

# From anti-structure to structure: Comparing the traditional and contemporary experience of PhD writing

**Kathryn Owler**

Auckland University of Technology, Auckland, New Zealand  
kowler@aut.ac.nz

The distinguishing feature of the PhD is the requirement that the student make a substantial contribution to knowledge. In the past, this has involved a long period of largely self-directed work. However, in the last ten to fifteen years many universities have implemented changes to the PhD, resulting in additional structure. This paper compares the experience of the traditional PhD to the contemporary more structured PhD; it contrasts the accounts of ten Australasian students interviewed in 1997 to nine interviewed 2015-2016. Foucauldian discourse analysis is used to discuss a significant finding of the research: the way in which dominant education discourse (traditional and managerialist) has shaped the experience of each group of students. This paper highlights the opportunities and drawbacks of each kind of degree, highlighted by the students. These insights should help inform the work of policy makers, faculty leads and supervisors when deciding on the future shape of PhD education.

**Keywords:** PhD education, managerialism, neoliberalism

## Introduction

The defining feature of the Doctor of Philosophy (PhD) is the requirement that the student make a substantial contribution to knowledge. Historically this has been viewed as necessitating a long period of largely self-directed and independent work; as result the traditional PhD has been characterised by a lack of imposed structure. In the last ten to fifteen years, many universities have made changes to the traditional PhD degree as a result of concerns with long times taken to complete and high attrition rates. Such changes have resulted in stricter time-frames for completion and in some cases, the introduction of a full research proposal facilitating transition from provisional admission to full registration (e.g. in all New Zealand and some Australian universities). In other words, the contemporary PhD is often more tightly structured than has traditionally been the case.

I completed my PhD in the late 1990s in Australia, my dissertation explored the lived experience of completing a traditional PhD (Owler, 1998). In 2014 I began working at a New Zealand university as a postgraduate learning advisor. I found myself wondering whether additional structure made any significant difference to a student's experience. For instance, did the full proposal help alleviate some of the anxiety and confusion of the traditional degree? Did the strict time limit place restrictions on good scholarship? While some research had been done in Australia on the experience of periodic progress reports (Mewburn, Cuthbert, & Tokareva, 2014; Mewburn, Tokareva, Cuthbert, Sinclair, & Barnacle, 2013), there was no published research on the student's experience of the full proposal or strict time-frames.

As a result I embarked on a comparative study that explored the difference between the contemporary and traditional PhD experience. I interviewed nine New Zealand students in 2015 and early 2016 (about their experience of PhD structure) who were close to completing or had recently completed their PhD. I contrasted these accounts with those of ten Australian students I interviewed in 1997 (about their experience of the PhD, including structure) who were at various stages of their PhD candidature. Only students completing a PhD were interviewed (as opposed to other forms of doctorate). All of the students were studying in arts or humanities related disciplines.

In this paper I utilise Foucauldian discourse analysis to discuss a significant finding of my comparative research: the way in which dominant (education) discourse shapes the PhD experience. Given my focus on student experience, I originally intended to utilise phenomenological analysis (van Manen, 1997). However, on examining the data it became evident that a straightforward comparison of groups (and experiences) was not possible; each group of PhD students were describing a very different kind of degree. This difference could only be understood in the context of the dominant discourses prevailing in higher education at the time: traditional and managerialist respectively. I therefore needed a critical analytical approach, such as Foucauldian discourse analysis, that would allow for the “historicizing” of experience (Stoller, 2009, p. 33#).

I begin this paper by outlining the context of the traditional and contemporary degrees and reviewing Foucauldian discourse analysis and its application to higher education. After presenting the research findings, I summarise the opportunities and drawbacks of each PhD degree and the implications of my findings for policy-makers, faculty leads and supervisors.

## **Shifting contexts**

### **Changes to the degree 1990's to today**

What marked off the traditional PhD degree (in place in the 1990's) from earlier levels of university study was its classification as a largely self-directed research project. As a result, it was characterised by a lack of imposed structure; the approach to knowledge was “open ended” (Green & Usher, 2003, p. 41) and exploratory. The traditional PhD was designed to provide an opportunity for the candidate to conduct a kind of “pure or curiosity driven research” (Green & Usher, 2003, p. 40), affording a chance to read widely, explore ideas and develop research skills independently. Olssen (1997) explains that this traditional approach to knowledge allowed the researcher to retain certain rights and freedoms over their work “in line with classical liberal notions of freedom of the individual” (p. 38); this included the right to make autonomous decisions.

Being exploratory, the traditional approach to the PhD could result in a rather nebulous experience for students. Students were generally told little about what to expect; rather, the PhD was rendered “a mysterious rite of passage” (Owler, 2010, p. 292). It was often characterised by a period of personal struggle, including feelings of confusion and anxiety (Lee & Williams, 1999; Morrison-Saunders et al., 2005; Owler, 2010) and loneliness (Johnson, Lee, & Green, 2000; Owler, 2010). Moreover, high attrition rates and long times taken to complete characterised the PhD degree internationally (Noble, 1994).

Since the 1990's, university administrators in Australia and New Zealand (and internationally) have made a variety of changes to the PhD as part of attempts to reduce attrition rates and long times taken to complete (Park, 2005, 2007). These changes have

included a stricter time-limit (generally three years full-time) and formative assessments; for example, all universities in New Zealand (and some in Australia) now require a full research proposal of candidates, allowing them to transition from provisional admission to full registration, after a suitable period of candidature (e.g. AUT University, 2016). Other changes have included a brief research proposal for provisional admission and regular progress reports (Mewburn et al., 2014; Mewburn et al., 2013). In many cases, the result has been a much more structured (rather than traditionally unstructured) PhD programme.

A number of commentators have explained that in their efforts to ensure higher education is more efficient, university administrators have applied a cost-benefit analysis to research education, implementing a managerialist approach (Barnacle, 2005; Hughes & Tight, 2013; Kloeta & Aspenliederb, 2013; Oowler, 2010). Within a managerialist framework, workers are primarily viewed as self-serving (Ashcroft, 2007; Olssen, 1997); as a result, they need to be held accountable to managers within a hierarchical system “premised upon a need for compliance, monitoring and accountability” (Olssen, 1997, p. 38). New expectations demanded of both academics and students require “measurable [and timely] outputs that produce substantive benefits for the organisation (and/or society and government)” (Ashcroft, 2007, p. 82).

### **Discourses and power shaping experience**

This paper utilises Foucauldian discourse analysis; this approach acknowledges the ways in which discourse and power shape experience. It also allows us to understand why “a particular experience arises at a certain historical moment and not another” (Stoller, 2009, pp. 708-709). Foucault (1969, 1978) claimed that subjectivity is constituted through complex relations of discourse and power. In this context, power is productive, or generative. It “not only unilaterally acts on a given individual...but also activates or forms the subject” (Butler, 1997, p. 84). This involves a form of subjection or becoming subject that is outside of our control (Butler, 1997). Therefore, while it may *feel* deeply personal, our subjectivity (and experience) is to a large extent scripted within a particular historical context.

In Foucault’s understanding, discourse and power operate in order to govern, or delimit, the field of human action in a particular setting. *Discourse* or a set of discursive practices, operate to set parameters and establish a set of rules for individuals participating in a particular field of action such as intellectual activity (Foucault, 1977). A number of commentators have drawn on Foucault’s analysis to argue that the discourse of managerialism currently shapes the practices of academic teaching, research and professionalism (e.g. Billot, 2011; Curtis & Matthewman, 2005; Kenny, 2009; Ryan, 2015). It has also been argued that dominant discourses in higher education (such as managerialism) are mapped out both “directly and inadvertently through [contemporary] graduate student programming” (Kloeta & Aspenliederb, 2013, p. 291). This would include the contemporary PhD degree.

My analysis of the traditional and contemporary PhD experience is presented in the next section. The main trends I have identified show clear evidence of the ways in which traditional and managerialist discourse have shaped the traditional and contemporary experience respectively.

## Findings - Main trends

I discuss the key trends I identified for each group below, including select illustrative quotes (pseudonyms used). Student responses from the traditional group reflected a perception that undertaking a PhD involved an exploratory, relatively open-ended, journey. In contrast, student responses from the contemporary group reflected a perception that undertaking a PhD involved completing a time-limited project.

### **The traditional PhD student experience: An exploratory journey**

#### *No formal structure*

The 1997 group were completing a traditional, unstructured PhD programme. They experienced little formal structure in their first (and subsequent) years of candidature. Students were not required to provide an initial proposal for entry to the degree, nor a full-proposal.

Students were deliberately encouraged to view their first year as one of exploration, with little guidance.

My supervisor said to me, oh, the first year you can just read. (Catherine)

The first year and a half I spent floundering around not knowing what I was going to do... so I really hadn't done much work and I assume that no-one really does because you have to fix on a topic before you do that. (Claire)

On the one hand, the opportunity to explore was seen as a strength.

I guess one of the strengths [of the PhD] is ... the structure being flexible, so that if I get six months down the track and realise I don't want to do this anymore, I can turn around and go the other way. (Margaret)

On the other hand, the lack of guidance and structure did generate a degree of anxiety and confusion for the majority of students.

I find it really anxious...you're in this perpetual uncertainty. (Naomi)

I've had horrendous times you know, I've done six months of absolutely nothing. No writing, virtually no reading, a lot of drinking, you know and thinking there's no way I'll finish. (Simon)

Given the lack of formal guidance offered, a few students deliberately implemented their own project management strategies early in the degree. For instance

The PhD's incredibly unstructured...I saw myself as writing a book about [the topic]... so I modelled it that way and in fact I think if I was to do it again I'd stick to that even more closely than I did. (Darren)

In summary, students were encouraged to view their PhD, at least in the early stages, as journey of open exploration. This opportunity was valued, but did create some emotional and practical challenges.

### *Time limits*

The majority of students had not specifically planned how they would achieve their PhD within a particular time-frame, nor had they been encouraged to do so.

I plan to manage it just by going into a big state of panic and writing it all in a few months at the end (laugh) so that's my plan. (Catherine)

You keep thinking full-time you've got a limit of five years and you think 'Well five years is a hell of a long time, I can do that' and so you tend to continually put things off until you get to the stage that I'm at now, I have 11 months [to go part-time]...but now I'm sort of thinking 'my god I can't write everything at the last minute'. (Claire)

Most students did *not* emphasise the need for project management skills. However, the majority did talk of the need for good time-management skills and the need to develop self-discipline, particularly after one or two years of undertaking the degree.

I think I'm a good time manager. I'm very proud of my time management skills. It's such an absolutely vital thing and in the first year I was not very good and that's when I realised how important it was. (Maria)

In summary, students did not commonly implement project planning strategies in order to manage their PhD within a particular time-frame. Rather, they saw self-management and self-discipline skills as keys to success.

### *Strengths and weakness of current lack of structure*

Given the mooted changes to the PhD, students were asked what they saw as the strengths and weaknesses of the traditional PhD. On the one hand, they appreciated the autonomy, freedom and flexibility it provided. However, on the other they felt that some additional structure (such as the requirement to submit work), might be useful.

I like the unstructured space ... [however] I know that I actually work better ...[with] a deadline to meet. (Claire).

[I think that more structure might be good] But I think that these regulations should be about supporting the students in their subjects ... and the freedom to do research which makes sure that they're backed up... So I think that the departments need to keep control of the PhD's in that way, just so the students can work better. (Darren)

While many students felt that added structure might be useful, they were also very cautious and even cynical about any changes that would shift the degree from an exploratory model to a more project based, business like one.

Universities have changed drastically into being more business-like and trying to discipline people to produce work in a time limit which is unrealistic to what really goes on and I think that kind of pressure can actually retard the process of producing a thesis. When you constantly think of the fact that it has to be done on a certain date and also it just reminds me of ... churning out cheese. (Naomi)

In summary, while students thought that more structure might be useful, they were cautious about mooted changes and as a result appeared to favour the traditional conception of the PhD as an opportunity for an open exploration of knowledge.

#### *What the PhD means to them and why they chose to enrol*

Students spoke about the PhD representing prestige, academic research and an opportunity to make a contribution to knowledge. They viewed the PhD as an opportunity for personal exploration. Most wanted to become academics. However, none spoke with optimism about the possibility of gaining an academic job, given the rapidly tightening academic job market.

[To me the PhD] means research and I think it also means academic prestige...but I think I also do get a sense that PhD does evoke a general sort of misty vagueness. (Darren)

I guess the PhD degree to me is the opportunity to research, you know, not just in the sense of finding something you can write down, but contributing to some sort of intellectual knowledge ... knowledge is about the only way I can think of it ... the whole process of thought ... so it's like this massive opportunity. (Margaret)

I mean it is obviously a qualification to get an academic job but I don't really believe it's going to get me one (laugh). (Michelle)

Only one student spoke about wanting to make a contribution to others through her PhD.

[I want to] some-day be able to help a student [as a lecturer], to be able to give other people the opportunity that I had. (Michelle)

In summary, the primary reason students gave for doing a PhD was to explore knowledge and pursue research. Whilst the majority of students hoped this would lead to an academic job, most had little confidence that this would come to pass.

#### *Conclusion*

Student-s largely appeared to treat the degree as an experience of (personal) exploration, rather than an outcome focused project. Indeed, there was some sense that there may be nothing to be gained at the end – they did not know where it would lead – maybe to an academic career, maybe not. The inference was that whatever happened in the future, the experience was worth it however, they would be taken somewhere on their PhD journey.

#### **The contemporary PhD student experience: completing a project**

##### *The experience of the full proposal*

All of the students interviewed completed a full proposal. Some students found completing the full proposal useful while others saw it as a bureaucratic box ticking exercise. Around half found completing the proposal had a positive impact on their thinking process.

The opportunity to think the project through occurred in many ways, from research 'down to the budgeting'. (Susie)

At least half thought it provided a useful sign-post within a large project.

It was a big hallmark. I know there's been some debate about the benefits of doing that process. But I think also the PhD, it's a long journey, and if there are no hallmarks along the way where you can go, 'I've done that,' it can be really hard ... [to feel] 'I've made tangible progress'. (Sophie)

Less than half saw the full proposal as a significant guiding document that they referred back to over time.

It's been the .... base from which the rest of its grown. (Jennie)

Those who found the full proposal most useful were well supported in the process by their supervisors and faculty. On the other hand, significant problems arose for students who felt their faculty saw the full proposal as a purely box ticking exercise. For instance.

It was the most negative experience I had [during the PhD]...I did not feel very supported. It was very arbitrary to me. It was not very respectful. (Elise)

Only one student found the full proposal form antithetical to good scholarship in her discipline (visual arts):

[Given the nature of my work methodology which is quite] intuitive and emergent [doing the full proposal] felt like I was going through the motions. ... I was having to use a language and be a certain way simply so that the university would be okay enough with what I was doing. (Michelle)

In summary, while students differed in their experiences of the full proposal, none of the students objected to the idea of planning for their thesis as such; in fact, the vast majority felt that the full proposal was *ideally* a good process to have in place in its function as a planning tool and marker of progress.

#### *The experience of time-frames*

There was a tension evident in student's opinions of the current time-frames. On the one hand, all of the students seemed to feel that the current time-frame was realistic for a PhD. On the other hand, they conceded that personal circumstances needed to be taken into account.

I think four years is a good time-frame. It felt good. I could've got mine done in three, but just because of the problems I had [with supervision and faculty], that wasn't possible. (Jennie)

Personal circumstances (their own and others) mentioned included sickness, accidents, family issues, work and caregiving responsibilities, family and community responsibilities (e.g. Māori and Pacific students), different life-stages (e.g. challenges of returning to study), different methodologies that require more time (e.g. kaupapa Māori) and poor supervision or faculty support. The majority did experience some form of unexpected delay in finishing.

All of the students were under some financial (or professional) pressure to finish within the time limit. One the students emphasised the need for students (in the race for publications) to finish their PhD as soon as possible so that they could publish their research before someone else published similar findings.

Only one student, who had been an academic for some years, reflected in a nostalgic way on the longer time-frame for the traditional PhD.

I think I would have loved the old-fashioned PhD. It was a kind of an exploratory [approach]. I am that kind of person ... I like to soak in the information and find in the information certain kind of passages ... I could have written forever... I could have spent another two years. (Douglas)

In summary, student accounts reflect an understanding that a PhD should be completed in an efficient manner. The majority of students felt the current time-frame was realistic. However, students also acknowledged that life happens and there can be unexpected delays.

#### *What the PhD means to them and why they chose to enrol*

A number of students (around half) mentioned being motivated to complete because of an interest in research or a love of learning. However, this was never the only reason.

Around half of the students saw completing a PhD as necessary for their future, if they wanted to continue to work as academics.

By far the bulk of students spoke of a desire to pursue a research project that would make a worthwhile contribution to their community or profession.

I have a huge sense of responsibility as a native woman studying, and one of the few in the profession that I chose to train in, so feeling a huge responsibility to do more and contribute and to make those changes. (Katarina)

In summary, while students might enjoy writing or research, they did not typically see research as an end in itself. The vast majority saw the PhD as a research project with a specific end goal.

#### *Conclusion*

Overall student responses reflect a perception that undertaking a PhD involves completing a discrete project. The PhD was generally viewed as a piece of time-limited research with a specific end-goal. It was viewed as a project to be managed and there would likely be other research projects to come.

### **Discussion: opportunities, drawbacks and future directions**

This study set out to compare the traditional PhD student's experience of (anti) structure, to the current student's experience of a more structured degree. Analysis found that the traditional group placed greater emphasis on completing a PhD for its own sake, while the contemporary group were more focused on working towards an end goal. It is not my intention to make a value judgement about which PhD (and experience) is better, as if a more or less valid form of subjection had occurred (Morrissey, 2015). Rather, I emphasise below the opportunities and drawbacks highlighted by each set of students.

#### **The traditional PhD**

This group of students placed greater significance on carrying out a PhD for its own sake. The PhD involved a (personal) journey of exploration (Hughes & Tight, 2013). Students

acknowledged a sense of ‘mystery’ surrounding the PhD; this related to the prestige that the PhD held in the general community. There was a great deal of autonomy to choose one’s subject, to craft one’s writing, to structure one’s own process; there was also a good deal of flexibility in terms of time-frames, to make exploration possible.

The lack of structure (and guidance) did however generate a good deal of anxiety and confusion for most students. As a result, the PhD required a unique capacity for self-discipline and a stout ability to persevere.

### **The contemporary group**

The contemporary group placed more emphasis on working towards an end goal. Instead of a personal journey, the PhD was conceived more as a “form of work and, more specifically, as managed work” (Hughes & Tight, 2013, p. 44). Students viewed themselves as working on a project with a specific end goal in mind e.g. contributing to their community or profession.

In contrast to the traditional PhD, the contemporary PhD seemed to be a much more manageable and transparent endeavour. It appeared that the full proposal was useful when it was well supported and that the time-frame was manageable if it was flexible enough to take into account that ‘life happens’. My interviews also suggested less anxiety and confusion for the contemporary PhD student (than for the traditional student) during the process.

Yet, despite the apparent benefits of additional structure, students no longer had the luxury to explore knowledge in an open-ended way. In other words, while “the PhD is a degree in philosophy” (Barnacle, 2005, p. 40), there was less time for the activity of philosophy (Barnacle, 2005). Rather, students were accountable to (and monitored by) their university and needed to finish within a strict time-limit.

### **Future directions**

The changing shape of higher education continues to shape the PhD student experience. The discourses that prevail will determine the student experience as well as the kind of PhD produced e.g. a Doctor of *Philosophy* or a PhD project to be managed. Currently even tighter time-frames are being implemented in some universities (e.g. AUT University, 2016) and further changes may follow. It is my hope that a knowledge of the opportunities and drawbacks of different approaches, will help policy makers, faculty leads and supervisors, in deciding what kind of PhD (and student experience) they want to promote in the future.

### **References**

- Ashcroft, C. (2007). Constituting academics as neo-liberal subjects: Research assessment in a New Zealand context. *New Zealand Journal of Education Studies*, 42(1), 77-93.
- AUT University (AUT). (2016). *The Auckland University of Technology postgraduate handbook 2016*. Auckland, New Zealand: University postgraduate centre, Auckland University of Technology.
- Barnacle, R. (2005). Research education ontologies: Exploring doctoral becoming. *Higher Education Research & Development*, 24(2), 179-188. doi:10.1080/07294360500062995
- Billot, J. (2011). The changing research context: Implications for leadership. *Journal of Higher Education Policy and Management*, 33(1), 37-46. doi:10.1080/1360080X.2011.537010
- Butler, J. (1997). *The psychic life of power: Theories in subjection*. Stanford, CA: Stanford University Press.
- Curtis, B., & Matthewman, S. (2005). The managed university. *New Zealand Journal of Employment Relations*, 30(2), 1-18.
- Foucault, M. (1969). *The archaeology of knowledge*. New York, NY: Pantheon Books.
- Foucault, M. (1977). *Discipline and punish: The birth of the prison*. London, U.K.: Penguin Books.
- Foucault, M. (1978). *The history of sexuality: Vol 1. An introduction*. London, U.K.: Pantheon Books.

- Green, P., & Usher, R. (2003). Fast supervision: Changing supervisory practice in changing times. *Studies in Continuing Education*, 25(1), 37-50. doi:10.1080/01580370309281
- Hughes, C., & Tight, M. (2013). The metaphors we study by: The doctorate as a journey and/or as work. *Higher Education Research & Development*, 32(5), 765-775. doi:10.1080/07294360.2013.777031
- Johnson, L., Lee, A., & Green, B. (2000). The PhD and the autonomous self: Gender, rationality and postgraduate pedagogy. *Studies in Higher Education*, 25(2), 135-147. doi:10.1080/713696141
- Kenny, J. D. (2009). Managing a modern university: Is it time for a rethink? *Higher Education Research & Development*, 28(6), 629-642. doi:10.1080/07294360903206934
- Kloeta, M. V., & Aspenliederb, E. (2013). Educational development for responsible graduate students in the neoliberal university. *Critical Studies in Education*, 54(3), 286-298. doi:10.1080/17508487.2013.826706
- Lee, A., & Williams, C. (1999). Forged in fire: Narratives of trauma in PhD supervision pedagogy. *Southern Review*, 21(1), 6-26.
- Mewburn, I., Cuthbert, D., & Tokareva, E. (2014). Experiencing the progress report: An analysis of gender and administration in doctoral candidature. *Journal of Higher Education Policy and Management*, 36(2), 155-171. doi:10.1080/1360080x.2013.861054
- Mewburn, I., Tokareva, E., Cuthbert, D., Sinclair, J., & Barnacle, R. (2013). 'These are issues that should not be raised in black and white': The culture of progress reporting and the doctorate. *Higher Education Research & Development*, 33(3), 510-522. doi:10.1080/07294360.2013.841649
- Morrison-Saunders, A., Moore, S., Newsome, D., Smith, A., Rodger, K., & Hughes, M. (2005). Making postgraduate students and supervisors aware of the role of emotions in the PhD process. In T.L. Forum (Eds.) *The reflective practitioner: Proceedings of the 14th annual teaching and learning forum*. Perth, Australia: Murdoch University. <http://lsn.curtin.edu.au/tlf/tlf2005/contents-all.html>
- Morrissey, J. (2015). Regimes of performance: Practices of the normalised self in the neoliberal university. *British Journal of Sociology of Education*, 36(4), 614-634. doi:10.1080/01425692.2013.838515
- Noble, K. (1994). *Changing doctoral degrees: An international perspective*. Buckingham, UK: The Society for Research into Higher education and Open University Press.
- Olssen, M. (1997). Education policy in New Zealand: The 1990s and beyond. In M. Olssen & K. Morris-Mathews (Eds.), *Reframing educational policy: Choice, Rawlsianism, Communitarianism* (pp. 391-428). Palmerston North, New Zealand: Dunmore Press.
- Owler, K. (1998). *Subject to closure: Meditating on the doctoral process* (Unpublished doctoral dissertation). The University of New South Wales, Sydney, Australia.
- Owler, K. (2010). A problem to be managed? Completing a PhD in the Arts and Humanities. *Arts and Humanities in Higher Education*, 9(3), 289-304. doi: 10.1177/1474022209356330
- Park, C. (2005). New variant PhD: The changing nature of the doctorate in the UK. *Journal of Higher Education Policy and Management*, 27(2), 189-207. doi:10.1080/13600800500120068
- Park, C. (2007). *Redefining the doctorate: Discussion paper*. Islington, U.K.:The Higher Education Academy.
- Ryan, J. (2015). It ain't just what you do and the way that you do it: Why discourse matters in higher education communities of practice. *Higher Education Research & Development*, 34(5), 1001-1013. doi:10.1080/07294360.2015.1011087
- Stoller, S. (2009). Phenomenology and the poststructural critique of experience. *International Journal of Philosophical Studies*, 17(5), 707-737. doi:10.1080/09672550903301762
- van Manen, M. L., (1997). *Researching lived experience: Human science for an action sensitive pedagogy*. Ontario, Canada: Althouse Press.

Copyright © 2016 Kathryn Owler. The author assigns to HERDSA and educational non-profit institutions a non-exclusive license to use this document for personal use and in courses of instruction provided that the article is used in full and this copyright statement is reproduced. The author also grants a non-exclusive license to HERDSA to publish this document in full on the World Wide Web (prime site and mirrors) and within the portable electronic format HERDSA 2016 conference proceedings. Any other usage is prohibited without the express permission of the author.