The disciplines in Australian education

Their share of the research output 1984-1998

ALLYSON HOLBROOK, UNIVERSITY OF NEWCASTLE
MARGARET FINDLAY, AUSTRALIAN COUNCIL FOR EDUCATIONAL RESEARCH

Drawing on the publications records in the Australian education database, this paper provides an analysis of research activity that can be attributed to the foundation disciplines of history, philosophy, sociology and psychology. History, sociology and philosophy (excluding policy studies) have played a relatively minor role in total activity during the period 1984-1998, and psychology a more significant one. However, in more recent years research output in the disciplines is in decline relative to research activity as a whole.

INTRODUCTION

foundations of education: that part of the teacher-education curriculum which deals deliberately with a study of the social forces, institutions, and human relations which undergird formal education. ... implicit in the focus on social, historical, philosophical, and psychological foundations of education is the assumption that the intellectual disciplines do not become meaningfully related to general education unless and until deliberate attention and scholarship are directed to the problem. (Good 1973 p.249.)

The history and philosophy of education, and educational sociology and psychology are four foundation disciplines within education. They have been taught primarily, but not exclusively, within teachers colleges, and university faculties, departments or schools of education in Australia. For close to half a century they constituted the disciplinary core of teacher education programs and educational research and research training. However, this situation has changed markedly over the past decade, largely because of the new demands placed by employers and practitioners on teacher preparation, but also at another level in response to the expansion and reorientation of university systems. One of the outcomes of economic rationalism in education systems has been the devaluation of disciplines within the arts and social sciences generally, with consequent impact on
funding for those disciplines. Academics are under mounting pressure to demonstrate the direct impact of university research and teaching on the way we live, learn and produce goods, services and technologies. In subjects such as the history and philosophy of education this is virtually impossible. Such subjects are directed to ‘understanding’ and ‘enrichment’ in the most liberal sense. They are meant to clarify and contextualise the worlds of policy and practice, and as such there is no direct linear relationship between them and outcomes. The same is not entirely true of psychology and sociology. In their case the teaching and research can be clearly ‘applied’ and have a strong action orientation. Even so it is notoriously difficult to achieve direct ‘take up’ of research findings (Holbrook et al. 2000, pp.42-63). For some time this has been regarded as a very major problem that requires solution (McGaw et. al. 1992).

The sticking point in any evaluation of the contribution of the foundations is what the various groups (practitioners, politicians, bureaucrats and academics) value or believe is ‘meaningful’ and important in relation to education (see quotation above). If there is considerable mismatch between positions it will be hard to obtain any degree of concession or consensus. At this point in time it has become extremely difficult to successfully argue the importance of the foundations as discrete subject areas in teacher preparation programs.

It is the relative research position of the foundation disciplines that is the subject of this paper. In Australia most educational research and development is undertaken by universities. Of the total person hours devoted to educational research, more than 90 per cent can be attributed to university staff and students (Holbrook et al. 2000, p. 64). Moreover, postgraduate students account for a substantial proportion of those hours. Consequently any significant change in resource provision for research will have direct ramifications for the education sector. In the current climate of ‘accountability’ where the number and type of publications produced by researchers in universities annually has implications for funding and promotion, publication productivity and ‘impact’ and thesis completion have assumed considerable weight. An issue of significance for the future of the foundations is whether or not these areas continue to attract postgraduate research students.

The authors of this paper feel that there is a need for better, more applicable and digestible, information about publication in education. Such information could contribute to future planning and lobbying by, among others, discipline and professional associations.

The most recent development in research policy was heralded by the publication of the White Paper, Knowledge and Innovation (Kemp 1999). All developments since that time suggest that centres of research excellence, team research and rapid throughput of PhD students will be rewarded with resources. Such processes are at odds with the traditional model of research in education in general, but especially history and philosophy. Are these disciplines robust enough to withstand the current philosophy driving educational research? There are some who would ask if they should be given special consideration at
all if there is no clearly demonstrated contribution to the educational enterprise. Those involved in the disciplines are seriously wondering if there is enough academic expertise to maintain their disciplinary base, including passing it on to the next generation of academics. In a climate of government focus on quality assurance, this type of concern has recently been most evident among those government bureaucrats who note a decline in the pool of educational psychologists with psychometric skills. Obviously it is best to recognise what is needed to ensure key skills survive before it is too late. For that we need a long-term strategy that involves monitoring research activity. The latter is not difficult, nor very expensive, but requires ongoing bipartisan commitment within government and the research community. This paper provides a relatively simple example of what is possible with an existing, widely known, but rarely fully utilised database.

Research-based information about education is gathered in education indexes, such as the Australian Education Index (AEI) in Australia, British Education Index (BEI) in the UK, and Educational Resources Information Center (ERIC) in the USA. They have been in existence for many decades. The education indexes can be used to extract a longitudinal record of publications and can be used as a tool to map the extent and direction of research. The latter extends to comparisons between publications in the four foundations, psychology, history, philosophy and sociology. The starting point for the analysis is 1984 primarily because the records in the AEI database are strictly comparable from that year. The period ends with 1998, because that is the last year for which complete records are available at the time of writing. Some analyses use data that span the whole period 1984-1998. The data was extracted from the updated index as of the end of February 2001 specifically for this paper.

The period 1988-1989 was a time of major reform in higher education when the amalgamation of universities and colleges of advanced education occurred. By 1992, the settling-in period was over and the boost to research funding that had accompanied the move was becoming evident in terms of the expansion of research publication in education. However, by 1997 the tide of funding had turned, auditing of research publications had begun and the research climate had become more competitive. In education the curriculum was becoming increasingly crowded, and academic staff numbers fell significantly. Academe had moved into an era of ‘performativity’ (Ball, 2000). The Ramsay Report (2000, pp. 166-180) indicates just how much pressure teacher education has been operating under. Academics in the foundation disciplines have been dealt a considerable blow by recent trends. They have experienced the diminished status of their disciplinary knowledge, networks and teaching base, their opportunities to research undermined by greater teaching loads generally, and the undervaluing of their research contribution. How far has the process gone and has it affected research in these disciplinary areas? This paper attempts to take stock.

The main questions addressed in the investigation are:

- What proportion of research activity, as evidenced through publications, is accounted for by the foundation disciplines of history, philosophy, sociology, psychology?
• What proportion of reported research is accounted for by theses?
• Does the pattern of thesis research differ from other research?
• Is research within the foundations in decline?

The paper will begin with a brief outline of method, an overview of research trends in general, and then move to a comparative analysis of the four nominated disciplines. It will end with reflections on what those trends imply for the future research status and profile of the foundations in education.

**USING THE AUSTRALIAN EDUCATION INDEX TO MAP RESEARCH ACTIVITY**

The sole data source for this study is the Australian Education Database in which the Australian Education Index (AEI) and Bibliography of Education Theses in Australia (BETA) are merged. The database was commenced in 1957 by the Australian Council for Educational Research (ACER) as a printed quarterly index to journals relevant to education and published in Australia. The collection strategies for the AEI are comprehensive, particularly for journals, involving actively seeking materials about education published in Australia, by Australians, and about Australia. The aim is to pick up all substantial works of scholarship and research in the field. Today some 4000-5000 published items are indexed annually using multiple descriptors drawn from the Australian Thesaurus of Education Descriptors (currently the second edition, 1996). For the period 1984-1998 just over 60 per cent of the publications in the database are divided between journal articles and conference papers. Another 10 per cent are theses, and a further 15 per cent include published proceedings, edited books and books (the latter accounting for a little over one per cent of the total). The remainder is primarily comprised of research and other official reports.

It is possible to gather information about research in the foundation disciplines from such sources as professional associations, the Australian Research Council large grant records, and from faculties or academics directly by means of a survey. However, it would be difficult to identify trends in the full spectrum of research activity in education over time with any source other than the Australian Education Database. The content of publications is a strong research indicator and the database, in turn, is strongly representative of total educational research output in Australia. One key to the database’s trustworthiness as a mapping tool is the consistency and scope of the collection procedures. Further, an examination of faculty of education records for one year (1997) for 35 institutions using database descriptors produced a pattern that very closely matched the pattern evident in the database by topic. In the faculty data there were some significant differences in the pattern of thesis topics (completed and in progress) and publications and grants. Compared to other publications and other topic areas, theses were disproportionately represented in the areas of learning and development and curriculum - a pattern that was also evident in the thesis records in the database (DETYA 2000, pp. 99-108, see also Holbrook, Findlay & Misson 2000).
This study is limited to broad patterns rather than fine detail. The data is mainly presented in terms of percentages of large numbers of records. At every stage in the analysis, the evidence was weighed in the light of the limitations and constraints of the data used. In the total possible pool of publications, there will be some publications (hereafter records) that will have been overlooked, especially if they are not in mainstream journals, however, the proportion is very small and is spread across the spectrum. There is also ‘lag-time’. Sometimes several years pass between the completion of the research and publication. Trends in foundation discipline research activity have to be interpreted with this, and publishing traditions, in mind. Lag-time is most extended for a book or research thesis. The majority of completed theses reported here for 1998, were started in 1993 or earlier, because most education thesis study is located in education faculties, and most postgraduate students in education are part-time (Evans & Pearson 1999, p.187).

Any education database has an indexing history and its structures reflect something of its origins, resources and available technology. However, indexes tend to evolve fairly rapidly. Indexers continually monitor the durability of concepts and document the new terminology appearing in publications - a process greatly assisted by developments in IT. Hence fine-grained searching can incorporate the newest terminology by utilising ‘identifiers’ and searches of abstracts. The second author plays the lead role in the development and maintenance of the database in her role as Manager of the Cunningham Library, ACER. The general procedures that govern indexing have been explained elsewhere (Holbrook, Findlay & Misson 2000, p.199).

For the purposes of interpreting the information presented in this paper certain features of the database need to be explained. All publications are indexed once at a Broad Subject Category (BSC), a record type (e.g. journal, book), and where possible at an educational level (e.g. primary education, adult education). The main tools of indexing, however, are the descriptors. There are 41 major categories of descriptor. All publications are allocated several ‘descriptors’ (on average 5, usually ranging between 4 and 7) which capture the main features of the content. Most researchers would understand descriptors as ‘key words’.

The Broad Subject Categories (BSCs) are a useful summary tool. There are 28 of these and they reflect broad discipline and topic areas. Some examples are: teaching, educational systems and institutions and educational planning and administration (see Holbrook et. al. 2000, p. 72, for a list). Each of the four foundation disciplines discussed in this paper (and other foundation areas such as comparative education, curriculum etc.) has its own BSC. When a record is given a BSC such as ‘educational psychology’ this means it falls first and foremost within that discipline group. However, not all records are that straightforward – hence the need for multiple descriptors. A publication might primarily focus on the gendered nature of the curriculum and so fall within the BSC ‘curriculum’, but its disciplinary origins can be picked up by searching further using the pertinent ‘descriptor’. A combination of the BSC and selected descriptors with correction for double counting form the basis of the data collection for this research. The main aim
was to pick up those records that were most purely ‘foundations’ in disciplinary origin. It is useful to note that for Psychology and Sociology the BSC picked up the majority of these. For history, about half, and for philosophy the task proved difficult.

Publications with a clear disciplinary focus in history, sociology and psychology proved relatively easy to isolate. However, philosophy is amalgamated in the BSC with ‘policy’ and ‘educational development’ - areas which are generally closely informed by a philosophical perspective, and possibly even more so in the past when the major descriptor groupings were devised. The result is an inflation of the philosophy strand in the BSC, and as this strand consists of thousands of records it would be exceedingly time-consuming to untangle. With greater resources it would be possible to tease out those items in policy and educational development that are more purely philosophy through fine-grained searching, however, it is possible to estimate the proportions. If we look at the descriptors educational philosophy, policy and educational development separately (Figure 1) we find that philosophy is a slender thread. Policy is much more robust, particularly for the decade from 1987. Using history and the descriptor/BSC ratio as benchmarks, philosophy records are estimated to constitute 11-12 per cent of the total group ‘philosophy, policy and educational development’.

The picture for the BSC plus the additional records captured by the descriptors (top line - hereafter called the expanded philosophy grouping) is one of decline until 1996 with policy publication activity growing after that time. The ‘philosophy’ descriptor strand on its own suggests that there is little possibility of a major growth in that core area as we move into the 2000 period.

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**Figure 1:** The BSC ‘Philosophy, policy and educational development’ and the individual descriptors of that name not included in the BSC.
FOUNDATIONS COMPARED WITH TOTAL EDUCATIONAL RESEARCH

Together all four ‘discipline groups’ (see Table 1), including the expanded philosophy grouping, constitute 31 per cent of the total records. The whole database consists of 105,000 records for the period 1979-2001. There are a total of 74,772 records or items in the database for the period 1984-1998. The table indicates that research activity (as evidenced by publication) grew after the initial period of amalgamation, exceeding the earlier peak in 1987. The columns in figure 2 represent the proportion of records in the four discipline groups for the period under study. The trend is one of decline from a peak in 1987 to a drop by some 10 per cent of the total by the mid- to late 1990s.

Table 1: Foundation discipline* and total records

<table>
<thead>
<tr>
<th>Year</th>
<th>Total records</th>
<th>Philosophy, policy &amp; ed.develop</th>
<th>History</th>
<th>Sociology</th>
<th>Psychology</th>
</tr>
</thead>
<tbody>
<tr>
<td>1984</td>
<td>4522</td>
<td>664</td>
<td>106</td>
<td>215</td>
<td>618</td>
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<tr>
<td>1985</td>
<td>4948</td>
<td>607</td>
<td>92</td>
<td>222</td>
<td>503</td>
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<tr>
<td>1986</td>
<td>5018</td>
<td>644</td>
<td>94</td>
<td>219</td>
<td>540</td>
</tr>
<tr>
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<td>5142</td>
<td>746</td>
<td>93</td>
<td>223</td>
<td>506</td>
</tr>
<tr>
<td>1988</td>
<td>4907</td>
<td>922</td>
<td>112</td>
<td>215</td>
<td>540</td>
</tr>
<tr>
<td>1989</td>
<td>4413</td>
<td>702</td>
<td>96</td>
<td>142</td>
<td>566</td>
</tr>
<tr>
<td>1990</td>
<td>4922</td>
<td>817</td>
<td>117</td>
<td>152</td>
<td>607</td>
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<tr>
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<td>4630</td>
<td>655</td>
<td>114</td>
<td>151</td>
<td>589</td>
</tr>
<tr>
<td>1992</td>
<td>4501</td>
<td>624</td>
<td>154</td>
<td>163</td>
<td>621</td>
</tr>
<tr>
<td>1993</td>
<td>4913</td>
<td>706</td>
<td>128</td>
<td>155</td>
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<td>1994</td>
<td>5582</td>
<td>654</td>
<td>147</td>
<td>185</td>
<td>920</td>
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<tr>
<td>1995</td>
<td>5452</td>
<td>534</td>
<td>132</td>
<td>197</td>
<td>676</td>
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<tr>
<td>1996</td>
<td>4811</td>
<td>397</td>
<td>95</td>
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<td>535</td>
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<tr>
<td>1997</td>
<td>5627</td>
<td>425</td>
<td>72</td>
<td>264</td>
<td>705</td>
</tr>
<tr>
<td>1998</td>
<td>5384</td>
<td>498</td>
<td>79</td>
<td>239</td>
<td>615</td>
</tr>
<tr>
<td>TOTAL</td>
<td>74772</td>
<td>9595</td>
<td>1631</td>
<td>2976</td>
<td>9227</td>
</tr>
<tr>
<td>%</td>
<td>100</td>
<td>13</td>
<td>2</td>
<td>4</td>
<td>12</td>
</tr>
</tbody>
</table>

*BSC group plus descriptor
Figure 2: Four discipline groups as a percentage of total records

The falling away may be due to:

- The straightforward reduction in research activity in some of these fields, mirrored in a reduction in publications (notably at a time when academic publication has a high profile);
- a move away from studies clearly positioned within one or other discipline;
- a de-emphasis of the disciplines when writing and reporting research; or
- hybridisation or fragmentation within the discipline resulting in a ‘muddying’ of the boundaries.

TYPE OF RECORD

Within some disciplines refereed conference papers are among the most prestigious publications. Within the social sciences and most disciplines represented in education, the refereed journal article carries great weight. In history research based books are regarded very highly. The book is also the most valuable publication in terms of research quantum (i.e. books attract more research dollars per item into universities than journal articles and conference papers). There is vigorous debate over the weight attached to the length of an article, and on the subject of single authorship versus multiple authorship. Much of this debate bears the clear stamp of ‘the sciences versus the humanities’. The different traditions, and the different resources required to produce different types of publication, do not lend themselves to uniform assessment despite publications auditing procedures. It is nonetheless very useful for the discipline based research associations to have a clear idea of trends in publication type, and a clear understanding of how publication type can work for or against the continuation of research support in their discipline.
Figure 3 illustrates the different patterns of publications in the foundation disciplines for the period 1984-1998. Journals represent about 40 per cent of publications in educational sociology and history. The proportion of theses varies considerably. One fifth of the total records in psychology, for example, are theses. A significantly greater proportion than in the other disciplines. Psychology most closely represents the total publications profile for all records in the database. It was not possible, given time and resource constraints, to develop trend lines by publication type for all four disciplines, but this type of analysis would indicate if the disciplines are retaining traditional publication patterns or if academics are responding to outside pressures in publishing.

**Figure 3: Total records by type and discipline 1984-1998**

**Philosophy**
- Other: 23%
- Jour: 28%
- Thesis: 11%
- Chap: 10%
- Conf: 24%
- Book: 4%

**History**
- Other: 6%
- Jour: 39%
- Thesis: 16%
- Chap: 10%
- Conf: 16%
- Book: 13%

**Sociology**
- Other: 16%
- Jour: 40%
- Thesis: 9%
- Chap: 9%
- Conf: 20%
- Book: 6%

**Psychology**
- Other: 9%
- Jour: 31%
- Thesis: 20%
- Chap: 8%
- Conf: 30%
- Book: 2%
Conference papers are the most ‘volatile’ record group in the database. If in a particular year a conference committee does not produce a proceedings, for example, this would affect the discipline publications profile, however, it would have to be a very large conference to have a significant impact on the total records profile. With that caution in mind it is worth noting that conference papers form a substantial group of records in the database and differ between disciplines, ranging from 16 per cent in the discipline group of history to 40 per cent in sociology. Given the high numbers of conference papers, and their comparatively low quantum value (zero if they are not contained in refereed proceedings) a useful investigation would be to trace the proportion that become other publications.

In disciplines such as history (the first author’s primary discipline) project duration is a major issue. Publication lag is common. Historical research projects are generally slow to develop, so journal articles that encapsulate a coherent and meaningful section of the project are difficult to craft when substantiated findings can not be achieved until all of the evidence is collected. It is not unusual for this phase to extend to six years and yield a small number of publications. Despite the relatively small number of publications the analysis undertaken here tends to the positive in other ways. A minimum of eighty per cent of publications in history bring research quantum into universities, and for 30 per cent of these attracts the maximum research dollars, which is a handy argument in today’s climate. Multiple authorship is very rare which is both a disadvantage and a strength. The latter because single authored publications attract the maximum publication allocated dollars, but a disadvantage because historians, given their traditions (McMahon 1996) are unlikely to be in a position to fully and rapidly exploit the new DETYA supported model of team-based research in their discipline. This restriction should not extend to multidisciplinary research although historians will probably need to act proactively to be invited on multidisciplinary teams and to specify the historical dimension of strategic and applied research projects (Holbrook 2000, Vick 2000).

EDUCATIONAL LEVEL

The first author has written elsewhere (Holbrook & Barker 1998) about the formal education sector focus of the history of education. Such a focus is to be expected in a discipline that has grown to serve the systems and institutions that ‘count’ as education in the Western World. For most of the twentieth century non-formal, especially workplace and domestic, forms of education were ignored in educational research, although this is changing, not least because of a growing interest in lifelong education. Educational researchers as a group generally direct their attentions to formal education, and this is reflected in their publications. Figure 4 provides an educational level breakdown of the records or items in the database by foundation discipline and level for 1984-98. The philosophy, policy and educational development group is separated into its three strands and presented in the second graph.
Not all records in the database can be allocated an educational level. For the years spanning 1984-1998 the number is 55,021 (71 per cent of all records for that period). A glance at the total columns in the figure indicate that early childhood education and adult and community education account for just over 15 per cent of ‘levels’ records. Twenty three per cent refer to higher education, 18 per cent to primary education, and 16 per cent to secondary education. Some publications in the database are about schools but not just one level of schooling. These amount to 15 per cent of the total. TAFE and vocational education and post-secondary education account for the remainder. Post-secondary education refers to those colleges or years between secondary school and higher education.
education or TAFE. Their typical students would be those who might return to education to complete their final year after having left school early.

About 23 per cent of all records allocated a level are located within the four disciplines. The variation is marked between disciplines. Eighty seven per cent of history records (N = 1413) have a level, sociology (N = 1157) about 40 per cent, psychology (N = 5095) 55 per cent and the extended philosophy group, at some 7000 records, closer to 70 per cent. Those not so assigned may be discussion pieces that extend beyond educational institutions (e.g. to individuals, age cohorts, social groups, political, institutions etc.) ranging through to methodological and theoretical writing.

To focus firstly on history a similar pattern of educational level records to the total is evident with the exception of ‘other school’ (27 per cent). The latter is relatively easily explained. Historians in Australia mostly write across levels and about systems. More than 10 per cent are also located in adult and community education. This category would pick up work in areas such as the history of groups such as YMCA, YWCA, Boy and Girl scouts, Sunday schools, and so on.

Compared to the other groups educational psychology activity dominates in early childhood, primary and secondary education. Fifty seven per cent of psychology records fall into the schooling category, and a further 18 per cent in higher education. Given the comparatively small proportion of the total student population in higher education the uniform emphasis on this area across disciplines and in total records is noteworthy.

The sociology pattern is least like the pattern of the total. The levels records in this case are clearly among the most represented in secondary, post-secondary, TAFE/vocational, and adult and community education. It is a pattern that suggests an educational level emphasis on school leavers and transitional education.

In the second graph the columns are calculated on the basis of the BSC plus the descriptors that capture philosophy, policy and educational development. Given the massive changes in higher education, and pressures on education within that sector; since the late 1980s, it is not altogether surprising to find that the records for this group are strongly in evidence at the higher education level even more so than total records. Nonetheless schooling is the main focus. The main ‘within’ strand difference is in ‘other school’, here the policy strand is more in evidence.

It would take discipline specialists to explain the patterns in full, and some aspects certainly warrant further exploration. The relatively large proportion of the publications within the extended philosophy group and psychology and sociology which are not assigned an education level is one such aspect. This may be construed by some as a lack of interest in key educational institutions, but an alternative explanation is that a substantial amount of work of a pure or experimental nature is occurring in the three disciplines. For example in psychology a proportion of the work would be experimental, some would be case or subject based. There would be a proportion of sociological studies that are concerned with cultural groups pertinent to, but not directly about, schools, youth sub-culture, family and so on.
Levels analyses is very useful in pinpointing those educational groups attracting the greatest interest in specific fields, for example what proportion of work on literacy is being undertaken that focuses on primary school level? In the context of this paper, however the analysis may prove of more immediate strategic use for historians. This is primarily because it captures the majority of publications in the area, and so trends are more fully discernible. For example, in a recent paper concentrating on educational history that drew on levels data for each year, the authors found that historians were moving out of areas such as adult and community education and increasingly focussing on schools in their research (Holbrook, Bessant & Findlay 2000).

RESEARCH TESIS IN THE DISCIPLINE

As indicated previously postgraduate research students make a major contribution to the total research enterprise in education. Thesis completion is the litmus test for the health and future of educational research generally, but particularly the disciplines. One of the difficulties that occurs in relation to thesis supervision in education is the often extended period between the student completing their first degree and returning to enrol in a research degree. Another is that a person's thesis topic, stimulated for example by their professional interests, may be in a different discipline or field altogether. This notwithstanding, 'disciplined inquiry' has its roots in the disciplines. Hence a common characteristic of research candidature involves positioning one's study within the framework of field or discipline. Hence it proves more straightforward to allocate a thesis to a BSC by discipline than some other published works. Figure 5 drawing on BSC information only, provides a useful visual aid to the relative position of the four disciplines for selected years. Psychology clearly dominates the profile, particularly in the thesis area, reinforcing just how important thesis work is to the discipline. This analysis also reveals a strengthening of the position of sociology in recent years, a development that also holds when compared to total records.

The following graphs show the trends in theses and other publications in the foundation disciplines relative to total records. As indicated above it is more difficult to unpack 'philosophy' than the other three disciplines. In Figure 6 philosophy is comprised of the BSC and the descriptors capturing philosophy alone. In order to see how much more would be added by policy and educational development, separate graph lines for BETA and AEI are included. Overall the BETA line proves to be a very slender thread and the trend is a declining one.
Figure 5: Distribution of records across the foundations for selected years - AEI and BETA

Figure 6: Educational Philosophy policy and development – % BETA & AEI
In the history of education (Figure 7) the thesis thread is even more slender, recently tending to decline. Overall activity was relatively stable between 1984 and 1996 with the exception of 1992. This anomaly has been investigated in another paper and traced to an unusual level of conference activity in that year not since repeated (Holbrook, Bessant & Findlay 2000). The latter warns us not to over-interpret the trend lines, particularly when the totals incorporate conference papers.

Bearing the latter comments on the history of education in mind, it is well to be cautious about the rallying trend in sociology theses in recent years (Figure 8). History and sociology involve small numbers, so small that a spate of retirements could have a considerable impact on research grants and output. By contrast...
psychology is more robust in terms of numbers and as a proportion of total activity (Figure 9). There was a spate of thesis completions around the time of university amalgamations and a pronounced rise in publications shortly after that. In recent years, however, there is a clear decline in psychology theses as a percentage of total records. This type of analysis alerts us to the relative fragility of some disciplines compared to others. In history it proved possible to determine how many researchers were necessary to maintain the discipline at its current level of activity (Holbrook, Bessant & Findlay 2000).
Figure 10 reveals that as a proportion of total records there is a pronounced decline in the aggregated foundation disciplines as a proportion of theses (BETA) and publications other than theses (AEI). Given the numbers of records involved this is a strong indicator of a decline in academic research ‘activity’ in the foundation disciplines, particularly psychology, and particularly in theses.

CONCLUSIONS

The four foundation disciplines in education, history, philosophy, sociology and psychology continue to play an important role in research activity, but foundations research (research distinctly and clearly positioned within the foundation disciplines) overall is in decline. Thesis work has long played a key role in maintaining disciplinary knowledge and skills, but in the foundations thesis research too is in decline. What will this mean?

Since the mid-1980s research in foundation disciplines has constituted some 30 per cent of total research, including pure research. The trends revealed in this analysis are very likely to cause worry enough for academics in these disciplines, however the future ramifications for the education field must be assessed. This particularly applies to thesis research in the four discipline groups. Can we afford to lose this particular research base? Is the base still there, but hidden in other areas such as curriculum, or administration? What is already lost? We also need a firm picture of what is contributed by the foundations that is not being picked up in other strands of research. Is there a minimum critical mass of research in the foundations? Can we sustain the latter under current conditions? The authors argue that such questions directed at any area of research provide a solid reason to keep monitoring research directions to inform research policy. With respect to monitoring disciplinary activity using the educational databases, we suggest that this is an arena that discipline associations could take on and use effectively.

In the debate on the impact of educational research, one of the criticisms aimed at the educational research community is the absence of a ‘cumulative’ base of research. Alongside this is the criticism that the research does not have a clear impact or direct application. In recent years there has been considerable effort by researchers to address application and impact, with more than a little success (DETYA 2000). However, these gains may have been achieved to the detriment of the propensity to provide cumulative knowledge in the disciplines. At this juncture after the impact report, it is pertinent to ask what the foundations contribute in terms of quality research as the basis for the future growth of knowledge. These are questions that deserve to be answered in an informed way through deliberate attention to the composition of research.
REFERENCES


