

Research-Based Teaching and Learning in Higher Education: The Perspective of Postgraduate Students

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Abstract

This paper is aimed at the analysis of research-based education and its implementation at the universities of Romania. A structured questionnaire was addressed to postgraduate students enrolled in Master and PhD programs in five public universities in Romania. Analysis was done based in the students' capacity to transfer and integrate research results to their educational program and professional practice. Results showed that postgraduate students act as "mediators" of knowledge.

Introduction

Recent years have been marked by a revival of interest in research and especially its transfer in the Romanian educational system. Efforts to promote research have been made by both national bodies and universities. Interest in research transfer has even increased and some authors believe that educational practices are not enough based on research findings.

There is a number of information about research transfer and its implementation in the practice of education, especially teaching. Hoddinott & Wuetherick (2006, p. 32) pointed that "a continuum between teacher focused research-based course content and a student focused research-based process of learning." Similarly, in their discussion of "research-led teaching" Holbrook and Devonshire (2005) describe the research-teaching nexus in terms of research-informed teaching – where disciplined-based research informs content – and research skills teaching develop students' research skills. They add, however, another element of research-inquiry teaching, Griffiths (2004), in his conception of the research-teaching nexus, refers to as the concept of "research-informed teaching" when academics use research to investigate the effectiveness of teaching and learning activities.

Teachers' education is one of the most relevant interest of research transfer and use and this interest it's motivated by the fact that teaching represents an important profession that might lead to changes in the contemporary society, especially in the light of the new paradigm of education based on the constructivism. This context marks a shift in which teachers are considered as "knowledge users" and redefine their position towards as "knowledge makers". However, knowledge making still remains in the scope of researchers and university educators' interest and is beyond from the actual needs of education.

In this new professional culture, adapted to a changing society, teaching as a profession is experiencing a continuous transformation and innovation process and education professionals appear to be researchers and knowledge users able to think thoroughly upon their own professional needs and upon the new topics arising in their professional field. There is therefore a shift from a passive to an active position enabling educators to become aware of how complex their field is and to understand that this field should meet the social, cultural, historical, philosophical, and psychological context shaping it. Teachers thus become aware not only of

the students' immediate needs and the facts occurring during their own classes, but also of their own training and professional needs. According to authors like Kraft (2001) and Beretter (2002), teachers become researchers of their own professional practice.

In order to face these new challenges, university programs have to adapt their study programs and methods in order to develop students' research competences, especially those related to conduct research projects and also to be able to transfer their knowledge and academic experiences to their professional teaching practice. For this propose, the paradigm of "research-based education" seems to be one of the most adequate to be implemented in the universities study proposals.

Research-based teacher education has lately received increasing interest among both researchers of teacher education (e.g. Jakku-Sihvonen & Niemi, 2006, 2007 and Toom, et al. 2010) and public discussion. Research-based teacher education has been studied in different contexts and education levels, and has a crucial interest in master and doctoral studies, especially under Bologna process where teaching professionals are trained through postgraduate studies. In order to develop research competences of future professionals in the field of teaching, activities of practicing inquiry and research are needed as part of the study programs.

Research based education in Master and Doctoral studies

Master's and PhD thesis, conducted at the end of the study programme, represent an independent but supervised research project for both students and teachers and imply a opportunity to get involved in an activity where the student get closer to the professional world analyzing and reflecting about their practice. It could also be seen as the integration of the theoretical knowledge base or theoretical knowing with the use of appropriate data collection and analysis procedures. Activities of practicing inquiry and research are needed to develop research competences of future professionals in the field of teaching. Students should be involved in a learning process where the theory and practice emerged and interconnect each other. Students also need theoretically oriented method courses and need to work on skills like observation, interview and interpretation. Knowing and action must be in reciprocal interaction especially when practicing inquiry and research (Toom at al, 2010).

Over the course of time, teachers' work has been investigated by professional researchers as well as teachers themselves. When looking back at past decades we can see that Schön's (1983) idea of the reflective practitioner did not guarantee that educational research would be open for teachers (Rudduck, 1985). Most of the research projects focusing on teacher's work were carried out by researchers who were not teachers themselves. Toom et al, (2010) suggest a horizontal rather than a vertical approach to the role relations between the actors.

Authors like Kansanen (2007), Krokfors (2007) and Westbury et al., (2005) dedicate to analyze of research-based teacher education and pointed that in all experiences analysed courses are integrated with research, and students take an inquiring stance to ongoing pedagogical questions. Authors agree that the aim is to educate autonomous and reflective teachers who are able to act as practitioner researchers and who can be characterized as pedagogically thinking teachers. The aim is not to produce researchers, but rather to provide the students with sufficient skills and knowledge by which they are capable of applying what they have learned, observing their pupils, and analyzing their thinking. The figure 1 illustrates the relationship between teaching and researching in teacher education programme.

	TEACHING	RESEARCHING
general level	<ul style="list-style-type: none"> ▪ metacognition ▪ reflection ▪ pedagogical thinking 	<ul style="list-style-type: none"> ▪ producing ▪ expertise
basic level	<ul style="list-style-type: none"> ▪ everyday thinking ▪ skills-based teaching ▪ teaching recipes, routines, tips 	<ul style="list-style-type: none"> ▪ adaptation ▪ consuming ▪ knowledge-based
	making pedagogical decisions	inquiring one's own work
	RESEARCH-BASED TEACHER EDUCATION	

Figure 1: Research-based teacher education according to Toom et al. (2010)

The research-based education approach establishes the development of student teachers' pedagogical thinking processes as its primary educational goal. Other concepts such as 'critical thinking', 'didactic thinking' and 'pedagogical thinking' were also associated to the pedagogical thinking processes and its main goal was to educate teachers who assume and approached their work in an inquiring manner. In other words, teacher must understand educational concepts and be able to apply them correctly. Teachers should question the way of working and take a critical stand towards routines. Instead of providing ready answers and tips, the research-based approach encourages the student teacher to make independent pedagogical judgements (Krokfors *et al*, 2011).

Research-based teacher education incorporates a number of rather problematic concepts, and relationships between them are also complex. Ebbutt (1982, p. 7) proposes a model addressed to view the role of research in teaching. According to him, there are five different ways for teachers to act: (1) as a traditional teacher, (2) doing self-evaluation, (3) as a researcher, (4) doing action research, and (5) doing broader action research. The research-based approach is based on the notions that the knowledge base of the study programme is dynamic and that the student teacher is an active processor of that knowledge (Zeichner, 1983). The idea is to integrate theoretical aspects with practice during studies. Identifying pedagogical elements and asking pedagogically meaningful questions in educational situations are among the most important skills that a future teacher needs (Kansanen *et al.*, 2000).

Research -based practice in teacher education

The study program and the initial and continuous training are important steps during the process of research-based education, but the process of research transfer and use not ends at university level. Teachers should continue their lifelong-learning and try to create a positive climate in their school, stimulating for them and favourable to a research-based approach in teaching. Studying research use in teaching practice is reasonably recent. Common reasons suggested for low levels of use include poor or inappropriate dissemination of research findings, alienating language and unfamiliar concepts, poorly targeted and inapplicable research findings, and problems associated with different "cultures" including receptiveness and knowledge of its potential users (Kennedy, 1997). Concerns about the impact of research have been tied to concerns about the quality of research, including fears about unsubstantiated findings and fads driving educational change. Ways of drawing findings together and filling the gap between

researchers and practitioners through developing consistent communication or mediation strategies are high on the agenda of major government agencies and universities.

When examining the use of research, the principal focus is on the strategies and methods practitioners use to access research and what helps and what hinders them in this process. Rickinson (2003) proposes a classification of factors that can help or hinder access to and use of research by education practitioners. These include the nature of research – factors relating to the focus and form of the research evidence; who the practitioners are – factors relating to the interests, needs and background of the practitioner users; the nature of the professional context – factors relating to the institutional context in which the research is used and character of the wider context of support – factors relating to the overall context of knowledge generation, transfer and communication.

Evidence of how the utilisation of research is influenced by the nature of research has often come in the form of barriers to utilisation, rather than in terms of the factors which can facilitate its use. According to Rickinson (2003) two issues that recur in studies of practitioners' perceptions and attitudes towards research are complaints about the inaccessibility of the language and the difficulty of locating work that is relevant. Statements along the lines of 'practitioners sometimes sounded frustrated as they talked about how difficult it was to get information already generated by research' (St. Clair et al., 2003, no page numbers) are common. A study of science teachers found that 'inaccessibility of many research reports in both location and style [was] seen as a barrier to the impact of research' (Ratcliffe *et al.*, 2004, p. ii).

Practitioners often do not have the capacity and opportunity to make fruitful use of educational knowledge in order to inform their work (Hood, 2003). They are rarely trained in how to make use of research and how to evaluate evidence. Levin (2004) identifies other factors that need to be taken into consideration, such as the characteristics of the research process. He also considers that the research conducted by universities has its motivation deep in the culture of universities and in the way research is rewarded which can include greater funding and increased prestige and this may mean that research is not inspired by the real practitioners' needs.

The study

We conducted the study in the Faculties of Education of five research universities in Romania between 2012 and 2013. According to the Romanian educational system, the institutions included in this study are defined as "advanced research universities" because their ability to offer master and doctoral programs. Master programs, according to the European Higher Education Area, are structured in a two-year period and during this time it combines specialised knowledge and practical activities. During the last year the students have to conduct a final thesis and in most of the cases this project consists in a research in which students have to develop a field study in order to approach a practical subject derived for the practice. The PhD programs are 3 years long and the study programme is entirely based in research.

Most of the students enrolled in Master and PhD programs in the Faculties of education are full employed in the educational system as teachers, administrators or educational counsellors. The role of postgraduate students in terms of their contribution to the total research activity, the breadth of research undertaken, and the linkage between schools and research is one of particular interest from this study. Postgraduate students constitute the largest single group involved in educational research in Australia. They are mainly part-time students who work in the education sector as school teachers and administrators.

In this context, the objective of this study is to explore to extent to which Master and PhD students (in education fields) use research in their workplace and how its use affects their practice.

Specific objectives are:

- To analyse the participants' perception on the importance of their study programme on their professional development
- To describe how the participants' study programme is integrated on their professional practice.
- To examine the strategies used by participants to enhance the impact of their research projects in their own work places.

Method

The instrument designed consisted in a set of questions adapted from an instrument developed by the Higher Education Division Department of Education, Training and Youth Affairs in the study *The Impact of Educational Research* (Australia- Sydney, 2000) and included seven sections:

1. General Information
2. Motivations for choosing studies
3. Information regarding the workplace
4. Information regarding the workplace among educational professionals
5. Sources and the importance of research (for educational professionals)
6. Research activities during studies
7. The transfer of information in the work place.

According to the seven sections mentioned above, we summarized the collected data including basic statistics: distribution, means, percentages, minimum and maximum values. Analysis also includes statistical tests and basic two-way variables analysis.

Findings

A total of 161 students from Romanian Universities took part in the study. According to the type of studies, distribution among Master and Doctoral students was almost the same with 51.5 doctoral students and 48.6 master degree students. When asked about the year of studies, almost two thirds of the participants reported being at the first and second year of studies (n=107), while the other third (n=54) reported being at the third, fourth, fifth or more years of studies. Most of the respondents were females (87.6%) and 73% of respondents were between 25 and 45 years old.

Motivations in choosing a postgraduate program were categorized as extrinsic (i.e. expectations of employers and advancing in careers) and intrinsic (i.e. personal interest, wish to expand networks, own interest in educational research and intellectual challenges). Figure 2 shows that, in regards to choosing a postgraduate program, extrinsic factors were less important than intrinsic factors. Career advancement and expanding the professional network were also given as important reasons among students. Employer expectation was important as a reason for undertaking postgraduate studies for a little more than one-quarter of students.

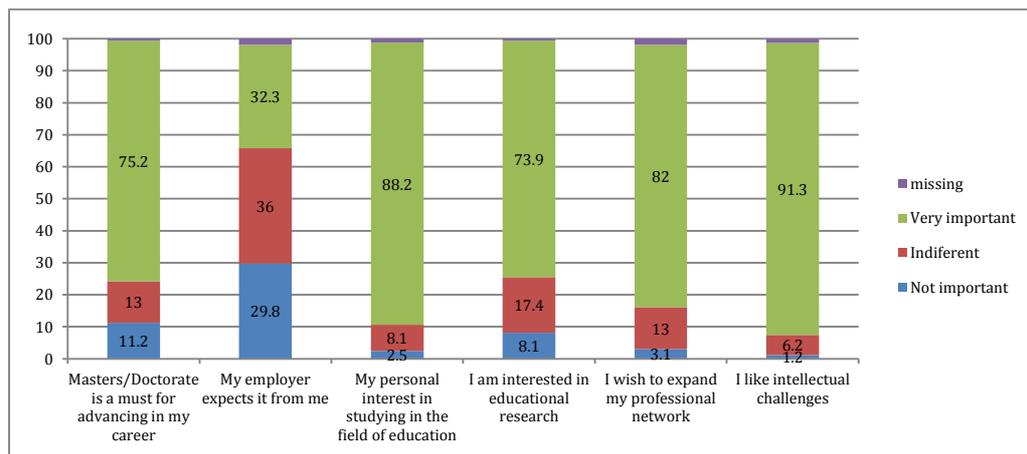


Figure 2. Motivations in choosing the academic program

Motivations for choosing academic programmes were compared with independent variables (gender, age and type of academic program). Age is related ($p\text{-value} < 0.05$) with the fact that “Masters/Doctorate is a must for advancing in my career” with 83% of students aged 35 years or less considering it as very important compared with 65% of students who considered this factor as very important. No differences were seen by gender or type of studies. In the case of the willing to “to expand my professional network”, there were differences by gender, showing that this motivation is higher among females (87% vs. 60% in males). Finally, females reported feeling more attached by the “intellectual challenges” than males with 95.7% of them reporting this motivation as very important (compared to 68.4% of men).

The last item of the Motivation for choosing post-degree module consisted in asking the participants about the feeling of encouragement: “In your workplace, how encouraged or discouraged do you feel in continuing your post-university studies”. The table 1 shows the distribution of encouragement and discouragement among the participants of the study and the perception of encouragement to continuing in a post-degree study by independent variables. When compared with gender, age-group and type of studies statistical differences were found.

Table 1. Perception of encouragement at the workplace (%)

	n (%)	Gender *		Age*		Type of studies	
		Female (%)	Male (%)	Less than 35 y (%)	35 y or more (%)	Master (%)	Doctorate (%)
Discourage / indifferent	84 (52.2)	56.1	30.0	44.9	62.9	47.4	57.8
Encouraged	75 (46.6)	43.9	70.0	55.1	37.1	52.6	42.2
Total	159 (100)	100	100	100	100	100	100

* $p\text{-value} < 0.05$

Although males are little represented in this sample, they reported feeling more encouraged than discouraged to continuing their studies (70% vs 30%). Perception of encouragement is lower among older participants (37.1% vs. 62.9%) and no differences in encouragement were found by type of studies.

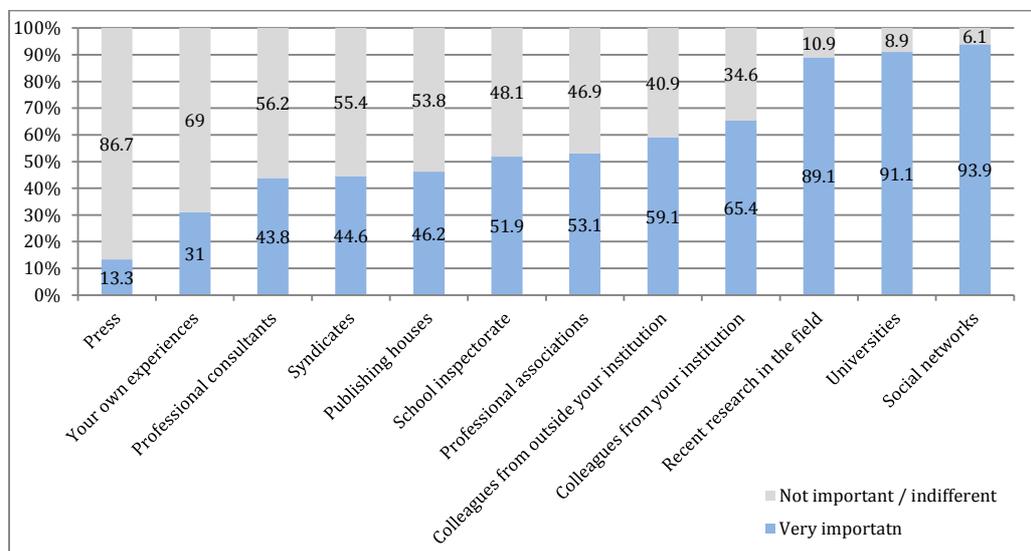
The module related to the participants’ professional activity included two items: current professional situation and field of work (only for professionals working in the educational sector). 83% of respondents reported being working full time and 74% of them in the Educational sector. When comparisons between current occupational status gender, age and type of studies were made, data showed that only the type of study was related with the current educational status (table 2).

Table 2. Current occupational status by gender, age and type of study (%)

	n (%)	Gender		Age		Type of studies*	
		Male (%)	Female (%)	Less than 35 y (%)	35 y or more (%)	Master (%)	Doctorate (%)
Employed fulltime	134 (83.2)	75.0	84.4	83.5	82.9	70.5	95.2
Other	27 (16.8)	25.0	15.6	16.5	17.1	29.5	4.8
Total	159 (100)	100	100	100	100	100	100

* p-value<0.05

The following section contains information about the importance of seven potential sources of new ideas and new techniques in educational institutions from the perspective of postgraduate students. Overall, social networks, universities and recent research in the field were seen as the most important sources of new ideas, with more than 80 per cent of respondents who considered them as very important. More than 50 per cent considered colleagues (outside and inside their institution) and professional associations as important or very important. Press, school inspectorates and own experiences were the factors with lowest importance as sources of new ideas (Figure 3).

**Figure 3.** Importance given to different sources of information and new ideas on educational research (%)

Comparisons of the importance given to different sources of information and research across the independent variables (type of degree, gender, and age), showed that 60.3% of the 78 doctorate students considered the School Inspectorate as indifferent or not important as source of information and new ideas on educational research. In contrast, 70.6% of the 51 Master degree students reported that the School Inspectorate is very important as a source of information and new ideas on educational research (compared to 39.7% of the 78 doctoral students who did it). Gender was also associated to the perception of the School Inspectorate as source of information and new ideas on educational research, 81.3% of the 16 men reported that as indifferent or not important (compared to the 43.4% of the 113 females who did it). No differences were found when comparisons were made between the importance given to social networks and universities and independent variables (type of degree, gender, age, type of field in education). As a source of information and new ideas on educational research, participants' own experiences were associated with the type of studies, with 78.2% of the 78 doctoral students who considered it as not important or indifferent (compared to the 54.9% of the 51 master degree students who did it). Gender was also associated with the importance that participants gave to recent research as a source of information and new ideas on educational

research: 92.0% of the 112 women reported it as very important compared to the 68.8% of the 16 men who did it.

Participants considered that their colleagues manifest receptiveness for new ideas based on research as showed in Figure 4. They also consider in a wide proportion (91%) that activities of master degree and doctorate influence their professional work, so they perceive that their studies has an impact on their practice at school level, as showed in Figure 5.

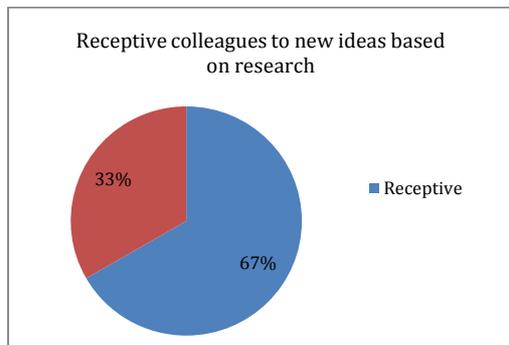


Figure 4. Receptiveness of colleagues (%)

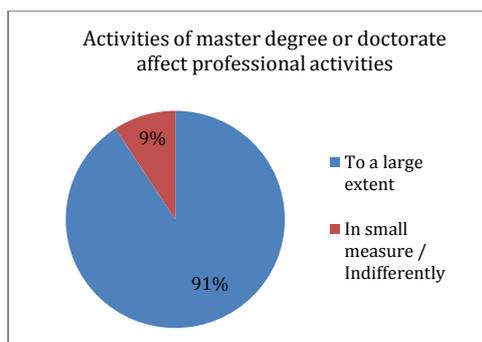


Figure 5. Studies done and their impact on activities (%)

When compared to independent variables (age, gender, type of studies), receptiveness of colleagues to new ideas and the impact of studies on the activities, no statistical association was found. However, the type of job in education was associated with the receptiveness of colleagues to new ideas. Compared to Teacher/Trainer/School director and Researcher/other; the group of Educational Counsellors/Psycho-pedagogue/Educational Consultant reported that their environment (colleagues) is less receptive (61.5%). This section also included questions about current or future research activities during the study program. 78.9% of participants reported they are of will started a research program during their study period.

The following four items assessed how the participants perceived the impact of their academic programs on their ability to gather information, their attachment to educational research and how those programs make them more informed on educational research and educational policies (Figure 6).

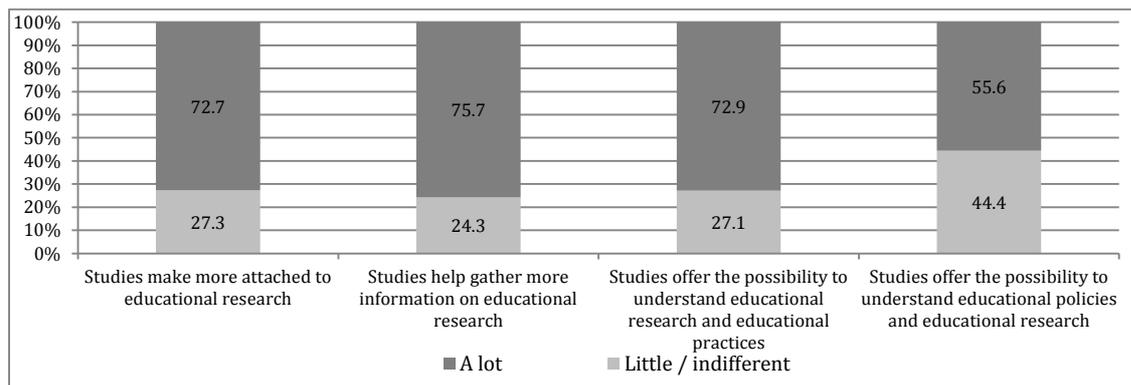


Figure 6. Impact of research on education, strategies to get information and awareness of research policies and practices (%)

Regarding the role of studying a master or doctorate and feeling attached to research, comparisons by age group showed that being 35 years or older makes students more interested in educational research (84.4% vs 63.3%). Regarding the role of studying a master or doctorate and having the possibility to understand educational research and practices, findings showed that 81.3% of teachers/trainers and school directors found this factor as very important when compared to other professionals: counsellors, psycho-pedagogue (53.8%) and researchers (61.5%). Finally, the role of studying a master or doctorate and the possibility to understand educational research and policies was not associated with the independent variables: gender, age, type of job or perception of encouragement showed differences statistically significant.

Discussion

Postgraduate students, particularly those working in the education and training sector form a key group in any links between research in faculties of education and the activities of schools and other educational institutions. The idea that exposure to research affects beliefs and practices of teachers has received support previously (Green & Kvidahl, 1990; Zeuli, 1992). Postgraduates are not the only exposed to research activities at universities, many of them become researchers, at least in the short term, through project work and through writing theses. In addition to creating research information, many of the postgraduates would be involved in disseminating and mediating research in both formal and informal ways. It could also be expected that their studies would lead many to use research findings in their professional roles.

While application of their study appears to be a high priority for practitioners, previous studies proposed that broader theoretical understandings are essential for educators, policy makers and researchers to be successful. In this regard both pre-service and postgraduate studies are important. In schools, links to research are formed through teacher involvement in professional development with a strong research base, and postgraduate research and coursework.

Postgraduate students do a large amount of educational research in mainly applied fields. Importance of such ad-hoc linkages between educators and research cannot be overlooked. Contact between these practitioner-researchers and university researchers can only increase the likelihood that new research will address the needs of educators involved in policy, administration and teaching, though on its own this contact is unlikely to give any strategic direction to the research effort. In addition, professional networks represent an important source of ideas and improvement for the teachers. This finding supports other work indicating that

teachers prefer to learn from other teachers, who perhaps used research as background information (Blaunstein et al., 1995).

Practical implications

The views of postgraduate students provide key information concerning the research questions for this study. The postgraduate students in the sample, particularly as most worked in the education sector, provide perhaps the major link between research conducted in and reported by faculties of education, and their own work in other educational workplaces. The majority of postgraduate students working in education were either school teachers or school counsellors. Consequently their views and experiences constitute important information in any study of the impact of research on schools and schooling and of the research based education in teacher education programmes at university level.

The sample data reported in this chapter indicated that postgraduate students have a wide range of research experiences and are focused on a diverse range of topic areas. Their major motivation for the studies they were undertaking would seem to be intellectual challenge and personal interest, in most cases closely related to their roles in the workplace. It would come as a surprise to those who work with or at schools, seen the professional networks and the universities as the important sources of new ideas and developments in the school.

Nevertheless, it was also clear that ideas and findings from research do have an impact on postgraduate students work in education, they indicated that educational research conducted in universities had some impact on their work and help them to improve their practice.

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