



UK **Council** *for* **Graduate Education**

GRADUATE SCHOOLS

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GRADUATE SCHOOLS

FOREWORD

The UK Council for Graduate Education is an organisation established to promote the interests of graduate education in all disciplines in higher education institutions. The Council was established in 1994 and has over 100 institutional members. This paper on graduate schools is the first of a series investigating key issues in graduate education.

The paper has been prepared by a Working Group convened by Professor Peter Scott, University of Leeds. The other members of the Working Group were Dr. Jonathan Adams, University of Leeds, Professor Jennifer Birkett, University of Birmingham, Dr. John Hogan, University of Durham, Professor John Laver, University of Edinburgh and Professor Colin Robson, University of Huddersfield. The UK Council is very grateful to all members of the Working Group for their time and effort in preparing this paper which will assist institutions to evaluate the models that can be used to help promote high quality graduate education and training.

In order to inform the Working Group about current developments and to enable the group to include up-to-date information about graduate schools, a survey was carried out by the Centre for Policy Studies in Education at the University of Leeds. Much of the background information for the report was obtained from this survey, and the Council would like to thank all those who responded to the questionnaire. The Council would also like to thank the following for making available information or offering advice to the Working Group:

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SUMMARY

- This paper explores the reasons for the establishment of graduate schools, the different models that have been adopted and their operation. It reviews the advantages and potential problems of graduate schools, and offers some issues for consideration for those institutions interested in establishing a graduate school structure, or wishing to review the performance of existing graduate schools.
- A significant number of institutions have already established graduate schools. According to our survey, 33 universities and one college of higher education have done so. A further 23 universities have definite plans to establish a graduate school, or are considering such a move.
- Half the 'old' universities have graduate schools, compared with a fifth of 'new' universities and one-in-ten colleges of higher education surveyed.
- Eighty-five per cent of graduate schools are in the 'old' university sector.
- Over half of graduate schools are university-wide organisations. The next most popular models are faculty/department-based graduate schools.
- Improving the quality of graduate education is the most important of the aims and objectives of graduate schools, followed by increasing the number of postgraduate students.
- Graduate schools' primary task is policy-making for postgraduate students. Next comes policy-making for academic programmes.
- Most graduate schools are not budget centres, but more than half have their own accommodation.

1. INTRODUCTION

During the 1980s there was a movement across a number of European countries including Britain to 'professionalise' postgraduate education. Attempts were made to improve the quality of supervision, to define more clearly the aims and objectives of study towards a Ph.D., and to provide a more formalised and structured training process. Often these initiatives were taken by governments or government agencies, particularly Research Councils. In Britain concern was expressed about the quality of postgraduate education in general and the submission and completion rates of research degree students in particular. During the 1990s growing numbers of institutions have decided to establish graduate schools: a development which is, at least in part, an attempt to tackle some of the problems traditionally associated with postgraduate education, including poor quality control procedures. According to our survey, 33 universities and one college of higher education have established graduate schools. These are listed in the annex. Six more universities and one more college intend to do so within the next two years. In addition 16 more universities are considering establishing graduate schools (Tables 1 and 2).

The concept of a graduate school can vary and be open to a number of interpretations. Different working models have already been established in the UK. In this paper, a graduate school is broadly defined as:

a distinct organisation concerned with the promotion of high quality graduate education and the administration of graduate education within an institution or across a number of institutions.

2. WHY HAVE GRADUATE SCHOOLS STARTED TO APPEAR IN THE UK?

The academic structures of most higher education institutions (HEIs) in the UK, as far as teaching is concerned, developed to cater mainly for undergraduate education. Undergraduates represent some 85% of the total higher education student population in this country, and for approximately 30 weeks in each academic year HEIs are primarily engaged in undergraduate teaching. One authority on graduate education has recently noted that 'graduate education remains marginal to a system traditionally and strongly geared to first degree provision' (Becher, in Clark 1993). There are now a number of important changes to the higher education environment which have caused institutions to consider whether they should adopt a graduate school model.

2.1 Professionalisation of Postgraduate Training

During the last 15 years there have been major developments in the provision of postgraduate training. The publication of the Advisory Board for the Research Councils' Report on Postgraduate Education in 1982 focused attention on the need to improve doctoral completion rates. The policy it recommended of a four year timescale for full-time students to submit a Ph.D. thesis was introduced with considerable rigour by the Research Councils. The adoption by the Economic and Social Research Council (ESRC) of a sanctions policy against institutions which failed to secure the submission of a certain percentage of Research Council funded Ph.D. students within the four year time-frame forced institutions to pay much more attention to the research training process. The policy was a success, albeit a painful one; only 19% of students who started an ESRC funded doctorate between 1973 and 1975 submitted within four years. In marked contrast of the cohort which started in 1989, 73% completed within the four year period.

Concern to improve submission rates led institutions to introduce new techniques for monitoring and facilitating progress. There has recently been a move away from the apprenticeship model of one- to-one research supervision towards a programme of research training, which often includes taught elements, the appointment of joint supervisors and careful monitoring of progress by a committee. The use of annual report forms and initial registration on an M.Phil., with upgrading to a Ph.D. conditional upon progress, are now widespread. Virtually all institutions have introduced a maximum word limit for research theses.

Postgraduate study has become more codified. The Committee of Vice-Chancellors and Principals took a lead in formulating good practice procedures in its series of reports (Reynolds Reports) on academic standards, published from 1986 onwards. It is significant that large proportions of the reports were concerned with postgraduate matters, including academic appeals. The Council for National Academic Awards produced an important series of guidelines on the supervision and teaching of postgraduates which were widely adopted in the former 'public' sector institutions.

Important new patterns of research training have been introduced. It is now common for students in the Arts or Social Sciences to undertake a taught element, probably a taught Masters degree, before proceeding to a research degree. The ESRC in its 1991 research training guidelines required institutions to provide formal taught training programmes for up to 60% of a student's time in the first year of postgraduate research study. The Office of Science and Technology has initiated a wide ranging debate over the advantages of a similar taught element for Science Ph.D. students. Several forms of M.Res. related degrees, which require inter- departmental training to be offered, will be introduced at institutions as pilot projects from October 1995. 'Taught' doctorate degrees are now available in Engineering (Parnaby Doctorate's) and Clinical Psychology, and an increasing number of Education Departments are offering Doctor of Education degrees which combine taught programmes and a significant research element.

None of these developments by themselves require institutions to establish graduate schools. They have, however, tended to require an increased level of 'centralised' monitoring and support of individual programmes and students, and all institutions have had to establish policies and procedures for such activity.

2.2 Growth in the Number of Postgraduate Students

It is widely recognised that over the last 12 years UK higher education has gone through a remarkable period of growth. What is generally not so well recognised is that the greatest rate of increase has been in postgraduate education. The number of registered postgraduates increased from 102,000 in 1982/83 to 220,000 (of whom 32,000 were overseas fee paying) in 1992/93, an increase of 115%, compared with an increase of 70% for first degree student numbers over the same period.

Higher Education Participation

	1982/83 000s	1992/93 000s	% Change 1982/83-1992/93
All full-time and part-time			
First degree	505	856	70%
Other undergraduate	256	368	44%
Postgraduate	102	220	115%
Total	863	1444	67%

{Source CVCP Higher Education Statistics 1994}.

While graduates remain the minority group in most HEIs, it looks likely that they will continue to increase as a percentage of the total student population. Changes in the employment market will continue to fuel the growth in postgraduate studies. It is significant that approximately 60% of all postgraduates follow taught programmes, most of them with a clear vocational slant. The decision made by the Government in November 1993 and extended in 1994 to hold the age participation level for undergraduates to 30% until at least October 1998 means there will be no further immediate significant expansion of full-time undergraduate

education. There is no such restriction on postgraduate numbers, and it appears from trends highlighted by the Higher Education Funding Council for England (HEFCE) in institutional strategic plans that a large proportion of HEIs will continue to increase their postgraduate numbers.

While postgraduates are the minority group in the system as a whole, they now represent over 15% of the student population in 48 out of 123 universities or London colleges. A number of specialist institutions, including the Courtauld Institute of Art, Cranfield University, the Institute of Education of the University of London and the London Business School, are primarily based on a postgraduate student population.

The growth of postgraduate numbers in the former polytechnic sector has been particularly significant. The number of postgraduate degrees awarded by the Council for National Academic Awards increased by 194% from 1979 to 1989, albeit from a low starting base. In the UK, postgraduates form a significant proportion of students in a large number of institutions and a fast growing proportion in others. Institutions need to consider how they are to handle such developments.

2.3 Quality of Provision

While few would doubt that there have been significant improvements in the organisation of postgraduate education, it is still the case that postgraduate study can, in many cases, be characterised as a lonely and isolated experience. It can give rise to a sense of being cut off from the mainstream academic and cultural life of an institution. Graduate students may feel marginalised in academic communities. The problems of social and intellectual isolation are difficult to alleviate, and many students find it difficult to adjust from their previous employment or undergraduate experience. Graduate students are, in the main, located in academic departments or schools whose primary purpose is to teach undergraduates and, depending on the nature of the institution, conduct research. Too often, graduates feel they are excluded by these two major functions from being considered part of the mainstream academic activity. Postgraduate students have, however, become more aware of the problem and more vocal in their calls for steps to be taken to improve their situation. The National Postgraduate Committee, in particular, has been active over the last few years in campaigning for better provision to be made for postgraduate students.

In the concern for 'quality' established by quality audit, teaching quality assessment and the requirements of the Charter for Higher Education, institutions need to consider whether their structures for postgraduates are able to satisfy external scrutiny. The Charter for Higher Education has a number of specific requirements for postgraduates including the monitoring of the handling of postgraduate applications.

2.4 Changing Nature of Undergraduate Education

The consequences of the rapid expansion in the higher education system and the introduction of modularisation and credit accumulation and transfer for undergraduate study have recently been explored in considerable detail by the Higher Education Quality Council's CAT Development Project's Report 'Choosing to Change' (Robertson Report). There can be little doubt that the changing nature of undergraduate education will have consequences for postgraduate education. In a mass higher education system where the unit of resource is set to diminish still further over the next few years. Institutions may find it necessary to ring-fence resources allocated to graduate education. It may be the case that the broadening of the undergraduate curriculum will change the nature of the traditional single discipline degree and require institutions to modify their postgraduate training accordingly. It is possible to see the expansion of four year degrees in Mathematics and Physical Sciences as an attempted solution to the problem of trying to cover an ever increasing range of subject matter and maintain an adequate base for the traditional British Ph.D. The Robertson Report itself notes that the development of graduate schools has been slow in the UK. but, with mass participation in undergraduate education, an increasing number of students may perceive a need to obtain a Masters qualification to give them a competitive edge in the employment market.

2.5 Research Environment

The abolition of the binary line and the transfer of research funds from the Funding Councils to the Research Councils has led to a position where many more institutions have the opportunity to compete for research funding and develop research specialisms.

Much undergraduate education is structured around single subject disciplines. While modularisation provides a means of allowing students to dip into a number of different subjects, institutions which are organised primarily to cater for their undergraduate teaching requirements are unlikely to have in place strong structures which facilitate interdisciplinary study and research. The growing number of contract research staff, who may be undertaking a part-time postgraduate qualification, can experience organisational difficulties located in research centres without any overarching structure to support research. Institutions may need to find new organisational structures to manage effectively the promotion of interdisciplinary research and to interface effectively with the new Research Councils.

It is difficult to overestimate the effect of the Research Assessment Exercise (RAE) and the pressures on HEIs to produce research results. The RAE not only determines the level of research funds provided as part of the Funding Councils' grant, but has also given rise to various league tables of research performance. The role of postgraduate students in the RAE is now widely appreciated. The number of research students was identified as one of the significant performance indicators in the 1992 RAE. Further, the number of postgraduate research students is one of the volume measures used to help determine the level of research funding. There seems to have been a substantial increase in the number of institutional scholarships made available for research students over the last couple of years and the importance of research students in the RAE must be a factor in this development.

In an analysis of institutional strategic plans for 1993/94 to 1997/98, the HEFCE noted that nearly all institutions have a strategy for strengthening research. The most common elements in these strategies are:

-
- selective allocation of resources;
- pump-priming funds for new initiatives;
- recruitment of new staff;
- encouragement of specialist research centres;
- growth in postgraduate research numbers

2.6 North American and European Influences

The concept of a graduate school was originally a North American one. Graduate education in the US is widely recognised as being at the heart of the leading North American universities. While there are many critics of the system, there is a general consensus that graduate education is well resourced, well taught and often given a higher priority within many institutional missions than is undergraduate tuition. The scale and range of resources made available to support advanced training and research is impressive, with 1.5 million students currently enrolled. It is an article of faith in the North American system that research and the teaching and training of postgraduate students are mutually supportive, and it is difficult for a department to be recognised as an outstanding research unit without a substantial number of research students.

North American graduate schools developed as separate organisations for the management of graduate education either on a university-wide basis or based on professional schools within a university. North American graduate schools vary in the power and influence they exercise, but it is common for graduate schools to have direct responsibility for a university's

research activity and, for example, to control research budgets. It is common for membership of the graduate school to be restricted to staff with outstanding research records and for members of the graduate school to be principally responsible for teaching graduate students. Graduate schools in North America play a leading role in the development of institutional research policy. The USA has a larger proportion of its young people entering higher education than any European Union country or Japan. It can be argued that it is the graduate school structure which has helped to defend research and postgraduate teaching, and has enabled the American system to combine successfully mass higher education with world class research.

Over the last four years government agencies in France, the Netherlands and Germany have taken the North American model of a graduate school and developed it to attempt to solve some of the weaknesses which were perceived in European research. The 1991 Memorandum on Higher Education in the European Community noted that the relative proportion of people engaged in research in Europe is less than in North America or Japan. There are indications across Europe that it is becoming harder to attract students to undertake research in Science, Technology and Engineering. The nature of research work is also changing. There is a need to develop multi-disciplinary research skills and to provide a more coherent training structure for students. The traditional European doctoral degree was regarded almost exclusively as a preparation for individuals for a career in academic research and teaching, and not as a key part of the research training process. A large number of graduate schools have been established in Northern Europe. These are small interdisciplinary research schools which actually carry out research and training. Unlike their North American counterparts, they are practitioner schools. Typically each research school has between five and 20 staff working with up to 50 students. These graduate schools have often been established by collaboration between a number of institutions, including private research laboratories. Additional funding has been provided by the national research councils.

In summary, North American graduate schools tend to be institutional-wide organisations which champion graduate education by supporting academic departments as the basic units for training and research. In the main, European graduate schools tend to be much smaller and cut across existing departmental structures to create new interdisciplinary units.

3. MODELS OF GRADUATE SCHOOLS

There is no unique model of a graduate school organisation but there are certain forms which can be identified. Some graduate schools are concerned solely with the promotion of the quality of courses and the student learning experience. Others are also responsible for policies to promote research. The following sections describe the main models which have been proposed or developed in the UK to date.

According to the survey, institution-wide graduate schools are the most common form. Over half conform to that model; twelve are faculty or department-based, and three programme-based. There was only one example reported (Strathclyde) of an inter-institutional graduate school (**Table 5**).

3.1 Research School (The 'Richmond' Model)

In September 1991 Sir Mark Richmond, the then Chairman of the Science and Engineering Research Council, argued that institutions should establish research schools to protect their research base. Given the increasing demands of undergraduate education, it was necessary to ensure that resources did not seep from research into undergraduate teaching. He argued for the establishment of research schools to operate as independent budget centres within HEIs, and that such research schools would be the natural place to locate responsibility for postgraduate training. He further argued that it was necessary to protect research-active staff from excessive teaching loads.

It does not appear that any institution has decided to adopt this model in its entirety. A number have adopted certain aspects of it, particularly the concept of a graduate school as a budget centre and the need to establish a research office able to respond effectively to the changing

requirements of the new Research Councils. Increasingly it seems likely that Research Councils will be seeking to place their support for postgraduate training and research into those institutions with a proven track record of such activity.

The administrative and organisational structures under which research is carried out matter. While many of the variables affecting research productivity are not fully understood, research productivity is influenced by the orientation and attitudes of academic colleagues. The development of a research culture is important. This, together with the size of the research group, the perception of staff of the constraints and opportunities available to them to pursue their own research and the availability of resources, help to determine the academic climate for research. A research school can help to develop the right environment to facilitate high quality research.

3.2 Institution-Wide Graduate Schools

In January 1991 the University of Warwick established a graduate school to provide high quality graduate education across the entire institution. The Warwick Graduate School was influenced by certain aspects of graduate school organisation in the USA, and information had been sought from the US Council of Graduate Schools. The Warwick Graduate School was intended to provide an umbrella organisation for an increasing number of postgraduates and, in turn, help to promote postgraduate study at the University to recruit more students, particularly research students. The graduate school was intended to support the University's central strategic aim of enhancing its research-base and maintaining its research reputation. The graduate school plays a key role in the policy-making process in the University, and by 1995 graduate students constituted 40% of the total student population.

Warwick was among the first UK institutions to establish a graduate school. The London School of Economics has for many years had such an organisation, and Cranfield University, amongst others, with its very high proportion of postgraduate students (in the region of 80% of its total student population, and 100% on its main campus at Cranfield), has had a particular focus on postgraduate work. Nevertheless, Warwick was the first of the new wave of graduate schools which have been established in response to the changing environment outlined in section two.

Institution-wide graduate schools are not intended to replace departments or schools as the direct providers of training and support facilities. They are intended to establish institution-wide policies and champion the cause of graduate education.

The synergy generated by bringing together postgraduate students, contract research staff and prominent academic staff can be identified as a key characteristic of a successful graduate school. However, no UK university to-date has adopted the full blown North American model of selective membership of the graduate school with such membership reserved for those members of academic staff with a proven track record of research. The general consensus appears to be that such a model would be unnecessarily divisive and inappropriate in the UK. Despite the pressures of increasing undergraduate numbers, and the increasing selective allocation of research funds, it is still the case that those UK universities which emphasise a research mission, still expect the overwhelming majority of their staff to be active in research, whilst contributing to both undergraduate and postgraduate teaching. Every university in the 'top' 35 in The Times Higher Education e Supplement's league table of research performance based on results e in the 1992 RAE entered over 85% of their academic staff into the :s RAE. There are still comparatively few teaching only or research y only posts in the 'old' university sector.

It may well be that new universities and colleges of higher s education which decide to promote research should consider carefully the advantages of a selective approach for membership of their graduate schools and the use of the graduate school as a means of ring-fencing their research effort.

3.3 Faculty-Wide Graduate Schools

A number of graduate schools which have been established have avoided cutting across the

pre-existing academic Structures for the management of graduate education by mirroring, more or less, existing faculty organisation. It is noticeable that some of the larger civic universities, including Manchester and Liverpool, have adopted this approach. The position at the University of Manchester is evolving. It initially established six Research and Graduate Schools (RGS), although three covering the Sciences, Engineering and Medicine subsequently combined for postgraduate education purposes, and still function independently for research purposes. It has allowed each RGS to develop its own structures but all have two parallel objectives:

- to improve postgraduate training and increase the number of graduate students
- to promote research excellence and increase research volume

The School of Biological Sciences describes its RGS as providing 'a fully integrated and interdisciplinary infrastructure to support and protect the research base by targeting resource, managing core centralised equipment and facilities, offering education and training within a research environment, developing and promoting quality issues and good practice, and encouraging collaborative research programmes with other University Research and Graduate Schools'. Within each RGS research divisions have been established. The University has also established corresponding Undergraduate Schools. Each RGS is headed by a Graduate Dean, and there is an overarching Postgraduate Education Committee Chaired by a Pro-Vice-Chancellor.

There are clear examples of 'faculty' graduate schools in North America. It is not unusual to find a graduate school for the Arts and Social Science Faculties and separate graduate schools for each of the large 'professional' areas of Medicine, Business and Engineering within a single university. The organisation of a graduate school along such lines has an advantage in being much closer to the actual research and teaching activity. Institutional-wide graduate schools can appear to be just another layer of bureaucracy. There are, however, a couple of obvious dangers with a faculty-based approach. There is a risk that the graduate schools will vary in their policies and in their effectiveness, leading to problems of comparability across the institution. There is, perhaps, a greater danger that if the graduate school mirrors existing organisation it will be little more than a re-labelling of existing activity.

3.4 Department or School-Based Graduate Schools

A graduate school could be based on a single department or school and many departments or schools already have structures in place to oversee the general direction of postgraduate training and research. The advantage of this model is a clear focus and an ability to concentrate on improvements at a grass roots level. It is similar in this respect to the European research schools which have been established. A key disadvantage is that it does nothing to encourage, or even co-ordinate, interdisciplinary research and, indeed, it could be argued that it helps to reinforce structures which have been primarily established for undergraduate teaching.

The University of Kent has recently considered the way it can ensure that its department-based graduate schools are effective without adopting a University-wide graduate school structure. It agreed that graduate schools should normally satisfy the following conditions:

- they should have sufficient number of staff and postgraduate students to make the graduate school viable as a unit
- they should be responsible for provision of training in research skills and the promotion of research
- they should provide a physical location for postgraduate students
- they should have some mechanism for involving graduate students in the running of the school

- they should be supported by a commitment to the provision of the necessary resources by the appropriate budget centre

The University suggested that, in order to avoid the danger of fragmentation, about 40 postgraduate students should be regarded as a minimum figure for a viable graduate school. Co-ordination of their activity is arranged by a Higher Degrees Committee.

3.5 Programme-Based Graduate Schools/Inter-Institutional Graduate Schools

An alternative way of considering graduate provision is to start from a particular programme or research activity and develop the structure needed to support this activity. This is much closer to the European model of graduate schools. One example of this sort of initiative at graduate level has been the Scottish Doctoral Programme in Economics, which has been recognised for studentships by the ESRC. Eight universities are involved; Aberdeen, Dundee, Edinburgh, Glasgow, Heriot-Watt, St. Andrews, Stirling and Strathclyde. The first year of the programme is located at the University of Glasgow and offers a common first year of study leading to an M.Sc. This first year is taught primarily at Glasgow, but draws on staff from all participating institutions. At the end of the first year those students who have reached the qualifying standard can proceed to a Ph.D. registration at anyone of the eight universities. Common training sessions through weekend programmes, conferences and seminars continue to be offered throughout the research registration, bringing students in the second and third years of their studies together, and preventing the isolation of research students that might otherwise occur. This pooling of expertise is still comparatively rare, but it does allow the participating institutions to increase their number of research students and raise the general profile of research in the discipline.

This collaborative graduate school model is potentially a very effective way of promoting interdisciplinary work. It can also allow institutions, which on their own may not have a sufficient number of staff or students in a particular discipline, to develop research and postgraduate training.

There are problems associated with collaborative graduate schools. Collaborative graduate schools tend to represent only a small proportion of anyone institution's graduate work. It has been hoped that the European interdisciplinary research schools will help to raise the overall standard of research training by cascading best practice, but unless there is some overarching graduate school structure in place for those parts of the institution not participating in the interdisciplinary work, it is not always clear how this will be achieved. Inter-institutional collaboration is difficult to manage and the rewards are not always spread evenly.

4. ROLES OF GRADUATE SCHOOLS

Four conditions appear central to an effective graduate school. First, it should have a distinctive place in the organisational structure of the institution, with its own designated head and dedicated committee (or other representative body). Second, it must have the means to do the job, adequate administrative support, and, arguably, its own budget, and privileged access to (if a not outright 'ownership' of) physical facilities. Third, it must have a clear set of responsibilities for making, and implementing, policies on postgraduate education and research. Finally, the graduate school needs properly articulated aims and objectives, which may be incorporated in a mission statement.

To satisfy the first of these conditions, graduate schools, whatever their actual title, must have a head, typically a Dean, Director or Pro- Vice-Chancellor. Graduate schools are also likely to have least some form of governing body, a committee with representation ill from the full range of participants -research staff and trainers and, ns crucially, postgraduate students. In addition, they need clearly defined policy-making and implementation responsibilities of their own, and also to be able to influence wider institutional policies on a range of issues such as the allocation of departmental or residential accommodation, library opening hours and IT facilities. Consequently the constitution of graduate schools is a key factor in their overall effectiveness.

To satisfy the second, graduate schools need dedicated administrative support. All institutions

have identified individuals, generally administrators, who are responsible for managing a range all of postgraduate related activities, such as admissions, examinations and applications for research grants. Those institutions which have established graduate schools have tended to establish graduate school offices by concentrating such administrative services and creating a cadre of administrative and clerical staff. Some graduate schools also have their own budgets in order to underpin their organisational distinctiveness. The survey found that well over a third of existing graduate schools were budget centres (**Table 6**).

Graduate schools should also ideally be able to provide dedicated facilities for staff and students. The survey found that just over half the existing graduate schools had their own accommodation, although this generally took the form of office space for administrative and academic staff. Only eight provided accommodation for students, and seven offered computing facilities (**Table 7**). It has been forcefully argued, by the National Postgraduate Committee among others, that graduate schools must be in a position to provide dedicated workspace, IT support and common-rooms for postgraduate students.

To satisfy the third and fourth conditions, graduate schools need a clear set of responsibilities which match their aims and objectives. These responsibilities cover a wide range of activities. The balance between these responsibilities within particular graduate schools reflects their institutional setting, in terms of wider institutional missions, the scale (and scope) of postgraduate education in the institution and its research profile. No standard blueprint can be devised to describe the typical graduate school. What matters is the consistency of the 'fit' between responsibilities and objectives.

In the survey, existing graduate schools were asked to indicate whether they had primary responsibility, some responsibility or no responsibility for a range of activities grouped under four broad headings -postgraduate students; programmes; research policy; and facilities and staff development. Only in the first two of these areas are graduate schools more likely to have primary responsibility than no responsibility for policy-making, which suggests that these are the core functions of existing graduate schools (**Table 8**). This is confined by the emphasis placed on improving the quality of postgraduate education among the aims and objectives of graduate schools. Without exception, graduate schools have been established to improve the quality of graduate education (**Table 15A**).

The results from the survey suggest that a number of core activities can be identified for most graduate schools. For postgraduate students these include responsibility for research students, monitoring student progress, training programmes and publicity. Other key student-related activities, such as admissions, liaison with student organisations, and grievances and appeals, appear in dedicated most HEIs to be regarded as generic institutional activities rather than the special responsibility of the graduate school. Although all existing graduate schools bar one, have some responsibility for space for recruitment, only a minority have primary responsibility for this activity (**Table 9**).

The next most significant area of responsibility for graduate tools must schools is academic programmes. Here the core activities, in most cases, are determining degree and examination regulations, approving new postgraduate programmes, and reviewing existing programmes (**Table 10**).

In the third broad area, facilities and staff development, the core tasks are coordinating training programmes and providing facilities for staff or students, while library and residential provision is a more peripheral responsibility (**Table 11**).

Most UK graduate schools established to date have little direct responsibility for research policy. Seven had none at all, and for most it was a peripheral responsibility. Within this broad area the most important responsibility is for coordinating institutional responses to the RAE. This may be a short-term role. Existing graduate schools have almost no responsibility for ongoing, and arguably core, functions such as allocating Funding Councils' research funds and pump-priming, and only limited responsibility for managing research grants and applications (**Table 12**).

The peripheral involvement of graduate schools in research policy is borne out by the comparatively low priority accorded to placed on managing research centres and promoting interdisciplinary work among the aims and objectives of graduate schools (**Table 15C and 15D**). Greater importance is attached to improving research of graduate performance, although this may reflect the imminence of the next RAE (**Table 15B**). Overall, it is clear that, in the 'old' universities, research policy is decided and implemented through other channels, such as research support and management units or free-standing research schools. In the 'new' universities and colleges of higher education, where the volumes of research activity and postgraduate education are more modest, it makes sense to combine these responsibilities.

5. ADVANTAGES OF A GRADUATE SCHOOL MODEL

There are a number of key roles which graduate schools can play to the advantage of those institutions which introduce such a structure.

5.1 Championing the Cause of Graduate Education

The outstanding advantage of any graduate school structure is that graduate education has a clearly identified champion, and one which normally has good lines of communication to the key policy-making and resource-allocating bodies within an organisation. In an institution which adopts a graduate school system it should not then be possible to disregard the specific interests of graduate education because a powerful body, or bodies, with a clearly identified constituency, becomes available to remind policy-makers about the impact of decisions or recommendations on graduate education. Much of the responsibility for this role naturally falls upon the head of the graduate school to act as the champion for graduate education.

An effective graduate school should be able to bring about cultural change within an institution in favour of specific modes and structures for the provision and support of graduate education. The graduate school should be able to articulate its own vision of academic excellence and set about promoting the *vision*. Graduate schools should be able to make a difference and there must be a value-added element - both to the individual and the institution - which justifies the graduate school's existence.

5.2 Pooling Expertise

By providing an institutional locus, graduate schools should be able to co-ordinate and to pool expertise at department, faculty and institutional level. The school should similarly make this expertise available to others. There should also be efficiency gains and economies of scale involved in the administration of larger institution-wide or faculty-based graduate schools. Effective graduate schools should help smaller departments, which may not have sufficient resources or students to provide a full range of research training or taught programme support, to act as part of a wider body. Graduate schools can act as an administrative clearing house for the various initiatives from Research Councils, funding -bodies and government departments. Graduate schools need not provide any new elements of research training but they may provide a more considered, focused and effective provision of existing elements.

5.3 Quality Assurance and Quality Control.

Graduate schools should be a forum for debate about ways in which high quality graduate education can be promoted. A graduate school should have a clear role as part of any institution's quality assessment and quality control procedures and should set minimum standards and encourage best practice. Typically, graduate schools set minimum standards for admissions, help monitor student progress and participate in the review of degree programmes. Graduate schools should be able to offer additional means of developmental support for postgraduate students and - equally importantly if institutional change is to take place - supervisors.

A graduate school may also enhance the training environment by becoming the key mechanism, which many institutions seem to have been seeking, to break down the isolation of much postgraduate study. It is still the case that research training for many postgraduates

follows an apprenticeship model. Despite efforts conceptually to broaden the base of research training much, perhaps too much, depends on a personal relationship between supervisor and student. Graduate schools should be able to reify a more contemporary and broader training and developmental base. They can also become a reference point for establishing new ground rules and, if necessary, adjudication.

It must be clearly asserted that in seeking quality standards in graduate education the graduate school is not acting on behalf of graduates against a recalcitrant organisation to which this represents a cost. Any step increase in the quality of a training environment tends to incur significant initial costs but the pay-off here is three-fold and reinforcing. First, there is an immediate return to the institution which, by adding value to its graduates, gains through immediately enhanced research activity. Second, the individual gains a more satisfactory development experience through their research training which increases their employability, both by allowing them to demonstrate their added value to an employer and then to perform more effectively in any career. Third, the enhanced employability of graduates with this experience feeds back to increase both the number and quality of applicants to the graduate school, and the willingness of large employers to associate with the activity taking place.

5.4 Managing Research

The role of the graduate school in this context depends very much on its constitution and most graduate schools have no research management role (see Appendix). Often for a school to be able to promote postgraduate training and research substantial changes need to be made in an institution's approach to its research structure.

If the school becomes the identified research structure, its primary role should be to manage institutional research activity in such a way as to protect the research effort from the pressures of resource fluctuations and to maximise the funding opportunities for research grants. A research school should help to identify and secure the allocation of academic staff time and other facilities for research. In pursuing this aim, the graduate school emphasises the quality of the research environment as a key factor in the quality of the graduate training environment.

The training/research synergy has been a key part of the common understanding of graduate education in the UK, and has often been cited as a justification for the broader disbursement of research funds through the HE system. It may therefore be necessary for the school both to work hard to support existing high quality research activity and at the same time to monitor carefully whether departments or units with poor research profiles are providing research training at a satisfactory level, and advise on appropriate action.

5.5 Interface with the Outside World

Graduate schools should be able to provide an accessible interface to the outside world. Industry, commercial organisations and the public sector often find institutional organisation bewildering, but graduate schools can present a standard, clear and coherent image and message to potential students or funders of research. There are marketing and organisational advantages in such an approach.

Postgraduate training partnerships, some of which have been stimulated by the 'Faraday' concepts provided by the Prince of Wales' working group on innovation, have been appearing in many institutions. These often build on existing schemes funded by the Research Councils, by industry and by the institutions themselves. Bringing all these schemes together under one umbrella that combines both a developmental and administrative approach, can make good organisational sense.

Technology transfer works best, it is said, when mediated through research people transfer. For this reason, many companies find that sponsorship of postgraduates is an effective way to identify excellent young people to recruit and at the same time to bring new expertise into the company. This can be even more effective where such training takes place jointly between the company and the resource institution. In such cases the graduate school can play a key research marketing role in setting up the liaison. It must then play a careful management role, ensuring that the liaison works to the benefit of all parties, including the graduate trainee, and

that appropriate academic standards are maintained.

It may also become more common for graduate training to take place across institutional boundaries in the future. A central repository for knowledge, expertise and, in due course, identification of funding routes will be found desirable if not essential.

5.6 Facilitating New Forms of Academic Collaboration

Graduate schools should be able to cut across existing institutional structures and develop new areas of research, particularly interdisciplinary activity. The school can provide a support structure for students who have no 'fixed' home in much the same way as many combined and interdisciplinary study units do for undergraduates. Where, as seems likely to happen, taught postgraduate courses are developed which aim to add portfolio specialisms to basic disciplines, then the graduate school may be the ideal 'one-stop-shop' to help groups of departments to interact with discerning 'customers' without creating a plethora of new degrees.

It is quite common in North America for graduate schools to be given direct responsibility for the management of interdisciplinary research centres. Since such centres can at times sit uncomfortably between academic budget centres, their relocation within a distinct alternative body has clear managerial advantages.

What is important is that the graduate school should seek to ensure that as supportive a structure exists for interdisciplinary students as for single subject researchers.

6. POTENTIAL DISADVANTAGES OF GRADUATE SCHOOLS

Since the concept of graduate schools first began to be canvassed, a number of fears have been expressed about possible negative aspects and effects. These have not, in the main, been realised in practice, but it will be useful to review them as indicators of dangers that the successful school will avoid.

6.1 Window-Dressing

An institution might introduce graduate schools primarily as a public relations exercise. While this could, in the short-term, bring some promotional benefit, the quality of competition in the field will rapidly expose the ploy and the damage in wasted time and lost reputation will be considerable. To be a worthwhile investment, graduate schools must be launched with the clear charge to improve the quality of graduate education, and must be provided with the resources to achieve their aim. A graduate school which is only the postgraduate office with a new name is not worth the cost of changing the letterhead.

6.2 Downgrading Undergraduate Work

North American higher education is frequently criticised for insufficient concern with the quality of undergraduate provision. Could a graduate school create an artificial barrier between the new undergraduate and postgraduate sectors in an institution? Such a bar would make it more difficult for undergraduates to recognise the research element they should be developing in their own learning. They should perceive a natural progression from their first degrees into advanced learning and research. Four-year undergraduate courses in Science are already blurring the edges between undergraduate and postgraduate activity, and this is a process that should be encouraged. It will be important for those concerned with the organisation of graduate schools to make sure that a variety of channels are established, and kept open, to ensure the healthy interaction of undergraduate, postgraduate and academic staff sectors.

Postgraduate participation in the teaching effort should be of a kind that enables undergraduates to feel that they are being kept in touch with innovative thinkers on the research front, not merely being fobbed off with teaching apprentices. Access to learning resources (laboratories, equipment, books, workspace) should not be such that undergraduates perceive themselves as disadvantaged disproportionately to their different levels of work. These should be matters of central institutional policy.

6.3 Dividing and Demoralising the Academic Workforce

The division of academic staff between those who teach undergraduates and those who carry out research and teach or supervise postgraduates is not common in the UK. But it is field implicit in some models of graduate school organisation, and has surfaced in various aspects of government funding policy. A graduate school can only achieve its purposes in an HEI with clear policies for differential teaching loads, reflecting differential commitments to research activity, and which seeks to reinforce the links between research-active staff and postgraduate training. However, this does not mean that the balance of every staff member's load between research, postgraduate training and undergraduate teaching should be fixed. Individuals are not always pitching at the same balance of research and scholarly excellence throughout their academic lives. There has to be movement within the system, both to allow the maximum number of established staff to maintain intellectual capacity and flexibility, and to enable new and young academics to show and expand their potential. Sensitive institutional policies are required to maintain that movement.

6.4 Reduction of School/Departmental Autonomy

Traditionally, departments and schools represent the basic unit at which research or postgraduate training is conducted. It might be felt that graduate schools diminish departmental authority over students, and thereby threaten the department's sense of commitment to their graduate training responsibilities. This seems unlikely if sufficient care is taken to emphasise that the role of the graduate school is to support local activity in individual units, while providing additional opportunities for interdisciplinary work. Graduate schools so far established do not seem to have sought to break the traditional pattern of a student's primary registration being with a department or school.

6.5 Disruption of Existing Structures

Graduate schools can be presented as threatening traditional institutional structures and familiar channels of communication. This is especially so in the case of the institution-wide school which cuts across faculty organisations. The fear is of loss of prestige, authority and resources: that the level of the central overhead might be increased at the expense of departmental budgets, and that the department might find itself working to enhance the reputation of an umbrella body while its own name slips into the background. Successful graduate schools will take care to demonstrate to contributing units that the administrative support they offer represents added value, and will make an effort to provide a showcase for good work from all their constituent units.

6.6 Incoherence

At this relatively early stage in their development in the UK, with a number of possible models and functions on the table, graduate schools risk being taken up by different people within an institution for different reasons. High costs and poor results are the price that is paid for failure to agree, right from the start, what precisely the role of the graduate school in the institution is to be, and what significant difference the introduction of the new body is expected to make.

7. SETTING UP A GRADUATE SCHOOL

7.1 Define the Purpose of the School in your Institution

Graduate schools have typically been established:

- to improve the quality of provision for postgraduate students
- to increase the number of postgraduate students
- to stimulate or strengthen areas of academic activity.

Sometimes motives have been defensive or reactive, in response to changes initiated by bodies such as Research or Funding Councils. Sometimes they have been proactive, seeking to

establish new organisational structures to promote research or enhance postgraduate training. It is important to be clear whether you are responding to external pressures or initiating a way forward of your own (or both).

Consideration needs to be given as to where the primary impulse of the school will lie. Is it in developing the research-base for staff, or in gathering together a postgraduate body (research and taught)? These are by no means exclusive aims but not many institutions have the resources to push both aims at the same time, to the same extent. An agreed order of priorities can be a useful safety net in a crisis.

7.2 Review Current Postgraduate Teaching Assets

Consider carefully the strengths and weaknesses of your existing provision for research and taught postgraduate students. How do these compare with other similar institutions nationally or internationally?

- Size of postgraduate population (taught and research).
- Size of population in other institutions with a similar subject mix/mission.
- External perceptions of the quality of your provision (consider student questionnaires, opinion of postgraduate representative organisations, course review documentation, external examiners' reports, teaching quality assessment and academic audit reports, employers' returns, etc.)
- Student success rates and submissions rates
- Number of postgraduate awards secured from Research Councils and the British Academy
- Level of research grants and contracts awarded; comparison with level achieved in other institutions
- Achievement level in last Research Assessment Exercise; comparison with level reached by institutions with similar subject mix/missions.
- Number of new research centres/major research initiatives established over the last five years

7.3 Review Current Organisational Structures

It is important to decide whether existing organisational provision is already sound, and needs a graduate school only for its better co-ordination and expansion, or whether existing structures are not producing results and require a radical overhaul.

Which particular graduate school model is best for an institution depends to an extent on the structures in place: whether, for example, the institution has strong faculty structures, whether it is centralised or decentralised, whether or not it has budgetary devolution to departmental level, etc.

The institution's sense of its research mission is crucial. Account must also be taken of successive implementation plans, and the commitment they demonstrate at departmental and institutional level to the development and potential of research in particular subject areas.

7.4 Take the Broad View

It is important to make a realistic assessment of the institution's place and potential, and then consider that within an equally realistic assessment of the current national educational policy. In a small institution beginning to build its research base, the graduate school may need initially to be more tightly focused, concentrating resources with the intention of attracting further

resources in the future which may be spread more widely. A larger institution, with a solid tradition of research behind it, could adopt a more ambitious initial role for the school. A well established inner-city institution, with developing institutions adjacent, might conceive of a version of a school which could both cover its own internal interests, and be open to networking developments with its neighbours. At this relatively open moment in higher education politics, graduate schools offer the imaginative policy-maker one of the most potent instruments for nudging an expanded but still inchoate system down some of the better roads to change.

7.5 Fix Specific Targets

Imaginative policies are one thing; hard results, another. The successful graduate schools of the next decade will have both an exciting vision and clear strategies. Given the historical neglect of the postgraduate sector in the UK, these strategies must include the setting and monitoring of achievable targets for quantity and quality of provision, subject areas for development, numbers of students to be recruited and standards of provision to be achieved.

8. CONCLUSIONS

A graduate school in an HEI can play a critical role in enhancing and embodying the highest standards in a critical part of its human resource development. The diversity of structures which is now emerging in HEIs in the UK suggests that this role is not necessarily always the highest priority on the agenda of every institution seeking to create a home for the graduate school. Yet, unless these high standards are acknowledged and incorporated it is unlikely that a graduate school can be successful in the longer term.

The market for graduate education is likely to expand rapidly over the next few years. The proportion of graduates in most HEIs, whether taught postgraduates, research postgraduates or, indeed, postdoctoral researchers, is only likely to increase. Institutions which do not recognise the powerful constituency which this articulate and mature group of people represents will find it increasingly difficult to attract the numbers of individuals that they require to provide an appropriate resource-base for their academic departments.

Many of those who will be taking up graduate courses will be self-financed and will therefore be even more keen than undergraduates to ensure that they obtain full value for their money. They will seek out information about the extent to which the graduate structures of an HEI have successfully added value to previous graduate students. They will want to know about generic training, the development of competencies underpinning lifelong learning, the extent to which courses were clearly focused on those goals and aspirations which graduates have in their career planning, and the success with which former graduates have entered the job market. Those institutions which have employed a 'graduate school' for marketing purposes or as a window-dressing will find it increasingly difficult to compete in this market atmosphere. Only those institutions which have genuinely absorbed the need to provide real empowerment to graduates will be able to respond positively to the scrutiny which this growing constituency provides.

A graduate school must play a difficult dual role in working on behalf of both students and the institution. It must champion the standards of graduate education within the institution, but at the same time it must be able to demonstrate to prospective graduates the quality and range of services which the institution is ready to provide. In the past, much of our graduate education has been focused on an extension of undergraduate courses, frequently vocationally orientated. The new graduate schools will have to provide much more than this. Graduates will expect to see themselves identified as a major learning group in the institution with appropriate and specific services provided for their welfare and development.

There must be a full consideration of all the graduate requirements. Offices which unite existing services will need to enhance these, most HEIs, link them and create a properly coordinated and integrated or, indeed, structure to underpin graduate career development. Only then will Institutions they be sufficiently empowered to develop the required high which this quality environment. Developments such as the M.Res. debate will find it have stimulated a great deal of new thinking about the kind of training and learning environment which graduates require. Disciplinary development alone is not enough. Consideration

needs to be given to new learning approaches to add value to graduates and to provide them with the skills which they will require in any future employment and -at all stages in their careers -the ability to respond to learning environments both in work and by returning to education. This realisation identifies a further test for the quality of a graduate school. Employers who recognise that to previous there are differences between institutions in the extent to which they enhance the employability of their graduates will seek to recruit preferentially from those institutions which have been most successful in creating quality development structures. The increased employment rate of graduates from those institutions will become a marker enabling those institutions to be more selective in the graduates which they take in, further enhancing the quality of their output. There will be a self-reinforcing cycle between the here. Only effort and care which they have invested in the graduate school and the success they have in marketing themselves to graduates to respond to students and to the employers of those graduates.

All these factors identify reasons why the graduate school concept should be taken extremely seriously and should be developed with care and with rigour. It is important to avoid creating facades behind which there is little genuine internal change to traditional approaches to graduate education. It is to be hoped that institutions recognise that only the highest academic and pedagogical standards are ready to will be sufficient to sustain research and enhance scholarship.

ANNEX

EXISTING GRADUATE SCHOOLS WITH THEIR TITLES: JANUARY 1995

University of Abertay	Dundee Business School
University of Birmingham	Graduate Research School
University of Bristol	<ol style="list-style-type: none">1. Arts Faculty Graduate School2. Engineering Graduate School3. Law Graduate School4. Science Graduate School5. Medical Faculty Graduate School6. Social Sciences Graduate School
Cranfield University	<ol style="list-style-type: none">1. College of Aeronautics2. School of Mechanical Engineering3. School of Industrial and Manufacturing Science4. School of Biotechnology5. School of Management
De Montfort University	<ol style="list-style-type: none">1. Science Graduate School2. Engineering Graduate School3. Design Graduate School4. Computing, Graduate School5. Humanities Graduate School6. Business Graduate School
University of Durham	Graduate School
University of East Anglia	The Graduate School -UEA Norwich
University of Edinburgh	<ol style="list-style-type: none">1. Graduate School in English Literature2. Graduate School in Geology and Geophysics3. Graduate School in Biological Sciences4. Graduate School in Social Sciences5. Graduate School in Divinity6. Graduate School in History7. Graduate School in Asian and Modern European Languages8. Graduate School in Law
University of Glasgow	<ol style="list-style-type: none">1. Graduate School in Social Sciences2. Graduate School in Arts and Humanities3. Graduate School in Veterinary Medicine
Institute of Education - University of London University of Kent at Canterbury	<ol style="list-style-type: none">1. Graduate School of Physics2. Graduate School of Chemistry3. Graduate School of International Relations4. Research School of Bio-sciences
University of Lancaster	<ol style="list-style-type: none">1. Sciences and Engineering Graduate School2. Management Graduate School3. Social Sciences Graduate School

University of Leicester	<ol style="list-style-type: none"> 1. Graduate School of Physical Sciences 2. Biological and Medical Sciences Graduate School 3. Arts Graduate School 4. Social Science Graduate School 5. Law Graduate School 6. Education Graduate School
University of Liverpool	<ol style="list-style-type: none"> 1. Biological and Life Sciences Graduate School 2. Economic and Social Science Graduate School 3. Humanities Graduate School 4. Environmental Sciences Graduate School 5. Clinical and Health Sciences Graduate School 6. Engineering and Physical Science Graduate School
London Business School - London School of Economics and Political Science	LSE Graduate School
University of Manchester	<ol style="list-style-type: none"> 1. Graduate School in Arts 2. Graduate School in Economics, Social and Legal Studies 3. Graduate School in Education 4. Graduate School in Science, Engineering and Medicine
University of Manchester Institute of Science and Technology	Graduate School
University of Nottingham	The Graduate School
University of Paisley	The Graduate School
University of Portsmouth	The Research Office
Royal College of Art - Royal Holloway and Bedford New College	Graduate School
University of St Andrews	St Leonard's College
University of Salford	Graduate School
University of Sheffield	The University of Sheffield Graduate School
School of Oriental and African Studies	Graduate School
Southampton Institute of Higher Education	Research Development Service
University of Strathclyde	<ol style="list-style-type: none"> 1. Environmental Studies Graduate School 2. Architecture Graduate School 3. Economics Graduate School
University of Wales, Swansea	Swansea Graduate School
University of Sussex	-

University of Ulster

Research Office

University College London

Graduate School

University of Warwick

Warwick Graduate School

APPENDIX

GRADUATE SCHOOLS SURVEY

BACKGROUND, METHODOLOGY AND RESPONSE RATE

A questionnaire was sent in December 1994 to all universities in the United Kingdom and to the constituent colleges of the Universities of London and Wales (108). It was also sent to those colleges and institutes of higher education which are members of the UK Council (16). Because of the time- scale, it was not possible to send reminders. The overall response rate was 73 per cent (124 questionnaires were sent and 90 completed). The response by sector is given in **Table 4**.

It is important to note that a good proportion of responses indicated that the position with regard to graduate schools was developing. In many cases graduate schools have been recently established and their areas of responsibility are likely to change during the next few years. The survey must, therefore, be regarded as a snapshot of the position in December 1994/January 1995.

Most of the replies have been analysed simply by reporting frequencies -but with the following modifications:

- (i) Three institutions which reported that they had established graduate schools have been excluded from Tables 5-15 on the grounds that they are entirely graduate institutions and, consequently, the institutions and graduate schools are co-terminous: the Institute of Education, University of London; the London Business School; and the Royal College of Art.
- (ii) The University of Ulster has been included, although it has not formally established a graduate school, because in its view its research office fulfils most of the functions of a graduate school, and it completed the questionnaire accordingly. Both Portsmouth University and the Southampton Institute of Higher Education similarly have graduate schools in the shape of research offices and completed the questionnaire on that basis. Other institutions are believed to have similar research offices which may perform many of the functions identified in the following tables.
- (iii) Two separate questionnaires were completed from the University of Glasgow, one from the graduate school in social sciences and the other from the graduate school in arts and humanities. Both have been included in the analysis of the responsibilities of graduate schools in Tables 8-15.

Table 1: Existing graduate schools

CHEs 1 (3%)

**'New' Universities
4 (12%)**

**'Old' Universities
29 (85%)**

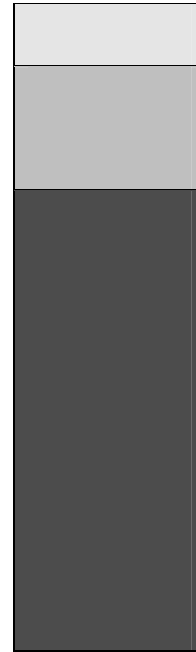


Table 2: Intentions with regard to graduate schools, by sector

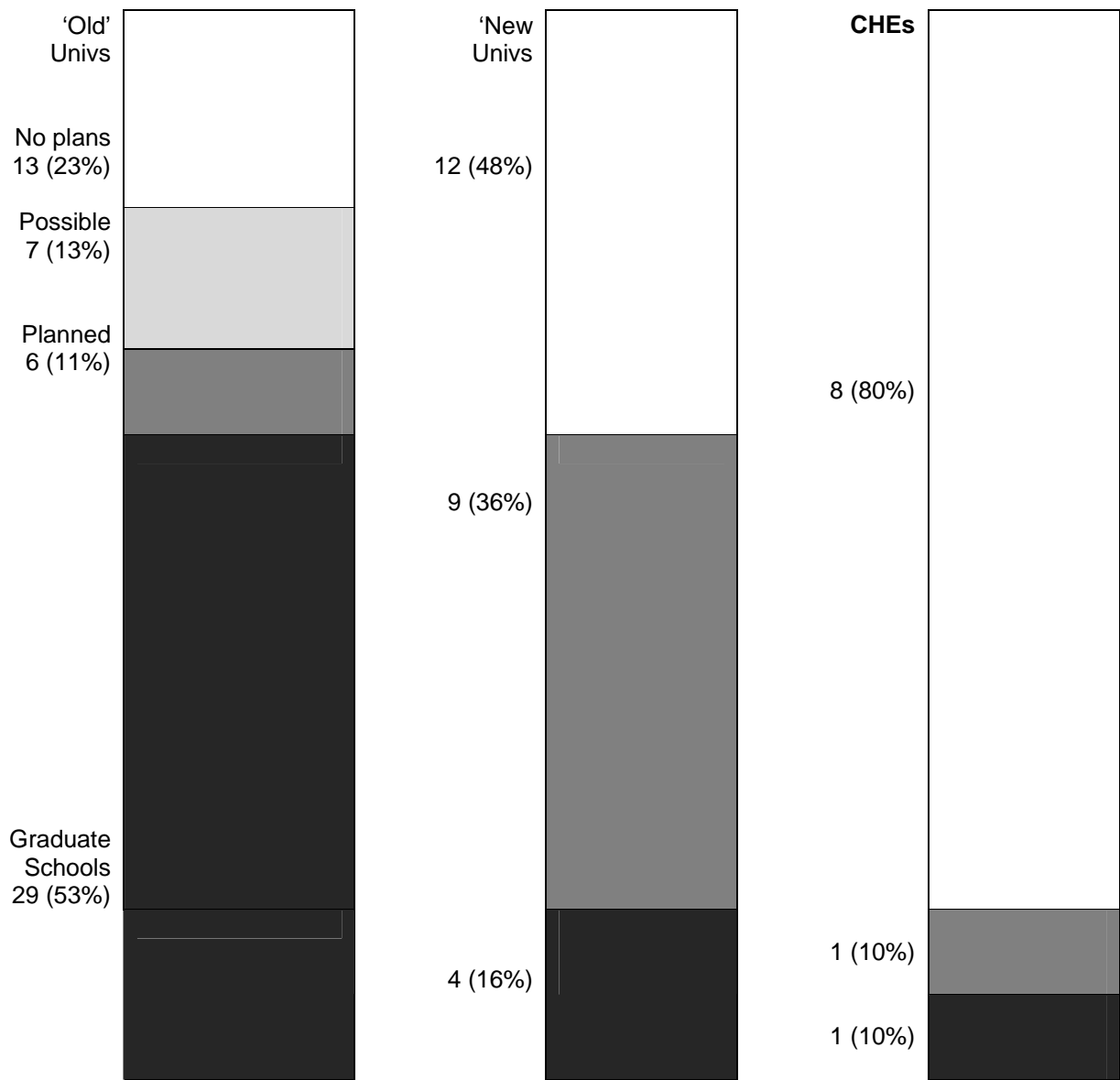


Table 3: Intentions with regard to graduate schools, by institution

	<i>Existing graduate schools</i>	<i>Plan to establish graduate school in next two years</i>	<i>Possible/ under consideration</i>	<i>No plans to establish graduate school</i>
'Old' universities:				
Birmingham	Nottingham	Bath	Aberystwyth	Aberdeen
Bristol	RCA	Bradford	Brunel	Aston
Cranfield	Royal	Heriot- Watt	Exeter	Bangor
Durham	Holloway	Hull	King's	Cambridge
East Anglia	St Andrews	Leeds	Loughborough	Cardiff
Edinburgh	Salford	Stirling	QMW	Essex
Glasgow	Sheffield		Southampton	Goldsmiths
Institute of Education	SOAS			Lampeter
Kent	Strathclyde			Newcastle
Lancaster	Sussex			Oxford
Leicester	Swansea			Reading
Liverpool	Ulster			School of .
LBS	UMIST			Pharmacy
LSE	UCL			University of
Manchester	Warwick			Wales
				College of
				Medicine
'New' universities:				
Abertay			Anglia Poly	Bournemouth
De Montfort			Derby	Brighton
Paisley			Greenwich	Central Lancs
Portsmouth			Guildhall	Coventry
			Hertfordshire	Glamorgan
			Humberside	Huddersfield
			Robert	Kingston
			Gordon	Leeds Met
			South Bank	North London
			Staffordshire	Northumbria
				Sunderland
				West of
				England
Colleges of higher education:				
Southampton		St Martin		Bath
Institute				Bolton
				Cheltenham
				and
				Gloucester
				Chester
				Harper
				Adams
				Nene
				Roehampton
				Worcester

Table 4: Response rates by sector

	'Old' universities	'New' universities	Colleges of Higher education
Questionnaires sent Out	69	39	16
Replies received	55	25	10
Response (per cent)	80%	64%	63%

Important: Not all the questions were completed by all respondents and on occasions two answers were made in response to the same question. The totals on Tables 5- 15, therefore, do not always equal the number of forms returned.

Table 5: Models of graduate schools

Institution-wide	19 (16 'old' university; 2 'new' university; one CHE)
Department-based*	12
Programme-based	3
Inter-institutional	1

* includes faculty or school-based.

Table 6: Budget Centres

Graduate school is a budget centre	12
Graduate school is not a budget centre	18

Table 7: Graduate school accommodation

Graduate school has its own accommodation:	16
<i>For staff:</i>	15
<i>For students:</i>	8
<i>IT facilities</i>	7
Graduate School does not have its own accommodation	15

Table 8: Responsibilities of graduate schools

Postgraduate students	1.84
Programmes	1.89
Facilities and staff development	2.38
Research policy	2.48

Note: Institutions were asked to indicate whether their graduate school had responsibility for policy-making in the above areas. These overall weightings have been calculated by scoring 1 for 'primary responsibility', 2 for 'some responsibility' and 3 for 'no responsibility', and taking the average of all the 'scores' in an area of activity. The lower the score the greater the level

of responsibility .Most graduate schools have either primary or some responsibility for policy for postgraduate students, while most have either some or no responsibility for research policy and facilities and staff development.

Table 9: Responsibility for postgraduate students

(Figures in brackets in table 9-12 are responses from 'old' universities)

	<i>Primary responsibility</i>	<i>Some responsibility</i>	<i>No responsibility</i>
Research students	19(15)	11(10)	-(-)
Taught PG students	15 (13)	15 (13)	1 (-)
Admissions	11 (10)	16 (11)	5 (5)
Registration	14 (11)	7 (6)	10 (9)
Student records	9 (7)	15 (13)	6 (6)
Liaison with student organisations	10 (8)	16 (14)	4 (3)
Monitoring progress	17 (12)	12 (12)	2 (2)
Grievances and appeals	11 (10)	9 (7)	11 (9)
Scholarships	10 (7)	16 (15)	5 (4)
Teaching Assistantships	5 (5)	15 (13)	11 (8)
Training programmes	17 (14)	9 (7)	3 (3)
Recruitment	12 (10)	17 (14)	1 (1)
Publicity	14 (13)	16 (12)	1 (1)
Travel funds	5(4)	11(8)	14(13)
Social provision	8(7)	17(14)	5(4)
Degree congregations	2 (1)	6 (6)	23 (19)

Table 10: Responsibility for programmes

	<i>Primary responsibility</i>	<i>Some responsibility</i>	<i>No responsibility</i>
Approval of new programmes	11 (10)	13 (11)	7 (4)
Review of PG Programmes	13(12)	15(11)	3(3)
Degree regulations	14 (13)	10 (8)	7 (5)
Award of degrees	10(8)	5(4)	17(14)
Appointment of examiners	11 (9)	9 (6)	11 (11)
Examination regulations	13 (11)	11 (9)	6 (6)

Table 11: Responsibility for facilities and staff development

	<i>Primary responsibility</i>	<i>Some responsibility</i>	<i>No responsibility</i>
Training for staff	4 (3)	14 (10)	12 (12)
Facilities	5 (4)	16 (13)	9 (9)
IT provision	2 (2)	14 (12)	14 (12)
Library provision	1(1)	12(10)	17(15)
Residential provision	1 (1)	11 (11)	18 (14)

Table 12: Responsibility for research policy

	<i>Primary responsibility</i>	<i>Some responsibility</i>	<i>No responsibility</i>
Allocating FC research funds	3 (1)	7 (7)	19 (17)
Pump-priming funds	3 (2)	10 (6)	17 (17)
Travel funds	3 (3)	9 (5)	18 (17)
Research centres	4 (3)	9 (7)	16 (15)
Grants & applications	6 (3)	11 (9)	13 (13)
Sabbatical leave	(-)(-)	2 (1)	27 (23)
Research assistants	4 (3)	3 (-)	23 (22)
Co-ordinating RAE	8 (4)	8 (7)	14 (14)

Table 13: Other responsibilities

Institutions were asked to list any additional responsibilities for which their graduate schools had primary (P) or some responsibility (S). Ten did so.

<i>Cranfield:</i>	Financial bottom line (P)
<i>De Montfort:</i>	Central school information centre (P)
<i>Edinburgh:</i>	Pastoral (S)
	Liaison with industry, employers, etc (S)
	Information Science (S)
<i>Glasgow (arts):</i>	Seminar and lecture programme (P)
<i>Lancaster:</i>	Exerting political pressure for better provision for postgraduate students (S)
	Sharing good practice regarding postgraduate students(S)

<i>Portsmouth:</i>	Franchised higher degree students (P) Promulgating research funding opportunities (P) University research report (P)
<i>Sheffield:</i>	New PG course/programme development (P) PG student numbers planning (S)
<i>Southampton Institute:</i>	Research development (P) External links (P)
<i>UCL:</i>	Interdisciplinary developments (P) National and international links (S) Provision/co-ordination of induction skills and language training (P)
<i>Ulster:</i>	Intellectual property rights (P) Ethical matters (P) Consultancy (P) European matters, including European Social Fund (P)

Table 14: Importance of listed aims and objectives of graduate schools

Improving the quality of graduate education	5
Increasing the number of postgraduate students	4.9
Improving administrative services for postgraduate students	4.2
Improving research performance	4.1
Promoting interdisciplinary work	3.9
Managing research centres	2

Note: rated on a five point scale; the higher the rating, the more important the aim.

Table 15: Aims and objectives of graduate schools

A. Improving the quality of graduate education

1 (low importance)	2	3	4	5 (Highly important)
			Ulster UMIST	<i>Abertay</i> Birmingham Bristol Cranfield <i>De Montford</i> Durham East Anglia Edinburgh Glasgow Kent Lancaster Leicester Liverpool LSE Manchester
				Nottingham Royal Holloway <i>Paisley</i> <i>Portsmouth</i> St Andrews Salford Sheffield SOAS <i>Southampton Institute</i> Strathclyde Sussex Swansea UCL Warwick

B. Improving research performance

1	2	3	4	5 (highly important)
Bristol Durham Salford		East Anglia Glasgow (arts) Nottingham Strathclyde	<i>Abertay</i> Leicester SOAS Swansea Sussex <i>UMIST</i>	Birmingham Cranfield De Montfort Edinburgh Glasgow <i>(soc. sci.)</i> <i>Kent</i> Lancaster Liverpool LSE Manchester
				<i>Paisley</i> <i>Portsmouth</i> St Andrews Sheffield <i>Southampton</i> <i>Institute</i> <i>Ulster</i> <i>UCL</i> Warwick

C. Promoting interdisciplinary work

1	2	3	4	5 (highly important)	
Durham	Bristol	<i>Abertay</i>	<i>De Montfort</i>	Birmingham	Nottingham
Leicester	<i>Southampton Institute</i>	Glasgow (arts)	Edinburgh	East Anglia	Salford
		Liverpool	St Andrews	Glasgow (soc. sci.)	Sheffield
		<i>Paisley</i>	Swansea	Kent	SOAS
		<i>Portsmouth</i>	Sussex	Lancaster	Strathclyde
		Ulster	UMIST	LSE	UCL
				Manchester	Warwick

D. Managing research centres

1	2	3	4	5	
Bristol	Manchester	Birmingham	Nottingham	<i>De Montfort</i>	St Andrews
Durham	<i>Paisley</i>	UCL	Sussex	Leicester	Ulster
East Anglia	<i>Portsmouth</i>		Warwick	<i>Southampton Institute</i>	
Edinburgh	Salford			Strathclyde	
Glasgow (arts)	Sheffield				
Glasgow (soc.sci.)	SOAS				
Kent	Swansea				
Lancaster	UMIST				
Liverpool					

E. Improving administrative services for postgraduate students

1	2	3	4	5 (highly important)	
Glasgow (arts)	Edinburgh	<i>Abertay</i>	Royal	Birmingham	Manchester
Kent		Liverpool	Holloway	Bristol	Nottingham
		<i>Southampton Institute</i>	St Andrews	<i>De Montfort</i>	<i>Portsmouth</i>
		<i>Paisley</i>	Strathclyde	Durham	Salford
		UCL	Sussex	East Anglia	Sheffield
				Glasgow (soc. sci.)	SOAS
				Lancaster	Swansea
				Leicester	Ulster
				LSE	UMIST
					Warwick

F. Increasing the number of postgraduate students

1	2	3	4	5 (highly important)	
		Portsmouth	Abertay	Birmingham	Manchester
			Edinburgh	Bristol	Nottingham
			Liverpool	<i>De Montfort</i>	St Andrews
			Royal Holloway	Durham	Salford
			<i>Paisley</i>	East Anglia	Sheffield
			SOAS	Glasgow (arts)	Strathclyde
			<i>Southampton</i>	Glasgow (Soc sci)	Sussex
			<i>Institute</i>	Kent	Ulster
			Swansea	Lancaster	UMIST
			UCL	Leicester	Warwick

Table 16: Other aims and objectives

Institutions were invited to list any additional aims and objectives:

<i>Bristol:</i>	Postgraduate training, transferable skills etc.
<i>East Anglia:</i>	Keeping informed about national trends and policies
<i>Edinburgh:</i>	Improving facilities/ working accommodation Economies of scale in research training Exploiting research excellence in departments and cognate areas
<i>Lancaster:</i>	Transmission of good practice
<i>Nottingham:</i>	Increasing the university's portfolio of taught postgraduate programmes
<i>Portsmouth:</i>	Monitoring of RAE developments Promulgating information on funding Monitoring success and submission rates Co-ordination of university research report
<i>Warwick:</i>	Transmission of good practice Policy – making university - wide

SELECT BIBLIOGRAPHY

- Advisory Board for the Research Councils. *Report of the Working Party on Postgraduate Education*. London. (1982).
- Blume, S. and Amsterdamska, O. *Postgraduate Education in the 1980s*. OECD. (1987).
- Burgess, R.G., (ed) *Postgraduate Education and Training in the Social Sciences: Processes and Products*. Jessica Kingsley Publications. (1994).
- Burgess, R.G., Hogan, I. V., Pole, C.I. and Sanders, L. *Postgraduate Research Training in the United Kingdom*. A report for the OECD. CEDAR, University of Warwick. (1993).
- Clark, B.R., (ed) *The Research Foundations of Graduate Education: Germany, Britain, France, United States and Japan*. University of California Press. (1993).
- Committee of Vice-Chancellors and Principals. *Academic Standards in Universities*. (1986, 1987, 1988, 1989).
- Council for Graduate Schools. *Organisation and Administration of Graduate Education. A policy statement*. Washington. (1990).
- Finger, P. and Frank Ford, I. New Structure in Postgraduate Research Training in the Netherlands. *Higher Education Management*. Volume 1, Number 1, pp 20-35. (1989).
- Gross, R. Accommodation of Research Students. *Journal of Graduate Education*. Volume 1, Issue 1, pp 21-24. (1994).
- Hazeu, C.A. Research Policy and the Shaping of Research Schools in the Netherlands. *Higher Education Management*. Volume 3, Number 3, pp 283-291. (1991).
- Higher Education Quality Council. *Choosing to Change*. The report of the HEQC, CAT Development Project. (1994).
- Hogan, J.V. *Graduate Schools: The Organisation of Graduate Education*. CEDAR, University of Warwick. (1994).
- Party Graduate Education in the USA. *Journal of Education Policy*. Volume 7, Number 5, 501-509. (1992).
- 1980s.
- Joint Performance Indicators Working Group Report on the conversion of the data submitted to the 1992 Research Assessment Exercise into performance indicators (established by the Higher Education Funding Councils). (March 1994). :
- Neave, G. and Van Vaught, F.A., (eds) *Prometheus Bound: The Changing Relationship Between Government and Higher Education in Western Europe*. London. (1991).
- Pole, C.J. *Inter-institutional Collaboration*. ESRC policy paper. (1992).
- Postgraduate Research Training Today: Emerging Structures for a Changing Europe*. Report of the Temporary International Consultative Committee on New Organisational Forms of Graduate Research Training. The Hague. (1991).
- Richmond, Sir Mark. *Support of Science and Engineering in the UK*. Text of speech delivered by Sir Mark Richmond, made available by of the CVCP. (1991).
- Rudd, E. *The Highest Education*. London. (1975).

Taylor, M.G. Implications of New Organisational Patterns of Research.
Higher Education Management. Volume 1, Number 1, pp 7-19. (1989).

Welsh, J.M. The Supervision of Postgraduate Research Students. *Research in Education*.
Volume 19, pp 77-78. (1978).

Whiston, T .G. and Geiger, R.L., (eds) *Research and Higher Education, The United Kingdom
and the United States*. Open University Press. (1992)