THE AUSTRALIAN RESEARCH COUNCIL AND ITS ROLE IN SUPPORTING EDUCATION RESEARCH

M H BRENNAN
Chair, Australian Research Council

THE AUSTRALIAN RESEARCH COUNCIL

The Australian Research Council (ARC) was established in July 1988, as one of four advisory Councils of the National Board of Employment, Education and Training. Its functions are broadly defined in the Employment, Education and Training Act 1988 as being to advise the National Board on research priorities and the co-ordination of research policy and related matters, and to advise the Minister for Employment, Education and Training on the allocation of resources for research under a range of approved programs (see Appendix, Figure 1).

The Council comprises ten part-time members and a full-time Chair. Council members are drawn from a range of backgrounds, including higher education, government research organisations, and the private sector. Part-time members normally serve for three year terms. The current Chair, Professor Max Brennan, has a five year appointment (see Appendix, Figure 2).

Although the scope of the Council's responsibilities is broad, its policy advice must be given in the context of the advice given to the government by a variety of Commonwealth agencies and organisations. Similarly, its advice on the allocation of funds must be given in the context of the level and nature of government supported research in all sectors - government laboratories, industry, and higher education institutions.

> The Council's mission is to provide advice on research funding and research policy, and to promote the conduct of research and research training of the highest quality for the benefit of the Australian community. The Council has a special responsibility for research in the higher education sector, basic research and research training.
>
> (ARC Mission Statement, March 1992)

RESEARCH POLICY ADVICE

Council's role in providing advice on research policy usually occurs in response to a Ministerial reference seeking advice through the National Board of Employment, Education and Training.

Recent and current examples of such research policy matters include:

- aspects of the Australian Postgraduate Research Awards including number, stipends, priority area loadings, and mobility;
- internationalisation of higher education research and research training;

- expansion of the research resource base;
- the balance of government funding between disciplines of academic and academically related research and its relationship to national priorities;
- the provision of research infrastructure in higher education institutions (with the Higher Education Council and the Department of Employment, Education and Training).

THE ARC AS A FUNDING AGENCY

The ARC is the premier funding agency for higher education research. It also supports basic research in the private sector and in some other organisations, including State libraries and museums. The Council supports research in all fields except clinical medicine and dentistry, which are supported by the National Health and Medical Research Council; and it supports research in all higher education institutions except the Australian National University's Institute of Advanced Studies, which is funded directly for research through a block grant from government.

In all its programs the quality of the research and the researcher are of paramount importance. With the exception of some infrastructure funds distributed to institutions on a formula basis, all of the funding decisions are based on assessments made by highly qualified researchers - the "peer review" system.

The magnitude and impact of the ARC's programs on higher education institutions can be gauged from two comparisons. First, the operating grants of the institutions contain two elements based on the institution's performance in research and postgraduate research training. In 1992 these together generated a component of operating grants to institutions (excluding the Institute of Advanced Studies) of $483 million (December 1991 prices) out of a total of $3.5 billion. Although institutions are free to allocate funds between activities on whatever basis they choose, this figure provides a reasonable measure of the total expenditure from the operating grants on research and research training. It includes a fraction of the salaries of academic and other staff involved in research as well as research infrastructure and direct research costs.

Set against this total expenditure in 1992 of $483 million from operating grants, the ARC programs total $245.3 million.

A second comparison can be made with the other competitively awarded Commonwealth grants schemes. A convenient source of information on these schemes is the data compiled by the Department of Employment, Education and Training (DEET) for use as a basis for allocating the so-called "research quantum" to higher education institutions. This data base includes, for 1992, thirty eight schemes distributing a total of $180 million.

These two comparisons, with research and research training expenditure from operating grants and with other Commonwealth grants schemes, show the importance in money terms of the ARC's programs. The Council's challenge is to ensure that every research dollar is allocated and used as effectively as possible.

ARC FUNDING PROGRAMS

The ARC funding programs are listed below, together with preliminary figures for the 1992 (December 1991 prices) expenditures. A brief description of each of the programs can be found in the information booklet *Australian Research Council*, March 1992.

	($ million)
Postgraduate Awards	55.0
Fellowships	18.3
Research Grants	88.2
Collaborative Research Grants	2.2
Large Equipment Grants	3.3
Centres	20.5
Infrastructure Grants	53.7
Grants to Learned Academies	1.5
Evaluation	0.6
To be allocated	2.0
TOTAL:	**245.3**

It is interesting to note that, over the four years since its inception, the total sum available to support the Council's programs has trebled. Approximately half of this increase has come from a transfer of funds from university operating grants and half is "new money".

In the case of research grants, the increase has been closer to a factor two. Despite this substantial increase, the success rate for initial applications has decreased as a result of a much greater increase in the number of applications. The success rate for initials was 29% for the 1992 grant year. It will be down to 18-20% for 1993. This is an unacceptably low success rate.

The success rate can be increased by making more money available or by decreasing the number of applications. Both will be needed. The Council will prepare a case for more government funding based on the opportunity that is being missed to realise the full benefits of higher education and basic research. We will also need to encourage researchers to seek alternative sources of research funds (probably for strategic or applied research) or, for some academic staff, to engage in professional practice to a much greater extent than at present.

The overall objective of the adjustment I have outlined should be to ensure that every department in every higher education institution is "in touch with" the leading edge of research and professional practice in its subject area. In that way, each staff member (whether or not he, or she, is actually engaged in research) will see the subject as living and dynamic, and so will be able to share that vision and perception with the students. This is what distinguishes higher education from training, and from education at more junior levels.

THE BENEFITS OF RESEARCH SUPPORTED BY THE ARC

The research supported by the Council's programs ranges from pure basic research, through strategic research, to applied research. The emphasis, however, is at the basic research end of the spectrum. That emphasis is appropriate given that essentially all other

Commonwealth support for research, amounting to some $2.5 - 3 billion a year, is directed towards the strategic and applied end of the spectrum.

Nevertheless, we must ask whether the outcomes of such basic research are anything more than the (mere) advancement of knowledge. What are the tangible benefits from such a large expenditure of the taxpayer's money?

The Council has identified five benefits:

1. *Contributions to the Quality of Our Culture*
   Strong, independent universities are a hallmark of a democracy. They are both creatures of the culture and a force which shapes it. Research plays a vital role in determining the nature and extent of that influence.

2. *Graduates of High Quality*
   Research is the vehicle for education and training at the advanced undergraduate and postgraduate (research) student level, and it contributes, in less specific ways, to teaching at all levels in the higher education institutions. The ARC has the important responsibility of providing the highest quality research environment for such advanced education and training.

3. *Direct Applications of Research Results*
   This is the most obvious and direct benefit of basic research; the application often stems from several pieces of research, sometimes in apparently unconnected fields, perhaps undertaken over extended periods of time in different locations. It can lead to the commercialisation of a new product or process in manufacturing, mining or agriculture, or to an improvement in environmental management, health care or social welfare delivery.

4. *Increased Institutional Capacity for Consulting, Contract Research, and Other Service Activities*
   Through the acquisition or construction of sophisticated equipment, through the improvement of the library and other information systems, as well as through the advancement of the skills and knowledge of the staff and students, the capacity of institutions to offer consulting, contract research, and other service activities is enhanced. This increased institutional capacity represents a powerful resource for industry and the community in general.

5. *International Links*
   For a country like Australia, with a small population, a highly developed and respected research community can provide an important channel of information on research developments in other countries, and the country's influence in international forums is enhanced by its standing in research.

One of the challenges currently confronting the Council is to devise ways in which consideration of these potential benefits can be brought into its selection and evaluation processes while preserving the emphasis on excellence in the advancement of knowledge.

ARC FUNDING FOR EDUCATION RESEARCH

Given the funding context referred to above, the Council sees its primary role as a funding agency to be the support of basic research. Such research may be of quite an applied nature (as it is, for example, in one of the five Priority Areas - Scientific Instrumentation); but it does not extend to the kind of "action research" funded by the old Education Research and Development Committee (ERDC).

Indeed, it is relevant to note here that the Federal Government decision to terminate the ERDC program was taken in the belief (quite correct, in my view) that the employers, particularly the private school and State and Territory Government systems, should fund such research - in much the same way as we expect industry to fund the highly applied and development end of the Research and Development spectrum.

Turning to basic research in education, it is interesting to note the very significant increase in ARC support that has occurred since the Council's establishment in 1988. Generally speaking, this has been in response to an increase in the number of applications rather than being due to an increase in the success rate. For example, initial applications for grants in the area Education/Humanities rose from 20 in 1988 to an estimated* 48 in 1990.

The total picture for education research supported by the ARC is less clear since such research is often conducted under another heading - for example, Cognitive Processes or Learning, memory and Perception. Also, there have been several changes to the Council's research field classification system.

For the 1990 grant year, 20 grants were awarded for projects in fields specifically including Education in their titles. The total funding in this area was $458 969 (5.6% of the total of $7 938 901 for Humanities and Social Sciences).

The fields in this category are:

(a) Education/Humanities
(b) Educational Psychology
(c) Sociology of Education
(d) Education/Social Sciences

Eight projects in Cognitive Processes, with obvious education connections, lift the total to $646 270 (8.1% of the Humanities and Social Sciences total).

It should be noted, at this point, that these figures refer only to the grants program. Education research, like other research areas, is also supported through the Postgraduate Awards, Fellowships, Special Research and Key Centres and Research Infrastructure Programs. Currently, there are two Key Centres in education - the Centre for Aboriginal Studies and Education, University of South Australia, and the Centre for School Science and Mathematics, Especially for Women, at Curtin University.

---

* The Figure includes a known number of applications for Large Grants and an estimated number of applications for Small Grants administered by the Institutions.

With the exception of education-oriented research in the Priority Area of Cognitive Science, education research in the broad area of the social sciences is now classified under the single heading "Education".

Under this general education heading, 55 out of 353 social sciences grants (Large and Small) were awarded for the 1991 grant year. The 55 grants totalled $944 000 in value, placing education third behind psychology and economics in the competition for social sciences grants funding. Clearly, education research has a significant place in ARC funded research.

For 1992, there were 27 Large Research Grants in Education with a total value of $659 600. This represents 12.5% of the total for social sciences.

THE FUTURE FOR EDUCATION RESEARCH IN AUSTRALIA

Within the higher education system the other significant source of research support in addition to the ARC is the Operating Grant for each institution. How much of this goes to support education research is not clear. (Like many others, I view the data collected by the Australian Bureau of Statistics on this matter as being highly suspect.)

One important issue for the future is the rapidly developing interest of staff from the former college sector in undertaking education research. Indeed, this is one of the sources of growth in the number of grants applications in this area as well as in many other areas of research.

One must ask how much basic research in education does Australia need and, also, how much can we afford. If, for example, the answers are "about the current level" then we must address the question of what non-teaching professional activities other than basic research should be undertaken by staff and (where appropriate) funded by the variety of sources available. Such activities might include (and here my comments are not specific to education) action research/development, consulting, contract research, and professional practice.

Without such non-teaching professional activity for the majority of staff, higher education institutions, most of which now carry the title "university", will be nothing more than super secondary schools.

APPENDIX

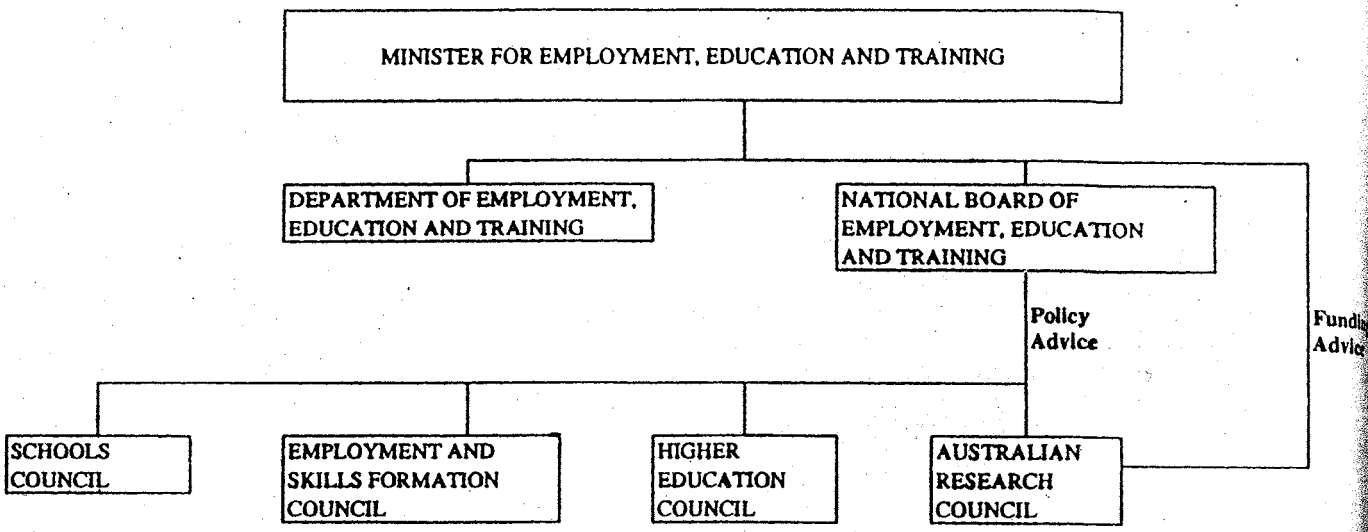

Figure 1: Councils of National Board of Employment, Education and Training.

Professor M H Brennan, AO	Chair
Professor R D Gibson	Vice-Chancellor Queensland University of Technology (Deputy Chair)
Professor G Brown	Deputy Vice-Chancellor (Research) The University of Adelaide
Dr B S Hickman	Delphicon Pty Ltd
Professor B Rawson	Department of Classics The Australian National University
Professor G Rigby	School of Electrical Engineering & Computer Sciences University of New South Wales
Dr M Sargent	Chief Executive Officer ACT Electricity & Water
Dr M Schapper	Vice President, Corporate Strategy CRA Limited
Professor P Sheehan	Academic Director of Research University of Queensland
Dr J W Stocker	Chief Executive, CSIRO
Professor R Symons	WAITE Agricultural Research Institute University of Adelaide

Figure 2: Membership of Australian Research Council.

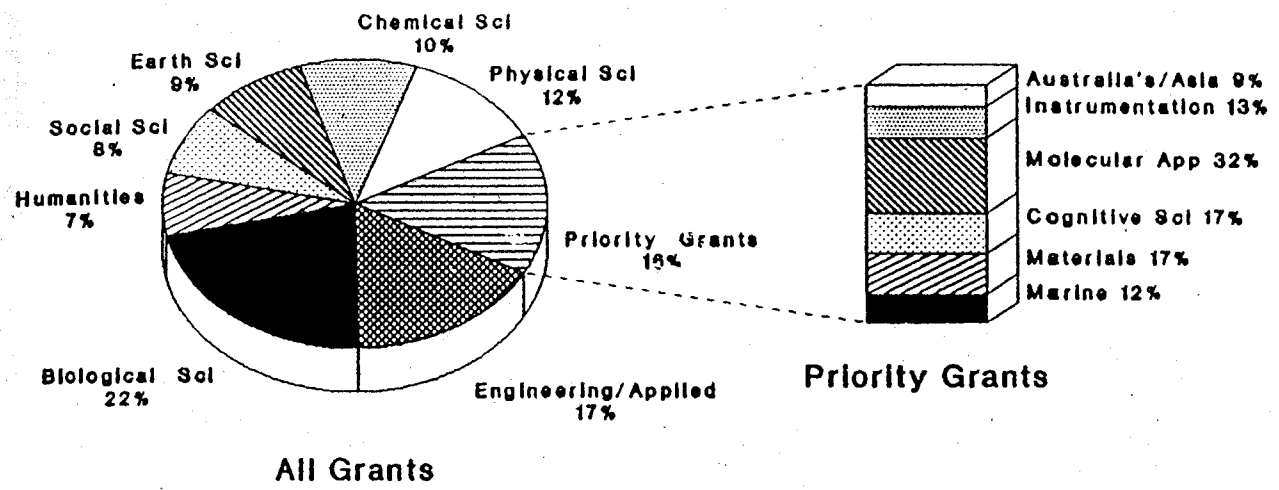

Figure 3: 1992 ARC Research Grants - Discipline and Priority Areas