TEACH[R]

Research: What Potential does it hold for Teacher Practitioners?

Anthony Williams
Vice President – Research, Avondale College of Higher Education, Cooranbong, NSW

Peter Kilgour
Head of School of Education, Senior Lecturer, Avondale College of Higher Education, Cooranbong, NSW

Abstract

The teaching profession finds itself at the cross-roads at this time. because the crowded curriculum and the emphasis on core competencies including literacy and numeracy can have the tendency to push research training into the background. The question should be asked though, is research capability a skill practicing teachers should be engaging with? Is reconstructing the curricula of universities to make research preparation a priority worth pursuing?

The following paper considers the issue of research and what it can add to teacher practitioners' "arsenal" of capabilities. The authors believe that there is value in reconsidering the curriculum of teachers, as there are many ways in which teachers can be informed and inform knowledge about teaching. The ability to apply research capabilities to the teaching context can significantly benefit the profession and more importantly its' students.

> *"Is reconstructing the curricula of universities to make research preparation a priority worth pursuing?"*

Teacher as Researcher

The concept of teacher professionalism is often in question. In fact examining teacher performance and the standards that measure it is on the current political agenda. The appropriateness of the application of the term "classical professionalism" to the teaching profession is based upon the concept of the existence of a body of technical knowledge and skills that belong exclusively to those within the profession. Goodson and Hargreaves (1996) relate that in attempts to "measure up" to the professions of 'high standing' (e.g. medicine, engineering and law), educationists have sought to quantify and codify teachers' professional knowledge. One area, which does have the potential to define the concept of codifying profession knowledge, is the development of 'pedagogical content knowledge' (Shulman 1986) as a knowledge domain that is specific to teacher professionalism.

The concept of teacher professionalism and teacher professional identity can be based on principles surrounding 'what works' in the classroom, and for the purposes of this paper the activities that support this, namely educational research and evidence-based practice. Blackmore (2002) considers this issue important stating:

> Research based practice works through the theory and practice of dynamic criticality, and it is that criticality that is crucial for a knowledge based democracy which takes into account the social and cultural as well as the scientific and technological. It requires researchers to problem set and not just problem solve, to be strategic as well as relevant. It requires from teachers as practitioner researchers another level of professional judgment that derives from the theoretical underpinnings of their disciplinary field of practice. (Blackmore 2002, p. 17)

The following paper considers the issue of the teacher as a researcher and why it is considered important for teachers to have both the knowledge of how to conduct research and the attitude to put it into action, so as to be more able to contribute to the disciplinary knowledge of the profession.

In simple terms teachers research because they want to know the answers to questions. Every day the thinking teacher is looking around their classroom, as they're planning, at their students' performance, attitude and behaviour, and wondering "in what way am I able to improve this".

If the reader is now starting to think about what the focus of their particular research may be, they could finish the statements:

I would like to improve the...
I am concerned about...
I would like to change the way my students...
I would like to integrate more... into my class.
How can I do it?

(Capobianca, Horowitz, Canuel-Browne & Trimarchi, 2004, p. 48)

AITSL Standards

The Australian Teacher Performance and Development Framework, introduced in 2012 by the Australian Institute for Teaching and School Leadership (AITSL) focuses on a cycle of continual reflection, goal setting, professional learning and review. More importantly, this process needs to be evidence based.

Without genuine inquiry into the processes of the classroom, the only evidence available to the teacher to drive improvement will be observer feedback and student outcomes. The proactive teacher will organize their own action research projects in their classroom as a means of collecting their own data as evidence to base change and improvement on.

Teacher Standards 6 and 7 prescribed by AITSL and under the domain of Professional Engagement zeros in on focus areas such as: *identify and plan professional learning goals (6.1) and apply professional learning and improve student learning (6.4)*. These focus areas are about teachers identifying areas of potential improvement as they set goals and plan how learning is going to happen in their classroom. Again, the teacher as a practitioner-based researcher will be making strategic and considered decisions in these areas as they base their planning on data collected in their classrooms.

The Notion of Professional Standards

Considering further the concept of standards, the Australian Quality Framework (AQF) that defines the status of all education in Australia on a scale of nine from secondary education to PhD differentiates between a Level 7 and a Level 8 with the Knowledge and Skills associated with Research. Consider the difference between the "Application of Knowledge and Skills" between Level 7 and Level 8 shown below:

Graduates of a bachelor degree will demonstrate the application of knowledge and skills:

At Level 7

- With initiative and judgement in planning, problem solving and decision making in professional practice and/or scholarship_
- To adapt knowledge and skills in diverse contexts
- With responsibility and accountability for own learning and professional practice and in collaboration with others within broad parameters (AQF, 2012, 48)

At Level 8

- With initiative and judgment in professional practice and/or scholarship
- To adapt knowledge and skills in diverse contexts
- With responsibility and accountability for own learning and practice and in collaboration with others within broad parameters_
- To plan and execute project work and/or a piece of research and scholarship with some independence (AQF, 2012, 51)

Note the difference between the levels is the attribute of research and scholarship. What is interesting to note is that teacher educators have aligned predominantly with Level 7, whereas other similar four year trained professions such as Engineering have aligned their programs with a Level 8. Engineering, and like professions, require the programs of study attain Level 8 as preparation for graduates entering those professions.

This provides an interesting backdrop for the consideration of the importance of research to practicing teachers. What is it that research capacity provides the professional practitioner?

The notion of research leading to a higher level of professionalism has long been acknowledged in other professions, most notably the medical and the engineering professions. The question needs to be asked: Does the research based (or the commonly used term 'evidence based') practitioner indicate a higher level of professionalism? The AQF rankings would attest to this concept. Professional action in education and, as Sanderson (2003) makes clear, in many other professional fields, always needs to take the normative elements into deliberation. Professionals need to make judgments about "the most appropriate course of action in the specific circumstances in a context of informal rules, heuristics, norms and values" (p. 340). Therefore the need is to raise considerations to the level of teachers questioning "is not simply 'what is effective' but rather, more broadly it is, 'what is appropriate for these children in these circumstances'" (p. 341). To suggest that research thinking limited to "what works" should be raised to the level of normative professional judgment is like considering what "ought" to be, rather than being limited to what "is". Educational practitioners should not be limited to considerations of evidence about "what works" but rather informing themselves about 'what can be'.

> *"Not simply 'what is effective' but rather, more broadly … 'what is appropriate'."*

Teacher Attitudes

It would be interesting to determine how Australian teachers identify with the idea of the 'teacher as a researcher'. International studies have reported that approximately one third of teachers had neither done any research into the learning process in their classroom nor 'seriously considered research finings since entering the teaching profession' (Beycioglu, Ozer & Uhurlu, 2010, p. 1092).

Teachers generally are not confident in doing research, often not having mastered the research type skills they studied during teacher training. They would prefer to be "fed" other people's research in the form of in-service courses, teaching journals or books (Beycioglu et al, 2010).

Research does not need to be limited to what is taught in a particular topic or how a topic will be taught. It can be a valuable approach to developing curricula. Research can inform curriculum decision-making, but the rational, evidence-based, findings of research tend to wither in the presence of pre-existing or widely held philosophies, as curriculum choices are made within specific disciplines, most often resulting in the retention of the status quo (Aikenhead, 2002). This results in practitioner knowledge being imbedded within established practices and curricula and forms the core of decision-making within schools and educational institutions. This tacit knowledge may be used intuitively by practitioners and without the means to do otherwise is difficult for practitioners to use in informing practice when the practitioners do not have a research knowledge on which to draw. Research knowledge has the capacity to empower teachers in the discourse of practice, with change being based on informed decision-making.

"Measures of this work cannot . . . focus exclusively on test scores and ignore the incredible complexity of teaching."

If teachers are to be involved in the development of new practices they need the capacity to reflect on their current praxis. There are many frameworks for engaging in reflective practice, specifically professional practice (Schon, 1983). Turner-Bisset (1999) is another who developed a model whereby a range of knowledge forms contribute to pedagogical content and practice. This model focused on "observed practice". It used this activity to identify contributory knowledge forms as including substantive, syntactic, contextual and self-knowledge, knowledge of learners, models of teaching and knowledge of educational outcomes. This may be considered in light of Barnett and Hobson's (2001) concept which, when focusing on science teachers, identified four groupings of knowledge; academic and research knowledge, pedagogical content knowledge, professional knowledge and classroom knowledge. Although Barnett and Hobson's study was of science teachers, it is appropriate to relate the findings to all teachers, and their finding that the profile of research is highly placed is translatable across all teaching levels and disciplines.

It is What Expert Teachers Do

While learning and shaping practice from existing published research is very worthwhile, particularly in terms of latest pedagogical techniques and information on how children learn, it is of particular benefit to a teacher to make their research specific to their own class and situation. It is particularly gratifying to a teacher to see improvements in the learning environment they generate based on information they have gleaned from their own research with their own class.

Professionals in all careers have an expectation of continual learning. The teaching career is no different but accountability in this area is growing. According to Loughran (2010), 'Expertise in teaching begins to strongly stand out when teachers shape their practice in particular ways that they know make a difference for their students' learning . . .' (p. 218). The way the teacher will find out what makes a difference to their students' learning is to survey the students, test the students, observe the students and then make considered adjustments to the way they do things in their classroom. This is action research.

If the only data the teacher has as a commentary on the learning and teaching in their classroom is test scores, then the complexity of the learning environment is being overlooked. There are many aspects of this social microcosm that need to be identified by digging a little deeper. Cochrane-Smith (2004) puts schooling into perspective: 'Teaching is unforgivingly complex. It is not simply good or bad, right or wrong, working or failing . . . measures of this work cannot . . . focus exclusively on test scores and ignore the incredible complexity of teaching and learning . . .' (p. 4).

Goodson and Hargreaves (1996) have offered seven principles of 'postmodern' professionalism', which seek to extend the debate on teacher professionalism beyond "the recent clamour for technical competency and subject knowledge" (p. 20). Abbreviated, they are:

- Increased opportunity and responsibility to exercise discretionary judgement;
- Opportunities and expectations to engage with the moral and social purposes and value of what teachers teach;
- Commitment to working with colleagues in collaborative cultures of help and support;
- Occupational heteronomy rather than self-protective autonomy;
- A commitment to active care and not just anodyne service for students;
- A self-directed search and struggle for continuous learning related to one's own expertise and standards of practice, and
- The creation and recognition of high task complexity. (p. 21)

Goodson and Hargreaves' (1996) concepts strike a resonance with research led teaching. Research is an invaluable component of teaching and learning. When teachers become more aware of how they teach and

how their students learn then the whole educational process becomes more enjoyable and meaningful for the stakeholders: teachers and students.

Research-Led Teaching

Within the university sector in Australia the concept of research-led teaching is a term that is commonly heard and finds itself mentioned in many teaching and learning plans of university. The concept of research informing teaching is not hard to comprehend at a university where the concept of newly developed, or created, knowledge finds its way into the curriculum of the programs taught at universities. But the question must be asked: Is this concept appropriate or transferable to the school classroom, both primary and secondary? Brew (2002) defines five domains which can affect the extent to which teaching is research-led and determine what is understood by the concept. These are:

1. Assumptions related to research and teaching which define the limits and possibilities for research-led teaching (preconditions for research-led teaching)
2. How the academic prepares for teaching (preparation for teaching)
3. How the teaching is actually carried out (teaching in progress)
4. What the teacher does after the teaching to reflect on or disseminate their teaching. (the backward glance).
5. How research and teaching are organised (institutional context). (p. 2)

On initial consideration the notion of research led teaching may seem out of the auspices of school teachers, but when it is conveyed in Brew's terms it is possible to start unpacking the concept and seeing relevance to school teachers. It may even be considered that it is those teachers with first hand experience of research and the research culture that exists in research active environments are able to align the two perspectives; judging professional practice by utilising both a systematic and objective stance as well as affective professional judgment. Those with research experience are better equipped to view professional practice through a range of evidence-based lenses, consistent with a practical understanding of research and research methods (Ratcliff et al, 2003).

Ratcliff, et.al. (2003, p. 27) extend this concept, further recommending that if an impact is to be made on classroom practice then four criteria are required:

- Convincing findings – appearing as generalisable to different contexts and from studies with clear, rigorous methods
- Resonance with or acknowledgement of teachers' professional experience in their practice
- Translation to practical strategies for classroom practice and
- Wide dissemination through professional networks

The study established that to be truly effective in changing practice teachers need to be influenced by strategies that are based on research, and be able to relate and participate in the ongoing evaluation of the initiative.

Preconditions for Research-led Teaching

The preconditions for this type of teaching will be influenced by what teachers understand by this concept and how they will develop it. The teacher may consider that teaching is outwardly focused or inwardly focused. With the outwardly focused possibility the teaching may focus on presentations or the development of journals, posters or teamwork to complete tasks, this emulating what is done at universities. Conversely the teaching may be inward looking, which will involve students in analyzing data, or doing qualitative types of activities that involve a more experimental style of activity. These types of activities emulate research and the presentation of research outcomes.

The teacher who engages in these types of teaching activities will have to deal with the situation where their teaching does not look like traditional teaching. The teaching will be far more student-centred and allow students to take more ownership of their learning. This type of teaching is regarded differently as the shift is from teacher focused to student outcome focused. The concept of the students developing or creating knowledge will also be developed.

"Teaching will be far more student-centred and allow students to take more ownership of their learning."

The Preparation for Teaching

The process of the teachers informing themselves of the wider range of options for the delivery of content to the students is putting in place a research-led teaching paradigm. The teacher will align how they deliver their lessons based upon research, they will look to the literature to identify what is the diversity of instructional models and select one that aligns with the type of knowledge, skills or attitudes they wish to impart during their teaching.

This would be putting in place the means of gathering the data or information that will inform the teacher how effective their approach to teaching has been. The teacher will find it difficult to achieve the final stage that is looking at the "quality" of their teaching if the means to gain the measures is not put in place before the teaching begins. The teacher will

need to ask themselves what they want to establish and identify the best way they are able to gather the information while immersed in the activity of teaching. Being effective in the preparation for the teaching activity and having the means of measuring the quality or effectiveness in place prior to the commencement of the activity is important. The concept is to ask what needs to be known about and how will it be established. Questions that could be asked and the means of considering them could be how effective was the communication, most important if considering that the teacher is introducing a new mode of learning, how well did they articulate this to the students, how would the data be gathered that would enable the teacher to measure the effectiveness of their communicating the concepts associated with the lesson or module. This involves the following considerations:

- Consider explicit questions to be answered
- Looking at the literature to establish what methods may be used to identify what is needed to answer the questions being asked.
- Establish criteria for assessing the quality of the outcomes achieved
- Establish the means of organizing the findings in a reportable manner

"There is a significant mutual benefit to be gained when schools and universities work together."

While the Teaching is Happening

When actually doing the teaching the teacher will be constantly observing what is happening and making "mental notes" of the responses of the learners and the way they are going about their work. The teacher needs to have a level of consciousness that provides an awareness of how things are progressing with the initiative.

Looking Back

If the preceding step has been put in place then the ability to reflect back with a level of confidence is possible. This process aligns well with the concept of the reflective practitioner (Schon, 1983). The consideration of both the effectiveness of and how the initiative was achieved, is important, for if it is to be introduced at a later time, then it may need to be modified to gain enhanced or different outcomes. This process is as Brew (2002) called it the "backward glance".

Creativity

An aspiration of teachers should be to be creative in their approach to teaching. It is through creativity that the boundaries of current educational practice will be broadened. From the evidence above the ability to teach in a creative way would require the ability to evaluate, a core quality of research led teaching. The challenges associated with teaching and assessing creativity are conceptual, structural and pedagogical; they relate to how we conceptualise creativity, how pedagogical dimensions are perceived, how we identify where it occurs, and what strategies we develop to assess it as a learning outcome (Williams, Ostwald & Askland 2010a).

A related problem concerns the pressure placed on traditional assessment methods as a consequence of the rise of quality assurance mechanisms for assessment and teaching (Ostwald & Williams 2008a). Traditional assessment practices tend to be based around a combination of subjective judgment and tacit understandings. Such practices and assumptions are inappropriate from a quality assurance perspective. Moreover, they position the assessment process first as a legal and managerial process, and only thereafter as a teaching and learning practice.

The capacity to utilize research capacities to identify opportunities for the application of creative methods of teaching and to then utilize assessment, which is in itself creative, requires attributes, which are closely associated with research skills. The ability to conceptualise, devise implement and evaluate are the core qualities of research that would be applicable to this context.

The Teacher – University nexus

The wider community and the school sector in particular needs to broaden its understanding of the role of the tertiary sector. It is too simplistic to see universities as senior training institutions without recognizing their role in knowledge creation as well as knowledge transmission. Indeed this view of universities is understandable because what is visible to the community is the training of a professional workforce. In fact less than half of the work of a university is in the learning and teaching area. A significant portion of the other half revolves around the knowledge creation area. It is research that informs the learning and teaching process at tertiary level.

When considering the area of teacher training at tertiary level, there is a significant mutual benefit to be gained when schools and universities work together. Universities need to be researching in schools and classrooms to be creating evidence-based knowledge to base their tertiary teaching on. At the same time, teachers in schools can make excellent use of academic staff in universities to help them with their research and use the evidence derived from the research the universities have done in their classrooms.

Cornelissen, Van Swet, Beijaard and Bergen (2011), found that the benefits of this research

relationship were threefold in the area of knowledge creation: 'Knowledge development', 'Knowledge sharing', and 'Knowledge use'. In the process of the research the members of the research teams were found to develop in the followings areas: nature of knowledge, cognition, meta-cognitions, emotions, trust, power, engagement, expertise, purpose, collaboration, inquiry, leadership, accountability and capacity (p. 151).

A further benefit to teachers of involving themselves with tertiary institutions to conduct research is that they may be able to use their study in a higher degree by research and work towards a Masters or PhD degree. At the very least they will experience and learn new ways of asking questions, developing methodology, collecting data, analyzing results and then making changes to classroom or wider school practice based on the results of the study.

Conclusion

The implementation of a research led teaching approach may assist in the formation and transformation of teacher professional identity (Mockler and Sachs 2002) as the approach has the ability to achieve:

- Developing and enhancing evidence based practice
- Developing an interactive community of practitioners using appropriate methods of informing their practice
- Making a contribution to a broader professional knowledge base with respect to educational practice
- Building research capability within and between schools by engaging both teachers and students in the research process
- Sharing methodologies which are appropriate to practitioner enquiry as a mean of transforming teacher professional learning

Are not these qualities the ones that teachers and, as such, teacher educators, aspire to? The increasing pressure to further crowd the teacher training curricula is acknowledged. This pressure includes increasing knowledge and skills for research, the expanding amount of legislature teachers are confronted with and the increasing levels of technology available to teachers. The question must be asked though, is not the ability to employ research-led practice a fundamental? The ability and the determination to identify opportunities, develop strategies to inform and then the skills to analyse are at the very heart of the teaching profession. TEACH

References

Aikenhead, G.S. (2002). The educo-politics of curriculum development. *Canadian Journal of Science, Mathematics and Technology Education, 2*, 49-57.

Barnett, J., & Hodson, D. (2001). Pedagogical context knowledge: Towards a fuller understanding of what good science teachers know. *Science Education, 85*, 426-453.

Blackmore, J. (2002). Is it only 'what works' that counts on new knowledge economies? Evidence based practice, educational research and teacher education in Australia. Paper presented to the Challenging Futures Conference: Changing agendas in teaching education, University of New England, Armidale, 3-7 February, 2002.

Capobianco, B., Horowitz, Canuel-Browne, D., & Trimarchi, R. (2004). Action research for teachers: Understanding the necessary steps for developing and implementing productive action plans. *The Science Teacher, 71*(3), 48-53.

Cornelissen, F., Van Swet, J., Beijaard, D., & Bergen, T. (2011). Aspects of school-university research networks that play a role in developing, sharing and using knowledge based on teacher research. *Teaching and Teacher Education, 27*, 147-156.

Goodson, I., & Hargreaves, A. (1996). Teachers' professional lives: Aspirations and actualities. In Goodson, I. and Hargreaves, A. (Eds.) *New Prospects Series 3: Teachers' Professional Lives* (pp. 1-27). London: Falmer Press.

Loughran, J.J. (2010). *What expert teachers do: Enhancing professional knowledge for classroom practice*. Australia: Allen & Unwin.

Mockler, N., & Sachs, J. (2002). A crisis of identity? Teacher professional identity and evidence based practice. Paper presented to the Annual Conference of the Australian Association for Research in Education, Brisbane, University of Queensland, 1-5 December 2002.

Ostwald, M.J., & Williams, A. (2008). *Understanding architectural education in Australasia. Volume 1: An analysis of architecture schools, programs, academics and students*. Sydney: ALTC

Ratcliffe, M., Bartholomew, H., Hames, V., Hind, A., Leach, J., Millar, R., & Osborne, J. (2003). Evidence-based practice in science education: The research-user interface. A paper presented at the annual meeting of the National Association for Research in Science Teaching, 23-26 March, Philadelphia, USA.

Sanderson, I. (2003). ''Is it 'what works' that matters? Evaluation and evidence-based policy making,'' *Research Papers in Education, 18*(4), 331–347

Schon, D. (1983). *The reflective practitioner: How professionals think in action*. New York: Basic Books

Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching." *Educational Researcher, 15*(2): 4-14.

Williams A., Ostwald M.J., & Askland H.H. (2010). *Creativity, design and education. Theories, positions and challenges*. Sydney: ALTC

> *"To identify opportunities, develop strategies to inform and . . . skills to analyse are at the very heart of . . . teaching."*