

A Pedagogic Trinity – Exploring the Art, Craft and Science of Teaching

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Abstract

This article aims to convince the reader that teachers in the current Higher Education (HE) climate should be conducting educational research and offers a number of points exploring the potential benefits of regular teacher engagement with current pedagogic literature to inform practice. This article also outlines three streams of teaching practice and asks the reader to identify themselves in any or all of these streams, whilst making the point that all teachers should be engaging in pedagogical research in some form. This paper might be of interest to readers of *JPD* because it should prompt them to share and submit their good practice. Given that the central premise of this paper is to explore current trends around how and even why HE practitioners engage with pedagogic research, then we should be open to having this question convincingly answered, at least in part. There are a number of reasons why one should: the central argument being...It's our job!...and, even if this is not strictly speaking the case, this author would propose that as an academic in a dynamic HE environment, it is too good an opportunity to miss for both your own professional development and the betterment of pedagogic practice within your discipline, department, school or unit.

Keywords: Pedagogic Research, Professional Development, Pedagogic Practice

Introduction

Defining the term 'pedagogy' is a challenge in contemporary HE, partly due to the fact the term has been incorrectly adopted as a sector-wide synonym for teaching and learning and partly because the more correct term 'andragogy' better describes what happens between learners and teachers in HE (Knowles *et al*, 2005) but no-one seems to use it!

A relatively quick thumbnail spectrum of prevailing opinions of how others define 'pedagogy' and 'pedagogical research' reveals that:

- Tamara Bibby from the Institute of Education (London) defines pedagogy as 'the interrelationships of people' (Bibby, 2009).
- Lin Norton from Liverpool Hope University suggests pedagogical research is 'understanding good learning and teaching practice and looking for ways to improve it.' (Norton, 2014).
- Norman Reid from the University of Hull suggests pedagogical research simply means 'finding out more about how learning takes place so that we, as teachers, can direct our energies into approaches which are more likely to be successful.' (Reid, 2003).

Just these three general opinions typify the breadth of feeling associated with teaching and learning practice, with this author picking out such emotive language as

'interrelationships', 'energies' and even 'understanding' to indicate that teaching practice has significant emotional and humanist elements. As part of his extensive case studies, Stenhouse (1985) postulated that pedagogical research allows the personal and practical aspects of teachers practice to be closer examined. Palmer argues that 'good teaching cannot be reduced to technique; good teaching comes from the identity and integrity of the teacher' (Palmer, 1998: 10) and this central premise has, over the years, been discussed to the point where there are many in the sector who feel that successful learning and teaching practitioners are largely valued for their crafting abilities to illustrate, judge, reflect and fluidly respond to learners needs, an idea captured quite convincingly in the following quote by Smith and Smith (2008: 19):

[W]e are called upon to be wise. We are expected to hold truth dearly, to be sincere and accurate... There is also, usually, an expectation that we have a good understanding of the subjects upon which we are consulted, and that we know something about the way of the world. We are also likely to be approached for learning and counsel if we are seen as people who have the ability to come to sound judgments, and to help others to see how they may act for the best in different situations, and how they should live their lives' (Smith and Smith 2008).

There are, however, others who argue that learning and teaching practice can and indeed should be approached as a science (Kornbeck and Jensen, 2009), building on the work of Donald Schön from the early 1980s, where his thoughts on reflective practice critique the sort of 'technical rationality' that has been generally adopted within more 'scientific' teaching approaches to practice (Schön, 1983).

There is yet another vantage-point on education and teaching which has been influencing practitioners as far back as the late 1970s, which views teaching as an art form, principally improvisatory and having a significant base in process. Eisner (1979: 208) argues that the ability to reflect, imagine and respond involves developing 'the ideas, the sensibilities, the skills, and the imagination to create work that is well proportioned, skillfully executed, and imaginative, regardless of the domain in which an individual works', going on to sum-up this ethos by postulating that 'the highest accolade we can confer upon someone is to say that he or she is an artist whether as a carpenter or a surgeon, a cook or an engineer, a physicist or a teacher'.

Moving forward, it was in the early 1990s that the concept of teaching as a craft was revisited through the works of Brown and McIntyre (1993: 12) who put forward the idea that 'it is impossible to have direct access to teachers' thinking while teaching, [therefore] it is important that theoretical accounts of teachers' classrooms thinking should be grounded in teachers' own way of making sense of the particular things they do', which can be interpreted as a type of intellectual craftsmanship on the part of the practitioner. These authors go on to confirm their opinions of sharing best practice by encouraging other practitioners to access 'a vast reservoir of experienced teachers' sophisticated professional craft knowledge' (*ibid*: 113).

Regardless of the tautology of the term 'pedagogy' as it is currently understood, few would argue against the strength of emotion and willingness to do the best for our students underpinning everything we do as teaching and learning practitioners. If we

are to crystallise understanding of our own practice, we must begin to pick apart our personal definitions and patterns of behavior moving forward and one mechanism that is very useful for helping teachers understand themselves is *via* contribution and engagement with the broader educational literature. This article takes a behaviour-focused approach in helping teachers begin to recognise their habits and perhaps open them up to the possibilities offered by developing new ones.

So, why bother publishing educational research?

It generally holds true that the impact factor of most educational journals is lower than for many other specialist fields, the upper range being around impact factor 5 for the top echelon (<http://www.scimagojr.com/journalrank.php?category=3304>) and so, teachers increasingly need to explore other and varied reasons to invest and/or justify the time to write up their educational research (Norton, 2014). It should be noted that one exception to this dilemma are the educational forum sections of mainstream scientific journals such as Nature or Science, exempt from this generalisation by proxy of these journal already having a high impact factor (impact factor >30) but these sections are notoriously difficult to qualify educational research for.

One of the main benefits of publishing teaching observations is their contribution towards a growing evidence-base of pedagogic research which at its least fosters a 'share what works' community in teaching and at its best offers a grounded theory-based validation of innovation and practice (Kennedy and Lingard, 2006). Apart from impact factor and teaching community knowledge exchange, the main benefit of publishing pedagogic research is one of peer-recognition and esteem factor, adding to the practitioners' professional development and credentials whilst opening up avenues for both collaboration and funding streams based on the research.

Although slightly out of date, the Tavistock Report in 2002 (<http://www.tlrp.org/pub/acadpub/Tavistockreport.pdf>), highlights a general lack of evidence-based pedagogic research around areas such as; Virtual Learning Environments (VLE's), performance linking to teaching, measurement of student satisfaction and the validity of peer-learning interactions. Indeed, further investigation of this document also highlights the need for pedagogic research in a plethora of educational arenas, including but not restricted to: widening participation, internationalisation, utilising and evaluating web 2.0 technology, linking neurobiology with learning and innovation in assessment practices. More contemporary resources confirm that these pedagogical research imperatives are largely still intact, with Internationalisation (Caruana, 2012); performance linking to teaching (Bamber, 2013) and Web 2.0 technology (Clark, 2013) enjoying a greater focus from pedagogical researchers in recent years.

One reason sometimes offered as to why teachers neglect to publish in their field is that pedagogic research literature is not as widely searchable in search engines as other scientific and biomedical research literature. Whereas in the past this might have been true, the Institute of Educational Sciences (ERIC), Educational Research Abstracts Online (ERA) and The American Psychological Association database (PsycINFO) all offer searchable educational research databases from 1996 to the present. These resources allow pedagogic researchers to place great emphasis on referencing in learning and teaching writings as a 'bread-crumbs' trail for those following in their wake.

One interesting consideration that readers might benefit from exploring is the practice-research nexus, which identifies a number of practical drivers for practitioners to engage with pedagogical literature, such as the RAE (research assessment exercise) or REF (research excellence framework) whilst also encouraging scholarly practice evidenced through continuous research contribution (Griffiths, 2004). The nexus broadly outlines three strands of engagement in pedagogical research; a reflective approach, a scholarship-based approach and a research-based approach to practice (Healey, 2000).

I would, but what can I report?

Pedagogic research is actually quite atypical in this regard, since educational practitioners usually have an embarrassment of riches to draw upon in terms of research data. Exam performance, student opinion, cohort data, year-on-year results for a multitude of parameters, completion rates, competency levels and many more; qualitative and quantitative data of all types limited only by ethical approval and imagination (Kennedy and Lingard, 2006). In terms of skill set, the educational researcher is unique from many other specialist areas in that to convince in their research, teachers must draw upon a wider range of research skills by comparison (CUREE, 2012); Reflective and critical-reflective writing; statistical data analysis; focus group evaluation; complex data handling, reduction, coding, analysis and presentation; longitudinal verses snap-shop data and ethical determinants are all factors in even the most basic of rigorous pedagogic research practice.

This links back to the previous discussion on the added benefits of a teacher engaging in pedagogic research, with development of this invaluable skill set being an additional convincing incentive to a professional's development. It should be mentioned that many HE institutes offer formalised M-level (Masters) courses to bolster these research skills and whilst, in no way mandatory in the field to date, these courses can offer the educational practitioner a good grounding in some of these research methodologies. Conversely, many teachers already have a basis in multiple transferable research skills having completed doctoral programmes themselves before embarking on a teaching career, effectively rendering many the skills imparted on these M-level courses moot and are thus able to 'jump right in'.

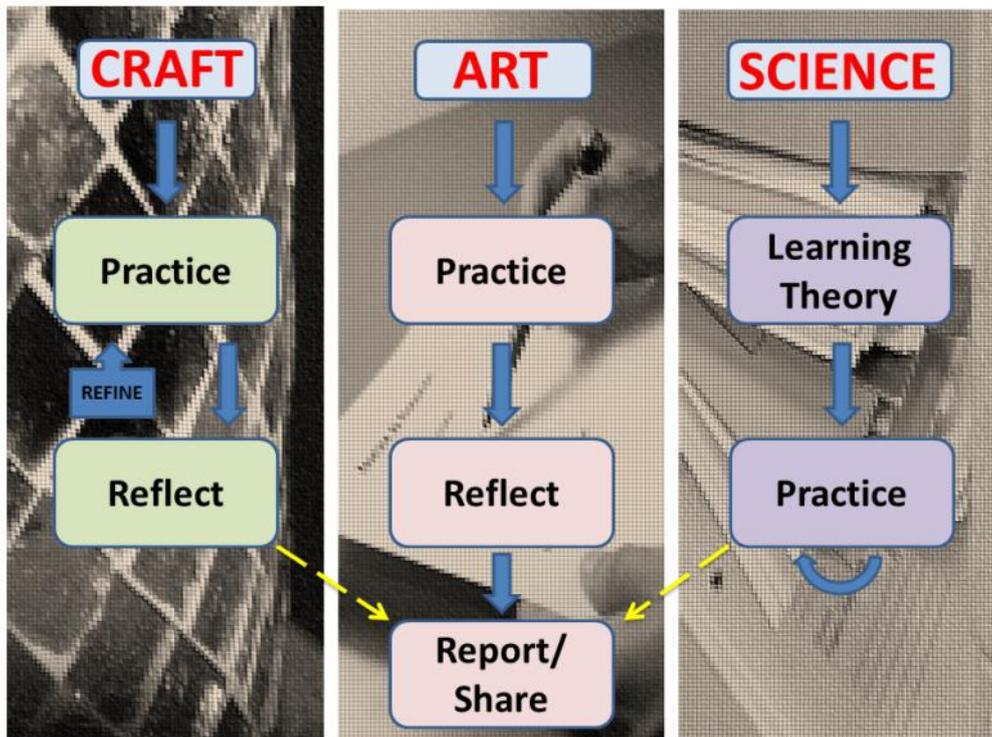
Equally, there are many other teachers who might benefit or desire to formalise this skill set and the individual teacher should explore what route best suits their professional development goals. Interestingly, most HE institutes offer learning and professional development support for teachers looking to engage in pedagogic research targeting particular methodologies the individual might need to support their current research aims. This provision is largely regarded as a better use of precious time rather than the individual enrolling on a whole course to access a particular desirable method or skill set.

So, what's your type?

This article postulates that the majority of pedagogic researchers can identify with one of three core teaching philosophy streams, captured here as a set of three 'pedagogic practice algorithms' (Figure below) to aid readers in identifying their own selves within

one of these streams when linking their teaching with their pedagogic research practices.

The three core ideals on offer here have been labelled the CRAFT, the ART and the SCIENCE of teaching respectively and these labels can be thought of principally as a mixed reflection of subject discipline norms, professional training biases and personal practice preference.



Pedagogic Practice Algorithms

The algorithms above initially show a great deal of conservation between the three streams of pedagogic engagement practice, with critical differences principally arising near the bottom of each stream.

We begin with algorithm 1: The CRAFT of teaching – This crafting algorithm is firmly based in Grounded Theory and Constructive Alignment, where practitioners adopt a cyclical process of design, deliver and test followed by a period of refining the delivery before re-testing (Brown and McIntyre, 1993). Practitioners that follow this stream focus more on refining their skills and practice, often through critical reflection whilst adopting a ‘deliver and test’ approach. The central idea of teaching as a craft is that practice leads to reflection and logically, back to refining of that practice in a largely circular loop and is highly optimized to the point that a teacher might not even consider sharing their practice with a wider audience but still regard the process of optimization as an indispensable and logical endpoint of the ‘craft’ of their teaching, with a focus very much on the process (Alexander, 2000). As indicated by the broken (yellow) arrow in the illustration, this stream does not always culminate in the skilled practitioner reporting or sharing their reflections as a fundamental part of their crafting ethos.

Jumping to algorithm 3: The SCIENCE of teaching – In essence a practitioner approaching teaching as a science will mirror some aspects of the craft stream in their pitch → evaluate → review loop with a core difference being those adopting a scientific approach to pedagogy typically start with a more solid underlining of learning theory used to pre-form their practice before the evaluation steps begin. Once the learning philosophy underpinning their thinking is in place, the evaluation and optimization cycle can begin. One of the hallmarks of this stream is that practitioners will remain inwardly self-directed, leading to potential missed opportunities (again, indicated by the broken yellow arrow) to share valuable evidence-informed lessons. In this way, the logical endpoint of the ‘science’ of teaching is very much a focus on the how rather than reflexively sharing best practice and in some cases can even be expanded to mean ‘control’ of the classroom environment (Simon, 1981).

Which leads us finally to consider the second of the three streams, algorithm 2: The ART of teaching – Teaching as an art generally mirrors the optimization loops of the other two streams but uniquely, will always result in sharing of good practice as an integral end-point before starting the process over, due to an inherent requirement within this stream for validation of ideas as a core part of the responsive, creative and intuitive nature of approaching teaching practice as an ‘art form’ (Banner and Cannon, 1999). The philosophy that underpins the teaching as an art stream is the fundamental ‘why’ of teaching which logically results in sharing of best practice as an automatic mechanism inherent to this stream. It is this algorithm that most closely mirrors the in-built reflective practice of many post-graduate level learning and teaching courses which is why these courses can be useful to assist the professional teacher to recognise and develop their reflective practices whilst adding to a nascent but growing evidence-base of pedagogic knowledge.

A final point to make is that just because teaching is happening in practice, this does not necessarily mean that learning is taking place and *vice versa*. Taking forward the pedagogic practice algorithms presented here and building on the evolving role of academic developers in HE, this author feels that both teachers, and by extension their students, are well positioned to engage and benefit from increased sharing of good practice (Kensington-Miller, 2012).

Concluding thoughts: Don’t fence me in!

The inevitable question at the end of this paper is logically: What now? In answer to this question, this author would suggest that practitioners who better identify with the ‘craft’ and ‘science’ streams could perhaps consider using pedagogic blogs or educational journals as automatic mechanisms to more widely share their best practice with colleagues since by its very nature the crafting / science aspects and their insights into these streams are often of significant potential benefit to the broader Higher Education sector. Readers who identify with the ‘art’ stream might consider deeper exploration of the practice-research nexus towards even greater scholarship, reflection and research output centered on their practice. Ultimately, some teachers might see aspects of their practice within all three of these streams but this author would argue that so long as the end point of your teaching is the sharing of discoveries

and reflections, wherever your philosophy sits will do nothing but help the field of education in the long term.

One of the most powerful aspects of engaging in teaching and learning research is its ability to permeate to all levels of practice, from policy to classroom within both the microcosm of the school/department and institute to the macrocosm of the (choppy!) currents of HE nationally and transnationally – hopefully this article has convinced you that this is not an opportunity to be missed.

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