

An evaluation of educational research and development in Iceland

SUMMARY

Prepared by the working group for the evaluation
of research and development in education 2003–2005

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EVALUATION OF EDUCATIONAL RESEARCH AND DEVELOPMENT

Four studies were carried out as part of the evaluation:

1. Educational research in Icelandic universities.
2. Institute-based educational research in Iceland.
3. Development projects in Icelandic schools.
4. Educational research and development in the private sector in Iceland.

In addition there are summaries in Icelandic and in English.

Each report and the summaries are independent units and are accessible at the web-site:
<http://www.rannis.is/rannsoknir-menntamal>

The Icelandic Centre for Research and the Ministry of Education, Science and Culture provided funding for the evaluation. Further funding was obtained from the Iceland University of Education, the University of Iceland, the University of Akureyri and Starfsafli.



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THE EVALUATION

Aims and methods

Background

In March 2003 the Icelandic Council for Research agreed that an evaluation of educational research and development in Iceland should be carried out and a proposal was submitted to the Ministry of Education, Science and Culture, which was approved in July 2003. The study was carried out under the auspices of a working group appointed by The Icelandic Centre for Research and a smaller management group which met between meetings of the working group. The first meeting was held in June 2003 and the last one in March 2005. In all 10 meetings of the working group were held. A list of those in the working group and the research team is to be found in Appendix A.

A key researcher was employed in a 50% post from September 2003–April 2005 and several assistant researchers worked on the evaluation during 2004 and 2005.

A web-site was maintained while the evaluation was in progress¹¹¹ and three newsletters were sent to over 700 stakeholders informing them of the progress of the study. Several guests were invited to meetings of the working group, including an educational researcher from Norway, Sven Ludvigsen.

An open conference was held as part of the evaluation process at the end of February 2005. Most of the 150 people attending had earlier participated in the data-gathering phase of the evaluation – as key informants, by sending in publications, by answering questionnaires or by participating in the working group. Implications of the results emerging from the evaluation were discussed.

The evaluation was sponsored by The Icelandic Centre for Research, the Ministry of Education, Science and Culture, the Iceland University of Education, the University of Iceland, the University of Akureyri and Starfsafl.

The scope of the evaluation

At the early meetings of the working group it was decided that the evaluation would:

- Describe the scope and nature of research and innovation in education and draw attention to areas lacking in research,
- Consider the status of researchers with regard to different target groups, working environments and research processes,
- Consider the conditions necessary for innovation in schools and the private sector and the relationship of innovation to educational research.
- Draw attention to the value and relevance of research for policy-making, school and other educational activities.
- Encourage debate on research and innovation with the goal of strengthening them.

From the outset the working group considered it important to take a broad view of educational research and development and to look at the role it can have in supporting the knowledge society. The group agreed that research and innovation in education would be defined broadly and would include:

- Research on learning and teaching in the broadest sense and would include research on lifelong learning, learning in the workplace and informal learning,
- Research on education and training, including the management and operation of the education system, general educational activity, the development of human resources and policy-making, and
- Innovation activity in the formal education sector and the employment sector, including development projects.

Data, analysis and reporting

Four separate studies constituted the core for data-gathering and report-writing and focussed on:

- University-based educational research,
- Institute-based research,
- Development work in schools, and
- Research and evaluation in education in the private sector.

A summary of the key findings of each report follows this introduction, followed by a discussion of key issues emerging from the evaluation.

¹¹¹ <http://www.rannis.is/rannsoknir-menntamal>

This evaluation employed a mixed-methods approach, using both quantitative and qualitative techniques. In all the studies, interviews lasting from 45–60 minutes were taken with key informants. These were then transcribed and analysed for common themes. Written work published by individual researchers and organisations during the period 1998–2002/3 (calendar and/or academic year) were coded according to several criteria, including the type of research, choice of topics, methods used, funding sources and cooperative partners. Conference talks and publications of learning and teaching materials were eventually excluded from the coded data and analysis on the grounds that the methods and topics would be reflected in research publications, such as theses or journal articles. Excluding university data from 2003 which was not available at the outset of the study appeared to have a minimal effect on the results. In all about 800 publications from universities, 350 from institutes and 64 from the private sector were analysed.

University researchers coded their own publications according to a format designed by the evaluators but other publications were coded by the evaluation team. Both approaches have their strengths and weaknesses. It was also possible to analyse the way in which research is being disseminated, both written and spoken, through the publishing database held by universities on academic research activities. Comparisons were made between the three universities under study but no information was analysed at the individual level.

All schools which had received funding for school development projects during the period 1998–2003 (academic year) received questionnaires. A small set of projects at three levels, pre-school, compulsory school (primary and lower secondary in a single structure) and upper secondary school, was selected for further study and interviews taken with principals and/or teachers.

Comparative sources

We noted early on in the process the advent of the OECD systematic reviews on educational research and development in New Zealand and England and by the time our study was completed we had access to the reviews in Mexico and Denmark as well. A summary of the OECD findings is to be found in Appendix B. We found the generic template (Appendix C) put forward in the review on Denmark particularly helpful as we were faced with

the task of interpreting and evaluating the findings of the four studies in Iceland.

A wide variety of reports from other countries was read during the preparation, implementation and analysis stages of this evaluation of educational research and development. Early on we took note of the assessment of university-based research in the Research Assessment Exercises in England and of a similar exercise at the University of Helsinki in 1999. Later we worked with ideas from an evaluation of research capacity in New Zealand. Then we encountered a study on the impact of educational research in Australia where we were particularly influenced by the way in which one group had mapped educational research and another had considered the use of research in decision-making in vocational education and training. We were also following developments in the USA where major policy reports on scientific research in education have appeared in recent years, and which emphasise controlled experiments.

STUDY 1

Educational research in Icelandic universities

Background to the study

The conditions for university-based research are undergoing change at the national level in Iceland. Strategic priorities for strengthening research in universities are being addressed at national and organisational level. These include an increase in competitive funds and an emphasis on the allocation of funds as a lever in ensuring quality in research and as an incentive. Enrolment figures have grown rapidly in recent years and research-based graduate degrees are seen as an opportunity for strengthening research. Both government and universities are wrestling with the issue of finding appropriate levels of basic funding for university research. Quality management and incentive schemes based on publishing performance have been introduced. These measures have raised issues of academic freedom and academic responsibility, as well as the development of research cultures.

The structure of the university study

Information was gathered from and about the work of educational researchers at three state-funded universities covering the period 1998–2002. Data were collected through interviews with key informants,

through a questionnaire to staff on the work which had been published during the period in question and through an analysis of research databases held by the three universities. One focus of the study was on the status of researchers with regard to the scientific community, policy-makers and practitioners. Another was to identify support mechanisms and barriers to the carrying out of research in universities. A third area was to consider the development of masters' and doctoral programmes.

A detailed report with the results of the study is available in Icelandic.

The universities

The three universities under study are:

- The *Department of Education at the University of Iceland* (UI) which is part of the Faculty of Social Science and has eight academic staff with tenure. Some members of other departments in the faculty also engage in educational research. Together they account for about one-third of the research publications from universities in the area of educational practice. About 40% are professors and almost all have doctoral degrees. The department was established in 1951.
- The *Iceland University of Education* (IUE) which employs about 125 academic staff, of whom about 75% carry out research in education-related areas, and together they account for a little over half of the educational research publications from universities. About 25% of the staff has doctoral degrees and about 40% of the staff did not have research responsibilities prior to 1998. About 8% are professors. The IUE has by law a designated role with regard to teacher education and to the promotion of research and development in education. The IUE was established in 1971 when primary teacher education was transferred to university level.
- The *Department of Education at the University of Akureyri* (UNAK) has about 20 academic staff, almost all of whom carry out research in education and related areas. About one-third have doctoral degrees and about one-quarter are

professors. The department was established in 1993.

As the study neared completion a fourth university, the University of Reykjavík, announced that it was establishing an education department and would be offering teacher education and graduate programmes from 2005. The university report does not include interviews with its staff nor other data on publications.¹¹²

Researchers at the University of Iceland are active in peer-reviewed research and a higher proportion of their work appears in local and international journals than in the other two universities. Some staff of the Iceland University of Education and the University of Akureyri carry out peer-reviewed research and others focus more on development work in schools, the writing of curriculum materials and inservice and continuing education. Researchers at all universities present papers at national and international conferences on a regular basis. All three institutions hold conferences and seminars on educational or related areas and several Icelandic educational journals exist.

University research funding

University research funding goes to the research component of salaries (usually 40–43%), sabbatical leave (as often as every sixth semester should be possible), internal research grants (varying in size from 120.000–600.000 kr.), research assistantships (80.000–85.000 kr. for a semester), annual bonus productivity payments (ranging from 10.000 kr. to 1 million kr.) and monthly bonuses for particularly active researchers (from 5–20% of the research component of a monthly salary). Research allocations also go towards a portion of shared overheads within universities, such as administration, housing and computer, library and other services. In 2005 the Iceland University of Education was allocated 324 million kr. for research. It is difficult to separate funds for the education departments at the University of Iceland and the University of Akureyri from other funding to these universities.

The University of Reykjavik is run on a different legal and financial basis than the three state universities that formed the focus of the study. Students

¹¹² Data from the Institute for Social Research and Analysis that was moved to the University of Reykjavík at the same time forms part of the study on institute-based research. Researchers were interviewed in connection with the private sector study.

are charged tuition fees and several major players in the private sector have contracted to support basic running costs.

Issues

Several issues emerged during the study. Many of them can be traced to the changes in the university and the research environments in Iceland and the status that educational research has, or does not have, in these changes.

Academic freedom and status

The Universities Act in Iceland requires the Ministry of Education, Science and Culture, together with the universities, to introduce measures of quality control in teaching and research. The universities in the study have all adopted similar research productivity assessment schemes based on a scheme initially introduced for professors in 1998. Salaries and bonuses to those who have permanent positions are tied to the number of points accumulated. The scheme builds on the principles of scientific work that the best work is that which has been subjected to stringent peer review. The basic unit of measure is that a single author peer-reviewed article in a journal listed in one of the Citation Indices (SSCI, SCI, AHCI) is assigned 15 points. Articles in other journals receive ten points or less. Points for joint authorship decrease in stages of 75% of the total each for two authors, 60% each for three authors, 50% for four authors and so on. Public or conference lectures give 0–3 points each, depending on the venue. In the UI and UNAK those individuals achieving more than seven points a year receive a bonus for each point above seven. The minimum number of points for a bonus at the IUE and for professors is 10. The funds available for the bonus payments however vary considerably between universities and between professors and other staff, where the value of one point, for the same kind of work, varied between 6.000 kr. and 21.000 kr. during the period under study.

An area of debate during this evaluation study was whether the assessment scheme encourages educational research in the same way, for example, that it might encourage research in the natural sciences. Doubts were also expressed as to whether the system encourages development work or cooperative projects. Another area of debate was whether the scheme promotes educational research and development work that is useful and accessible to policy-makers and practitioners, and used by them.

Academic freedom lies at the core of the debate and the extent to which it can or should be guaranteed during the selection of topics or projects, their implementation and the dissemination of results. Opinions are divided on this issue with regard to educational research which for many researchers carries with it notions of improvement and utility. University-based educational researchers suffer considerable stress, insecurity and an underestimation of their abilities as they try to meet the often competing demands of the ‘academy’ and education as an applied field. It is urgent to consider the extent to which project grants, incentive schemes and assessment schemes work in favour of educational research and improvements in the education system.

Responsibility and choice

Many researchers felt that in their publications they had been writing for policy-makers, though at the same time it was felt that policy-makers were not necessarily using such work and that the way in which findings were presented does not necessarily encourage their use. Opinions are divided on whether university researchers should choose research topics in consultation with users and policy-makers and, if so, how this is best done. The question of responsibility thus arose, of who is responsible for making research findings accessible to those outside the research community. Most researchers concede that there appears to be a need for more consultation between researchers and policy-makers. Some university researchers consider it important to be visible in schools and to engage in development work with teachers and parents.

A related question discussed during the evaluation was the extent to which funds should be targeted for particular research areas or not. The choice of such areas might be responsive to the wishes of users through a consultation process involving researchers, funders and users of research. The question is whether value is added by steering the selection of research topics or whether more is gained by researchers being responsible for setting their own agendas according to their interests and abilities.

Research cultures and capacity building

The three universities have all signed agreements with the Ministry of Education, Science and Culture on the number of full-time student equivalents for which they will receive funding each year and related agreements on research funds. Increases

in the number of students enrolled at universities have often led to a heavier teaching load for those with a research responsibility. Both the Iceland University of Education and the University of Akureyri have developed substantial distance learning programmes, which have also made demands on university staff with regard to new teaching and technology skills. Discussions are underway at government-level on a new formula for allocating research funds directly to universities, given the national policy of increasing allocations to competitive funds.

The universities are developing graduate programmes that are ambitious and strong arguments are made concerning research cultures and a link between improved research performance of a university and the existence of research-based graduate studies. Universities do not have adequate financial nor human resources to carry out their ambitions, nor to meet the demand for research-based training, though the need for more and better qualified researchers in education research and development seems clear. Funds for graduate students are sparse and most students do not have the resources to engage in full-time studies. Conditions do not encourage the participation of students and supervisors in linked research work and there are signs that without intervention further developments in research-based training will be characterised by competition rather than cooperation as universities build up a 'research culture'. There appears thus to be an urgent need to find ways of facilitating the funding of graduate studies, both with regard to teaching and supervision, and of providing stipends for students so that they can become engaged full-time in research projects.

STUDY 2

Institute-based educational research in Iceland

Background to the study

A variety of institutes in Iceland are tasked with monitoring the education system, carrying out evaluations and conducting short-term research projects for national and local government. Few of these organisations compete for project funds, each having carved their own niche in the flora of information needed. Evaluation studies of educational research in other OECD countries have noted the effect, positive or otherwise, of commissioned

research, the bulk of which is often carried out by institutes. The use of evidence in decision-making has been promoted in recent years but it is not always clear when and why evidence is used. Research studies carried out by institutes are seldom subject to peer-review before publication and results are published in reports which may have a narrow readership rather than in journals. The question has also been raised on the extent and quality of a country's knowledge about its current educational system. Subsidiary questions include: Who is collecting what knowledge about the operation of the education service? In what form is such knowledge made available? Who has rights of access to such knowledge?

The structure of the institute study

In this study information was gathered from and about the work of educational researchers in organisations and institutes at national and local level. Data were collected through interviews with key informants and through the coding and analysis of 364 publications from the period 1998–2003. One focus of the study was on the nature and extent of the institute-based research. Another focus was on the status of researchers with regard to policy-makers and practitioners and the relationship with universities. A third area was to consider decision-making and the nature of the role played by research knowledge in decision-making processes.

It should be noted that pre-schools and compulsory schools are run by municipalities and upper secondary schools and universities by national government. Continuing education and inservice training is sponsored both at national and local level.

A detailed report with the results of the study is available in Icelandic.

Research organisations

Those organisations outside universities which are responsible for educational research can be divided into three groups:

- Group A (National government): Research and evaluation by/for the Ministry of Education, Science and Culture, Statistics Iceland, the Educational Testing Institute, the National Centre for Educational Materials, the Icelandic National Audit Office, and others.
- Group B (Local government): Research, development and evaluation carried out by local education offices and local government.

- Group C (Institutes attached to universities/independent institutes): Research and evaluation by the Social Science Research Institute at the University of Iceland, the Research Centre at the Iceland University of Education, the Research Institute at the University of Akureyri, the School Development Division at the University of Akureyri and the Icelandic Centre for Social Research and Analysis.¹¹³

Nature of institute-based research

Studies are often initiated by policy-makers but the intention may be that the information is also of use to researchers or practitioners. There are two groups involved in the production of institute-based research – those who fund it/have a need for information, and those who collect and process information (see Table 1).

In some cases, there are several funders for the same study, coming from both national and local level. For example, university research centres (Group C) have carried out school evaluation studies and social surveys for both national and local government (Groups A and B). In recent years, the Educational Testing Institute (Group A) has carried out some analyses of standardised assessments at the request

of local authorities. Almost all such analysis is though carried out for the national government.

Despite evaluation activity by local education offices not much centralised monitoring of school activities has been carried out by municipalities since the decentralisation of compulsory schooling in the mid-1990s.

Funding of institute-based research

It is difficult to estimate accurately the actual amount of funding for research in institutes. In all, about 40% of the research studies are funded by the Ministry of Education, about a third by local government, and the rest by other official bodies. Nearly 90% of the funders are based in the urban south-west. Only about 3% of such activity is funded from abroad.

The *Educational Testing Institute* is by far the largest institute. The institute receives about 20 m.kr. as a fixed allocation and another 90 m.kr. through contracts, largely with the Division of Evaluation and Supervision at the Ministry of Education, Science and Culture.

The *Research Centre at the Iceland University of Education* received about 25 m.kr. over a four year

Table 1. Collection and processing of information by institutes

Collected/processed by	Funded by national government	Funded by local government	Funded by competitive funds
National government departments or institutes (Group A)	Standardised tests/-assessments with results at school and individual level Statistics/monitoring at national level (national reports, surveys, etc.) Participation in international comparative studies	Feedback from standardised assessments to local authorities	
Local government (Group B)		Statistics/monitoring at local level Evaluations	Participation in Nordic or European development projects
Independent or university-based research institutes (Group C)	Evaluation of schools Assessments of self-evaluation procedures Evaluations of national projects Needs assessments e.g. adult reading skills Comparative studies	Evaluations of schools	Participation in Nordic or European co-operative projects The National Research Fund grants administered by the Icelandic Centre for Research

¹¹³ As the study neared completion it was announced that the independent Icelandic Centre for Social Research and Analysis would be attached henceforth to the University of Reykjavík.

period (2000–2003) for evaluations of which about one-third came from the Ministry of Education, Science and Culture and about two-thirds from municipalities.

The *School Development Division at the University of Akureyri* relies for its operations on fixed agreements and short-term contacts with the Ministry of Education, Science and Culture and municipalities.

The *Social Science Research Institute at the University of Iceland* has no direct funding but finances its activities through projects commissioned from within or outside the university. The institute also obtains funding for research through grants from competitive research funds administered internally or through external funds.

The *Icelandic Centre for Social Research and Analysis* (now at the University of Reykjavík) specialises in youth research. Most of its projects have been carried out at the request of the ministry, other institutes, social groups, local authorities and schools.

The largest service provider in compulsory education has been the city of Reykjavík and it has run a development division as part of its centralised support services. This division has been responsible for several large surveys, some carried out annually or at two-year intervals. The department for pre-schools in Reykjavík has commissioned evaluations of selected schools and has carried out attitude surveys. Some local authorities and their associated education offices have carried out evaluations and surveys. Examples include the district offices in Seltjarnarnes and Reykjanes. The National Centre for Educational Materials and the Icelandic National Audit Office have also engaged in educational research.

Issues

Institute-based research in Iceland is characterised by the collection of information for monitoring and evaluation purposes. Research activity is characterised by commissioned or contract projects rather than being funded through competitive grants. Several areas of concern about decision-making and transparency became apparent during this study, related to the standards used in collecting information, the purposes behind the activity, accessibility to information and the use to which it is put.

Standards and their purposes

There has been an increased emphasis on standard-

ised assessments over the last decade, with new assessments being added at the 4th and 7th grades, two new subjects being assessed in the 10th grade, and the introduction of assessments in upper secondary school. These assessments often serve several purposes that are not necessarily compatible. The director of the Educational Testing Institute has pointed out the multiple purposes which 10th grade assessments are supposed to serve:

- Provide information to students and parents about the learning achievements of the students,
- Be a standard for the admission of students to different courses of study in upper secondary schools,
- Assess, where possible, whether the learning objectives in the national curriculum are being achieved, and
- Provide comparative information between schools on student performance in different subjects.

The assessments are based on classroom-based pencil-and-paper instruments. Related information is seldom gathered on-site, as is common in some other countries, where government inspectors visit schools on a regular basis. It is generally not possible to link the assessment information directly to actual practices in schools and classrooms. It is important to consider whether the effort and funds which go into standardised assessments could improve our knowledge of teaching and learning, for example, through different reporting techniques and feedback to schools or with the participation of practitioners in the interpretation of results.

Educational research and decision-making

The relationship between decisions by policy-makers and research was discussed by many. While some felt that research was not being used enough by policy-makers others felt that it was important to separate research from policy in order to ensure the independence of researchers. With regard to policy-makers it was mentioned that they needed to understand the value of and constraints in using research information for decision-making.

As noted earlier, much institute-based research is commissioned. Some of it is survey-type research carried out regularly/annually but other work is of a short-term nature and researchers may be under pressure to produce results within a time-frame not

conducive to thorough analysis and interpretation. Nor does short-term research provide the leeway needed for peer review.

There is a tension here between the independence of the researcher and the need for consultation between parties that is reminiscent of the debate on academic freedom in universities. Educational research is an applied science and for many its value lies in the use of research results by policy-makers and practitioners and not only in academia. The scientific climate encourages international peer review but the educational arena calls for the national discussion of results and debate about their meaning. It is important in a small country like Iceland, with its limited resources, to use well the work done by researchers and ensure that it is discussed by decision-makers, and when the need arises, that further work is commissioned.

Research, monitoring and feedback

Iceland does not have a tradition of inspectors visiting schools and the increased emphasis on self-evaluation since the mid-1990s means that a wide variety of methods of evaluating performance and activities within schools are being used. This can lead to difficulties in preparing standards used for evaluating conditions and outcomes.

Two points emerged with regard to the use of information to monitor the school system. One was that at present quite a lot was known about compulsory schools but much less about pre-schools, secondary schools and universities. This is true both of research being conducted by university researchers (see Study 1 on university research) and that being carried out by institutes. The other was that there is a considerable amount of such information available which has not been analysed. Research institutes themselves have neither the financial nor human resources to fully process all the data being collected and there may be opportunities for interpretation which lie outside their area of expertise and/or experience. The use of such data by others would require skills in working with quantitative data, methods in which few researchers in universities have specialised.

The question of presenting research results in such a way that they are useful to practitioners and not just to policy-makers and other researchers was raised and it was felt that more feedback could be provided to teachers in practical ways. This too requires expertise.

STUDY 3

Development projects in Icelandic schools

Background to the study

The school system in Iceland is going through a period of considerable change, starting in the early 1990s with new policies, new laws in the mid- to late 1990s and a new national curriculum for all school levels in 1999. This curriculum is undergoing revision following discussions on ways to shorten secondary schooling.

Both national and local government, as well as the teachers' union, provide grants for development projects in schools. The national funds were established 10–15 years ago and specific areas are often prioritised. The funds coming from government sometimes focus on new legislative demands such as the requirement for schools to carry out self-evaluation or specific areas such as reading or school-parent partnerships. There is more scope for individual interests in the funds administered by the union. Projects are typically short-term though some project leaders apply for follow-up grants.

In recent years increasing attention has been paid to the dissemination of results with applicants being required to state how they plan to do this. Two annual conferences are held to promote school development, one of which has focussed on the use of information technology and the other which gives all grant holders the opportunity to present their project results. The former conference has been held each spring by the Ministry of Education, Science and Culture since 1999 and the other each autumn since 1997 by the Research Centre at the Iceland University of Education. Since 2000 the planning process has been consultative involving other stakeholders as well.

Questions have been raised about the levels of funding available for development and the rates of rejection, the usefulness of target areas, the relationship between research and development projects, and the extent to which projects become part of a school's activities or results are used by other schools. Much of the funding goes to paying staff overtime for work dedicated to the projects and in some instances for external assistance and for resources used in the project. The general rule is that project funds may not be used to pay for "normal or routine" school activities. Project leaders must submit at

least one progress report and a final report for funds to be paid out and these reports are usually published on the Internet.

The structure of the school development study

In this study information was gathered about school development projects carried out during the period 1998–2003. Data were collected through interviews with principals and/or teachers involved in the projects and through a questionnaire to schools on projects carried out there. The majority of the respondents had received national funds so the study reflects in particular projects supported at national level over the last few years. The response rate was from 57% to 67%, reflecting responses from 114 schools.

A detailed report with the results of the study is available in Icelandic.

The school system

The educational system in Iceland is divided into four levels, the first three of which receive some funds for development work in the formal school system. Details of the first three levels are in Table 2.

Pre-schools: About 1200 (less than 40%) of the teaching staff in pre-schools have a teaching qualification, either an upper secondary level diploma attained before the late 1990s or a university degree attained in the late 1990s from the Iceland University of Education or the University of Akureyri. Another 200 have some formal background in education or training.

Compulsory schools: Over 4000 of the teachers in compulsory schools (about 85%) have a teaching qualification, most of whom have a three-year uni-

versity degree in education. Teacher education for primary and lower secondary schools has been at university level since 1971.

Upper secondary schools: Over 1200 of upper secondary teachers (about 75%) have a teaching qualification, which is generally a university degree in a teaching area or a vocational qualification, plus the equivalent of half to one year's university training in education. Most of the rest have a university education or an advance vocational qualification but not a teaching qualification.

Funding for development projects in schools

Three funds for development work are administered by the national government – for pre-schools, compulsory schools and upper secondary schools. There is an advisory committee for each fund which makes recommendations to the Minister of Education on areas of emphasis (target areas). Applications to the funds can be submitted once a year and the advisory committees shortlist projects. Some other project funds are administered at local level and by the teachers' union.

Project funding by the national government at pre-school level has been about 3 million kr. per year the last few years. The total expenditure of local government on pre-schools in 2003 was 10,3 billion kr.

About 11–12 million kr. per year have been allocated by government to the national development fund in compulsory schools in recent years. Project funds administered by the teachers' union in 2003–2004 were about 9 million kr. The largest municipality allocates about 18 million kr. per year to development projects in schools. The total expenditure of local government on compulsory schools in

Table 2. The first three levels of formal schooling in Iceland

Academic year 2004–2005	Pre-schools	Compulsory schools	Upper secondary schools	Total
Number of students	16685	44511	24220	85416
Number of staff with teaching duties	3811	4725	1647	10183
Number of certified staff	<40%	~85%	~75%	
Number of schools	267	178	29	474
Total expenditure (figures from 2003)	At least 10,3 billion kr.	At least 34,2 billion kr. ¹¹⁴	At least 10,7 billion kr.	

Source: Hagstofa Íslands http://hagstofa.is/?pageid=755&src=/temp/thjodhagsreikingar/fjarnal_opinb.asp

¹¹⁴ Figures from Statistics Iceland, for the year 2003–2004. <http://hagstofa.is>

2003 was about 29 billion kr. and the national government about 5,4 billion kr. The Ministry of Education, Science and Culture also has a Development Office which in recent years has focussed on the use of information and communication technology in schools and sponsored several projects, not necessarily on a competitive basis.

About 15–17,5 million kr. per year have been allocated to project grants at national level in upper secondary schools in recent years. Other funds include a fund for the development of materials for upper secondary schools (about 70–80 million kr.). The total expenditure of national government on upper secondary schools in 2003 was at least 10,7 billion kr.

Issues

Several issues emerged during the study, particularly concerning factors which encourage or hinder development work and the dissemination of project results.

The starting point for projects

Each year the Ministry of Education, Science and Culture selects target areas to be funded the following school year. These have included assessment, reading, home-school cooperation, flexible teaching methods, self-evaluation and the development of a school curriculum. Over the last ten years the target areas have to some extent been a response to new laws in the mid-1990s or to the new national curriculum in 1999. Schools may also apply in an open category but often only projects falling within the target areas receive funding.

It is clear though from the evaluation that project work does not usually start with the target areas, though there are exceptions. What is more likely to happen is that schools already engaged in development work adjust their plans to suit the areas selected by the Ministry. The starting point can often be traced to the impetus provided by individual teachers or groups of teachers though sometimes projects are initiated by principals with an interest in a particular area. It was also of interest to note that some principals regard a project grant as a reward or further incentive for work already being done while others might regard a grant as a condition for such work to be carried out. In the interviews it seemed that crucial to good development work was general satisfaction with the workplace, where teachers are

encouraged to explore new ways of teaching and working. Very few of those receiving grants felt that particular research had led directly to a development project, though some attributed their interest in project work to their academic studies, particularly at the graduate level, and topics which had been discussed there. Some felt that there was indeed a shortage of relevant research for good development work.

Dissemination and impact

In recent years more opportunities have opened up for the dissemination of project results. An annual conference at the Iceland University of Education, with partial funding from the development funds, went from 19 talks in 1998 to about 70 in 1999, over 80 in 2000 and over 120 in 2003. All grant holders are invited to make presentations on their project. There is no shortage of presenters, but the audience is more likely to consist of others working on development projects or researchers than of teachers, many of whom do not wish to attend professional events out of ordinary working hours. Thematic conferences, focussing on single areas such as parent-school cooperation or better learning conditions, are an increasingly attractive alternative and have been held with success in several venues. The presenters at such conferences are usually selected by the organisers.

Grant holders are also required to submit final reports before final payments are made and in recent years these have been published on the Internet. Part of the agreement reached between “mother schools” and the Education Office in Reykjavík requires project leaders to take an active role in providing advice and guidance for other schools interested in their work. Sometimes this requirement has been interpreted fairly narrowly, such as giving a talk at a conference.

Despite the holding of conferences and web-based dissemination, there was general agreement that projects did not necessarily have much impact outside the sites where they were carried out. The level of outreach from one school to another is not high though it is most between pre-schools. Graduate courses have to some extent influenced dissemination as course participants are often required or indeed choose to consider development and evaluation work elsewhere or to make presentations on their own work.

Projects, choice and culture

In all the project work considered there seemed to be an element of choice, perhaps even chance, in the selection of project areas, the way in which projects are carried out and the way in which results are disseminated. Teachers can choose whether or not to carry out development work, target areas may not be an obvious choice for on-site classroom work, principals can opt to support innovative teachers or not, municipalities can choose whether or not to support development work, and there is a wide degree of choice in how or indeed whether project results will be disseminated.

Schools are however required by law to carry out self-evaluation, prepare a school curriculum and prepare a schedule of inservice education activities for teachers. There seems however to be no general recognition that an outcome of self-evaluation should be a set of development activities, that development projects might be required for a school curriculum to evolve, that school development and professional development go hand-in-hand. Schools need to with-stand demands for continuity and stability, and at the same time for development, innovation and change.

Tension is however necessary if teaching and learning is to improve – there must be a culture allowing continuity and change. The current situation reflects a series of choices and decisions at all levels. What is serious though is that policy-makers seem to have opted for continuity with development a low priority as evidenced by the low levels of funding.

STUDY 4

Educational research and development in the private sector in Iceland

Background to the study

It was decided at the outset that the evaluation would not be restricted to educational research in the formal and/or government sector but we had little knowledge of educational research in the private sector. Of the four studies carried out, the study of the private sector was the most difficult, for several reasons, but also in some ways the most rewarding. There is no central organisation which monitors research and development so the mapping of research and development activities proved to be a time-consuming and prolonged activity. Some of

the organisations we approached were somewhat defensive and adamant that they did not do any “research” but were willing to concede that they had been collecting information systematically and had analysed it and written reports. The act of taking inter-views with somewhat reluctant informants turned out to be a learning experience for both parties as the realisation grew that research was on the increase and that its potential contribution was being considered by several in the sector.

It was also clear that the private sector area is one of rapid development and has changed more rapidly in the last two years than university or institute-based research or school development work.

The structure of the private sector study

Data were collected through interviews with a range of key informants and these included trainers within large companies, representatives of training organisations, representatives of trade unions and company associations and consultants working in the area, either privately or attached to a university. About 40 organisations in the private sector were contacted for information and documents. Returns from about 30 organisations fell within the broad definition of research being used. It is difficult to estimate the percentage return as the number of those involved in educational research is unknown. The organisations included were six vocational councils, five continuing/adult education organisations, the four largest associations of trade unions and employers, ten other organisations and five of the companies and institutes that carry out survey-type research. The documents were also analysed according to the type of research, the research topic and sources of funding. About one-third of the studies were carried out by organisations such as Gallup and IBM and a university-based research institute.

In all 64 documents from 1998–2003 fell within the definition of research used in the study and were coded. This analysis gives an indication of the nature of research activity in the private sector but not necessarily its scope. For example, this evaluation did not have the means to collect systematically information on final projects carried out by university students relating to education in the private sector. Some such projects are not carried out by students registered in education departments.

A detailed report with the results of the study is available in Icelandic.

The private sector: education and training

Education and training in the private sector in some respects is a relatively young area in Iceland. Several cooperative ventures have been put in place in recent years however, and several committees have been tasked with coordination within the sector, or between the sector and national government.

A law on vocational education was passed in 1992 in which a channel for cooperation between government, employers and employees was formally established, known as the *Occupational Council*. The council was given the task of policy-making. It also administers a development fund for education projects in the private sector.

In 1998 the first meetings of individual *vocational training councils* were held. Vocational education is offered at both upper secondary and tertiary levels. There are 14 vocational councils comprised of officials from the ministry and trade councils and these oversee the preparation of curricula and the requirements for apprenticeships.

EDUCATE (Mennt) is a cooperation forum between the educational sector, social partners, local authorities and others and was established in November 1998. The main focus of the work of EDUCATE has been to gather and disseminate information and to facilitate transference of knowledge and competences. EDUCATE carries out projects related to education and training and acts as a venue for discussion between the educational and employment sectors and policy makers.

The *Education and Training Service Centre* was established in December 2002 by the Icelandic Federation of Labour (ASÍ) and the Confederation of Icelandic Employers (SA). The Centre is a collaborative forum for adult education and vocational training in cooperation with other education bodies operating under the auspices of the member associations of ASÍ and SA. It targets those who have not completed upper secondary education, about 40% of people in the labour market. The Centre aims to cooperate with the Ministry of Education for the recognition of 'real competence' (*í raunfærni*) in order to shorten study periods. Real competence is knowledge and skills acquired by various means, such as through professional experience, vocational

training, leisure education, school study, social activities and family life.

As the general level of education has increased in Iceland so has the emphasis on professional education, through activities run by companies singly or in cooperation with one another and with individuals taking part in professional development opportunities from short courses to graduate studies. A number of universities offer training in private and public sector management that include courses on human resources development. It is possible to obtain an MBA at several universities. Some of the larger companies run their own educational and training programs while others seek cooperation with universities or consultants. The link between human resources development (HRD) and vocational education and training (VET) remains however relatively unexplored in Iceland.

Issues

Research in education and training has yet to become an acceptable and necessary part of the spectrum of educational activities in the private sector but there appears to be a willingness for this to happen. A burning issue though is where responsibility for steps in the research process might lie such as the identification of research topics, the dissemination of results and sources of funding.

Information-gathering and responsibility

The quality of information available about educational activity is one indicator of the importance attached to education. Information can be collected or made accessible at several levels, starting with the individual and moving through practitioners to policy-makers. There are signs of development at all levels. There are attempts to facilitate record-keeping about and by individuals, especially through the emphasis on real competence. The identification of research topics through collaboration is still at an early stage.

Linked to the gathering of information are questions of responsibility and who stands to gain from its collection. Market-driven research plays a part in the research carried out but most of it concerns the education system and public administration. There is little research to be found on teaching and learning and individual subject areas. Not surprisingly over half the research analysed in this study concerns upper secondary and tertiary education, adult education and continuing education, but this repre-

sents a very small part of the total research in the area, especially since the area receives attention from only a very few university researchers or institute-based researchers.

Coordination, cooperation or collaboration

Mutual understanding and cooperation was a theme mentioned by many in the interviews and which was discussed in particular at the open conference. The metaphors used in the discussion were thought-provoking. Mention was made of the need for 'bridges' or 'town-squares' to exchange information and the need for an 'arena' or 'forum' for consultation. The issue arises of the extent to which the different parties were willing to work together towards the same goal (collaboration), whether the parties seek to work alongside one another each meeting their own goals (cooperation) or whether they simply want to know what others are doing at any time in order to make better use of resources of time and money (coordination).

It would seem that this issue is symptomatic of education and of educational research in the private sector. There is no unanimity on whether it is in the common good to work towards the same goal or that responsibility should be shared; instead the choice is for different goals and allocations of responsibility to different parties. Competition between companies in the private sector plays a role here, where knowledge has value and increased knowledge adds value to an operation. There is though another factor and that is the role which is or could be played by national government. Iceland is a small country and many expect the government to take the lead in policy-making, be it in education or in research, and in providing funds. It should be a subject of debate about whether this should indeed be the case in a changing Iceland. The responsibility of individual researchers and their willingness or otherwise to collaborate in research projects should also be discussed. The usefulness of target areas should also be discussed.

The private sector and academia

The role of universities is not unambiguous in the development of educational research in the private sector. Research in general varies in the extent to which it can be classified as basic or applied, supply-driven or user-driven. The academic research that has been carried out in the private sector in recent years can be traced to a handful of individuals. This may change though with the advent of MBA pro-

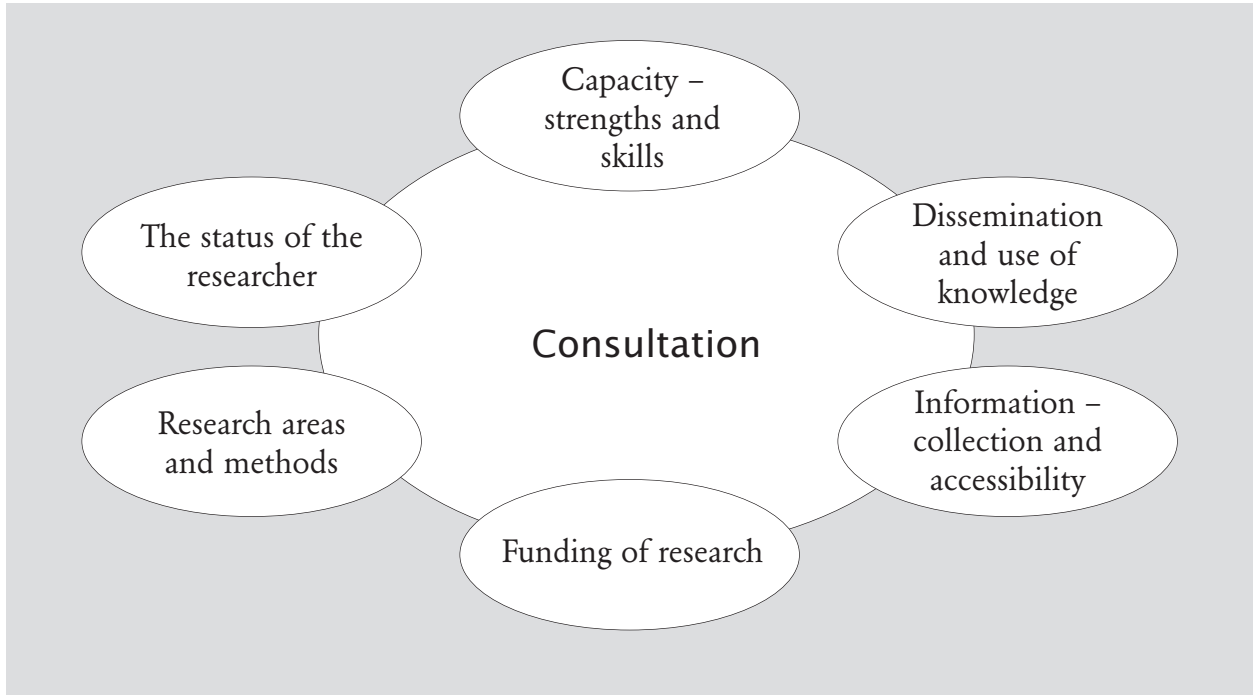
grammes, more attention being paid to human resource development (HRD), tacit knowledge and the knowledge society. The relationship is however a little uneasy. Some of the issues concern the choice of research topic and who might benefit, others concern the funding of research and the potential or otherwise of a return on investment in research on education. Some research in the sector is commissioned and the results are not necessarily subjected to peer review, the gold standard of academia. There does however appear to be a growing realisation that it is not necessarily prudent to invest 500 million kr. (personal communication, Ingi Bogi Bogason) in continuing, vocational and adult education and 50 million kr. in development projects without supporting research and evaluation.

IMPLICATIONS FOR POLICY AND FUTURE RESEARCH

Each of the four studies has revealed a set of issues which need to be addressed in order to further educational research and development in Iceland. There are though several issues which emerged to a greater or lesser extent in all four studies and which require consideration by all stakeholders (Figure 1). These issues are interlinked and require simultaneous attention; it would be risky to consider only some and not others. Underlying them all is an urgent need for consultation on many issues – between all stakeholders and across all arenas. In some neighbouring countries educational research and development has been accorded a particular importance in recent years. For example, England, Finland, France, the Netherlands, Norway and Sweden all have national educational research programmes or have coordinated efforts at a national level. The OECD is conducting a series of national reviews of educational research (see Appendix 2). We would like to think that educational research and development should begin to have a similar importance in Iceland and suggest that this evaluation is a step in that direction.

Educational research and development is carried out in universities and by institutes, in school settings and in the private employment sector. We have considered research as a process in this evaluation – from the choice of research topic and planning of research, through funding measures and implementation to a final dissemination of results and level of impact. We have also considered

Figure 1. Issues arising out of the evaluation of educational research



research as a product – what is researched and by whom, for whom and why. This has led us to each of the issues shown in Figure 1.

Research areas and methods

Considerable resources go into understanding educational processes and structures and human socie-

ty (Figure 2). A consideration of teaching and learning in individual curriculum areas seems to have a lower priority. Research on special needs, which in this research fell into the category of physical and mental conditions, appears to be carried out more in universities than in institutes. In such a small country intense and specialised research activity in

Figure 2. Number of publications per research area 1998–2002/3

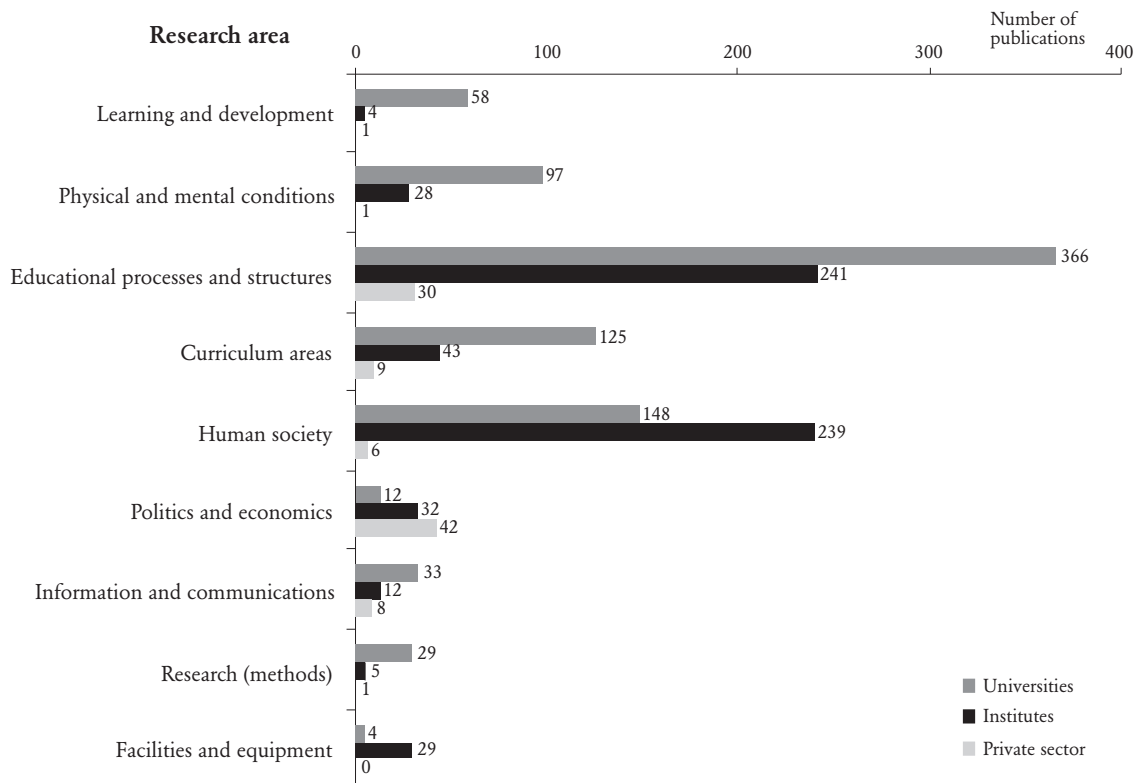


Table 3. Distribution of educational publications in Iceland and Australia

	Iceland 1998–2002/3 %	Australia 1997 %
Educational processes and structures	40	41
Curriculum areas	11	18
Learning and development	4	9
Human society	25	9
Research (methods)	2	8
Politics and economics	5	6
Information and communications	3	6
Physical and mental conditions	8	3
Facilities and equipment	2	1
Total	100%	100%

Source: Í Holbrook, A., Ainley, J., Bourke, S., Owen, J., McKenzie, P., Misson, S. & Johnson, T. (2000). Mapping educational research and its impact on Australian schools. Í *The Impact of Educational Research*, bls. 15-278. Research Evaluation Programme, Higher Education Division, Department of Education, Training and Youth Affairs, Canberra.

areas such as human society and youth studies can easily affect the relative distribution of research and publications, as has been the case in recent years. Learning and development receives some attention in universities but not from others involved in research. In the private sector processes and structures and politics and economics receive the most attention, which is understandable in terms of the links between government policy and practices in the private sector.

It is noteworthy, in the light of issues of academic freedom, that the distribution among research areas is generally similar for universities and institutes, with the exception of special needs (physical and mental conditions) and curriculum areas, which appear to be researched more in universities (Figure 2). Interviews indicated that one of the weakest areas of research is classroom-based research where an increased interest might also lead to a strengthening of special needs research and curriculum investigations.

In Table 3 the distribution of research areas in Iceland during the period 1998–2002/3 is compared with the situation in Australia for the year 1997. There appears to be relatively more work on curriculum areas and learning and development in Australia than in Iceland and more work on human society in Iceland, which is in part accounted for by the level of activity of one specialised research institute over the last few years.

The range of methods used in educational research in Iceland in the period under study is shown in Table 4. Qualitative methods are favoured by university researchers and quantitative approaches by institute-based research and in the private sector. Even though a variety of methods are found in all areas it is notable that open-ended interviews are seldom used in the private sector and not that often in institutes. By the same token standardised tests are not often used by university researchers.

Two points are however particularly noteworthy in Table 4. One is that there seems to be good use of existing sources and data by many researchers, a practice which adds value to the use of the limited funds available for initiating new research. The other is that only 12 publications reported on the use of an experimental approach. Given the emphasis in Iceland on qualitative work in universities and large survey-type studies in institutes this low figure is not surprising. It should however also be viewed in the context of current policies of educational research in the United States, as formulated by the National Research Council where “evidence-based decision-making” has come to mean that the only evidence worth having is that which has been verified by an experiment.¹¹⁵ A similar emphasis is to be found in Britain, where “systematic reviews” following the Campbell and Cochrane models are taken to mean only reviews of studies involving comparative experimental work.¹¹⁶ There are epistemological questions

¹¹⁵ Committee on Scientific Principles for Education Research (2002). *Scientific Research in Education*. (Executive summary). <http://www.nap.edu/catalog/10236.html> [Richard J. Shavelson and Lisa Towne (Editors).]

¹¹⁶ Torgerson, Carole (2003). *Systematic reviews*. London: Continuum International Publishing Group.

Table 4. Range of research methods used in Iceland 1998–2002/3

Research methods	Number of publications 1998–2002/3			
	Universities	Institutes	Private sector	Total
Not applicable	124	67	20	211
Review/summary	113	3		116
Qualitative methods	516	209	34	759
Open-ended interview	170	71	7	248
Field visits/participant observation	117	36		153
Discourse analysis/content analysis	72			72
Analysis of existing sources	129	80	13	222
Other qualitative techniques	28	22	14	64
Quantitative methods	260	331	45	636
Structured interview	30	17		47
Survey/questionnaire	130	204	22	356
Experiment	12			12
Analysis of existing data	72	77	17	166
Standardised test		28		28
Other quantitative techniques	16	5	6	27
Total	1013	610	99	1722

that are worthy of serious debate in Iceland as we seek to build capacity and allocate funds to research projects.

Most of the information gathered by institutes concerned compulsory education, as much as 60–70% of all information gathered (Figure 3). Much less was gathered about pre-schools (6%), upper secondary schools (12%) and universities (6%). Research on adult education and continuing education was only 2–3% of published research. A similar distribution could be found in the research conducted by universities. The research carried out in the private sector is more evenly distributed across all education levels but still less than in universities and institutes.

It is worth considering whether action should be taken to strengthen some of the research areas and to promote research in school levels other than compulsory school levels or in selected areas within compulsory levels as discussed above. It would seem to be in the national interest to strengthen research on older learners, from secondary school upwards, especially commissioned research in the institutes and more carefully monitored development work in the private sector.

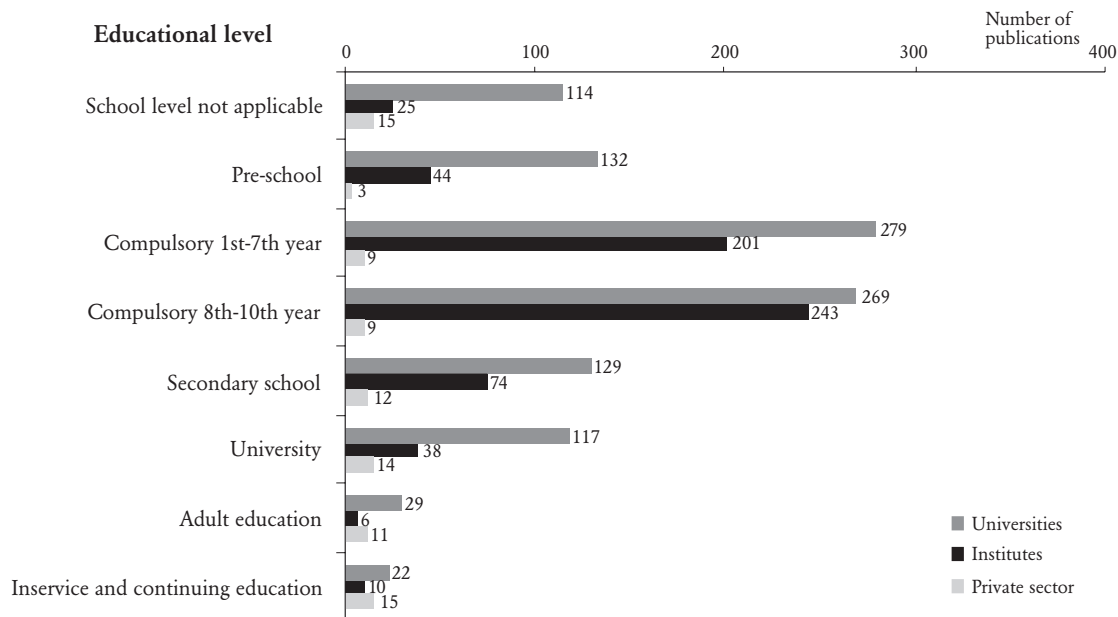
While the evaluation was underway the national science and technology council advertised for ideas on research programmes for the next five years to succeed programs now ending in information technology and the environment. A group of educational

researchers prepared a submission to the council, at the initiative of the rector of the Iceland University of Education. This document is not available in English but is included as an appendix to the Icelandic summary. It is recommended that this submission be considered as a measure of the interest in the field and the areas currently considered important by those active in the field.

Capacity-building and current capacity

Capacity building in educational research is a long-term process and it is necessary to think of the development of skills and knowledge in all areas and at all levels. Most obviously long-term capacity building can be part of formal university education, through an emphasis on reading and understanding research in undergraduate studies, on reading and using research in professional programmes and through research-based graduate programs, where students conduct their own research.

Several universities in Iceland now offer research-based graduate programs but because of funding constraints and levels of capacity they find it difficult to offer supervision of projects in all areas at the necessary levels. An uneasy element of competition has emerged in an area which requires imaginative thinking and serious collaboration to reach the goal of offering doctoral programs of the finest quality.

Figure 3. Number of publications per educational level 1998–2002/3

Good development work and legal demands for self-evaluation in schools require teachers and other professionals working in schools to understand how to collect, process, analyse and present data. The ability to reflect on one's work and to read for understanding are deemed increasingly important for the work being carried out in schools. The majority of the educational researchers in Iceland work directly in teacher education. They need opportunities to increase their own skills and they need access to examples of research carried out in Icelandic schools. Investing in research in teacher education and in researchers themselves is needed if the long-term aim of a research literate profession is to be reached.

The majority of educational researchers in Iceland use qualitative methods and these are sometimes used very well. What is also needed though is more capacity to carry out quantitative and mixed method research. This could be accomplished by strengthening the opportunities and requirements for developing both quantitative and qualitative skills at the individual level but it could also be useful to create teams of researchers who could share their skills and interests.

The capacity of school leaders and other decision-makers at local and national level to read, support, elicit and use research is important. The accessibility of relevant research, the means of encouraging teachers and researchers to carry it out, the opportu-

nity to make an input on the type of research needed, and the means to apply it, are all part of the capacity of the system to make the production and use of knowledge a reality.

The teachers' union (Kennarasamband) emphasised the importance of research and development at its congress in March 2005. Working conditions in schools are not necessarily conducive to teacher research and some schools feel reluctant to admit external researchers to their schools because of a shortage of time. Schools that do not see the products of research being useful might be reluctant to take part in research and this in turn is linked to the capacity of researchers to present their results in such a way that they can have an impact on teaching, learning, schools and the school system. This will be discussed a little more in the next section.

What has been said here applies also to the development of capacity for researching education in the private sector. More detailed knowledge of adult education and continuing education is required, as well as expertise on learning in the workplace. Not only should the ability to develop projects be encouraged, but also the ability to evaluate them and reflect on the results. Here we could learn from other countries, for example, projects on lifelong learning and learning in the workplace which have been funded by the Teaching and Learning Research Programme of the Economic and Social Research Council in Britain.

Resources and funding

Capacity building and new research areas require resources – time and funding – for training researchers, for training teachers in the use of research, for building on strengths and for enhancing research skills. The resources of time and funding are also required for the planning, implementation, evaluation and dissemination of research and development projects. Not least a new view is required of those making decisions about which projects to fund. Funders need to be convinced that it is worthwhile developing capacity in educational research and that it is valuable to fund educational projects.

It should not be forgotten there already exists a core of highly-qualified and productive researchers in Iceland, in universities and institutes and in the private sector and schools. It is possible that some of these researchers have not had funding opportunities in recent years commensurate with their capacity. This may be particularly true in the Iceland University of Education where new demands for research capacity were made after 1998. Internal project grants and bonus payments are lower than those for similarly active researchers in other universities. The high level of expertise among some researchers at the Iceland University of Education, and which is found more generally at the University of Iceland and the University of Akureyri, is a resource which cannot be ignored. It is urgent to find ways of funding and rewarding capable researchers in all universities at the same time that incentives are found for more inexperienced researchers to develop and carry out research.

It would be dangerous to think that only a redistribution of current funding is required; a new view of the value of educational research and development is needed accompanied by more funding and a new approach to funding measures, allowing bridges to be built between areas and existing processes to be strengthened.

The status of researchers

The status accorded to researchers in education and to the work they carry out is as much a result of their own achievements as it is to the way in which the system funds and rewards educational research.

Labaree wrote in 2003¹¹⁷ about the status of educational research in the academy and the difficulties of making the transition from one worldview to another. He had also talked earlier, in 1998, about the problems educational researchers face in “living with a lesser form of knowledge”.¹¹⁸ Educational knowledge is soft and applied rather than hard and pure. It may be difficult for researchers to establish causal claims – education is the “softest of the soft fields of inquiry.”

Educational research is often carried out to solve particular problems and it is an applied field, a “public policy field focusing on a particular institutional sector” (Labaree, 1998, p. 6). Labaree also suggests that educational knowledge has a low exchange value and a high use value. While areas such as medicine also have a high use value, they are hard pure fields rather than soft applied fields.

In 1998 Labaree discussed the nature of knowledge production in university education departments and the consequences. Some of these we consider important in understanding the results of this evaluation.

There are several positive consequences of the nature of educational knowledge. The production of useful knowledge is not necessarily a bad thing – responsiveness and usefulness can make it easier for funders to justify investment. Educational knowledge is relatively free from consumer pressures and university education is built on social rather than individual ends. The absence of disciplinary boundaries can offer research a certain freedom, though this is not necessarily an advantage if significant others, such as funding agencies, think primarily in terms of disciplines. The social organisation of educational research is relatively egalitarian, though this can pose problems for elite researchers, especially if they are associated with particular disciplines. Finally we can mention that “Education, however, is largely accessible to outsiders and therefore vulnerable to discursive critique from nonexperts” (Labaree, 1998, p. 11). This can work both ways though, for it also means that educational researchers have easier access to the public than others working in more prestigious but somehow more closed areas, such as cutting-edge biochemistry.

¹¹⁷ Labaree, D. (2003). The peculiar problems of preparing educational researchers. *Educational researcher*, 32(4), p. 13–22.

¹¹⁸ Labaree, D. (1998). Educational researchers: living with a lesser form of knowledge. *Educational researcher*, 27(8), p. 4–12.

Labaree also pointed out several negative consequences. These include low status within the university, weak authority with education and educational policy-making, a pressure to transform education into a hard science, a pressure to transform education schools into pure research institutions and a sense that the field is never getting anywhere. We have seen that the support given to research in the Iceland University of Education, whose primary mission is teacher education, appears less than that given to the other two universities under study, the University of Iceland and the University of Akureyri. University researchers feel that they often write for policy-makers but that little attention is paid to their work. The introduction of the productivity assessment scheme at the universities studies has increased pressure for research that is “hard science” (for example, international peer-reviewed publications) rather than soft and applied (for example, development projects in schools). There are more incentives for pure research than applied research (points assigned to different activities and publications). An apparently high rate of rejection from national competitive funds has discouraged several of the more active researchers.

Collection and accessibility of information

The OECD evaluations of educational research (see Appendix B) indicate that one measure of the strength of educational research is the availability and quality of information on the education system. Accessibility of information has at least two sides to it – one concerns the extent to which it is actually made available and the other the extent to which it can be used as data for further research. Statistics Iceland (Hagstofan) and the Educational Testing Institute have collected and processed a wealth of information for purposes of monitoring trends in the educational system and for evaluation and comparative research. In some cases the information is not standardised between school levels and sometimes it is difficult for researchers to work with the data. More consultation with researchers might add value to the information collected. Some large databases exist from studies which have been funded by national or local authorities over the last decade or so. Accessibility of researchers to these databases has not been secured and may raise issues of confiden-

tiality, but the existence of these databases is a resource which is worth considering as attempts are made to strengthen educational research through knowledge utilisation and a knowledge transfer approach.

The impact of educational research

During the evaluation many commented on the lack of impact of educational research. We looked systematically in each study at the status of researchers with regard to other researchers, to practitioners and to policy-makers (Figure 4). For whom were researchers writing and who was using the existing research?

The routes for traditional dissemination to other researchers are established, viable and under constant review, with several peer-reviewed journals now available in Icelandic,¹¹⁹ several annual conferences with comprehensive web-sites and a variety of opportunities to give public lectures. Communicating results to other researchers has been enhanced through the incentives associated with the introduction of the productivity assessment scheme a few years ago.

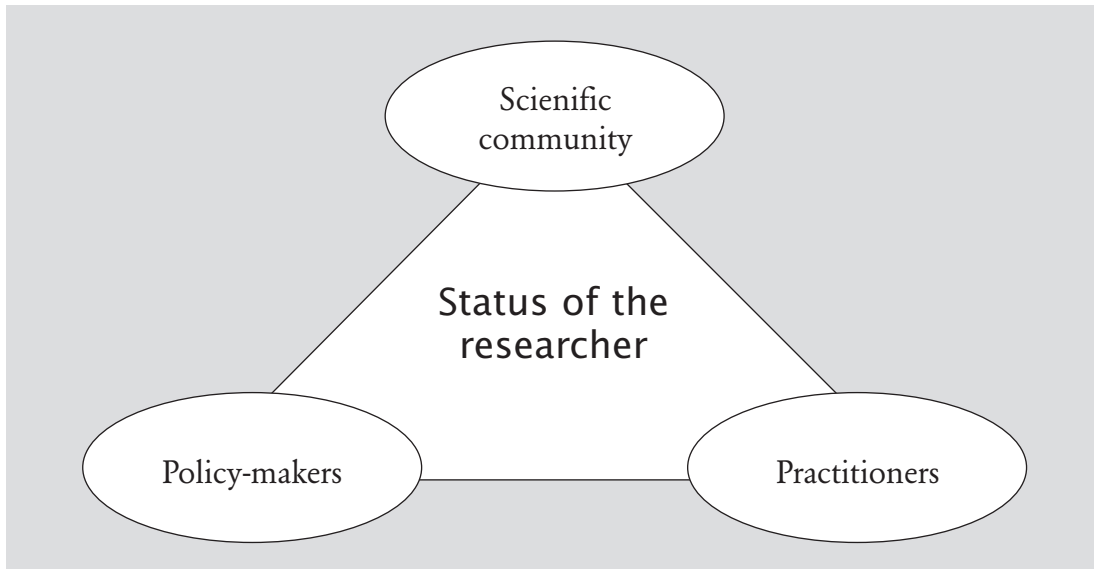
Dissemination of research and development for practitioners appears more problematic, both in the private sector and in schools. An education journal, with shorter articles than in the peer-reviewed journals and published by the teachers’ union, was discontinued several years ago, and it seems that the gap has not been satisfactorily filled. Articles on education in the private sector are few and far between, most publications being in the form of reports with a narrower distribution.

There are fewer opportunities and rewards for practice-oriented publications and attendance at conferences aimed at schools can be low when events are held out of ordinary working-hours. Grants for development projects seldom include funds for disseminating results through workshops or visits to other organisations. Sometimes the outcomes of development projects do not go beyond the organisations carrying them out, this being the case both for schools and for the private sector.

Dissemination to/for policy-makers appears to be a random process, with researchers hoping that their work might be noticed but there is no fixed channel

¹¹⁹ These include *Uppeldi og menntun*, *Netla*, *Tímarit um menntarannsóknir* and the conference proceedings of the annual social science conference held by the University of Iceland.

Figure 4. The status of researchers with regard to stakeholders



for presenting the results of research to policy-makers, who themselves show understandably a variable interest in attending research conferences or reading research journals. Some researchers feel that it is not their responsibility to bring their work to the attention of policy-makers and focus their efforts on writing for other researchers. Others however feel strongly that researchers who are working on topics of importance to policy should feel a sense of responsibility in bringing their research to the attention of policy-makers.

The conventional wisdom has been that research leads to development. Increasingly we realise that the process is not linear, that interactions in many directions are required for both research and development. We accept also that links between research and development are not only desirable but also necessary. The current scale of development fund-

ing for education in Iceland does not encourage links to research; indeed the advisory committees eliminate projects which seem to involve “research” early in their deliberations, not least because of the low level of funding provided. This is particularly acute in the development funds for pre-schools and compulsory schools. Development funds in the private sector have sometimes been used for educational research. At the same time though, as was seen in the university study, the incentive schemes for university staff do promote written reports on development work, but do not otherwise reward development activities and contacts in the field. Steps should be taken to encourage interactions between research and development through new kinds of dissemination opportunities and through incentive schemes which encourage the building of links.

RECOMMENDATIONS

It is recommended that policy-makers and practitioners, together with researchers and other stakeholders, consult with one another and evaluate the distribution of activities and resources across different topics in order to ascertain whether there is a need in the short-term to prioritize particular research areas and whether there is a need in the long-term to build up capacity in selected areas.

It is recommended that policy-makers and practitioners, together with researchers, educators and funders, consult with one another to plan a set of activities that will strengthen the capacity of individuals, schools, institutes, universities and the private sector to initiate, carry out, evaluate and use research and development in education. There is a need for short-term initiatives to increase the accessibility to research in education and long-term plans to develop educational research as a career option.

It is recommended that all stakeholders in educational research should consult with one another to enhance the impact of educational research by finding ways to fund all aspects of educational research, from the identification of topics to the dissemination of results and to do this in such a way that an interaction between research and development is enhanced. Here we might learn from the Scottish Parliament to which an educational research unit is attached, bringing results to the attention of policy-makers or collecting information to answer their questions.

It is recommended that policy-makers in particular, at national and local level, and all stakeholders in general, take measures to understand and address the status of educational researchers and deficiencies in funding, capacity-building and impact such that educational knowledge can make a greater contribution to education in Iceland. In this regard it might be useful to consider the special approach taken by the Swedish Research Council in setting up a national committee for educational science and the measures being taken in England to encourage consultation between a wide range of stakeholders.

Appendix A

THE STEERING COMMITTEE AND RESEARCH TEAM

The steering committee members were:

Allyson Macdonald, chairperson, member of the Science and Technology Policy Council and professor, Iceland University of Education

Ásgerður Kjartansdóttir, specialist, Ministry of Education, Science and Culture

Guðbjörg A. Jónsdóttir, formerly head of the Development Division, at the Reykjavík Centre for Education, now at IMG Gallup

Guðrún Alda Harðardóttir, lecturer in pre-school studies, University of Akureyri

Halldór Grönvold, deputy director, Icelandic Federation of Labour

Ingi Bogi Bogason, education manager, Confederation of Icelandic Industries

Jón Torfi Jónasson, professor of education, University of Iceland

Kristín Jónsdóttir, teacher and chairperson, Educational Issues Council, Icelandic Teachers' Union

Margrét Harðardóttir, division head, Assessment and Evaluation, Ministry of Education, Science and Culture

Sölvi Sveinsson, formerly principal, Ármula Upper Secondary School, now principal, Commercial College of Iceland

Valgerður Ágústsdóttir, specialist, Ministry of Education, Science and Culture

Porvaldur Finnbjörnsson, Head of Analysis, Evaluation and Indicators, The Icelandic Centre for Research.

The research team:

Ingibjörg Kaldalóns, chief researcher

Anna María Hauksdóttir, co-researcher

Þórhallur Ásbjörnsson, co-researcher

Elva Brá Aðalsteinsdóttir, researcher

Hildur B. Svavarsdóttir, researcher

Kristín Björnsdóttir, researcher

Sesselja Snævarr, researcher

Lilja Björk Ólafsdóttir, research assistant

Appendix B

SUMMARY OF OECD EVALUATIONS

Educational research and development
in four OECD countries:
Summary of examiners' reports from
New Zealand, England, Mexico and Denmark

M. Allyson Macdonald
Iceland University of Education

March 2005

INTRODUCTION

1. This summary of recent OECD reviews on educational research and development (ERD) forms part of a review of ERD in Iceland which was initiated by the Icelandic Centre for Research and the Ministry of Education, Science and Culture in 2003. In addition, three state-funded universities and an adult education organisation Starfsafl have provided financial support for the review.
2. The reports summarised here are the following:

OECD Review (2001). EDUCATIONAL RESEARCH AND DEVELOPMENT POLICY IN NEW ZEALAND. EXAMINERS' REPORT 2001.

OECD Review (2002). EDUCATIONAL RESEARCH AND DEVELOPMENT IN ENGLAND. EXAMINERS' REPORT 2002.

OECD Review (2003). EDUCATIONAL RESEARCH AND DEVELOPMENT IN MEXICO. EXAMINERS' REPORT 2003.

OECD Review (2004). EDUCATIONAL RESEARCH AND DEVELOPMENT IN DENMARK. EXAMINERS' REPORT 2004.
3. The Centre for Educational Research and Development (CERI) at the OECD has considered the means and ends of how to improve the knowledge base for educational practice and policy-making through several reports and country reviews. Two central publications have appeared: Knowledge management in the Learning Society (CERI, 2000) and Innovations in the Knowledge Economy: Implications for education and learning systems (CERI, 2004). A strong relationship between the knowledge base for educational policy and practice and successful innovation is assumed in the OECD approach. Further it is suggested that evidence-informed policy and practice should be encouraged.
4. So far reviews of ERD have been carried out in four OECD countries by teams of three external specialists in the area of ERD and a member of CERI. The reviews took place in New Zealand in 2001, in England in 2002, in Mexico in 2003 and in Denmark in 2004. The reports differ in structure and approach. In the Danish report, the review team presents a generic template for the evaluation of ERD (see Appendix C). The summary here is based largely on an application of the template to the information presented in the earlier reports.
5. The analysis indicates that, of the four countries, England has taken the most active steps towards formulating and implementing a strategy for educational research and development. Thus in order to facilitate a comparison of the results of the OECD reviews with the review of ERD in Iceland, activities in England might be considered as a "benchmark" of what might be possible. There are though many similarities between Iceland and New Zealand with regard to recent changes to education systems and between Iceland and Denmark through cultural and historical ties and cooperation in many areas.
6. The ERD review in Iceland will be completed in spring 2005. Four background reports have been prepared, all in Icelandic – on educational research in universities, on research carried out by institutes and other non-university based organisations, on development work in schools and on developments in education in the private/employment sector. An open conference with short talks, seminars and a panel discussion, was held at the end of February 2005 to discuss the first results and next steps in strengthening EDR in Iceland. A range of stakeholders attended the conference.

DEFINITION OF EDUCATIONAL RESEARCH AND DEVELOPMENT

7. The operational definition for ERD developed by OECD in 1995 was as follows:

Educational R&D is systematic, original investigation or inquiry and associated development activities concerning

- the social, cultural, economic and political contexts within which educational systems operate and learning takes place;
 - the purposes of education;
 - the processes of teaching, learning and personal development of children, youth and adults;
 - the work of educators;
 - the resources and organizational arrangements to support educational work;
 - the policies and strategies to achieve educational objectives; and
 - the social, cultural, political and economic outcomes of education. (OECD, 1995)
8. This definition guided the work of the New Zealand review but the England review drew more explicitly on the notion of knowledge-based economies and that ERD policies need to be located within a broad context, with a particular concern for the way knowledge is generated, validated and used across organisations and sectors. In the Danish review it is stated that the purpose of the OECD reviews is to assess the extent to which ERD within a country is functioning as an effective means for creating, collating and distributing knowledge (or developing and applying usable knowledge) that teachers and policy-makers can draw on to improve the quality of educational practice and policy.
9. The Denmark review introduces the following question with regard to ERD: Who needs what knowledge created by whom for whom for what purpose in what time frame at what cost? This formulation indicates a consumer-led perspective but the consumers could be other researchers, policy-makers or practitioners. The question indicates that ERD is always influenced by the purposes and timeframes of the participants, aspects about which there may commonly be disagreement.
10. The steering group in the Icelandic review agreed at the outset that research and innovation would be defined broadly and would include:
- Research on learning and teaching in the broadest sense and would include research on lifelong learning, learning in the workplace and informal learning.
 - Research on education and training, including the management and operation of the education system, general educational activity, the development of human resources and policy-making.
 - Innovation activity in the formal education sector and the employment sector, including development projects.

DIMENSIONS OF EDUCATIONAL RESEARCH AND DEVELOPMENT

Extent and quality of knowledge about the current educational system

11. Information that is systematically collected about an education system or its participants can be used in several ways. Some of it is used for monitoring or comparative purposes, including participation in international studies such as PISA. Other information is used to build up the repository of knowledge, for example, through journals for teachers and for researchers, and evaluation studies. The Denmark review indicates that relevant sources of information generally exist, but are often

only locally known. Achievement data is not usually used for comparative purposes and there is no consensus on key definitions or indicators. Decentralisation in Mexico has not facilitated the collection of information.

12. In New Zealand certain gaps in knowledge were found, for example about post-compulsory education and lifelong learning, but the government was commended for the commissioning of nine broad literature reviews on areas of importance. It was felt that although monitoring and assessment schemes were in place that almost too much attention was paid to assessment to the detriment of other areas.
13. The most dynamic approach to the collection of information is found in England where several mechanisms have been developed whereby researchers and users are brought together, for example, through the National Foundation for Educational Research (NFER). The Department for Education and Skills (DfES) supports the systematic collection of assessment data, with clear targets, access to and use of "best practice" information. The English government is said to have established a "theory of action" with the development and implementation of a system of "continuous improvement". The review team however encouraged England to monitor the implementation of the national curriculum and to consider in particular two aspects; students that need special attention and the point of interaction between teacher and student.

Strategies, priorities, funding and quality

14. Reviewers noted the absence of a research agenda in Mexico. In Denmark some features of policy on ERD could be found but were not explicit, though it was noted that there was a separation between research and development and that applied research needed more attention. In New Zealand there exists a statement of strategic research priorities, but the reviewers noted that this was not the same as having a strategy for research. ERD in New Zealand is skewed towards development rather than research and focuses heavily on the formal educational system.
15. The Mexico reviewers suggested that a national forum be created to prepare an agenda. The forum should include research providers, intermediaries (funders and the media), research users and those that work as coordinators (e.g. government, teachers' unions). In England NFER has established a funders' forum to explore possibilities for greater collaboration between funders. A methodology and criteria will be developed for identifying priorities for ERD. An Education Observatory will be established to monitor development and emerging trends.
16. ERD in England has been characterised by the dominance of the university sector in the selection of priorities. The sector is estimated as carrying out 90% of educational research. There has been a debate about how much research should be "blue skies" research (pure basic) and how much should be pure applied research or user-inspired basic research. The government, through its department of education (DfES), is undertaking a series of actions to promote more applied or user-inspired research, including an attempt to influence the Research Assessment Exercise (RAE) criteria for judging research, selection of reviewers of research and the policies of journals. It would appear that in England ways are being sought of finding a balance between research and development.
17. Individual choice of research topic and autonomous, independent and self-regulating researchers appear to be the norm. Some priorities for research have been identified in Denmark, such as science education, but more knowledge is needed in vocational and special needs education. The reviewers in New Zealand suggested that ways be found to cluster research expertise.
18. Funds for ERD are thinly spread, even in England, where there has been significant progress in recent years. ERD has a low success rate with the traditional research councils who do not prioritise education. The Denmark team drew attention to Sweden where a separate committee exists at national level with funding for research and capacity-building in education.
19. In Denmark there are an equivalent of 245 full-time research posts, a minimum of 95 in New

Zealand and about 500–1800 researchers in Mexico, where they have a variety of roles, with the minority being full-time researchers.

20. Expenditure on ERD in Denmark is about 0.15% of expenditure on education, in New Zealand about 0.17–0.20% and in England less than 0.5%. Much of this goes to universities; about 65–75% in Denmark and about 60% in England. It was considered difficult to estimate the actual level of research activity with relation to funding in tertiary institutions because of changes made to university funding.
21. The private sector does not support ERD to any great extent creating special responsibilities for government. For example, 60% of research funding in education in England comes from the government while government funding can be as low as 33% in other research areas. In both Denmark and England local government contributes to ERD.
22. There are quality mechanisms in place in all four countries, including research reports, annual reporting of research activity, research plans, periodic evaluation studies and peer reviews of grant proposals. In Mexico there was a gap between researchers who could withstand scrutiny at an international level and researchers whose work would not stand up to a rigorous evaluation at a national level. The reviewers in Denmark felt that review mechanisms on choice of research topics, through external committees and feedback from users was needed to enhance quality and to give as much prestige to applied research as to basic research.
23. Both England and New Zealand were trying to understand the effects of research assessment exercises on the way in which research topics were being selected and carried out. The schemes would appear to encourage small-scale, supplier-driven research. The criteria for creating a register of scientists used in evaluating funding proposals in Mexico has encouraged a divide between pure or basic research by elite scientists and development work in schools. It would seem that a linear view of research, from supplier to user, is dominant in all the countries, although the involvement of practitioners in the setting of priorities is considered desirable. The linear view presupposes a view of quality that does not value applied work or collaborative work with users.

Distribution, coordination, dissemination and knowledge transfer

24. Research activities are distributed among universities and research centres with the role of teacher training institutions (CVUs) in research being unclear in Denmark with the advent of the DPU and uncertain in New Zealand and England with new funding mechanisms. In Mexico teacher training colleges are associated with applied research. In England the advent of new dedicated research centres was considered noteworthy but careful evaluations were considered necessary. Specialist research centres operate within some universities in Mexico.
25. University-based research was not considered conducive to large-scale problem-oriented work. The newly established Learning Lab in Denmark indicated a willingness to consider innovative approaches to education and some of the specialist centres in Mexico could take on targeted research. In New Zealand it was suggested that an intermediary body was required to counteract the effects of commissioned research (by the Ministry) which was often short-term and could lead to fragmentation.
26. New Zealand and Denmark were both considered as small countries. Attention was drawn to the geographical isolation of researchers in New Zealand on the one hand and that researchers in Denmark were often in better contact with international researchers than with researchers in their own country. Only the elite researchers in Mexico had international contacts.
27. It was mentioned in the Denmark report that there was no systematic mechanism for tracking international developments in research. Literature reviews were recommended, a step which had already been taken in New Zealand. It was also noted that the smaller countries should not expect to do research in all areas, but should instead prioritise nationally and track internationally.

28. The well-managed systematic collection of research in England was mentioned, such as the work being done by the BEI (British Education Index) and its cooperation with Germany in an EU project (PERINE) and the establishment of the database CERUK (Current Educational Research in the UK). The EPPI centre on policy and planning, the NFER and the DfES are the key users of such databases. CUREE, a centre focussing on systematic reviews (reviews of quantitative experimental work), has also been established in England.
29. In general though, dissemination was often considered as being one-way, from researchers to users. There was a need to develop more local forums, establish peer-to-peer networks, or as the Mexico team said, there was a need to create intermediate spaces.
30. There was a need to distinguish between dissemination and impact. Dissemination practices were well-handled through databases, journals and courses but without more consultation or follow-up with users, the research evidence does not necessarily have any impact. An increase in participatory research (see the next section) could go some way towards increasing the impact of research.

Research capacity, teacher training and capacity building

31. Capacity is defined by NFER as "the resources – human, material and intellectual – that are available in the education system for doing and for using research, together with the (more or less effective) ways in which resources are brought to bear." The England review team also indicated the need to think specifically of research capacities
32. Some teacher training institutions in New Zealand are being merged with universities; those tertiary institutions that were historically engaged in teacher training tend to engage in applied forms of research, with close links to practitioners. In Denmark the so-called CVUs have the exclusive role of initial teacher training with substantial professional development responsibilities. There are no systematic arrangements to tie teacher trainers to research and the team noted that more staff was needed with research experience at the CVUs. It is however generally accepted that teachers in training be introduced to research and are able to access and evaluate research findings for classroom use. It was suggested in Denmark that teachers may need incentives in order to participate in research.
33. Teacher training in Mexico is being transferred from federal to state responsibility as part of decentralisation reforms. Working conditions in schools in Mexico are poor and schools have limited autonomy, and there is no research training in colleges.
34. In England teacher training is often located in university departments and this should offer the opportunity of introducing students to research. In 1995 the Teacher Training Agency in England initiated an effort to characterise teaching as a research- or evidence-based profession. At that time David Hargreaves (who formed part of the Denmark review team) said that educational research was not cumulative, was generally lacking in quality and was not useful for improving schools. His comments and the responses of others were in part responsible for the changes seen in ERD in England over the last decade. The Teacher Training Agency and the DfES has since set up a National Teacher Research Panel of teachers who advise on research issues. A wide variety of networks and scholarships have been set up to promote teaching as a research-informed profession. An increasing number of small-scale studies to improve teaching methods and student learning is being carried out.
35. All the countries were characterised by researchers who are in their mid-50s, following the rapid expansion of teacher training colleges in the 1960s and 1970s. These researchers will be retiring in the next decade or so and all the countries are faced with a dearth of young researchers, in part because posts have been frozen and new researchers cannot be recruited, and in part because young researchers, for example in the social sciences, do not necessarily choose education as a field of study.
36. An interest in professional development has led to the expansion of graduate programs but many of those who undertake research as part of their studies do not continue to carry out research. While short-term graduate studies strengthen capacity in schools and other areas, it hampers the develop-

ment of larger or long-term projects. These trends are very clear in New Zealand and England with research not being defined as a career pathway.

37. All the reviews mentioned a shortage of researchers with quantitative skills. This also meant that existing data sets, collected for example by assessment agencies or teacher councils, were not being explored.
38. Specific attempts have been made in England to introduce capacity building initiatives, for example through the Research Capacity Building Network (RCBN), a project run under the ESRC-funded Teaching and Learning Research Programme. The RCBN looks not only at methodological approaches but also at high-quality management of projects.
39. The England and the Mexico team both mentioned the need to build up capacity in government for using evidence-based policies and for understanding research.

COMMENTS AND QUESTIONS

40. There is an increased awareness of and more political interest in ERD, especially in England but also in New Zealand and Denmark. Mexico's efforts are currently directed at the provision of basic education but their decentralisation policies have thrown into sharp relief the question of who is responsible for ERD. There appears to be support for ERD at local or municipality level as well as national level in Denmark and England, based on the reviews. In New Zealand the government, especially the Ministry, takes an active part in commissioning research. The question of responsibility for ERD, not just at local or national level, but also in the public and private sectors, could be of interest in the Icelandic study.
41. A national ERD strategy could only be seen in England. Despite increasing attention to knowledge management in OECD countries, especially in the private sectors, the approach to ERD (and R&D in general) is typically linear. Projects are supply-driven and ways to increase impact require more attention. The England team argued strongly for and presented evidence of user-inspired research. How can the situation in Iceland be characterised? What is the relationship between researchers and users, be they policy-makers or practitioners?
42. Research areas are not prioritised and gaps in some areas could be found in all countries, but especially in the areas of adult and vocational education and lifelong learning. The England and the Denmark teams suggested that more attention could be paid to students with special needs, and in England it was suggested that the point of contact between student and teacher should receive special attention. The reviews of New Zealand and Denmark made a point of mentioning the small size of the countries and suggested that not all areas need attention. The Icelandic study has mapped the areas being researched in Iceland; the question will thus arise on the way forward – to strengthen strong areas or to develop some of the weaker areas, or both?
43. The ways in which research is evaluated and rewarded by research councils and by universities has an effect on ERD. The choice of topics, their value, time-frame and funding support all affect the accumulation of knowledge and its distribution and impact. There are indications in some of the countries under review that two things might be happening: good basic research is sometimes avoided and that good applied research and development is not rewarded. It will be of interest to see the type of research being carried out in Iceland and the views of researchers on the quality assurance schemes in place.
44. The recruitment of new researchers and general capacity building among teachers and trainers was of concern in all the countries. The range of skills possessed by current researchers is biased towards qualitative research. Existing databases are underexploited resources. There is sometimes a lack of appreciation of what research might have to offer policy-makers. All these issues relate to the capacity of a country to carry out and use ERD, the capacity to manage and use accumulated knowledge. Have problems of capacity arisen in Iceland and if so, how can they be solved?

Appendix C

OECD GENERIC TEMPLATE¹²⁰

Who (1) needs what knowledge (2) created by whom (3) for whom (4) for what purpose (5) in what time frame (6) at what cost (7)?

1. What is the extent and quality of a country's knowledge about its current educational system?

Subsidiary questions

Who is collecting what knowledge about the operation of the education service?

In what form is such knowledge made available?

Who has rights of access to such knowledge?

2. Is there a national policy or strategy for ERD with a clear understanding about what counts as research and as development?

Subsidiary questions

Is there a need to develop a national policy or strategy for educational R&D? If so, in what ways might this best be developed?

Is there agreement among the participants and stakeholders about what is to count as research and development?

Are there explicit criteria for what should count as 'good' and as 'best' practice of what teachers do in educational institutions and settings for training?

3. Are the models of RD held by participants excessively linear? How are RD priorities determined?

Subsidiary questions

How are the knowledge needs of the education system identified?

How much diversity is there in the perceived priority of these knowledge demands? Is it desirable to seek agreement on value, importance and urgency of R&D possibilities among the participants and stakeholders? If so, how is it achieved?

4. How are RD priorities supported and funded?

Subsidiary questions

Which R&D priorities get funded and on what basis and rationale?

What modes of funding are adopted by research councils with what justification?

Does the funding system ensure that the best mix of priorities is supported?

Is there a system of co-ordinated funding so that unintended overlaps and gaps are avoided in the R&D programme as a whole?

5. How are the various RD activities distributed and coordinated?

Subsidiary questions

Have R&D programmes adopting interactive, problem-solving models been commissioned where these are likely to provide a more robust knowledge base for policy and practice than isolated projects using a linear model?

Is there co-ordination between R&D activities to ensure the accumulation of a trustworthy evidence base for policy-makers and practitioners?

¹²⁰ OECD Review (2004). EDUCATIONAL RESEARCH AND DEVELOPMENT IN DENMARK. EXAMINERS' REPORT 2004.

Are appropriate R&D networks in place? Is the knowledge of how to establish and operate an effective network available to support R&D initiatives?

6. Has the RD enterprise forged appropriate international links?

Subsidiary questions

Is there adequate information about R&D activities in other countries available to stakeholders?

Are R&D outcomes from other countries being tested (or modified) for replicability in one's own country?

Is there some form of observatory to scan other countries for new or neglected areas of R&D?

7. How effective is the communication and dissemination of research findings? (How effective is knowledge transfer?)

Subsidiary questions

To what degree are R&D projects following linear or interactive models?

Is sufficient attention being paid to impact rather than just communication of outcomes?

8. How is the RD embedded in provision for the education and training of teachers/trainers?

Subsidiary questions

How effective are the mechanisms for moving R&D outcomes into initial teacher training and the various forms of in-service education and training and continuing professional development?

What systems are in place to educate school leaders in R&D developments and provide teachers with active support to engage with new ideas and practices?

9. What quality assurance procedures are in place for educational RD?

Subsidiary questions

To what extent are existing channels for disseminating research results serving their purpose?

Are there regions, subpopulations or settings that are not served well?

Are there opportunities for regular review of ways that information is disseminated? Do these opportunities also identify emerging issues and gaps?

10. Is there adequate capacity building for educational RD?

Subsidiary questions

Have research needs and priorities been assessed to allow a judgement to be made on adequacy of research capacity?

Has appropriate action been taken to develop, and where necessary expand, research capacity?

Do researchers have an attractive research career structure?

Who is responsible for monitoring and managing research capacity?

To what extent do the initial or basic programmes for teacher education prepare new teachers to understand the main methods used in educational research and the reports of educational researchers?

Are there opportunities for experienced teachers to join research training programmes?