Links Between Research and Schools: The Role of Postgraduate Students

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Abstract

In Australia a desire to increase the return of investment in educational research has led to interest in different aspects of research impact, including the nature of links between research and schooling. One significant group in such links is postgraduate students who are also teachers or educational administrators. Responses were obtained from 1267 postgraduate students to questions about their perceptions of new developments in schools and of research, including their own studies. Differences between postgraduate students who were involved in school-level education and those who were not involved at this level were also investigated. Colleagues within their school were named as the major source of new developments, but two-thirds also saw the universities as important sources. The most common type of new development described was in the area of curriculum. Research was the most frequently cited basis for new ideas and development in schools, with a large majority stating that research had at least some impact on their work and on education generally in their region, the research frequently being introduced or mediated by colleagues. Areas being addressed by these students in their own research and projects were, in the main, of relevance to schools, most commonly in the areas of curriculum and educational processes and structures. Finally, the importance of postgraduate students as linkage agents between research and schools is stressed.

Introduction

In Australia, the U.S. and Britain an intense interest in the impact of educational research has emerged in recent years, although in each country the context is somewhat different (Blackmore and Lingard 1998, Hargreaves 1998, Hegarty 1997, Hillage et al. 1998, McGaw et al. 1992, NERPPB 1998, NRC 1999, PCAST 1997, Rudduck 1998, Selby-Smith et al. 1998). In the USA, the focus appears to be on a perceived failure of large research projects to yield generalisable and sustainable results; a sense of failure within urban schools; and the difficulty of implementing the results of research in a large, decentralised system of education. In Britain concern

about the impact of educational research appears to be related to a determination to reform education and raise educational achievement in comparison with that of other countries. In Australia the source of the focus on research impact is less clear, but appears to be linked to a desire to improve practice and to increase the return of investment in research. Foremost among concerns are the quality of educational research and whether or not unsubstantiated findings and fads are driving educational change.

Despite such differences in focus, there is a common interest in establishing the most effective ways to support, coordinate, prioritise and evaluate research. And there is widespread concern to understand the processes through which new knowledge based on rigorous enquiry is generated, disseminated and utilised. This is in the context of the explosion of knowledge, as policy makers, managers and practitioners seek to integrate research into other forms of usable knowledge (Lindblom and Cohen 1979, Backer 1993, Davenport 1997).

Recent Australian concerns can be traced in part to a relatively recent discipline review of education in Australia (McGaw et al. 1992), and a number of investigations into research use in Britain (Kerr et al. 1998, Tooley and Darby 1998, Hillage et al. 1998). A key conclusion of the McGaw review was that, while Australian education research exhibited many strengths and much excellent work was being done, the whole enterprise was a fragile resource that required reorientation and increased support if it was to contribute more effectively to the challenge of improving Australian education. The report made a range of recommendations for improving the dissemination and application of research. These were built around the key idea of more closely integrating researchers, funding agencies and the users of research in the processes of identifying research priorities, conducting research, and monitoring its uptake and impact. The report also pointed to the need for a better understanding of research impact – that is whether research is used, what kinds of research are influential, and what forms of interaction are most effective. Submissions to the review panel had suggested there was widespread suspicion or dismissal of research within the practitioner and policy-maker communities, and that researchers had to take the needs of those groups more into account and work more closely with them.

It was argued that one of the major constraints on the effectiveness of educational research was its fragmented nature. Overall resources were low, research for most academics was a part-time activity fitted around other pressing demands, and there were few instances of sustained programs of research as opposed to small-scale individual projects. It concluded that one way to address the issues of relevance and effectiveness was priority setting and a concentration of research effort, especially more extensive use of teams of researchers, and research centres. With the exception

of research on VET, this has not occurred at a systemic level, although there are many individual examples of universities and academics developing more effective relationships with schools and educational authorities during the 1990s. As a result of a recent white paper (Kemp 1999), it appears that future research funding may come to depend on restructuring of this kind.

The McGaw review raised serious questions about research use, but empirical research about educational research impact in Australia was relatively limited until the recent publication of a series of studies (DETYA 2000a). One of these studies (Holbrook et al. 2000) sought to map total research activity, and explore the outcomes of research from some hitherto unexamined perspectives, including the views and research work of postgraduate students. The major purpose of the part of that work reported here was to investigate the linkage and impact of research on practice, through determining the range of new developments in schools and relating these to research interests and work being done particularly by postgraduate students in education, the largest group of educational researchers.

Research use and linkage

Common reasons that have been suggested for low levels of research use include poor or inappropriate dissemination of research findings, alienating language and alien concepts, poorly targetted and inapplicable research findings, and problems associated with different 'cultures' including the receptiveness and knowledge of potential users (Kennedy 1997). Three of these four reasons relate to a lack of effective linkage agencies between research and practice. The fourth reason relates to the targetting of research, and suggests a detachment of researchers from the concerns of schools.

A range of people and organisations provide linking and integrating functions between the worlds of research and practice. Linkage agents assume considerable importance in summarising and interpreting the findings of educational research in ways that make them more accessible to practitioners. As a result of their roles, linkage agents can provide important perspectives on the impact of research.

Contrary to some perceptions, postgraduate research students in faculties of education are the largest group of educational researchers in Australia, exceeding numbers of university staff and other educational researchers in 1999 by a factor of more than two (DETYA 2000b). Further, the estimated time spent by postgraduate students on research and development in education and training approached three times that of academic staff in universities in 1996, the most recent information available on this measure (Holbrook et al. 2000, p. 64). Their number, the quantum of their

contribution and the fact that the majority of postgraduate students in education are currently or recently practising teachers and educational administrators, make these postgraduates a group of particular interest concerning potential linkages between research and practice and consequently the use of research.

There has been considerable recent support for the suggestion that exposure to research affects the beliefs and practices of teachers (Green and Kvidahl 1990, Zeuli 1992). Postgraduates are not only exposed to university research activities, but many also become researchers, at least in the short term as indicated above, through project work and through writing theses. In addition to creating research information, many would be involved, either during or subsequent to their postgraduate work, in disseminating and diffusing research in both formal and informal ways. It could also be expected that many would use their own and others' research findings in their professional roles. As many postgraduates are part-time students who are working full-time as teachers or educational administrators, and others are currently full-time students who will return to schools and education systems on completing their degrees, these students are clearly in a key position as potential linkage agents between university research and its conduct and any implementation of findings in schools and school systems.

Method: sampling and questionnaire

Questionnaires were sent to postgraduate students in education in all States and Territories of Australia in the latter half of first semester, 1999. The students were approached indirectly through their faculties because, for privacy reasons, most universities would have been unwilling to provide their students' names and addresses without the students' prior permission. All 36 universities with a faculty/school/department of education were asked to forward a questionnaire to each of their postgraduate students if they had up to 100 such students, and to randomly select 100 students across the range of postgraduate qualifications they offered if they had more than 100 eligible students. Detailed procedures on how to do this were provided to faculties (see Holbrook et al. 2000, pp. 246–7). One university found itself unable to distribute the questionnaires at all, so the potential sample of postgraduate students was no more than 3500. However, as some universities would have had fewer than 100 postgraduate students in education, the potential sample was estimated to be about 3100 students.

A letter of request for return of the completed questionnaire (which did not include the respondent's name) and an attached pre-paid envelope was enclosed with each questionnaire distributed to the postgraduate students. By arranging return directly to the researchers in this way students were freed from the unlikely event of pressure

to cooperate with the research by staff of their faculty. Useable responses were received from 1267 postgraduate students, a disappointing response rate of only 41 per cent of the estimated total sample.

However, in determining the likely accuracy of estimates made from the responses of the obtained sample, it was also of interest to estimate the achieved sample as a proportion of all postgraduate students in Australian by type of course. Comparable information was available only for students undertaking doctorates and masters degrees, whether by research or coursework (DETYA 2000b, p. 56). As postgraduate diploma and certificate qualifications had been classified differently across universities, these students were omitted from this estimate. The achieved sample of doctoral degree students in the present study was 19.4 per cent of the total number of these students, the research masters sample was 15.2 per cent of that population and the coursework masters sample was 6.8 per cent of the total. Thus the combined sample of masters and doctoral students represented 10.9 per cent of the national total of these students in 1999. Including such high proportions of the student populations in the study, provides more confidence in generalising from the results than would otherwise have been the case.

It was also desirable to check the extent to which the achieved sample represented the Australian States. Five of the six States and both Territories were represented approximately as expected, given their populations. As the State including the one major university which was unable to participate effectively, Victoria was the exception, having a lower proportion than expected in a national sample.

The questionnaire had three major focuses. Firstly, it requested detailed background personal and employment information about postgraduate students in education. Secondly, it sought their views of the sources and importance of research, and on their research interests (and research topic if they were engaged in a research project). Finally, it covered the views of postgraduate students regarding the usefulness of their studies as well as their views of the impact of educational research more generally. Subsequently, 24 of these postgraduate students, who had indicated their willingness, were interviewed by telephone to provide more detailed information on their motivation to study and their use of their postgraduate studies in the workplace.

Characteristics of the student sample

It would first seem appropriate to describe the postgraduate students who responded to the questionnaire by type of degree and by gender, two of the more interesting and important differences found within the discipline of education. These are related here to two key variables: age and mode of enrolment (full- or part-time candidature).

Type of degree: In the Australian context, the experience of postgraduate study is likely to be very different for students undertaking coursework degrees and other qualifications, and research degrees either at masters or doctoral level. Clearly the task for coursework students is taking and passing subjects, although some may also do a minor thesis as part of their degree. Conversely, although research-degree students may engage in some coursework, their main or only assessable task is completing a thesis. However, the professional doctorate (Ed.D.) does not fit neatly into this framework, normally requiring both coursework and a major thesis.

Type of degree		Gender		Total
		Male	Female	
Ph.D.	Number	147	209	356
	% within gender	31.5%	26.3%	28.2%
Ed.D.	Number	94	93	187
	% within gender	20.1%	11.7%	14.8%
Master (Research)	Number	57	116	173
	% within gender	12.2%	14.6%	13.7%
Master (C'work)	Number	156	349	505
	% within gender	33.4%	44.0%	40.0%
Other PG degree/ diploma	Number	13	27	40
	% within gender	2.8%	3.4%	3.2%
Total	Number	467	794	1261
	% within gender	100.0%	100.0%	100.0%

Table 1: Numbers of postgraduate students by type of degree and gender

Ignoring gender differences for the moment (these are briefly discussed below), Table 1 shows that students doing coursework masters degrees formed the largest single group (40%), although the total of students doing Ph.D. and research masters degrees is more than comparable (42%). If we grouped all students who undertake major research projects, that is we included the Ed.D. students with the Ph.D. and research masters students, this would constitute a clear majority of the postgraduate sample (57%).

Gender: For the total sample, 63.0 per cent of the postgraduates were female, but only 55.6 per cent of the doctoral candidates were female. These figures, although

slightly lower, are comparable with those for the national population of postgraduates in education where females are 66.0 per cent of the postgraduate and 57.2 per cent of the doctoral candidates (DETYA 2000b, p. 56).

Returning to Table 1, there were clear differences in the type of degree between genders. Although the proportions of postgraduate males and females doing Ph.D.s were similar, there was almost twice the proportion of males doing the Ed.D. degree compared with females, but a considerably greater proportion of females doing coursework masters degrees than males.

Age: Type of degree was also broken down by age. Respondents were grouped into five age bands, ranging from younger than 25 years to older than 54 years. The classification of type of degree by age band is shown in Table 2. One reason for not grouping the Ed.D. students with the other research students is evident in this table: the Ed.D. students tended to be much older than the others. More than 60 per cent of the Ed.D. students were older than 44 years, whereas less than one half of the Ph.D. and research masters students were of that age (48% and 44% respectively).

Age range		Ph.D.	Ed.D.	Master (Res.)	Master (C'Wk)	Other PG deg/dip	Total
< 25 yrs	Number	3	1	6	15	5	30
	% within age	.8%	.5%	3.5%	3.0%	12.5%	2.4%
25–34 yrs	Number	51	11	37	118	7	224
	% within age	14.4%	5.9%	21.4%	23.4%	17.5%	17.8%
35–44 yrs	Number	131	62	54	173	15	435
	% within age	36.9%	33.2%	31.2%	34.3%	37.5%	34.5%
45–54 yrs	Number	123	92	64	174	11	464
	% within age	34.6%	49.2%	37.0%	34.5%	27.5%	36.8%
> 54 yrs	Number	47	21	12	25	2	107
	% within age	13.2%	11.2%	6.9%	5.0%	5.0%	8.5%
Total	Number	355	187	173	505	40	1260
	% within age	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 2: Numbers of postgraduate students by age and type of degree

This information clearly indicates that the postgraduate students in education were older than those across all disciplines. From Table 2, approximately 15 per cent of the doctoral students in the education sample were less than 35 years, but more than 30 per cent of all doctoral students nationally were less than 30 years of age (DETYA 2000b, p. 54). The lack of directly comparable information by age band makes the contrast even more stark. A similar pattern exists for both research and coursework masters students, although the differences are not quite as marked.

Full or part-time enrolment: Of the many other possible comparisons of student characteristics related to type of degree, only one is briefly discussed here. When full- and part-time enrolment was considered by type of degree, only 20 per cent of the total were full-time, and the range was from 9 per cent for coursework masters students to 39 per cent for Ph.D. students. Between the extremes, only 12 per cent of the Ed.D. students were full-time, compared with 22 per cent of research masters students. On this criterion, the Ed.D. students were more like the coursework masters students, and the research masters students were again more like the Ph.D. students.

Postgraduate students involved in education: The postgraduate students were asked to state the industry sector in which they were currently or most recently employed as their main employment. Of the 1267 students, 1130 indicated they were from the education sector, the remaining 137 (almost 11%) being from other industry sectors. The areas of education these 1130 students worked in are shown in Table 3. Three groups dominated: primary/preschool (of which primary was much more strongly represented than preschool) comprising 20 per cent, secondary (28%) and higher education (22%). It is the 1130 students in the education sector who are of greatest interest in this paper because it is this group who are most likely to play a role in the dissemination and use of educational research.

Education area	Number	%
Primary/preschool	225	19.9
Secondary	316	28.0
Primary and secondary	92	8.1
Special school	38	3.4
TAFE	89	7.9
Higher education	246	21.8
Other education/training	124	11.0
Sub-total	1130	100.0
Non-education	137	
Total	1267	

Table 3: Postgraduate students by area of educational involvement

Even more specifically, respondents who worked in school-level education might be expected to have a particular interest in educational research which would have application to schools and school systems. The particular school and system roles of these school-level postgraduate students are shown in Table 4.

A total of 671 students worked mainly at the school level. Of these, 617 (92%) stated their one major role and most of the remainder gave multiple roles. More than three-fifths of the total were classroom teachers and the other major groups were school and regional administrators, together constituting almost one-fifth of the total. Most of the remainder who gave one role were in positions such as consultants, counsellors, and research and development where it was likely that they influenced what happened in schools The preponderance of teachers and administrators as respondents is important for linkage of research and schooling because these persons are very likely to institute, or at least be in positions to influence, new developments.

Major role	Number	%
Teaching	412	61.4
School administration	109	16.2
Region administration	24	3.6
R and D	12	1.8
Other (unspecified)	23	3.4
Counselling	14	2.1
Education consultant	23	3.4
Sub-total	617	92.0
Multiple codes	52	7.7
Missing	2	.3
Total	671	100.0

Table 4: Major role of postgraduates employed in school education

In linking the information from Tables 3 and 4, it was found that a major division of the 671 school-level postgraduate students was between those mainly engaged in primary (including preschool) education (39%) and those involved with secondary schooling (61%). Generally there were no significant differences between these groups in their responses to the areas of interest in the following sections of this paper. Where there were differences, these will be noted.

The final sections of this paper are concerned with the views of these school-level respondents about sources of new ideas in schools and school systems, the roles of

research in general and university research in particular, and the nature of their own research projects and interests.

Sources and nature of new ideas in schools

The postgraduate students were asked about new ideas and developments in their workplace. We were seeking information concerning their personal experiences of what was happening with respect to sources of new ideas and types of new developments across schools and systems.

Respondents were first asked to indicate the importance of eight potential sources of new ideas in their school, centre or institute. Table 5 shows, in descending order for those involved at the school level, the proportions of these postgraduate students who stated that each of the sources was at least important. These are compared with the proportions for the other postgraduates engaged in education workplaces. In the main, the other respondents were involved at the tertiary and TAFE levels.

Source %	School-level respondents (n=671)	Tertiary/TAFE respondents (n=459)
Colleagues within school or institution	84	85
Colleagues outside school or institution	75	83
Professional associations	74	74
Universities	67	80
Professional consultants	51	40
Head or regional office	50	40
Publishing houses	47	52

Table 5: Importance of sources of new ideas for two educational groups

Colleagues within their school were seen as important more frequently than any of the other sources by the school-level respondents, and colleagues in other schools were next in frequency of importance, closely followed by professional associations. Two-thirds considered universities to be important, but only about half saw the remaining sources as important. The other education group, perhaps not surprisingly as it consisted of a high proportion of tertiary educators, more often saw universities as important, and professional consultants to be important less frequently. This group also rated the importance of colleagues outside their own institution almost as highly as internal colleagues. The differences found between the two respondent groups,

although not huge, were sufficiently marked to emphasise the need to be clear about the nature of respondents when considering the importance of sources of new ideas in schools.

The nature of new developments respondents had experienced in the past year was requested next by asking, in an open-ended question, for a personal example. Responses were categorised into fifteen areas, six areas being much more common than the remainder. For these six areas, a total of 407 new developments or innovations were listed by the 671 school-level respondents. New developments in other areas, mentioned far less frequently, are not given here. The six areas are shown in Table 6 in descending order of proportions, and are compared with the percentages for the 224 developments listed in the same areas by the tertiary and TAFE education respondents.

Types of new developments %	School-level respondents (n=407)	Tertiary/TAFE respondents (n=224)
Curriculum	31	28
Computers in education	21	35
Administration	15	19
Learning and teaching skills	14	9
Student welfare and experience	13	5
Assessment and evaluation	6	4

Table 6: Types of new developments listed for two educational groups

Developments in curriculum were most frequently listed by school-level respondents (31%), with computers in education (21%) clearly the second most frequent. There was little difference in frequencies for these respondents between three of the other four common areas: administration (15%), learning and teaching (14%), and student welfare (13%). The last of the six areas was assessment and evaluation which was listed by 6 per cent of these respondents.

It can also be noted from Table 6 that there were more new developments for curriculum, learning and teaching, student welfare, and assessment and evaluation, but fewer for computers in education and in administration listed by school-level respondents compared with tertiary and TAFE educators. The differences were sufficiently large to be statistically significant (n = 631, chi-sq. = 25.8, df = 5, p < .001). The largest differences in proportional terms were for computer education (21% compared with 35%) and for student welfare and experience (13% compared with 5%).

The roles of research in innovation

When students were asked the probable basis for the particular new ideas and developments in schools they had provided in a previous question, five categories (including 'other') were provided. The 'research' category was subdivided by the level of research. Overall, the most common basis cited was research, with the total of small-scale or local research, larger-scale Australian research and international research constituting a little more than one-third of the responses (34%). A relatively large group (30%) indicated they did not know the basis for the new development they had cited. The next most common basis, listed as 'accumulated wisdom or practical experience', accounted for approximately one-fifth of responses (21%). An 'other' basis was given by 8 per cent of respondents, and 7 per cent gave 'an individual's idea' as the basis for the development.

The specific impact of the work of university researchers in education was examined by two other questionnaire items. These concerned the impact of research on what the postgraduate students personally did in their work, and the impact on education generally in their region. These two sets of responses could be compared for those involved in primary and secondary education, and for those in school education and tertiary/TAFE education. Again there was no significant difference between primary and secondary school levels, but there were large differences between school and tertiary/TAFE levels. Both sets of comparisons are shown in Table 7.

Impact of research	On respondent personally		On education generally	
%	School	Tertiary	School	Tertiary
Large impact	21	29	6	12
Some impact	56	47	51	52
Little impact	21	21	39	33
No impact	3	3	3	3

Table 7: Level of impact of research: personally and generally

Clear majorities of both groups thought that university research had at least some impact on their work personally and on education generally. A total of 77 per cent of the school-level respondents stated that university research impacted on their own work. While this may not be surprising given that they were postgraduate students, 57 per cent stated that this research had some impact on education generally in their region. Only a small, but consistent, proportion in each case (3%) thought that university research had no impact.

The differences in perceived impact between respondents at the two levels of education were statistically significant. The difference for respondents personally was mainly shown by more tertiary/TAFE respondents indicating a 'large impact', compared with 'some impact' preferred by school respondents (n = 1089, chi sq = 11.8, d f= 3, p < .01). For education generally, the difference was that more tertiary/TAFE respondents indicated 'large impact' and more school respondents indicated 'little impact' (n = 1076, chi-sq = 14.3, df = 3, p < .01).

Topics of student research and interest

In attempting to investigate concerns expressed by some commentators about the lack of relevance of research interests and of educational research undertaken to schools and school systems, respondents were asked to indicate areas of study in their present degree. Up to three responses were coded for each student. In the cases of research students and of coursework postgraduate students undertaking minor research studies or projects, the areas cited would normally be part of their thesis or project topic. The areas given were then coded into the same groupings as had been used in other parts of this study for the topic codes used for the Australian Education Index (AEI) and for Faculty of Education publications data (Holbrook et al. 2000, pp. 222–3).

Descriptor group %	School education	AEI (in 1997)
Learning and development	4.3	8.5
Phys. and mental conditions	10.1	3.3
Educ. processes and structures	35.5	41.4
Curriculum	33.0	17.9
Human society	5.8	8.9
Politics and economics	2.6	6.2
Info. and communication	1.6	5.7
Research	7.0	7.5
Facilities and equipment	0	0.6

**Table 8: Areas of study by descriptor group
for school educators and for the AEI**

The proportions of responses by those involved in school education in each of the nine descriptor groups are shown in Table 8 where they are compared with the proportion of entries in the AEI for 1997 (the latter having been extracted from Holbrook et al. 2000, p. 82). Of course the AEI percentages are based on all

educational publications, not only those by those interested in school-level issues. Even so, the two dominant areas in both cases are educational processes and structures (between 36 and 41% respectively), and curriculum areas (between 33 and 18%).

Although the overall patterns are similar, there are also some significant differences. In terms of sheer size, the major difference is that the postgraduates involved in school-level education indicated an interest in curriculum areas almost twice as often as such publications had been indexed in the AEI. Although from a much smaller base, the school-level respondents indicated physical and mental conditions more than three times as often as the AEI. The major topic in this area was special education. There were also notable but smaller proportional differences for areas such as learning and development, politics and economics, and information and communication. On this evidence, it would seem that most postgraduate student interests (and AEI publications) are of direct relevance to schooling.

Conclusions

This paper has presented results based on some of the questionnaire responses of 1267 postgraduate students in education. The major focus has been on the responses of 1130 students involved in the education industry to questions principally about their perceptions of sources and types of new developments in schools, and the impact of educational research on schools and school systems. The students were also asked about their own current areas of study, which would in most cases have been closely related to their research thesis. In the main the students in the sample were female (63%), were more than 34 years of age (80%), were doing a research degree (57%), and were enrolled in part-time studies (80%). Of particular interest was a subgroup of 671 postgraduate students whose current or recent experience was at the school level. This subgroup, comprising 59 per cent of the students from the education industry, were mainly in teaching positions (61%) and were more often involved with secondary schools and schooling (55%).

There are studies which show that school teachers and administrators in Australia seek out and use research information, are receptive to research-based policy, and that they access their knowledge from many sources (Figgis et al. 2000, McMeniman et al. 2000). A teacher's working knowledge comprises the knowlĕdge generated by systematic educational enquiry in universities and elsewhere, with knowledge of local conditions, and craft knowledge, which in its most distilled form constitutes 'best practice' (Brown and McIntyre 1989). In the U.K. teachers are being encouraged to engage in research through a government-funded scholarship scheme tied to the teachers' own 'best practice' (Hargreaves 1999, NERF 2001).

It has been shown that new knowledge uptake is mediated by working knowledge (Kennedy 1984). Hence for research to make a difference it is not just a matter of disseminating new ideas; it is important to demonstrate their importance, quality and relevance in the light of working knowledge. In the past the debate on research impact has been centred on simplistic models of one-to-one transference of research findings into practice, the flip side of which is a theory versus practice mentality, or us versus them. The reality in Australia at the beginning of the twenty-first century is an extended research community involving a wide range of participants, not least teachers researching their own practice. Universities play a pivotal role in this community. Returning to the study at hand, two-thirds of the respondents involved in education at the school level saw universities as important sources of new information. The majority of the sub-sample of respondents engaged in research who were interviewed for the study emphasised the importance to their research aspirations of having access to university study, but particularly the benefits of talking with fellow students. In addition most respondents to the questionnaire said they discussed their own research with colleagues in the workplace.

It would appear that the importance of the 'informed colleague' cannot be overstated with respect to the translation of research into teacher knowledge and practice. Some 84 per cent of all respondents saw colleagues in their own school and in other schools as important sources of new ideas. It was not specified that the idea was initiated by the colleague, but that it was through the colleague the idea became known and acted upon.

Postgraduate students in education are soundly placed to be the sources of new ideas and thus perhaps to be key change or at least linkage agents in their schools and systems. First, these students have exposure to new ideas and their evaluation through considerable contact with research as part of their studies. Secondly, more than three-quarters of the students stated university research had at least some impact on what they did personally. Finally, the students' most common research interests and the studies they undertake are based very much in areas of direct relevance to schools, such as educational processes, curriculum and special education.

Consequently it would seem to be important for the adoption of soundly-based innovation in schools and school systems for more primary and secondary teachers and administrators to be attracted into postgraduate studies, especially types of studies involving close contact with research. In bringing the concerns of the schools to their university work, postgraduate students have a strong incentive to use their research to improve understandings and seek solutions to relevant issues. Having school personnel enrolled at a postgraduate level is important also for the education faculties in which they enrol. A major benefit to faculties of having larger cohorts of

school-level practitioners as postgraduate students is that they help to focus research on area relevant to schools and accordingly keep university staff current with school and school-system concerns. As a group school-level postgraduates should also be recognised and represented in any move to develop a national research forum or peak research body (such as that which exists in·the U.K.) to plan for future research in education.

Several issues related to perceived benefits of the continued enrolment of school-level personnel as postgraduate students in education would seem to warrant further investigation. One such issue is the very high proportion of part-time postgraduate students in education, compared with most other disciplines. With four-fifths of education students enrolled part-time, one might want to look at the balance of full-time and part-time students with a view to maximising the potential to implement new ideas in a timely way. A second question concerns the extent to which postgraduate students continue to be involved or at least interested in applying research or systematic enquiry methods to their work after they have completed their postgraduate studies. If ex-students do not remain active in research in the workplace, one might question whether any benefits are restricted to the period of candidature and are thus no more than short term. Thirdly, consideration should be given to including greater discussion and perhaps even explicit training in research dissemination and usage during postgraduate education programs, in the same way that students receive training in research methods, for example. Of course, outcomes of some teacher in-service training programs could also benefit from greater concentration on issues and techniques of dissemination.

Overall the clear message received from the majority of postgraduate students is that research is valued but that there are many competing sources of information recognised as effecting and justifying changes in schools. It is reasonable to suggest that current or recent students would be more likely than most to understand and to value the importance of research than many other persons involved with schools. Consequently they are most likely to act as linkage agents between research/researchers and practitioners, actively demonstrating and modelling new knowledge in ways that lead to conceptual uptake among their colleagues. However, many of this potential linkage group are unconvinced of the importance of research in their work, and this group presents an important challenge. Consequently those who wish to elevate the position of research as a rationale and direction indicator for educational change must accept that there is much more to do in raising the profile of research among educational practitioners generally. It would seem that encouraging and assisting teachers and administrators to become postgraduate students is one productive approach, but clearly it is not the only answer. How else the greater development a research ethos in schools might be achieved is not a new

question, and one not likely to be solved in the short to medium term, but there is now a substantial body of evidence which has 'cleared the way' for progress in this endeavour.

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