



SFRE Forum I

Stimulus Report: Scotland

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Capacity and Quality in Education Research in Scotland

A Stimulus Report for SFRE Forum I

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A. Preface and acknowledgements

The intention of this national report for Scotland in Year 1 is, like the other UK reports to SFRE, to review the context for educational research and associated matters of quality, accountability and capacity building. It aims to provide background information and to contribute to a common starting point for discussion. Particular attention is paid to provision and key outstanding issues and it conforms to the framework laid down for the national reports by SFRE in order to aid discussion at the Forum event. This will contribute to the overall objective of exploring the issues that relate to the production and use of educational research as a knowledge management system and how that system's effectiveness and contribution to society might be improved.

SFRE has decided that there will be authored reports for each country in the UK and that these should not necessarily be taken as the views of the SFRE or of government departments. The perspective of the Scottish report reflects the author's personal experience of the system. This includes involvement in Scottish educational research for 37 years, secondment from the university sector for four years to what is now the Scottish Government, chair or member of the education panels of the UK Research Assessment Exercise for a decade, five years as vice-chair of the TLRP Steering Committee, and former member of the ESRC Research Grants and Postgraduate Training Boards.

While I take full responsibility for the Contents of this report, I must express my sincere thanks to those from whom I have gathered the ideas and information that are included. Individual references to conversations are generally not cited in the text, but for the most part are overtaken in the bibliography. I am particularly grateful for discussions with Julie Allan, Fiona Fraser, John Ireland, Audrey MacDougall and Pamela Munn, and also for access to Walter Humes' exemplary writing on the educational research infrastructure in Scotland.

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B. Executive summary

Context of education research in Scotland

All seven university education faculties formed after mergers with colleges over a decade ago now undertake teacher-education and research, but with significant numbers of staff still not research-active. Most research is carried out in higher education institutions and is practical, developmental and evaluative, but strong theoretical and methodological approaches are patchier. An innovative national Applied Educational Research Scheme (AERS), established with five networks to foster collaboration among researchers, practitioners and policy makers for the benefit of school education, also has a remit to build research capacity. Other areas of research strength such as post-compulsory education, policy analysis and fundamental research generally have yet to be seen as integral to any national government system for educational knowledge management, but that does not imply a lack of concern for research.

Despite wide support for ideas of collaboration, there are significant concerns about adequate funding to continue both practical and fundamental research in the future. Inclusive and collaborative strategies are expensive and can divert researchers from more RAE-relevant theoretical and methodological areas that establish research excellence and wider international links.

Quality and accountability for education research in Scotland

Average RAE ratings of quality are good, but the achievement of more at the highest levels is a priority. AERS is structured to build in accountability of research to all the stakeholders and other practice-based projects have similar priorities. However, there are concerns that the quality of research undertaken outwith higher education (e.g. in the voluntary and private sectors) does not receive adequate scrutiny. Establishing comparable expectations of research among researchers, practitioners and policy makers is a continuing task

There are concerns about balances between academic (peer-reviewed) and professional publications, dangers of judgements based on attractiveness and relevance of findings rather than research excellence, the need for more international outlets for Scottish research and mechanisms for engaging teacher-education with research.

Capacity building for education research in Scotland

There is urgency in the need to extend and enhance research capacity that is recognised by the research community, the Scottish Government and the funding council. Areas such as quantitative skills and economics of education are particular scarcities. AERS has developed both generic and on-the-job approaches to capacity building, and education faculties promote postgraduate opportunities. Efforts are also evident of more experienced researchers and institutions supporting the less experienced. However, there continues to be concern about matters of future funding for research training, an aging population of experienced researchers in university

education faculties, tensions between demands of teacher-education and research training, and the reluctance of some inexperienced university staff to take advantage of research training opportunities.

An advantage of AERS developments has been the chance to continue the clarification of the roles of practitioners and policy makers in research and the implications for their professional development as well as that of the researchers.

C. Main Report

1. Introduction

Scotland's applied education research community accepts that if the aim is to influence education, then active collaboration with those who provide it, whether at policy level or in learning environments such as the classroom, is essential. To achieve this, researchers cannot behave as hero innovators bringing "gifts" to the classroom or to policy makers and be surprised by rejection or, at best, a response of "all right in theory but not practical for my classroom/policy". If new ideas or findings are to have any chance of being seen as practical and of value, then communication about them has to take account of how sense is made of what is already going on in classrooms or policy making environments.

This short text inevitably offers a rather thin account of a complex research arena, and tends to emphasise inquiry into school education rather than other sectors because that has been a feature of the way the system has developed. The report reflects, but is not structured around, changes arising from Scottish political devolution and the extensive 1990s UK debate on the importance of links among educational research, policy and practice (e.g. Hargreaves, 1996). It is tentative in looking forward in circumstances where the Scottish National Party (SNP) government has established a Future Thinking Taskforce that anticipates Scottish universities having to justify all future funding increases by demonstrating how they will help the Scottish economy to grow. It remains to be seen whether, and if so how, this will affect institutional autonomy, academic freedom, ring-fencing of funding, the role of the Scottish Funding Council (SFC) or education knowledge management. However, as universities are exhorted to be more internationally competitive, the greatest concern is with restricted budgets and disparity of funding compared with English institutions, not least because of the risks of losing their best qualified researchers to southern honey traps.

Inevitably most of the focus in this report is on education research undertaken in higher education institutions since that is where most of it is to be found. Outwith higher education, schools or voluntary and private sectors undertake modest amounts of research that may well be relevant to stakeholders' interests, but the assessment of its quality is sparse. Traditionally, the greatest emphasis has been placed on research about schools rather than other sectors of education and that is also reflected in this report.

One feature of the knowledge management system for Scottish education research is that it cuts across three, albeit inter-related, systems:

- The scholarly development of advanced research skills and production of high quality academic research.
- The education of practitioners as competent professionals to convey education to other young or mature people.

- The generation of policy with the aim of embedding this in practice.

Many “issues” identified in this paper reflect the importance of communication and interaction among these systems and tensions arising from their different patterns of priorities. The trick is to establish where and how such priorities can come together for mutual benefit. One of Scotland’s advantages is that all university education faculties undertake both research and teacher-education, and in a relatively small education community links among policy makers, practitioners and researchers are fairly straightforward.

2. The context of education research in Scotland

2.1. Provision

A recent concern suggests the UK Research Assessment Exercise (RAE) might encourage educational research centres to secure higher quality ratings by becoming social science institutes. The function of such institutes could be to provide the national research base, and matters of practice (e.g. teacher-education or interactions with schools) would be the responsibility of others. Traditionally, such research-practice divisions characterised Scotland, but there has been significant change.

Until the 1990s, almost all teacher-education was in colleges, staff were not expected to undertake research and few had research experience until the colleges merged with universities establishing seven Scottish education faculties. This brought contracts that expected former college staff to undertake research. In earlier RAEs, college research output was mixed: some good but most judged as poor or as misunderstanding what counts as research excellence. The mergers enabled research development among former college staff, although this remains a continuing challenge.

The ancient Scottish universities also changed; previously small education departments emphasised research and research training from perspectives of philosophy, psychology, sociology or history (with exceptions such as Edinburgh's Godfrey Thomson Unit on testing, and Centre for Educational Sociology - CES). However, one newer university education department at Stirling was larger, educated teachers from the 1960s and focused on education practice and policies in its research and research training. This emphasis on enquiries into teacher-education, schools, classrooms and current policies was later to be reflected in the research activities of all the other education faculties.

The new century, however, brought one distinctive development. After somewhat disappointing performances in the 2001 RAE (see Section 3), a £2m strategic investment in an Applied Educational Research Scheme (AERS) was set up jointly by the then Scottish Executive Education Department (hereafter Scottish Government – SG) and the SFC, both with significant power to shape research agendas. AERS is led by a consortium of Edinburgh, Stirling and Strathclyde Universities, has funding for five years to December 2008, promotes collaboration with non-consortium universities, and construes education research broadly (see bibliography for the AERS homepage). The research programme is designed to benefit school education and organized as three networks: Learners, Learning and Teaching (LLT); School Management and Governance (SMG); and Schools and Social Capital (SSC). These networks emphasise collaboration among teachers and researchers from higher education, teachers and headteachers from schools, and local authority personnel. A central aim has been to enhance education research capacity and research training throughout Scotland (see Section 4).

Empirical research that is practical, collaborative, developmental and evaluative characterises the programme. LLT research projects examine conditions in

schools and other environments that affect teachers and learners, establish communities of enquiry, construe teachers as learners and explore learner engagement. SMG projects are concerned with development of school governance in Scotland (particularly post-devolution), how schools measure their own progress and issues of citizenship and democracy. SSC projects aim to build on the resources among academics, teachers, young people, parents and the community to maximize learning in a range of formal and informal contexts.

Generation of theory varies across the networks. LLT is evaluating the applicability of social learning theory and models of communities of enquiry. SMG is clarifying concepts of citizenship and citizenship education, particularly among marginalised groups. SSC places the most emphasis on theoretical developments and focuses on complex frameworks relating to meanings and explanations of social capital. “Dialogues” among everyone involved focus on alternative conceptualisations of social capital with concrete exemplification and support from the literature. There is encouragement to understand the practical importance of theoretical constructs and explore ideas linking concepts of teacher professionalism with productive mobilisation of social capital or social capital with societal diversity.

The empirical work mostly uses familiar research methods and AERS has not focused on new methodologies. The networks use web-based virtual learning environments, but only SSC has engaged in specific methodological debate. An online dialogue encourages individuals from its collaborating groups to contribute to arguments about how to explore what respondents have to say about social capital, and how social capital intervention changes researchers as well as the researched. Previous social capital research has generally neglected the respondent voices, particularly children.

Collaboration is central to AERS and includes experienced and beginning researchers working together, and researchers working with teachers and local authority personnel. In SMG surveys, local authority staff contribute to the research design and participate in data production. SSC includes all groups in theory and methodology debate. LLT works with local authorities to provide web-based opportunities for teachers to share strategies for formative assessment and personal learning plans. All university education faculties enable inexperienced staff to work with established researchers in their own or other institutions. But there remain constraints on collaboration arising from inter-institutional competitiveness spurred on by the RAE, funding council stratagems and debates about universities separating teaching and research.

Local authorities’ are interested in the opportunities for collecting statistics about educational provision that AERS can provide. They are hampered, however, by a concordat with the SG whereby ring fencing of funds has been removed, but overall budgets are reduced. A curtailment of education-related services and staffing ensures severely limited expectations of significant contributions to research through funding or other resources. Learning and Teaching Scotland (LTS), the main curriculum body, has an interest in research that is primarily concerned with data collection and relatively unsophisticated evaluations. It has, however, been a major player with the SG over the last decade in the national

initiative Assessment is for Learning (AifL). This involves significant development in classroom practice, resources, school management and continuing professional development. It offers teachers valuable and easy access to a selection of assessment literature and research material that informs AifL. Perhaps understandably, the research output from the Scottish initiative itself is limited, and definitely practical and descriptive rather than scholarly and innovative (see bibliography for AifL website).

Beyond AERS and AifL, much Scottish research has a practical focus on national priorities rather than fundamental theory, methodology, broader educational aims or the exploration of ideas, and some of what is seen as research is better classified as un-theorised development. Indeed, the SG has concerns that too much current education research emphasises somewhat sterile school-sector studies that do not engage with modern ideas and developments from the social sciences, or focus on a broader agenda (particularly lifelong learning and skills). There are exceptions to this, of course, where work in areas such as post-compulsory education, policy analysis and inclusion offers more theoretically-oriented high quality research and engages with wider international networks. But there is little evidence, as yet, of the development of national knowledge management systems for work of this kind.

Institutions vary considerably in the quality of enquiries they undertake and without adequate research environments some universities find difficulty in attracting and retaining senior staff with high level research experience. In particular, expertise in advanced quantitative methods is scarce and some substantive areas are under-researched, particularly the economics of Scottish education. There are, of course, always a few surprises. For example, one unusual SFC-funded exploration of “Open Space” methodology is led by the Royal Scottish Academy of Music and Drama in collaboration with the BBC, Scottish Arts Council, a less privileged community (the Raploch) and some experienced university researchers. The aim is to build social inclusion on Venezuelan methods using music tuition.

Most funding for applied research comes from the SG; its Analytical Services Division commissions not only from universities, but also from the voluntary and private sectors. Commissioning is relatively transparent and seeks expressions of interest followed by full proposal submission. The funding relates closely to major development programmes, such as Curriculum for Excellence, and national priorities for achievement, inclusion, equality, citizenship and lifelong learning; but research is seldom designed to get to the point where it evaluates the actual differences made to learning. A downside of many researchers depending too heavily on government funding is that they tend to be unwilling to engage in public critical debate with policy makers. However, post-devolution the SG has enabled some such debate by inviting expert witnesses to engage with parliamentary committees (Allan, 2003) and, because politicians have for the last decade been accessible in Edinburgh rather than London, more positive relationships are encouraged. Her Majesty’s Inspectorate for Education (HMIE) is also returning to policy development and has educational databases of potential value for, but currently inaccessible to, researchers.

Among the research centres in Scottish education faculties, some could relate to what Humes 2007 (p77) refers to as David Hargreaves' "one man and a dog" variety, but there are several of substance. Edinburgh's CES, with a focus on policy-related analysis, is unusual in its complex statistical capability. Strathclyde's Quality in Education Centre (QIE) has a pragmatic agenda, mostly depending on central government funding. And for the future, Stirling draws on its strengths as it plans for a theory and methods laboratory to train research students and inexperienced researchers (including summer schools). The Scottish Council for Research in Education (SCRE), established in 1928, became part of Glasgow University when its direct Scottish Office grant was removed in the 1990s.

Fundamental research is seen as particularly important in higher education for RAE purposes and by many as an essential base for more practical work. For the most part, it has to be funded by Research Councils (ESRC, AHRC and EPSRC), sometimes in combination. Apart from Edinburgh and Stirling, Research Council funding for "blue skies" work has been modest in the education faculties, not least because of reluctance on the part of some to make serious applications. The SG has rarely funded research that is not entirely driven by policy, but could take a more positive stance in the future and consider shared funding approaches (which would probably imply a reduction in support for small-scale short-term projects). Civil servants have expressed a hope that Scottish researchers will be more active in seeking the kind of support that is available (e.g. from ESRC) to buy themselves out of other responsibilities and engage more seriously in research.

The SG is aware that it has to provide a significant element of the more expensive resources for education research and it currently places considerable emphasis on the establishment of large, high quality and robust data sets that can be used by social scientists. Some of these, national and international, are already in place (e.g. SG, 2007) and others, such as those relating to adult literacy and numeracy and a re-launched national survey for the Assessment of Achievement Programme (AAP), are planned for the future.

The expectation that these data sets will provide invaluable resources for use in social science research in the context of education has significant common-sense validity. In practice, however, there is little evidence so far that such resources lead to insightful research that provides greater understanding of teaching and learning or of how the quality of education might be improved. What the data sets can do is feed national demands for audit, inspection, evaluation, regulation and competitiveness and enable the media to make simplistic and highly questionable comment on what are seen as slumps in education standards (Grek, 2008). Of even more concern is the potential impact on, and narrowing of, education systems to ensure that international comparisons can be made (Grek and Ozga, 2008). Authentic assessment that is designed to reflect the breadth of curriculum designed within a national system is usually very different from that which takes account only of what can be expected from an international "common elements" approach.

2.2. Outstanding issues

- Despite major efforts post-devolution to facilitate inclusive research that is relevant and applicable to policy priorities, there are significant concerns about how to sustain the promising starts. Attention is focused on adequate funding to continue practical and basic research, weaknesses as well as positive aspects of inclusive strategies, concern for more Scottish researchers to explore theoretical and methodological areas, and the importance of establishing greater international links. Wide support for collaborative ideas implies that the real costs and benefits of their implementation be properly evaluated.
- Given the costs of collaborative research, inter-institutional competition threatening collaboration, uncertainties of funding after the current AERS pump priming, and continuing support needs of inexperienced researchers, is there a possibility of Scotland's faculties of education reverting to the earlier research-practice divide?
- What are the costs of research collaboration (financial, time, impact on other academic activity including other research) in comparison with the benefits? Does pressure on less experienced researchers to collaborate become pressure to conform? Is AERS-type collaboration the most appropriate way to bring different kinds of knowledge together?
- Can education research engage more effectively with the social sciences more generally and place increased emphasis on matters outwith school education?
- How can the tendency for many Scottish researchers to neglect strong international links and be inward looking in their research be addressed (a tension between developing inclusive research in Scotland and making an impact on the world stage)?
- How can communication among stakeholders and funding bodies be improved, resist fragmentation, take account of changes in personnel and include others (e.g. HMIE, General Teaching Council for Scotland -GTCS, LTS) more closely in the discourse about research?
- How can approaches that give more attention to underlying theory and advanced or innovative methodologies be encouraged?
- How can Scotland develop the capability and find the resources to sustain and improve its fundamental education research as a basis for its applied work? What would encourage more of the less experienced Scottish researchers to improve their skills and scholarship in order to seek high status funding from, say, the Research Councils?
- How can development work be persuaded to include more effective formative as well as summative evaluation, and continue this to the point that assesses the actual differences it makes to learning?

- How can Scotland ensure that the resources invested in the establishment of large data sets are used to facilitate quality research that genuinely improves the understanding of education?

3. Accountability and quality for education research in Scotland

3.1. Provision

Traditionally and currently the quality of the best of Scottish educational research has held its own in international comparisons but, as elsewhere, excellence is patchy. Judgments about research quality in higher education, as in the rest of the UK, rest heavily on the RAE. The last two RAEs saw only one “5” rating for a Scottish education submission (Stirling, 1996) and although in 2001 the majority were rated “4”, volumes of staff submitted were disappointingly low. Criticisms cited weaknesses in methodological or theoretical developments, quality training for research students and collaboration among institutions or disciplines. This rather modest record was instrumental in energising the introduction of AERS and of institution-specific, but unpublished, reviews of research across Scotland. It is not clear how far this has had an impact on the professional development and internal research appraisal for which individual institutions are accountable. Unfortunately, researchers from other disciplines often perceive standards in education research as low and this impedes collaborations.

The quality of research that is carried out in schools or the private and voluntary sectors has no quality assurance comparable with the peer review of the RAE and Research Council work in higher education.

Within AERS there is a Management Committee with responsibility for strategic management and development of the scheme. It includes representatives of central and local government, SFC and the ESRC-administered Teaching and Learning Research Programme (TLRP) as well the consortium and the non-consortium universities. An Executive Committee has membership from within the scheme and carries responsibility for the implementation and monitoring of the programme in relation to the original collaborative proposal. This structure aims for accountability to both funding bodies and various stakeholders as part of a supportive framework. It was one focus of an AERS formative evaluation (2007) by a team from Cardiff University, but the evaluators’ recommendations for an alternative structure were not accepted (AERS annual report, 2007). More generally, the evaluation’s recommendations on AERS (SG 2008) suggested that while there had been significant achievements, the funding provision was inadequate to enable all the ambitious and competing goals to be attained. The need to focus on narrower targets was identified in order to make more efficient use of expertise if quality is not to be at risk.

Beyond AERS, an emphasis on evidence-informed practice and policy implies that Scottish research should be accountable to practitioners and policy makers. Project advisory committees usually provide one forum for this. As in other collaborating communities, however, stronger accountability can foster reluctance, tension or suspicion. One feature that can generate uncertainty is the diversity among expectations of research and, therefore, judgments about its quality and value. Practitioners often expect research to answer the common-sense question “what works?” But high quality research rarely provides clear

guidance about specific action to be taken in the classroom. When clear directive findings are produced, practitioners often complain that they are either self-evident or simply not credible. In the past, SG policy makers also had utilitarian expectations of immediate advice for policy development, implementation, and evaluation. It was frequently assumed, therefore, that policy and practice could be evidence-based rather than evidence-informed. More realistic expectations may now be evident and accompanied by agreement that for high quality research the priority is to understand what is going on in educational settings and why things are the way they are. Sensible decision-making for policy or practice requires this understanding, but such decisions also depend on other factors including politics, resources and preferences in particular contexts. Research can facilitate evidence-informed policy and practice to promote education's wellbeing, but to classify this as evidence-based would be something different.

To achieve a shared framework for judging quality, an evidence-informing role implies that the integrity of applied research be held to account against criteria that include:

- **Relevance:**
raising specific questions about practice and policy.
- **Communication:**
robust empirical evidence and argument about
 - (a) how education works in practice and how particular actions can be effective (or not) in various settings,
 - (b) understandings of why things turn out as they do in diverse circumstances and what factors are important determinants of outcomes and
 - (c) the implications of choosing among different courses of action in particular settings.
- **Collaboration and trust:**
joint identification among stakeholders of possible plans to overtake practical or policy aims, challenge existing practices and policies, or make for different futures.

Fulfilling such expectations is daunting and still remains an aspiration rather than achievement. Although LTS and the GTCS show more interest than in the past, and some universities are making significant efforts to encourage practitioners' engagement with research within their initial teacher-education or CPD, practice is uneven and not extensively reported.

One aspect of judging quality relates to funding success of research applications, especially to bodies like the Research Councils. Many among Scottish education faculties have no history of significant numbers of such awards or, indeed, of applications. In the late 1990s, the early stages of ESRC's TLRP focused on building networks for research on schools, but had few funding applications from

Scottish institutions. One large network grant looked like coming north of the border and had the potential to establish significant collaborative activity several years before AERS was set up. It was highly rated by UK referees and assessors, but suffered an inexplicably negative assessment by the SG. In later stages of TLRP commissioning for post-compulsory education, Scottish applications were significantly more successful and AERS has been in a position to benefit from TLRP's experience as it builds networks of its own. Furthermore, the existence of the AERS infrastructure is starting to be effective in attracting other research grants.

The 2007 AERS annual report indicates a good record of conference and seminar presentations to practitioners, policy makers and academics, together with briefing papers and newsletters produced by the scheme and various research centres. These provide important accountability to all the stakeholders. However, the report cites only ten publications in peer reviewed journals which are crucial for accountability to the research community. Six of the ten are in a special issue of the Scottish Educational Review (SER, 2007) or in *Education in the North*, neither of which is widely read outside Scotland. Scottish educational research publishing more generally has demonstrated a similar inward-looking tendency. There is a clear tension between, on the one hand, the demands of the RAE and the conditions for involvement in international cutting-edge research and, on the other hand, the need to communicate effectively with the broad Scottish educational community. Perhaps new developments will relax this tension and also discourage some researchers' fears of criticism and reluctance to admit areas of weakness.

3.2. Outstanding issues

- One concern of the system for quality and accountability is about balancing the needs of (a) developing in relation to international criteria for research excellence and (b) maintaining the importance of local practitioner and policy maker engagement. A second concern is how that local engagement can contribute most effectively to the quality of research and for the good of education.
- How can less experienced Scottish researchers be persuaded to increase their participation in the international community so that the quality of their work is opened up to wider scrutiny? Can they be encouraged to publish in eminent peer-reviewed outlets at the same time as communicating through professional publications?
- How should the importance of the quality of research for fundamental purposes and peer review be balanced against that for communication with practitioners and policy makers?
- How can we ensure that practitioners and policy makers are enabled to take account of the quality of research rather than just the attractiveness of its findings? Is this particularly important where private or voluntary sector consultants are relied upon?

- How can the quality of research undertaken in locations other than higher education be appropriately scrutinised?
- How much and what kind of emphasis should be placed in teacher education (initial or CPD) on research and judgments about its quality? Are all those who provide teacher education sufficiently well-informed or is this aspect to be left to research elites?

4. Capacity building for education research in Scotland

4.1. Provision

In the early 1980s, the then Scottish Office became uneasy about the lack of research in the colleges and ring-fenced research funding for them. College research proposals were assessed for funding and staff were encouraged to undergo research training. Although delighted with ring-fenced money, colleges made little progress in research training, even where a specific programme was established. With a few exceptions, high quality research output remained sparse and most staff still failed to engage in research.

After the college-university mergers, the new education faculties attempted to introduce research training; these had mixed results. However, a primary aim of AERS was to extend and enhance Scotland's educational research capacity. The approach to capacity building has focused not only on the capabilities of researchers to produce high quality work, but also the involvement and understanding among practitioners, policy makers and other "users" about what research can and cannot offer. Led by the consortium of Edinburgh, Stirling and Strathclyde Universities, the scheme's intention was collaborative and inclusive across Scottish education faculties and has pursued research training through both a generic approach and within the AERS networks. Part-time research fellowships were established to enable less experienced staff to develop on-the-job skills within the networks.

During its five years, the scheme has introduced: formal MSc provision in research methods; training within networks involving a range of stakeholders and establishing "communities of enquiry"; structured on-the-job training for inexperienced researchers; Masters' modules for accessible research training; opportunities for experienced researchers' research management skills; and encouragement for collaborative working across seven universities. On-line capacity building resources, developed by Strathclyde University, have ESRC recognition for a Scottish Masters in Applied Educational Research. This enables distinctively education contributions to more generic social science research training. It is too early to evaluate longer term effects of these enterprises, although there are increases in numbers of active researchers from Scottish institutions returned for RAE 2008. There remain tensions for individuals between the demands of developing research capability and other responsibilities such as those of teacher-education. The latter, unfortunately, often exhibit a culture of over-teaching and this, together with teacher-educators' own preferences and recent increases in numbers of student teachers in Scotland, can militate against research activities.

Anecdotal reports suggest significant numbers of inexperienced researchers are keen to expand their research skills and that AERS on-the-job approaches within networks have worked quite well. Evidence of the quality and success of more generic approaches, particularly the new modules, in engaging novice researchers remains incomplete. Alongside these developments, some faculties have introduced MRes and EdD programmes for both inexperienced university

researchers and practitioners with doctoral or research aspirations. These exploit links between the practical wisdom of teachers and theoretical research knowledge. One university offers research leave to teaching fellows to prepare for conversion to lectureships, which include research responsibilities, and there are aspirations that the inclusion of research matters in teacher education will help establish a more secure foundation for the future. However, the jury is still out on the matter of the best route for the improvement of research capacity and the most efficient ways of combining the various pathways currently available. Inevitably, the most experienced research groups and centres are more able to plan for longer term research training and awards for doctoral and post-doctoral students. This can also include on-the-job elements with novice researchers associated with funded research projects. One TLRP post-compulsory education project, for example, involves FE lecturers as researchers.

The engagement of practitioners in research continues to be seen in much educational rhetoric as a potentially fruitful path to school improvement, but the interpretation and implementation of such ideas remain as challenges. AERS has explored the role of busy teachers in formulating research questions, design, data collection methods, approaches to analysis, report writing and discussion about theory and methodology. But there are still significant constraints of time, limited resources and the failure of many people to see research as a credible core activity for teachers. More promising are approaches that engage practitioners in critical reviews of research, the collection of data relevant to associated developments and involvement in the dissemination of their experiences.

From earlier experience in the school sector we know that:

- Teachers' involvement and confidence in research is dependent on specialist support and mutual trust.
- Research evidence relating to familiar contexts and focusing on matters of classroom or school practice draws teachers' interest and readiness to learn.
- Research evidence leading to development of classroom-relevant materials provides incentives for collaboration.
- Evidence of findings from specific settings enables teachers to judge its usefulness (or not) for their own contexts.
- Evidence-informed practice is not a quick fix for improvement.

Action research offers another model for practitioners' involvement where they take more, or even complete, control and ownership of the research, but may also look to researchers in higher education for support and development of enquiry skills. This approach has had less impact on education in Scotland than England and teachers have been more reluctant to spend time in enquiry mode at the expense of complying with other formal demands. Only a minority appear convinced that conducting their own enquiries would promote their enthusiasm, effect changes in teaching and foster effective and satisfying practice in Scottish

classrooms. Apart from a small scheme initiated by the GTCS (2004) with modest resources, the approach in Scotland has focused more on the enhancement of practitioners' understanding and use of research and on how they can influence what is undertaken, and less on them taking full responsibility for the enquiries.

One proposal for the future suggests a "developing practice" network that could be based on, for example, the Curriculum for Excellence (Munn, 2008b). This would involve cooperative working among experienced researchers from the seven Scottish faculties of education, local authorities and school teachers. The networks could operate with clusters of schools and work at both national and local levels. Because the SG and many local authorities focus broadly on "the child" and on thinking across services rather than simply on education, professionals from social work and health might also be included. However, this would require significant extra resources from local authorities or central government and serious consideration of the relationship of this enterprise with other aspects of higher education's more basic research. Furthermore, it continues to be difficult for practitioners to work systematically with researchers because of problems of release from other duties.

4.2. Outstanding issues

Significant numbers of staff working in education faculties in Scotland are still not active researchers in the conventional sense, and a large proportion of the active researchers producing high quality work are over 50. Currently, this influences RAE volumes of staff, QR money from SFC and education faculty status within institutions. The evident priorities for Scottish education faculties are to increase proportions of active researchers among staff, and improve the quality of the overall output. This implies concerns about not only the adequacy and form of research training, but also the acceptance by individuals of the value to themselves of such training. Since the institutions all undertake teacher-education, there are questions about the expertise sought in staff recruitment to higher education institutions and patterns of academic demand on staff time. And there remain issues about practitioners' involvement with or in research and how that is to be managed.

Should all university education staff, especially younger members, be expected to engage in research regardless of their personal preferences and other demands on their time?

How can concerns about the limited research training, particularly in advanced quantitative methods, experienced by many HE education staff be addressed? How can the acute problems of finding resources and time for the training of inexperienced researchers be resolved, especially for universities with low QR funding? How can the problems of inadequate research skills outwith the higher education sector be addressed?

Should we encourage more and younger social scientists with research skills into education faculties when this sits uneasily with the priority for teacher-education

staff to have had substantial school experience? How can greater research collaboration with other social sciences be achieved?

How can more inexperienced researchers be persuaded to take advantage of opportunities offered by developments in AERS' research training, mentoring for inexperienced staff, institutional collaboration and the Scottish Educational Research Association (SERA) networks? How will such opportunities be funded in the future?

How can the role of practitioners in research be further clarified and ideas developed for bringing together different kinds of knowledge, especially research knowledge and practical wisdom?

To what extent and in what ways should initial teacher education and the continuing professional development of teachers emphasise a research or enquiry role?

5. Conclusion

More than two decades ago Scotland set up a Forum for Educational Research with the aim of identifying national research priorities and exchanging information, but without significant funding. This is not the place to analyse the reasons why it was discontinued after a few years, but two important elements were:

In practice, the priorities for research continued to be largely determined elsewhere by the powerful players, especially the SG.

Exchanging research information among the stakeholders on a local and ad hoc basis was probably seen as more useful and better accomplished than formal national arrangements could achieve.

More recently, however, a funded national strategic initiative in relation to school education has arisen as a result of increasing emphasis on the use of educational research knowledge for practical and policy purposes, concerns about the modest numbers of research-active staff in higher education and some disappointment in RAE performances. The approach to collaboration among researchers, practitioners and policy makers in AERS suggests it has potential for all groups to have a role in the production and application of research knowledge, and offers ideas for building Scotland's research capacity. To achieve this potential the strategic initiative has to be sustained over longer periods of time with continuing financial support. Collaboration is time consuming and expensive, especially if more comprehensive coverage of the country and extensions to other aspects of educational knowledge are to be accomplished.

There remain the crucial tasks of identifying the roles of the different groups in relation to the production and use of educational knowledge, and looking at how this influences the structuring of professional development and the occupational demands that are made. In the case of policy makers, the continuing priority is to understand better what research is, and is not, capable of achieving. The establishment of priorities requires a two-way collaborative process that implies some ceding of power to the practitioners and researchers. While policy makers have taken steps to test out a system for knowledge management in relation to research on schools, there is need to think more broadly and to extend initiatives of this kind into, at the very least, other education sectors. Furthermore, the current emphasis on funding large scale data collection has to be scrutinised carefully to judge its real contribution to the understanding of effective education.

For practitioners, there are questions about how they approach and value new knowledge that could underpin improvements in their practice, but may also threaten their existing ways of thinking about their work and make significant demands on their time. There continues to be debate about the most effective ways for practitioners to engage in research, and how teacher-education can take account of this.

Researchers in universities have to face issues about how they divide up their time. For some in Scotland, accepting the necessity of further research training is

vital if research capacity is to be increased and higher research quality achieved. For others, the inroads that collaborative work for applied research makes into research time has to be balanced with the resources needed to carry out fundamental research and so remain in the “world class” category. Additional teacher-education pressures from increasing numbers of student-teachers, and the need to relinquish some power by facilitating the involvement of others in research decisions, further complicate researchers’ personal professional planning.

Some significant steps have been taken to develop a system of educational knowledge management in Scotland and to move beyond immediately “local” networks. However, there are substantial questions about how an enterprise of this kind that engages a range of legitimate stakeholders can be extended to a wider community across the country (or even the whole UK) and what the costs would be to other aspects of educational activity.

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E. Glossary of Acronyms

AAP	Assessment of Achievement Programme
AERS	Applied Educational Research Programme
AHRC	Arts and Humanities Research Council
AifL	Assessment is for Learning
CES	Centre for Educational Sociology
EPSRC	Engineering and Physical Science Research Council
ESRC	Economic and Social Research Council
GTCS	General Teaching Council Scotland
HMIE	Her Majesty's Inspectorate for Education
LLT	Learners, Learning and Teaching
LTS	Learning and Teaching Scotland (AERS)
PISA	Programme for International Student Assessment
QIE	Quality in Education Centre
RAE	Research Assessment Exercise
SCRE	Scottish Council for Research in Education
SERA	Scottish Educational Research Association
SFC	Scottish Funding Council
SG	Scottish Government
SMG	School Management and governance (AERS)
SNP	Scottish National Party
SSC	Schools and Social Capital (AERS)
TLRP	Teaching and Learning Research Programme