Research impact: a BSRLM discussion

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These notes report key ideas in a discussion about the impact of practice on research and research on practice.

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Orientating questions

Participants were given three questions to consider:

1. In what ways can practice impact on research?
2. In what ways can research impact on practice?
3. In what ways can such impact be evidenced?

We also looked at five research proposals which had been successful or had been praised for their treatment of impact.

The impact of practice on research

We spent most time talking about this question, because it was felt that this is the aspect of the research-practice relation least discussed. It is more usual to raise questions about why research does not impact more strongly on practice. There was vigorous discussion among the researchers and teachers present. There is of course a need for 'blue skies' research, but research which aims to advise teachers now needs to relate to current practice. Teachers and teacher-researchers present suggested that, for research to make an impact, it needed to address real questions, issues, concerns and excitements for teachers, so that current practice is recognisable in research reports and findings. Further, because it is probable that the research thus produced is more obviously relevant to practising teachers, it is likely to have more impact and enhance practice.

It was generally agreed that researchers who are not teachers could (and, ideally, should) engage teachers in their research plans at various stages. The examples of proposals we examined showed teachers' engagement in the preparation of proposals in several ways: raising the original questions and concerns; contributing practice wisdom to initial theory-forming; co-planning pilot studies; co-production of materials; co-planning interventions; teachers approaching researchers to suggest research. The least 'teacher-engaged' proposal we looked at had the model of researchers approaching teachers to find out their views and practices before designing an intervention, but the original question derived solely from the researchers' concerns.

Practice also impacts on research in more subtle ways, in that students' prior educational experience can lead clinical researchers to make inferences about states of understanding that are highly influenced by earlier teaching.

Models of mutual engagement

As well as ad hoc arrangements arising from networking, we recognised that researcher/teacher partnerships can be more organised in a variety of ways:

- Partnerships between HEI, schools, and teachers which exist primarily for initial teacher education and CPD (e.g. for MaST) can also be research partnerships
- University practice schools, such as those in Finland, provide a site for research
- Teacher educators in HEI provide a research/practice interface role, whatever the level of their own research activity
- Teacher-research studentships
- Teachers who have been educated in the value of research during their initial teacher education are more likely to be interested and involved in research, and to want to work with researchers
- Research projects that explicitly focus on building teacher/research communities

Difficulties and differences

Different communities have different ideas about what makes good research.

- For teachers, good research might be research which solves a practical problem, improves student learning, offers tools which are new and useful to them, and takes their knowledge and practice, and current policy into account. Teachers also value research which stimulates them to ask themselves questions about their pedagogical knowledge and practices, which engages them in deep thinking and which is intellectually provoking. Researchers focusing on their own agenda do not necessarily locate the deepest drives and motives of teachers; triangulation is sometimes in the researcher's terms rather than a process of getting at teachers' or students' interpretations.
- For researchers, good research might be that which is publishable, which addresses current concerns in the research community, or which conforms to a particular kind of research design.

The language used to talk about research is different in different communities, as is its authority and worth, and the associated drive and advocacy. The purposes of research might be different, depending on the political, social and economic motives of funders. Researchers may get their standing from contributing to a body of knowledge that might be considered esoteric by teachers. It was suggested that some funded and published research appears to be ignorant of practice and history and reasons for this were suggested, such as access to professional knowledge and practice when research is based only on literature searches of previously published research. However, the group felt that the most worthwhile research deliberately and explicitly takes practice and history into account and that reviewers should look for this grounding when reviewing proposals and papers.

Teachers' research

An obvious kind of research to mention is teachers' own research into practice, in which teachers, supported by HEI, undertake research. As well as informing their own practice, such research can be disseminated through professional journals and the

NCETM portal. However, while this process disseminates research findings among teachers it does not ensure that such research impacts upon other research, or (other than that on the NCETM portal) is accessible to the research community. It does not appear systematically in literature searches and can therefore be overlooked by academic researchers, as can teachers' professional knowledge that is reported in non-research contexts.

Informing teachers about research in mathematics education

There was a brief discussion about how teachers can be informed about mathematics education research. The NCETM is currently developing ways to support mathematics departments who wish to use seminal research to inform practice. Exercises in producing succinct abstracts of research for teachers need to be recognise teacher knowledge and experience, and avoid sounding patronising, or positioning teachers as in need of change.

Overview

There are many different kinds of research, and all of them can add to knowledge in mathematics education. Researchers of all kinds need to find out what is already known, and how, and by whom. Importantly, this knowledge is not confined to the codified knowledge embodied in research papers; the uncodified practitioner knowledge base, often tacit, has much to offer researchers. Ideally, there would be seamless links between research carried out in HEI and the teaching profession. Reviewers of research proposals and papers can and should consider the importance of practitioner-knowledge.

The roles of BSRLM and the NCETM in this are not all clear; the NCETM HEI Liaison Committee is making some progress in the area of promoting teacher research and making research findings available for teachers. It is less clear what would be needed to encourage researchers to communicate with teachers at the formation stages of their research, and to locate and draw on sources of practical knowledge and wisdom. A major question is whether published teacher-knowledge can be located using search engines.

There are many examples of the role of school/HEI partnerships in the development of mathematics education research.

For the purposes of REF, it was recognised that actual impact on practice and policy may be impossible to predict – what most proposals talk about is dissemination. However, engagement of users at the formation stages of research, so that questions are informed by practice and policy concerns, means that impact is more likely. It was also recognised that this approach can trap research into tinkering with what happens already, rather than allowing 'blue skies' ideas to be developed by teachers and researchers together.

The implicit focus of the discussion was on the impact of research on classroom practice and the sorts of research we discussed could be seen as situated within the classroom (case studies, ethnographies, action research). We did not discuss, for example, research which takes place in clinical interview or laboratory situations, in which the nature of intervention and the previous mathematics educational history of the students are not always fully reported.