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The Higher Education Sector: A Statement by the Royal Society

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In the context of the current Dearing Review (the National Committee of Inquiry into Higher Education) and the Parliamentary deliberations that will follow publication of the Report, it is timely for the Society to draw upon its 30 years of experience in science education policy, its support of quality research workers in the H.E. sector and its understanding of UK research needs and the role of H.E. in them, and affirm its views on some key policy issues relating to the Higher Education sector.

The Society's key concerns can be summarised as follows:

- Diversity of provision
- Provision of skilled manpower and basic research
- Adequacy of university infrastructure
- The Dual Support System for research
- Assessment and selectivity in research funding

The ideal in H.E. of educating people to the highest level of their ability is rooted in the belief that developing innate gifts is both of inherent value in enhancing quality of life and a necessity in maintaining the nation's well-being in a highly competitive world. With a recently much increased participation rate at 18+, a growing proportion of mature students and the need, not least for scientists and technologists, for continuing professional development, it is imperative that the H.E. sector increase its diversity of provision. More must mean different and not worse. Courses, and their associated qualifications, must be more varied in both content and duration. The system needs to develop a qualification structure that takes account of the widening range of student objectives. A Teaching and Learning Council should be established to assume responsibility for these developments, encouraging institutional diversity in the interest of a nationally efficient and effective system of H.E.

Vital to the economy, the wealth and the quality of life in the UK is its scientific research. It is conducted in industry, in research institutes and in universities. The strength of research in the last is critical, since universities (and a number of research institutes in association with universities) provide the trained manpower. They must attract sufficient students with real aptitude for research and provide quality teaching, at first and higher degree level, in a research environment. Within that provision students proceeding to doctoral level should normally undergo seven years full time education (or eight under the Scottish system) from starting undergraduate

studies to reaching Ph.D. status. The seven-year envelope may be used in a variety of ways but should always include the development of transferable skills and formal advanced training in research techniques, as well as the conduct of original research.

Without a commitment from Government to provide the necessary resource, the transition to mass higher education will fail. The underfunding of university infrastructure, in respect of both its teaching and research functions, is damaging the ability of the system to deliver adequately skilled manpower for industry's needs and original and innovative research. Underfunding as a whole threatens the quality of university research. There must be a whole-hearted commitment to correcting that underfunding if the UK is to compete internationally.

Research at universities is the single biggest contributor to the Science Base. Its future success will depend upon selectivity and multiple streams of funding. But at the core of such a system lies the stability, continuity and capacity to plan ahead created by the Dual Support System. Changes in H.E. funding over the past decade have damaged that System. Though still sound in principle, it consequently needs substantial improvement, for example in ensuring a continuing foundation of expertise in technical staff, in fostering transdisciplinary and interdisciplinary research and related cross-departmental collaboration, and in enhancing efficiency through joint institutional arrangements over infrastructure. The current provision of overheads is unsatisfactory in that universities are not recovering the full costs of research projects supported by Research Council grants. The solution lies in the Research Councils supporting fewer projects, more completely costed and funded. There must be no more transfers from the Funding to the Research Councils. It must be recognized, further, that the two legs of the Dual Support System serve complementary functions and are not interchangeable.

The Research Assessment Exercise has enabled a desirable policy of research selectivity to be implemented successfully; in time sharp increases in funding for highly-rated Departments will properly follow. However, it is now important to assess the longer-term implications of the exercise: for example, the possible adverse impacts on staff mobility, on 'open horizon' work with a long time-frame to publication, on collaboration between groups now thrust into a competitive situation and on multidisciplinary projects and cross-disciplinary research. A greater use of refereeing and peer review, including international involvement, with these factors in mind, would enhance the sophistication and reliability of the system in delivering the research needs of the nation as a whole.