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RESEARCH TRENDS AND POSSIBILITIES IN TEACHER EDUCATION

CLIVE MCGEE

*Centre for Teacher Education
University of Waikato*

ABSTRACT Over recent decades there have been major changes in the way educational research is viewed and the methods used to carry out research. Qualitative approaches have developed alongside previously dominant quantitative approaches. Recent research in teacher education has come closer to addressing the central issue of the impact of teachers' beliefs and practices upon their students' achievement. Nevertheless, there are tensions when drawing teachers themselves into research activity. Possible topics for future research are identified, showing gaps that still exist in the general body of knowledge on teacher education. The lack of a clear body of knowledge makes teacher educators vulnerable participants in the politics of teacher education.

INTRODUCTION

New Zealand teachers are required to undertake extensive pre-service programmes before entering the profession, and to continue their professional development during their career. Their professional education includes experiences in teacher education institutions and schools. Popular "wisdom" suggests that an important part in teacher's education and training should be the knowledge that has been accumulated from the efforts of researchers who have investigated and reported on aspects of teaching and learning and teacher education. However, to reach this goal a heavy reliance has been placed upon overseas research, since the volume of New Zealand research in teacher education is disappointingly small. Therefore, New Zealand needs to learn from the approaches used overseas and extend local research into contemporary teacher education topics.

This paper outlines how international research approaches in education and teacher education have changed from a preponderance of quantitative strategies to greater use of alternatives employing qualitative methods. It draws attention to dilemmas over the applicability of the accumulated body of research upon the work of teachers, discusses the New Zealand situation and suggests topics that might be studied to a greater extent. Suggestions about research strategies are made.

The Shifting Sands of Research

The approaches to educational research have undergone substantial change over the last few decades. It is instructive to look at textbooks just three decades

old and compare their contents with those published in the 1990s. For example, George Mouly in *The Science of Educational Research*, published in 1963, argued a strong case for the importance of a "scientific" approach to educational research. He asserted that science had contributed a great deal to the solution of human problems, yet in the social sciences there was a long way to go in systematically studying the "technology of human living". His definition of research reflected a rigorous, "scientific" methodology. It is "the process of arriving at dependable solutions to problems through planned and systematic collection, analysis, and interpretation of data" (p. 4). His book has three parts: science and the scientific method; research techniques (focussed upon statistical techniques and sampling); and research methods (historical research, the survey method, and the experimental method).

Another well-used textbook in the 1960s was Robert Travers' book *An Introduction to Educational Research*. Like Mouly, he saw that in educational research the approaches used by scientists were needed to contribute to theory building. But he recognised, too, that educational theory is often stated in more informal language. In addition to historical research, the book focussed upon experimental research using statistical procedures to analyse data. Another emphasis, as in Mouly, was to tie educational research firmly into the orbit of the social sciences. In summary, educational researchers in the 1960s were conscious of the need to become "more scientific" to achieve recognition and respectability for their work.

Textbooks of the 1990s reveal a continuation of the concern that educational research be systematic and quantitative, thus utilising the "scientific approach" with its strengths of precision and control. But now, in these recent books, qualitative approaches receive far more attention than they did in the 1960s. Robert Burns, in his popular book *Introduction to Research Methods* (1994) included chapters on ethnographic research, action research, and case studies. James Spradley's earlier book, *The Ethnographic Interview* (1979) is typical of the quiet revolution that introduced the techniques of research pioneered in anthropology, using what people *say* to describe and explain social-cultural situations and events. Such work provides a background for more recent developments in another book of the 1990s, *Narrative Analysis* by Martin Cortazzi (1993), which describes techniques that listen to the voices of educators and develop understandings from them. Education has benefitted from developments in the social sciences, generally. Sociology is an example of an emerging discipline that has utilised a range of approaches, with advances in qualitative methods such as those used in the interactionist perspective. Denzin (1989) provided a thorough description of symbolic interactionism and attendant methods of biography, participant observation, film and photography, surveys and narrative. Increasingly, educational researchers have adopted such methods.

Clifford (1973) reported that four major changes had occurred by the 1970s. First, terminology in research had moved from "the science of education" and "educational science" to "educational research". Second, the researchers themselves had become more broadly-based with social scientists joining the previously dominant psychologists in the study of educational issues, even though the latter group was still dominant. Third, more money was being

devoted to educational research, notably in the United States of America. Fourth, there was increased questioning of the impact that the scientific movement, through research, had had upon the effectiveness of schools. The almost blind faith in progress through advances in scientific knowledge came under scrutiny, and skepticism emerged alongside the optimism of the scientific contribution to education.

Research on teacher education in the 1960s in the United States focussed upon student teacher characteristics, and numerous quantitative studies tried to demonstrate statistical relationships between characteristics and academic achievement. Teaching methods was another area of focus, particularly studies of how developing technology could be utilised in teaching. Alternative teaching methods were studied too, including team teaching, lecture methods compared with discussion methods, and individualised instruction and learning. Also, there were many studies of teacher effectiveness, particularly correlational and factorial research designs that were used to test relationships between identified teacher competencies and student achievement. It was becoming clear by the early 1970s, however, that such research was fraught with problems, not the least of which was the bewildering number of intervening variables that cast doubt on research results or did not provide the basis for developing models of best teaching practice (Trent & Cohen, 1973).

There has been, therefore, a shift from a heavy emphasis upon quantitative research methods to greater use of qualitative research methods. The preponderance of correlational studies of educational problems, topics and issues has given way – but not entirely, of course – to much greater use of qualitative approaches employing different methods of sampling, and data collection and analysis. The contents of *The Handbook of Educational Research* (Wittrock, 1985) illustrate the impact of this shift, as well as the continued emphasis on studies using experimental and quasi-experimental research designs.

Making a Difference

It can be argued that the major purpose of educational research is to contribute to improvements in classrooms and schools; not *all* research, of course, but the considerable research effort should see some pay-off. This is the view of several former presidents of the American Education Research Association. However, this goal has not been attained. William Cooley (President 1982-3) has made a recent observation that his own extensive published work in the 1960s and 1970s was largely written for AERA audiences, not teachers. Its impact upon schools was minimal. His later work on policy studies, published differently, has had far greater impact upon "what is happening in schools". He argues that we need researchers working on local issues, in addition to more global ones (Cooley, Gage & Scriven, 1997).

Nat Gage (President, 1963-64), who was heavily involved in quantitative research, claims that educational research *has* contributed to generalisations that "hold up across many replications with high consistency" (Cooley, Gage & Scriven, 1997, p. 19). He argues that what has *not* been done, is the development of theories that tie the generalisations together into models and

explanations of educational practise. His view is that we have not trained educational researchers to engage in theory development. They need to be, to develop explanatory models to deepen the understanding of schooling and teaching and how and why they function. He argues a case for this continued use of "scientific" methods and claims that approaches that are "scientific" do not undermine professional roles such as artistry, judgement and reflection; yet critics claim that they *have*. Gage argues that these qualities may be enhanced by such theory development, and he cites the case of curriculum theorists who have benefitted from their exposure to the ideas of philosophers of science, such as John Dewey. Thus, he is advocating a better link between theorising and empirical findings to develop explanations that can be applied in classrooms.

Michael Scriven (President, 1978-79) is critical of AERA, representing educational researchers, in that it has failed to "identify educational best practice and improve it" (Cooley, Gage & Scriven, 1997, p. 20). To qualify this, he acknowledges that a lot has been learned from research, but – using a medical metaphor – few treatments have been found. This research has not contributed as well as it might to its "principal duty to society" (p. 20). Scriven is of the view that the study of expert practitioners (teachers) has been neglected, and so an opportunity missed to develop theory from what is learned from these experts. He claims that we have the skills to do it, but not the commitment. He is also critical of educational researchers who have too readily allowed the baby to be thrown out with the bathwater; for example, well-proven educational effects of programmed reading texts being replaced, without adequate reason, by computer programmes that are more expensive, less equitable, and do not have demonstrated learning gains.

On the other side of the Atlantic Ocean, David Hargreaves (1996) has also been critical of the outcomes of educational research, in claiming that it has largely failed to provide a sound evidence-base for teaching. It has not generated a cumulative body of knowledge about teaching and solutions to teachers' classroom problems, and it has failed to produce sufficient practically relevant knowledge. Hammersley (1997) has challenged this assertion of Hargreaves on the grounds that many of the problems teachers face may not be solved through research. He acknowledges that technical aspects of teaching may be helped by research findings, but because so much of a teacher's work involves judgement rather than following rules, there are practical issues that do not easily lend themselves to rule making.

All of this highlights, again, the conflict between "positivist", "scientific" research and context-specific, context-sensitive, interpretive research. Hargreaves, however, is adamant that teaching *is* both "technical" (skills of teaching) *and* "practical", involving professional judgement. That is, teachers sometimes engage in rule-following and sometimes make decisions on the basis of professional judgement. Research, then, can contribute to an understanding of both types of activity. Hargreaves has compared the medical and teaching professions and argued that one of the key differences in their practice is that doctors have a far more extensive knowledge-base than teachers. Shulman (1987) drew attention to this issue in teacher education when he criticised the enterprise for not having developed a clear body of

content that all teachers should learn, and on which they would make their judgements and decisions.

Quite rightly, then, Hargreaves draws attention to the need for this knowledge-base to be built up, helped, too, by what can be learned from research. He says that it is easy to opt out of this commitment by claiming that classrooms and the teacher's job are too complex, too context-specific. Some of the research on classroom and school effectiveness has shown that research *can* contribute to a better understanding of how classrooms work and what works better than something else. Several examples support this assertion. First, Neville Bennett's (1976) research on teaching styles and pupil attainment produced a number of findings that lead to generalisations about effective teaching: not universal laws or causative factors as per positivistic natural science, but "scientific" nevertheless, in terms of tentative advances in what is known about teaching and learning. The research advanced the knowledge of how different teaching styles can be organised into a typology based upon classroom observations, and showed how teaching style produced different forms of classroom organisation and influenced the academic results that children achieved.

A second research project, by Maurice Galton and colleagues (Galton & Simon, 1980) involved detailed classroom observations of teachers' and pupils' actions and the organisational arrangements and use of time. They discovered that the reality of English classrooms did not match the rhetoric of the Plowden Report (1967) which viewed classrooms from a liberal, rather naïve perspective as belonging to a "golden" age of progressivism. In a third project, the Leverhulme Primary Project (Wragg, 1993) thousands of lessons were observed and many teachers and pupils interviewed about the management of classrooms. Together, these three projects have collected an enormous amount of information. If they are linked to work by Peter Mortimore (1988) who studied school effects upon pupil achievement, there is a sense of the cumulative value, for each study contributes to the subsequent ones. It is to be hoped that they lead on to theorising which may produce propositions that impact upon classroom practice. To return to my earlier claim, this should be the ultimate goal of such studies.

This is, perhaps, at odds with theorists like Hammersley (1997) who argue that educational research's main function is to inform public debates about educational issues. This seems to be limiting the scope of research, valuable though this function may be.

The New Zealand Situation

In New Zealand, educational research has mainly been carried out in education departments in universities, the New Zealand Council for Educational Research, and to some extent colleges of education. The main funding of this research has come from the state in the form of university employment, grants to NZCER, and contracted research by the Ministry of Education (formerly Department of Education).

McIntyre (1997) reported that the pattern of research activities in British university departments of education was quite fragmented, with staff

publications scattered over a wide range of topics. Much of the research was individualistic, with staff working in isolation from each other, sometimes on issues too big for solo researchers: "much of educational research is in a dilettante tradition that looks like a game of trivial pursuits". One of the problems was that there are two main groups of staff; pre-service teacher educators with a professional orientation and not interested in research, and foundation subject specialists concerned with their scholarship and rarely the work of primary and secondary schools.

I do not know whether these claims about Britain apply to New Zealand. I suspect they are not too far from the truth, but in recent years I believe we have moved towards a more varied approach to research, both in the methods being employed and the topics being studied.

One of the challenges in New Zealand has been how to handle the smallness and diversity of the educational research enterprise. Should clear national priorities be formulated? Should the scarce resources available for research be channelled into selected projects? What accountability for research outcomes should there be? In teacher education research in particular, the same questions need to be addressed.

In teacher education research, there is, too, the question of the relationship between the researchers and the teaching profession. There are those who argue that school teachers should be researchers as well as teachers. There has always been ambivalence about the relationship between "professional" researchers (usually in universities or colleges of education) and "practitioners" (teachers in schools). John Elliott (1990) has been a long-time advocate of the teacher as researcher, and indeed sees teachers as being in the pre-eminent position in any relationship with professional researchers:

... educational research is a form of inquiry which fuses inquiry with practice. There can be no educational research if teachers play no important role in the process of articulating, analysing and hypothesising solutions to complex educational problems. The specialist inquiries of professional researchers should be viewed as subordinate to this fundamental process (p. 16).

This is a somewhat controversial view, for some would challenge the claim that *all* research should be done in this way. McIntyre (1997), for example, questions whether teachers *can* devote the "single-minded concern" required in good research when they are faced with enormous classroom complexity that requires full attention to numerous on-the-spot decisions and judgements.

An interesting attempt to bridge this divide is reported by Loughton and Northfield (1996). Jeff Northfield spent a year from his university job teaching in a junior high school, and recorded his reactions (self study) of his own experiences in a daily journal. The other two main sources of information came from interviews by an external interviewer with a number of Jeff's students, and students writing about their classroom experiences and their regular learning tasks. From his journal, Jeff identified 24 themes and regrouped them into:

- the nature of learning;
- creating conditions for learning;
- student perspectives and learning;
- process of teaching and learning; and
- overall reactions to the experience.

During his year, Jeff attempted to reflect upon his practice in line with Schon's (1983) ideas on reflection. But there was an important ingredient that needs to be noted. A colleague, also a teacher educator, acted as a data collector of students' reactions and an interpreter of what the classroom experiences meant. It seems that this researcher (colleague) – teacher (also a researcher) relationship was crucial to the reporting that resulted from this experience, and would be in other similar attempts.

An issue connected with this type of research is that even if teachers do not actually *do* research themselves, how can they be persuaded to read research reports and accommodate the findings into their teaching? There is of course, a two-edged sword here. Teachers need to be attracted to the research reports. Researchers have a responsibility to somehow parcel their "product" to *make* it attractive, yet not trivialised.

This kind of research is also interesting because it again raises the questions about the appropriateness of different research strategies. The above case study is, of course, set in a particular context. But what can be learned from it that it might be applicable to other (and perhaps) similar contexts? Or, is it so specific that little can be transferred? Indeed, should we even *try* to infer from it to other contexts?

Herein lies a dilemma that research faces in the postmodern age. On the one hand, educational researchers have been chided (for example, by David Hargreaves, 1996; 1997) for not developing explanatory models to deepen the understanding of schooling and teaching. Such models and understanding might help in teacher education by providing guidelines for developing effective teaching. On the other hand, this goal does not necessarily sit easily with those who work from a postmodern perspective. While the former view of model development might be called "scientifically situated", the literature of educational researchers has moved towards "politically oriented research" (Constas, 1998). Constas explains this movement as follows: "As a distinctive intellectual approach to comprehending and solving problems, postmodernism abandons the enlightenment ambitions of unity, certainty, and predictability" (p. 26). Changes such as the escalating advances in technology have reduced the order and predictability of many aspects of everyday life. Constas says that, "Using the notion of chaos as an explanatory metaphor, postmodernism doggedly questions the view of a world founded on the aspiration of progressive betterment" (p. 26). Research carried out from this perspective seeks to understand the divisions and differences between many groups, ethnic, gender, class, linguistic and so on. Rather than reconcile these differences, many researchers subscribe to a form of cultural politics of difference and an agenda to politicise particular groups towards empowerment and social action. In short "those who write from a postmodern perspective tend to question the value of rationality, to reject grand theory, to favour local

knowledge over systemic understanding, to eschew large-scale studies, and to view the world as an indeterminate place beyond coherent description" (Constas, p. 27).

A look at recent academic journals and books that report educational and teacher education research shows that the above fundamental epistemological changes have impacted upon the methodological approaches employed in research. The emergence of narrative methodology is a case in point, and researchers in teacher education have enthusiastically embraced the narratives of particular people, for example, teachers (Connelly & Clandinin, 1990). Yet there is a danger in taking particular narratives too far, so that there is no attempt at conclusions. Interestingly, Norris (1993) has observed that taking the "cult of indeterminacy" (Eagleton, 1996) too far would not support Foucault's position, arguing that, "there is nothing more alien to Foucault's thought than the kind of ultra-relativist orthodoxy that erects its own lack of critical and ethical resources in a quasi-universal postmodern condition" (Norris, 1993, p. 194).

From all of this, researchers investigating teacher education topics and issues need to develop some clarity about *what* they study and *how* they do so. We have seen that the methods of research have undergone considerable shifts in recent years. But what do researchers study? The following section outlines some suggestions.

The Content of Teacher Education Research

The possibilities for research in teacher education are great, for as a field, it is still comparatively under-researched, certainly in New Zealand. The recent Green Paper on teacher education gives no help, for it says nothing of any importance about research.

Quite a lot of the research about teacher education has been survey-type research that has looked at different programmes to gain information about how effective they seem to be – especially pre-service programmes. There is a paucity of New Zealand work of the kind cited earlier from Britain that looks into classrooms in a way that might lead to generalisable findings. Alton-Lee and Nuthall's (1994) work is the kind that has promise but needs to be extended. Clay's extensive work on teaching and learning in reading (Clay, 1991) is research that has had a major impact upon teachers' work by providing findings that have led to theorising and subsequent alterations to the policies and practices in early reading. Clay's work has, of course, been challenged. Nevertheless it *is* an example of work that has met the benchmark set by Cooley and Scriven and Gage referred to earlier: that is, it has made an impact upon schools, teachers and students.

There is, then, great scope for fresh research activity. One way to appreciate this is to look at the breadth of fields of study within teacher education in a major American publication. *The Handbook of Research on Teacher Education* (Houston, 1990) provides a thorough review of a large range of research, primarily from a North American perspective. The handbook uses the following theme classification and I have listed some of the sub-themes in parentheses:

1. Teacher education as a field of inquiry (themes in research, philosophical inquiry, historical studies, futures research)
2. Governance of teacher education (governance, finance, standards, policy analysis)
3. Contexts and models (teacher preparation, staff development)
4. Participants in teacher education (teachers and knowledge, development and socialisation)
5. Curriculum of teacher education (professional knowledge, foundations studies, preparation for diversity, special education, content studies, hidden curriculum of pre-service education)
6. Processes of teacher education (technology, practicum, supervision, internships)
7. Evaluation and dissemination (assessment of teaching, evaluation of pre-service programmes, changing teacher education)
8. Teacher education in the curriculum subjects (various school subjects research)
9. Broadened perspectives of teacher education.

Approaches to Research

Traditionally, in New Zealand, there have been a lot of small-scale "one shot" studies by individuals, some team research, and development-type work through contracts. There is now a pressing need to study ways of more effectively organising research approaches. In a situation of scarce resources, team approaches may be preferable to "one shot" approaches. Within institutions, research centres may be needed to bring individuals together.

Earlier I mentioned the paucity of research on classroom life that might lead to improvements in schooling. This is an example of a field of study more suited to team research because it should be easier to combine the talents of several researchers, including classroom teachers, to tackle the complexity of the classrooms under scrutiny. The work that is underway by Ted Glynn and a team is an example (Glynn, 1998). Teachers and researchers are working to develop better ways of teaching Māori children to improve their school achievement.

There are other studies that have been carried out at The University of Waikato that have employed some of the more recent methods of research to investigate topics in teacher education. An example of small scale team research is the study by McGee, Oliver and Carstensen (1994) which investigated an issue that had been concerning both policymakers and those delivering teacher education courses: What do student teachers *really* get out of their practicum? By keeping log-books of their on-going experiences and answering before and after questionnaires, and talking to interviewers, these student teachers revealed that their practicum experiences were very complex. The information gained from the research has led to "theorising" about practicum in the teacher education programme, including deliberations about factors that positively and negatively impact upon student teachers. Policy

changes have resulted, for example, revised and more effective associate teacher training.

Contributing to research in this field of practicum is a study by Calder, Faire and Schon (1993) who used interview techniques to learn about the views of university staff concerning their supervision of student teachers during practicum. From this research, more is known about the interaction between the supervisor and student teacher and what follow-up may be needed to improve the quality of the supervision or pass on the benefits of already highly effective supervision.

These studies are mentioned because they are examples of how relatively low-cost research which investigated relevant issues was of benefit to teacher education delivery. Another example of very promising research is a study carried out by Clare Rosemergy (1997). For a thesis, she made a detailed study of the thinking that lay behind the curriculum decisions of several experienced primary teachers. In particular, she studied their "mental" planning processes and how these related to what they committed to paper. A fascinating interplay between the official curriculum and teachers' own thinking was revealed. This is the sort of start which has the potential to take the work mentioned earlier (for example, Galton & Simon, 1980, Wragg, 1993) further by more specifically studying the daily work of teachers and how they interpret curriculum and implement their curriculum decisions. Such work is ideal as team projects which might include experienced and less experienced researchers and graduate students generating theses from the research.

It is unfortunate that expanded research activity is being advocated at a time when the national climate in teacher education is not conducive to co-operation between institutions. In spite of this I remain of the view that collaborative research involving researchers from several institutions has a lot of potential. Research into practicum experiences in pre-service teacher education is one example, where comparative studies and large team studies could add to the knowledge base and eventually influence policies and practices.

Finally, one of the concerns I have about the lack of teacher education research, is that teacher educators are not in a strong position to defend their enterprise. In the face of changes and criticisms from politicians and others about teacher education, the profession itself cannot always adequately answer with any degree of conviction or supporting evidence. How would teacher educators answer these kinds of questions which are part of the current politics of teacher education: Why should pre-service teacher education not be located primarily in schools? Why should teacher education be primarily in a tertiary institution? Why should a teacher be trained as a professional instead of being trained as a technician? How can teacher education contribute to a more just society in New Zealand? What constitutes teacher effectiveness and how is it achieved through teacher education? What knowledge base do beginning teachers require? To what extent should teacher education be standardised and centralised? What powers should teacher education institutions have to determine the content and outcomes of their own programmes? What is the answer to the often-stated charge that there is a continuing divide between theoretical and practical aspects of a teacher's work in professional

programmes? (the long-standing "too much theory, too little practice" claims by critics). What are best ways to reform teacher education, if reform is needed?

Some of these questions are politically-oriented and some are practice-oriented. There are differences in the priorities of researchers, policy makers and teachers, as Barry McGaw (1997) outlined in his keynote address to the conference, "Priorities for Educational Research in New Zealand", October, 1997. It is important to represent these three perspectives in future teacher education research. Policy needs, wherever possible, to be informed by research. So too, do teachers, ideally by being participants in research as well as consumers of other people's research.

Teacher education is, indeed, faced with many challenges. That in itself provides opportunities for researchers that are there for the taking.

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