Beachside Comprehensive* Cambridge: Cambridge University Press
- Becker H S (1971) Footnote, added to M. Wax and R Wax (1971) Great tradition, little tradition and formal education, in M Wax (ed) *Anthropological Perspectives in Education*. New York: Basic Books pp. 2-27
- Behar R and Gordon D (eds) (1995) *Women Writing Culture*. Los Angeles: University of California Press
- Burgess R. G (1984) *In the Field*. London: Allen and Unwin
- Clifford J and Marcus G. E (eds) (1986) *Writing Culture*. Berkeley: University of California Press

(Continued on page 8)

(Continued from page 7)

- versity of California Press
- Connell R W (1985) *Teachers Work*. Sydney: Allen and Unwin
- Delamont S, Coffey A and Atkinson P (2000) The twilight years? Educational ethnography and the five moments model, *Qualitative Studies in Education* 13(3): 223-38
- Denzin N K and Lincoln Y S (eds) (1994) *Handbook of Qualitative Research*. Thousand Oaks CA: Sage
- Denzin N K and Lincoln Y S (eds) (2000) *Handbook of Qualitative Research (2nd edition)* Thousand Oaks CA: Sage
- Fordham, S (1996) *Blacked Out: Dilemmas of Race, Identity and Success at Capital High*. Chicago: University of Chicago Press
- Foster P, Gomm, R. and Hammersley M (1996) *Constructing Educational Inequality*. London: Falmer.
- Geertz C (1973) *The Interpretation of Cultures*. New York: Basic Books
- Geertz C (1983) *Local Knowledge*. New York: Basic Books
- Hammersley M and Atkinson P (1983) *Ethnography: Principles in Practice*. London: Tavistock
- Hargreaves D (1967) *Social Relations in a Secondary School*. London: Routledge and Kegan Paul
- James A, Hockey J and Dawson A (eds) (1997) *After Writing Culture*. London: Routledge
- Lacey C (1970) *Hightown Grammar*. Manchester: University of Manchester Press
- Lambert A (1977) The sisterhood, in M. Hammersley and P Woods (eds) *The Process of Schooling*. London: Routledge and Kegan Paul pp. 152-9.
- Lincoln Y S and Denzin N K (2000) The seventh moment: Out of the past, in N K Denzin and Y S Lincoln (eds) *Handbook of Qualitative Research (2nd edition)* Thousand Oaks CA: Sage pp. 1047-65
- Lofland J (1971) *Analyzing Social Settings*. Belmont CA: Wadsworth
- Tooley J (1997) On school choice and social class: A response to Ball, Bowe and Gewirtz, *British Journal of Sociology of Education* 18 (2): 217-30
- Wolcott H (1981) Confessions of a 'trained' observer, in T S Popkewitz and B R Tabachnick (eds) *The Study of Schooling*. New York: Praeger pp. 247-63
- Young M F D (1971) Introduction, in M F D Young (ed) *Knowledge and Control*. London: Collier-Macmillan

Using computer-mediated communication in educational research

Neil Selwyn

Cardiff University School of Social Sciences

As information and communications technology (ICT) becomes part of day-to-day life in schools, colleges and adult education the temptation for educational researchers to use technology to gather data is growing. In particular the use of computer-mediated communication as a research tool has emerged in the education literature over the past five years and is often treated as an unproblematic alternative to 'conventional' methods. The purpose of this brief article is to help educational researchers consider the potential advantages and disadvantages of using ICT-based methods.

What is Computer Mediated Communication?

In its widest sense, computer mediated communication (CMC) describes any form of communication which takes place via computers. With the rise of the Internet the term popularly refers to interpersonal communication facilitated through computer networks. In this way, CMC is often contrasted with con-

ventional 'face-to-face communication' where people interact with each other in the same place at the same time. Computer mediated communication is significantly different from face-to-face communication in that participants generally only see what is on the computer screen, and rely primarily on what has been written rather than the non-verbal forms of communication which form a large part of face-to-face interaction (although videoconferencing is growing in frequency and practicality). Computer mediated communication can either be synchronous (where communication takes place in 'real-time') or asynchronous (where communication is fragmented and takes place over time). Popular examples of CMC include e-mail, internet chat and bulletin boards, e-mail, newsgroups and even mobile-phone text messaging.

Practical Attractions of Using CMC in Research

The growing popularity of computer-mediated communication as a

research tool is grounded in its convenience. One major advantage is the compression (and some would argue negation) of time and space. Communication via computer networks is often instantaneous and not dependent on both the researcher and the researched being available at the same time and being in the same place.

Another significant advantage is reduced cost. Questionnaires distributed via e-mail, for example, cost considerably less to administer both in terms of money and effort. As it is possible to send the same message or file to multiple addresses in one action, a large 'mail-shot' is relatively straight-forward. Those studies that have used email questionnaires with schools would seem to suggest that 'electronic' surveys lead to comparable but accelerated response rates when set against conventional mail surveys (see Figure One).

Another practical attraction of CMC is the collation of data in 'ready-to-

(Continued on page 9)

(Continued from page 8)

go' electronic form. When interviewing via the internet, for example, data require little or no additional transcription - with a minimum of alteration the text from online interviews can easily be tailored for any word processor or computer-based qualitative analysis package. As well as obviously saving the researcher time and money this also eliminates any biases introduced through incorrect transcription. With online interviewing the data that are eventually analysed are exactly as the interviewee dictated.

Caveats to Consider

Given such advantages it is little wonder that educational researchers are beginning to use CMC in its various guises as the basis for research projects. However, aside from practical savings on the part of the researcher, there are other less obvious factors that should be considered before adopting a research strategy based around CMC.

- *Limitations of Population*

The primary limitation of CMC is the extremely self-selective population that it covers - limited to those individuals with access to the technology needed to sustain it. Despite steady increases in ownership of ICT repeated studies show that populations of 'users' remain substantially skewed along lines of class, race, age, income and gender (Selwyn and Gorard 2002).

We should not be fooled into thinking that this limitation of coverage amongst the general public is not relevant to research focused on educational institutions. For example, despite all predictions, computer-based communication such as e-mail remains a minority past-time among many young people - rapidly usurped by mobile phone text-messaging. Even if students do have official e-mail addresses at school, college or university many prefer instead to use temporary addresses via services such as Yahoo or Hotmail which will not be easily

accessible to researchers. The lack of permeation of e-mail into schools has been reflected in the government recently dropping its target for 50 per cent of children to have a personal email address at school by 2002. Similarly, teacher and school use of e-mail is also not proving to be as comprehensive as was expected with many schools using general school or class-wide email addresses.

Even with 'ICT active' populations in educational settings the use of CMC is not straightforward. The problem of *information overload* means that research via CMC runs the risk of becoming marginalised as a form of electronic 'junk mail'. Unsolicited attempts to gain information via e-mail by researchers (however genuine) are often being simply ignored by the deluged recipient at the other end of the line. The speed of CMC also lends it an certain ephemerality which may compromise its effectiveness as a research tool - unlike the standard mail questionnaire or interview the respondent can discard CMC messages at the touch of a button.

- *CMC as a 'different' form of communication*

Researchers sometimes forget that ICT also leads to *different* data being collected than would be the case with conventional methods, primarily due to the distinctiveness of CMC as a hybrid form of oral and written language. Although many instances of CMC do resemble written forms of speech such communication often relies on a simplified register due to the increased effort needed to input what you want to say. For example, CMC can be loose in terms of conventional punctuation and spelling - often relying heavily on acronyms, abbreviations and new forms of textual representation of feelings to overcome the lack of non-verbal communication. CMC is also seen as altering the organisation of communication. Due to the lack of proximity with others and differing time constraints, the traditional notions of opening and closing conversa-

tions, turn-taking and interrupting are often altered or even ignored altogether in all but the most formal of computer mediated settings. Thus data gathered via CMC are not necessarily what people would have said or written in 'conventional' situations.

- *Issues of Power and Ethics*

CMC based research should also be seen as 'different' in terms of power relations between researchers and participants. On the one hand this can be seen as a good thing. For example, it is argued that electronic communication sets up a 'democratisation of exchange' that eludes more conventional research methodologies. Interviewing via CMC reduces the problem of interviewer 'effect', both in the form of visual and non-verbal cues and effect of interviewer status. It also can reduce the problem of dominant and shy participants, particularly in a focus group situation. In this way, electronic research goes a long way to alleviating some of the interpersonal problems commonly associated with conventional face-to-face techniques.

Yet the disembodiment of CMC does not automatically lead to unbiased research. Firstly is the issue of (mis)representation. The lack of visual identifiers when communicating via technology gives people the opportunity to describe and present themselves to others in different ways. For example people can intentionally construct an artificial self - altering notions of gender, age, social class, race, disability and sexuality as they wish (for good or bad). Of more concern however are warnings that interactions via CMC are *not* as democratic and un-hierarchical as one may first assume, with online interactions often proving to be structured in terms of gender and computer competence (Mann & Stewart 2000).

Finally, from an ethical perspective, issues of anonymity are also not straightforward. For example using

(Continued on page 10)

(Continued from page 9)

more popular forms of CMC such as email it is often impossible to guarantee the respondent anonymity as their name (or at least their email address) is automatically included in their reply. At best, therefore, most CMC research can only ever be a 'semi-private' affair.

Summary

The proliferation of CMC, along with the increasing ease of carrying out internet based research suggests that electronic methodologies are

likely to increase in popularity in the near future. Whilst this is no bad thing, there remain significant limitations in using CMC in social science research. At present using CMC offers the researcher many advantages, temporally, spatially and financially. Nevertheless, its use should always be offset against the wider considerations of population access to the medium and the limitations of the (sometimes plentiful) data that are generated. Beneath the hype it remains that electronic methodologies should only be considered a valid alternative to tra-

ditional techniques for research which targets specific and narrowly defined populations with easy and unproblematic access to technology - and even then with careful consideration of the type of data likely to be gathered.

Mann, C. and Stewart, F. (2000) *Internet Communication and Qualitative Research* London, Sage
Selwyn, N. and Gorard, S. *The Information Age* Cardiff, University of Wales Press

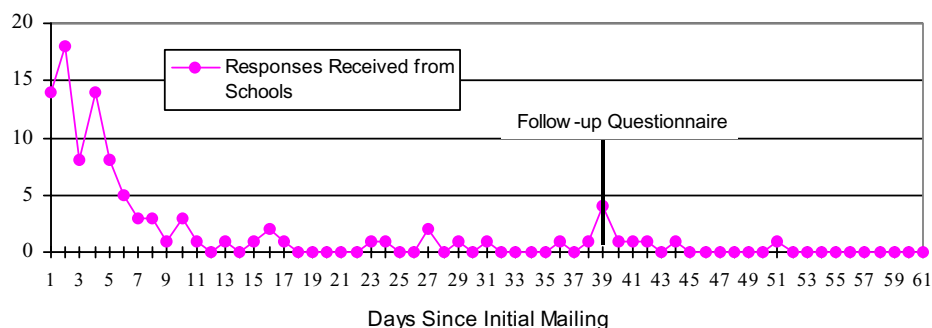


Fig 1. Number of Responses to an e-mail survey sent to secondary school ICT co-ordinators (n=227). Graph shows number of responses received each day since initial mailing. After two months responses had been received from 44% per cent of the sample - with 80.1 percent of these responses being returned within the first seven days (from the 'Surfing to School' project - Hesketh & Selwyn 1999)

Theories, hypotheses, hunches and ignorance

Peter Tymms and Carol Taylor Fitz-Gibbon

CEM centre, University of Durham

Should the police arrest a man when he has been reported for beating his wife? It is a difficult question to answer, and the police, faced with the choice of arresting or cautioning, might argue the case both ways. On the one hand, if they do arrest the man, it might make him more unpleasant and more likely to beat his wife in the future. Perhaps a caution would have been sufficient to shame him and allow the couple to get on better. On the other hand if they do not arrest him, he might simply continue to beat his wife believing that the police will not take action. One could theorise about this endlessly. Ultimately, collecting high quality data is the only way forward. Fur-

ther, if we were to look at data after the decision to arrest or not and then try to analyse the data taking into account the severity of the treatment and whether it was a first call out and so on, one would never come to a satisfactory conclusion because there would always be a nagging doubt that the police took a particular action because they perceived the situation to be of a particular type. They might tend to arrest the man if the situation is more severe and maybe they were able to sense things that would not be recorded in research studies or even that they were unaware of. If we try to look at the consequences of arrest we would be compromised by not being able to equate the

situation in the homes where men were arrested or cautioned. The only way forward is to involve the police in an experiment where they decide to arrest or not arrest at random. The decision, within certain well-defined parameters, would essentially be taken on the toss of a coin. In that way, we can follow up and see what happens to couples and whether there is more beating or less or how the situation evolves. The random assignment allows for fair comparisons to be made.

To some readers this might sound bizarre but it has actually been done several times and the answers are very clear and are well-
(Continued on page 11)

(Continued from page 10)

reported in Boruch (1997). We now know whether to arrest a man when police are called out following a reported case of wife-beating. The moral of the story, however, does not concern decisions about arresting or cautioning and interested readers are referred to Boruch. The key point is that this was a fairly straightforward situation where we were ignorant of the consequences of important decisions that had to be made. The solution to this, from a research point of view, was a randomised controlled trial, or better still, a series of trials and they have been carried out. They provide good information and can protect women in the future. Notice that these were experiments carried out where we did not know what the answer was. This is quite contrary to the advice given by Moore who advises that we should only carry out experiments where we are pretty sure what the answer is going to be. In fact, if we are pretty sure what the answer is going to be, there will be an ethical difficulty in randomly assigning people at all. The purpose of the experiment is to find out things that we do not already know. That is the first and most important point.

The second crucial thing is that arguments needed to persuade interested parties of the need to carry out the research did not require great theories. There were ideas; informal hunches; perhaps an understanding of psychology or sociology, but still the persuasive point is that we are ignorant. In fact, this is quite often the case, and one of the characteristics of education is our ignorance. The result is that we often find ourselves on a pendulum. We swing to one position and move away from another. First it is whole class teaching, then it is individual

lessons, and so on. We do this because the theories can argue things both ways. We can agonise and come down on conclusions one side or the other. Ultimately, we do not know. Ultimately, the only way forward is to collect good data. Maybe the data tell us that actually it does not matter very much if you take this policy or that policy, but that is important to know, and lack of firm evidence is a position from which we can move forward and from which we can construct better theories if we want. But it is that empirical basis that we need in order.

The idea that theory is **the** way forward is mistaken. The nature of social science is such that aspiring to low-level generalisations explained informally is often as far as we can reasonably go. Michael Scriven, the originator of the idea of formative and summative evaluation has written about the desirability of minimalist theory (Scriven 1998) and the need to keep things simple. Ramachandran, the well-respected psychiatrist and director of the Centre for Brain and Cognition at the University of California, San Diego, is scathing about the use of theory.

"People often assume that science is a serious business, that it is always "theory driven", that you generate lofty conjectures based on what you already know and then proceed to design experiments specifically to test these conjectures. Actually science is more like a fishing expedition than most of my colleagues would care to admit. (Of course I would never say this in a National Institutes of Health [NIH] grant proposal), for most funding agencies still cling to the naïve belief that science is all about hypothesis testing and then carefully dotting the "i's" and crossing the

"t's". God forbid that you should try anything that is something entirely new that's just based on a hunch!" (page 93-4 in Ramachandran and Blakeslee, 1998)

Moore's (2002) article makes many important points but we must treat our education "theories" with a deal of scepticism. On close examination they often turn out to be a series of loosely-coupled hypothesis some of which are dangerously held as beliefs.

Theory is holding back educational research. We will never "understand". We urgently need more experiments in education and it is on them that "theory" can be hung; meta-analyses conducted; systematic reviews written and they can form the basis for more incisive work in the future.

(PS Acting on the "theory" that it is good to be nice to colleagues who are left curious regarding violent husbands, the answer regarding arresting violent husbands or not, was yes, arrest them – first time. This gave better outcomes.)

References

- Boruch, R. (1997). *Experimental evaluations of public programs*, Sage.
- Moore, L. (2002) Research design for the rigorous evaluation of complex educational interventions: lessons from health services, *Building Research Capacity*, Issue 1, 4-5.
- Ramachandran, V.S. and Blakeslee, S. (1998) *Phantoms in the Brain*, Quill William Morrow New York.
- Scriven, M. (1998) Minimalist theory: The least theory that practice requires, *The American Journal of evaluation*, 19, 1, 57-72.

Building Research Capacity

ISSN 1475-4193, Issue 2

Editors

Stephen Gorard, Project Director
Chris Taylor (TaylorCM@cardiff.ac.uk)
Karen Roberts (RobertsK@cardiff.ac.uk)

Cardiff University School of Social Sciences

Views expressed in this journal do not necessarily reflect those of the University, the Research Capacity Building Network, the Teaching and Learning Research Programme, nor the Economic and Social Research Council.

RCBN News

Skills consultation exercise

The RCBN are nearing the end of our research skills consultation exercise. Can we thank all those who have now responded to our research skills survey identifying their methodological expertise and future training needs. We still need to ensure maximum coverage from the Teaching and Learning Research Programme so if you have not yet returned your survey form then please do so as soon as possible. As many of you may be aware we are also conducting a parallel survey of members of the British Educational Research Association (BERA). Not only will this provide invaluable information for BERA but will also ensure that the capacity-building activities we provide attempt to reflect the wider needs of the educational research community.

To obtain a further copy of our skills survey please contact the RCBN office or download a copy of the survey from the What's New page on our website.

On the basis of the research skills consultation exercise we plan to produce a more detailed outline of our capacity-building activities for the next two years. In the meantime we are still happy to consider any training events, workshops and seminar discussions that TLRP members believe will contribute to their own capacity-building. For more information on this and other capacity-building activities please visit our Resources page on our website.

New resources on the RCBN website

We have now updated the Resources page on our website. This includes:

- *The Research Capacity Building Noticeboard* - this provides details of forthcoming events including courses, workshops and conferences which may be of interest to TLRP researchers;
- *On-line Research Resources* - a list, with links, of organisations and centres that run research methods training courses and also a list of on-line resources available for capacity building activities;

- *RCBN Recommended References* - references we consider to be relevant for research capacity building because of their interesting discussion or approach, their uniqueness, their usefulness, and/or for their clarity in explaining complex phenomena.

Forthcoming RCBN workshops

Introduction to Complex Project Management

20 May 2002

London (exact location to be announced - see website)

This one-day workshop will introduce the basic concepts of project management, explore the issues particularly relevant to engaging in (teaching and learning) research project management, and point people in the direction of software they might wish to use in managing their research projects. The workshop will be jointly conducted by David Parsons, who is a specialist project management trainer (largely for business, but also for academic researchers) and members of the RCB Network (particularly Prof Gareth Rees and Dr Laurence Moore, both of whom have extensive experience of managing research projects). Should there be sufficient interest, this workshop may be followed up at a later stage by more specialised training events. Places are limited, and are offered on an expenses paid, first come first served basis to TLRP researchers.

NVivo training

Introduction to software for qualitative data analysis.

Please visit our website for more details of these and other forthcoming training.

If you are aware of, or have experienced, any research training course that you feel would be relevant to other teaching and learning researchers then please let us know.

Similarly, we still welcome suggestions for future capacity-building activities.

ESRC Teaching and Learning Research Programme Research Capacity Building Network

Project Director

Stephen Gorard
gorard@cardiff.ac.uk

Project Administrator

Helen Taylor
taylorh1@cardiff.ac.uk

Correspondence

Cardiff University School of Social Sciences
Glamorgan Building
King Edward VII Avenue
Cardiff CF10 3WT
Tel. +44(0)29 2087 5345
Fax. +44(0)29 2087 4678