Teaching Granny (and Grandpa) to suck eggs: Psychology and the practicing teacher

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This paper argues that psychology has an important role for practicing teachers. Firstly, it is important that they keep their knowledge of best teaching and learning practices updated; psychology is a continually evolving field of research and whilst some traditional aspects may remain compelling even today, others are no longer seen as valid, thus updating of the knowledge gained during initial training should be seen as essential for all practicing teachers. Secondly, the current emphasis on evidence-based teaching and the need for teacher-led research, highlight a need for understanding the research methods used in education, which again psychology at postgraduate level can deliver. Finally the challenges of teaching psychology to practicing teachers are discussed.

EVERY YEAR throughout the UK, practicing teachers from both primary and secondary schools will opt to undertake either a diploma or a masters course in education. These teachers embark upon postgraduate study for a number of reasons, usually directly related to their professional work. For many it is a chance to gain a better understanding of how children learn, or how wider educational policies impact on the schools or colleges in which they spend their professional lives. They may hope to gain more confidence and competence in their everyday practice. So can psychology, usually an important component of such postgraduate studies help to give them this? Surely teachers do regular INSET training days that can deliver such professional enhancement? After all, conventional INSET courses are concerned with the practicalities of everyday teaching, which is perhaps of more value to qualified teachers in terms of increasing professional confidence and competence? Whilst it is true that INSET training can add a great deal to the direct accumulation of ideas for everyday teaching practice, it seems shortsighted, (patronising even?) to suggest that this is all the updating a teacher needs to be effective in the workplace. This paper argues that educational psychology has an essential part to play in the continuing professional development of practicing teachers.

So why do teachers need psychology?

If you ask the majority of teachers where they learned to teach, many of them would probably say that they learnt most of their skills through experience. Indeed, much of the expertise that teachers' need could not be developed without concrete, practical experience, hence the importance placed on school placement during initial teacher training. However, effective teaching skills are not acquired through practice alone. To be a successful educator, a teacher must understand fully about a range of issues including child and adolescent development, teaching and learning strategies, how to motivate pupils, different methods of assessment and classroom management; they need to know and understand how to apply the basic principles of educational psychology. Knowledge of the tenants of psychology can enhance teaching skills, allowing teachers to develop a knowledge base of theoretical information that can be combined with their experiences so as to make decisions about how to help their pupils learning become more productive. Clearly an effective teacher must be able to communicate information to their pupils at a level that is appropriate to the age and ability of the group and in a way that encourages the child to engage with the subject matter. Thus educational psychology

provides an essential tool for teachers when planning, delivering and evaluating their professional practice. Indeed, good teachers regularly apply the principles of psychology to their practice, even if they do not realise they are doing so, or are unable to name the principles they are applying.

The value of psychology to teaching has been recognised for a long time; in the late 19th century, James Gibson Hume lectured on 'The Practical Value of Psychology to the Teacher' (Green, 2001), whilst the publication in 1899 of *Talks to Teachers on Psychology*, a series of lectures by William James, is commonly credited as the first educational psychology textbook. Today, educational psychology is a vital discipline that is taught to trainee teachers as a matter of course and can be defined as the application of psychology and psychological methods to all aspects of the teaching and learning process including child and adolescent development, learning skills, motivation, instruction, assessment, and so on (Elliot et al., 2000). Clearly the aspects of psychology that have implications for education are numerous and the amount of information available is huge. By necessity it is important to present trainee teachers with the concepts and principles that will be most relevant to their work as professionals in education. However, educational psychology is a continually evolving field of research and whilst some traditional aspects may remain compelling even today, others are no longer seen as valid, rather than updating of the knowledge gained during initial training should, therefore, be seen as essential by all practicing teachers.

What should teachers know about psychology?

Despite criticisms of behaviourist models of learning (e.g. Wood et al., 1999), behaviourism remains an important tool for schoolteachers. Firstly it forms the basis of many classroom management strategies (Wheldall et al., 1986). Incentives and praise for instance are useful for managing and modifying problem behaviour as well for motivating children to stay 'on task'. In addition the principles of Skinner's 'programmed instructions' (Skinner, 1954) can still be found in the contemporary computer packages used in schools. Known as 'integrated learning systems', these modern teaching materials present children with curriculum based teaching activities and assessments. Each child is guided through the materials at a level that is appropriate to their ability, and progression through the system is linked to each individual's success on the assessment tasks. Teachers using such systems need to be aware of the advantages and disadvantages of a behaviourist approach; whilst there is some evidence supporting the effectiveness of such programmed instruction (e.g. Becker & Gersten, 1982; Lynch et al., 2000), there is also evidence which suggests that learning is superficial only (Aldrich et al., 1998). Furthermore, too much emphasis on solitary individualised learning can deprive children of important learning opportunities that are only available during peer group interactions (Johnson, 1981).

The idea that learning should be matched to the level of the individual if education is to be effective is, however, a recurring theme in educational psychology. In the 1960s Piaget's constructivism provided the foundation for what was then known as progressive education. According to the principles of constructivism children must be allowed to explore and discover how the world works for themselves – direct instruction could inhibit learning if it interferes in this exploratory process (Newman et al., 1989). However, these educational experiences will only be effective if they are appropriate to the child's current level of knowledge and understanding. Teachers must be sensitive to the needs of their pupils and prepared to be flexible in their approach. The influence of constructivism and the idea of learning through discovery can still be seen in educational settings today, most notably in primary classrooms. It has, however, been suggested that secondary education in the UK should

give a more prominent role to Piagetian approaches, especially in weaker curriculum areas such as maths and science (Dixon, 2004). The approach to maths devised in the US by Kamii (2004) is a good example of how this approach could be applied to the curriculum.

Whilst the value of individual enquiry and discovery learning should not be denied, teachers need to be aware that there will be times when more instruction is required. However, there are different ways of 'instructing', some of which have been demonstrated to be more enlightening for pupils than others. Contemporary research based on Vygotsky's social constructivist approach, provides a useful guide to effective methods of instruction in the classroom. Mercer (2000), for example, has investigated the ways in which teachers guide their pupils learning through classroom discussions. According to Mercer, the most effective instructional techniques are the ones that encourage pupils to contribute what they already know about a topic, thus developing a body of information that is based on pupil-teacher collaboration; by this joint construction of knowledge, teachers allow the pupils some ownership of knowledge, even within the confines of a set curriculum. Mercer's research, therefore, takes us beyond early social-constructivist research, which concentrated on the one-way transmission of knowledge from expert (the teacher) to novice (the pupil).

Research from both constructivist and social constructivist perspectives have informed our understanding of the importance of group work for children's learning. Studies by Doise and Mugny (1984), for example, were some of the first to apply a Piagetian perspective to peer interactions. According to Doise and colleagues, by collaborating on a task peers are able to facilitate each other's learning in a way that would not be achieved when working alone. For peer facilitation to be effective, however, it is important that the children work with a partner of different, but not too disparate, ability. This will ensure that initially, the children provide different solutions to a problem. Being faced with conflicting ideas about a task should provoke cognitive disequilibrium, which can only be resolved through re-examination of the problem, assimilation of new information and the generation of a new solution. In such a scenario it is often (but not always exclusively) the child with the lower ability who realises the most in terms of cognitive gain from this 'socio-cognitive conflict'. However, if the gap between the children in terms of their knowledge and ability is too great, socio-cognitive conflict is unlikely to take place as the more able child is apt to impose their solution to the task, which will not result in any cognitive gains for either partner. More recent work on peer group collaboration from a social constructivist perspective should also be considered here. Analysing children's talk during group work sessions has led Mercer (2000) to suggest that the most useful group learning situation is one in which children engage in what he terms exploratory talk. Exploratory talk involves explicit sharing, negotiating and reasoning about a task. Criticism of each other's ideas must be constructive and challenges must be justified. However, it has been recognised that children do not always have the skills necessary for effective exploratory talk (Mercer, 2000) and so a framework to foster such skills in the classroom has been developed (see Dawes et al., 2000, for details of the scheme, with additional resources for teachers available online at www.thinking-together.org.uk).

Knowledge and understanding of these and other psychological approaches provide a basis for teachers to plan and organise classroom activities and effectively manage behaviour. The greatest skill of the teacher though, will be in knowing when to apply each of these techniques and this is when personal experience can, of course, be of great value. This is what many, William James included, would call the art of teaching. However, this is an idea that has been challenged by some educationalists (e.g. Elliot et al., 2000).

The science of teaching

According to Elliot and colleagues, teachers often adopt a scientific method in the execution of their professional role. They go as far as to outline four steps which teachers must follow in order to identify objectives and devise strategies to achieve those objectives. The first step is to identify the problem – what is the topic these pupils need to learn? Having identified the objectives, the second step is to formulate a logical series of steps to reach this goal – what is the best way to deliver this topic to the group? The third step involves gathering data – this is the assessment of pupil learning which includes deciding what to assess as well as how. Finally the data has to be analysed and the results interpreted – have the pupils' achieved the desired learning goal.

The idea of teachers applying a scientific method to the organisation of their classroom and timetable deserves further exploration. It is the second and third of Elliot et al.'s four steps that really concerns us here. How do teachers decide how to deliver and assess a curriculum topic? Use of a scientific method would call for consideration of the available research evidence about which methods of teaching and assessment are most effective for the chosen topic. Indeed, in the late 1990s Hargreaves (1996, 1997) argued for educational research to have much more impact upon teaching practice and since then others have taken up this theme. However, the use of phrases such as 'evidence-informed policy' and 'evidence-based policy', suggest that this is most often perceived as a corporate issue (Evans & Benefield, 2001) rather than something that should be pursued by individuals, – an observation which undoubtedly reflects the 'top-down' model of teaching that dominates in the UK. However, the Teacher Training Agency (TTA), now the Training and Development Agency for Schools (TDA), has supported this view of teaching as a profession guided by the systematic use of research evidence, and in particular teacher-led classroom research (TTA, 1996). This emphasis on teachers having more involvement in developing the evidence base led to programmes such as the 'School-Based Research Consortium Initiative', which took place in England from 1998 to 2001. Sponsored by the TTA and a private company the Centre for British Teachers, the aim was to encourage teachers to engage 'in and with' research. This was achieved by creating partnerships between groups of schools and university education departments in order to establish a support system for class-based, teacher-led research into effective teaching practices. The TTA's call for more classroom-based research by teachers was, however, controversial, with criticism being levied at the quality of some of the TTA sponsored work. Foster (1999), for example, noted that much of the end product was descriptive and lacked reliability and validity and for that reason did not deserve to be called research. Furthermore he suggested that funding teachers to carry out research was not a viable solution to developing a high quality evidence base for teaching since:

> '…research and teaching are significantly different roles which depend on different types of knowledge, skill and disposition. Expecting teachers to take over the task of doing educational research underestimates the difficulty of that task and the expertise it requires; it also underestimates the considerable demands that the job of teaching already places on them' (Foster 1999, p.395).

Yet despite such challenges, the need for teacher-led research continues to be widely recognised and support can be seen in form of books (e.g. McNiff & Whitehead, 2002), websites (e.g. www.becta.org.uk/index.cfm; www.actionresearch.net) and scholarly articles (e.g. Whitehead, 2000; Foray & Hargreaves, 2003). Furthermore, groups such as the National Teacher Research Panel (www.standards.dfes.gov.uk/ntrp/), an independent group of practicing teachers, are working to ensure that all research in education takes account of the teacher perspective and aim to increase the number of teachers engaged in research activity.

In addition, calls for more input from educational researchers and a methodical approach to assessing the evidence, have led a number of systematic reviews for education. In the UK many of these are written or supported by the Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI centre), based at the London Institute of Education. The EPPI-centre website currently lists more than 50 published reviews, all carried out since 2001, suggesting this is a burgeoning area. These UK developments are supported by other progress in education worldwide including the organisation of the Education Co-ordinating Group (ECG), an international network of volunteer professionals who have undertaken to 'prepare, update and rapidly disseminate systematic reviews of high-quality educational and training interventions conducted worldwide that are aimed to improve education and learning' (ECG, 2005).

It might be expected that such developments would be viewed positively by researchers and teachers, intended as they are to encourage the application of the evidence provided by educational psychology in order to improve the school experience for children. However, just as evidence-based practice in medicine was regarded with suspicion and even derision by some health care practitioners when first introduced, so too problems are emerging in the educational sector. Fears that a new reliance on evidence will change the nature of educational research making it more experimental (following the medical model) and less socially based have been voiced (Evans & Benefield, 2001) and the dangers of prioritising the positivist model in educational research have been outlined (Hammersley, 2001). Ironically the introduction of evidence-based practice in medicine has raised similar debates on the problems of randomised control trials (RCTs) and the pre-eminence of positivist research in medicine over the past few years (e.g. Sleigh, 1997; Shahar, 1997). It is perhaps worth noting that the rise of evidence-based medicine does not appear to have led to a reduction in the more qualitative aspects of health care research and discussion of the role of such work in evidence-based health practice continues (e.g. Newman et al., 2006); an observation which should be of reassurance to educational psychologists and teachers alike. Indeed, the support shown for a humanistic approach to research within education (e.g. McNiff & Woodhead, 2002; Woodhead, 2000) suggests that best practice based on experience and achieved through reflective practice will continue to flourish (Foray & Hargreaves, 2003).

Issues concerning cultural and organisational problems in what is seen by some as transposing the medical model to teaching have also been levied. Foray and Hargreaves (2003) succinctly highlight the similarities and differences between teachers and medical practitioners. The similarities lie, they argue, in the methods adopted by both teachers and doctors, as both practitioners must use their professional judgment to decide how best to deliver their clients requirements given their current context. In essence they 'learn to tinker, searching pragmatically for acceptable solutions to problems their clients present' (Foray & Hargreaves, 2003). The difference they claim is in the dissemination of knowledge concerning how best to manage a clients needs. Whilst medicine has a long established and effective system for carrying out research and disseminating findings, in education this system is 'deeply flawed.' (Foray & Hargreaves, 2003). Clearly the available evidence must be cascaded down to classroom practitioners if teachers are to move from educational practice that is based on personal preferences to one based on evidence (Evans & Benefield, 2001).

Psychology for practicing teachers

An obvious advantage of studying psychology as a practicing teacher is being given the opportunity to learn about new and up to date research in education – it is one way in which the evidence can be disseminated.

The benefit of this for the teaching professional comes from encountering new ideas emerging from research, and having traditional assumptions about teaching and learning challenged by new ways of thinking. However, this alone is not enough; it is imperative that teachers know how to evaluate this evidence as well. In order to do this properly, they are taught how to approach the reading of this research critically. They must learn to address issues such as did the study have an answerable research question? How effective were the methods used to answer this question? How reliable and valid are the results? What does this research say about (my) current teaching practice? And so on. In this way, teachers can learn to be reflective about their own beliefs and practices in the classroom. Thus rather than being provided with a set of approaches to use, practicing teachers must be taught how to evaluate the available research and the alternative approaches offered by educational guidelines in order to develop their own teaching methods, based on the best available evidence of what is appropriate given: (a) the subject matter to be taught; (b) the school context in which it is to be delivered; and (c) the characteristics of the intended learners.

Clearly a basic understanding of the research methods used in education is needed in order to engage with the literature in this way. Indeed a lack of research skills in the teaching profession is just one barrier to improving the research and dissemination system noted by Foray and Hargreaves (2003). Whilst this can easily be taught at a theoretical level, perhaps the best way of truly understanding the nature of research is through experience; thus an essential part of any psychology course for teachers must include supporting them in carrying out research in their own classroom. This will help familiarise teachers with some of the techniques and analytical frameworks used by professional researchers in psychology and education. Indeed, the initiatives described above which have aimed to increase the amount of research carried out in the classroom by practicing teachers, serve to emphasise the importance of instructing teachers in the subject of research. It is, however, essential that the process of research is situated firmly in teachers' own practices. Indeed, in their evaluation of the 'School-Based Research Consortium Initiative', Simons et al. (2003) noted that in the process of creating and using evidence, teachers only adopted practices in contexts which were closely related to the situation in which the evidence for improving practice arose.

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Teaching psychology to teachers is, however, not without its challenges. Firstly, many teachers who study for a higher degree in education have been away from academic study for a considerable length of time. Whilst teachers may well get regular practice at reading and writing reports, policy documents, and so on, they may not have read academic texts or written for academic purposes since doing their initial teacher training course. Returning to study can be difficult and requires a great deal of support and encouragement. Furthermore teachers are required to carry out their studies in addition to a full teaching load, which requires organisational and time management skills and a great deal of commitment. Students may also find studying difficult because the roles are reversed – they are the ones doing the learning not the teaching and this new role can be difficult for some of them to adapt to. Indeed some never really do! The majority, however, *are* able to adjust to their new role and in doing so gain a better insight into the situation of their own pupils; becoming the student rather than the teacher can be a useful reminder of the difficulty in meeting deadlines, the frustration of not grasping a topic and of feeling embarrassed or reluctant to ask for help. Perhaps the benefits of return to study can be found not just in the topic studied but also in the actual experience?

A further difficulty lies in asking teachers to consider the processes of teaching and learning (as educational psychology tends to do) rather than simply the end product of this process. This is perhaps not surprising given that the current focus in the UK educational system seems to be on the outcomes of teaching – school league tables based on exam successes put the emphasis firmly on the quantity rather than the quality of learning at school. However, outcomes will never be improved unless the process of teaching and learning is addressed first – an issue highlighted in a recent Ofsted report concerning the teaching of maths in UK secondary schools, which noted the problems raised by 'teaching to the test' (Ofsted, 2006). Clearly achieving results has become a driving force in education and so not surprisingly teachers want to quantify learning outcomes in terms of what knowledge has been amassed. Asking them to take a step back and consider instead how knowledge is acquired can be demanding. However, those who are able to shift their focus permanently find they view the classroom and the learning situation in a whole new light; they are able to re-evaluate their practice and in so doing become better teachers; a development which will not be lost on their students.

Finally, carrying out research is the area teachers tend to struggle with the most. It requires a completely new way of looking at the classroom. Honest self-critical analysis is also a necessity. However it is also the area that teachers can get the most out of – if they are prepared to put in the work! It allows them to apply psychology and what they have learnt about in terms of the theory of both learning and teaching to their practice. It gives them the opportunity to learn at first hand the pitfalls and problems as well as the benefits of carrying out educational research.

Conclusion

Psychology has a lot to offer the practicing teacher. It provides an essential tool to aid planning, delivering and evaluating teaching practice and continual updating of skills in this area is necessary in order to keep up with developments in the field. Furthermore the study of research methods in educational psychology will enable teachers to apply the available evidence to their practice both by increasing their ability to evaluate research evidence and in providing the skills for teachers to carry out their own research and so add to the evidence base. Thus psychology has a crucial role to play in establishing the role of teacher-researcher and the practice of evidence-based teaching in the classroom.

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