# 5 Minutes to Hell.  Time to Tell the Truth.  The Disintermediated Doctoral Student

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> It's probably always been true that you have to find your way through or around formal education in the search for what really matters (2011, 190).
>
> — Jonathan Dollimore

It is not a great time to be working in higher education, or as I have recently termed it, the Zombie University (Brabazon 2016).  Brains are consumed and the only solution is to run away from the threat.  It is even less pleasant to be committed to—and believing in—doctoral education.  Many "universities" are blurring and aligning with further education institutions, forging a post-expertise university.  (Higher) education and training merge, compress and conflate.

Stanley Aronowitz's The Knowledge Factory (2000) – the theoretical dystopia he summoned in 2000 – is now the operating system in our universities.  Senior managers in higher education are no longer drawn from the database of outstanding teachers and researchers.  These men and women have taken the third path—administration—to "manage" academics and scholarly portfolios in areas in which they have not themselves been successful.  What happens to supervision, students and supervisors in this post-expertise knowledge factory?  How can we manage power and research dissemination in a different way?  How can we claim our space, claim our expertise and fight back against an anti-intellectual wave? How can we balance individual expertise and excellence against co-learning and collaboration? (Sze n.d.)  In response to these questions, this article is theoretical and practical, political and punchy, providing strategies that confirm the role and place of standards, rigor and excellence in the modern university.  My goal is to ensure that there remains a space and place for high quality doctoral education.  I argue that supervisors, doctoral candidates and universities deploy digitization and online learning in a way that increases the reflection, research capacity, and rigor in a PhD program.

My title is used with intent.  Five minutes to hell—time to tell the truth—is derived from the final episode of series 9 of Doctor Who (Moffat 2015). The Doctor travelled to the end of the universe, attempting to save the life of his companion Clara.  He failed, but met the last immortal – Ashildr – who reminded him with stark honesty, "Five minutes to hell.  Time to tell the truth" (Moffat 2015, 53).  This seems profoundly appropriate at this point in the history of universities.  If we lose the standards within our doctoral programs, then we lose the point of our institutions and our future:  to create and enable the scholars who will replace us.  The context in which this succession planning is taking place may be described – at best – as tumultuous.  Imogen Tyler confirmed that, "we are living through a turbulent period in world history in which several man-made catastrophes including environmental change, peak oil, terrorism and warfare and global economic recession, are converging with ruinous consequences" (2013, 5). We are five minutes to hell.  Time to tell the truth.

The death of Ben Agger—a friend, advisor, editor and personal inspiration—has provided the initiative for this article.  His commitment to entwine and align complex theorizations of the political economy with media transformations has provided leadership for generations of scholars and scholarship.  Yet it is Ben Agger as a teacher and doctoral supervisor that I wish to summon, remember, and acknowledge in this article.  His international role as a rigorous and respectful examiner changed the lives of many of my doctoral candidates and hundreds of emerging

scholars. Therefore, in this issue of Fast Capitalism, I continue to recognize the international contribution of Ben Agger and offer recognition of his contribution to doctoral education through supervision and examination.

Like much of Agger's research, popular culture can summon these unpalatable truths for education, teaching and learning. Pop can be banal, discriminatory or disposable. It can also be Thinking Pop (Brabazon 2008) and high popular culture (Redhead and Brabazon 2015). Throughout its analogue and digital history, fans have used, abused, appropriated, rewritten and refashioned pop for their purposes (Brooker 2002). A range of theories have summoned this complexity, including Stuart Hall's <u>Encoding and Decoding</u> (1980), Henry Jenkins' <u>Textual Poachers</u> (1992) and Constance Penley's <u>Slash Fiction</u> (1992). Social media have intensified this dialogue between pop and society, production and consumption. Rarely though is popular culture used as a trigger, model and frame to understand doctoral students, supervisors and our higher degree programs. Building these connections generates and disseminates knowledge, but also shapes career networks, developing skills and an academic profile. Such insights and inflections also create interdisciplinary doctoral studies (Manathunga, Lant and Mellick 2006).

This is a difficult era for PhD students and their supervisors. The neoliberal university has little interest in the highest levels of scholarship and achievement. "Quality" is deployed as a marketing device and to mitigate risk management. Doctoral students are valued for their financial contribution and are only visible when there is a risk to institutional branding and profile (Lovitts 2001). The recent case at the University of Wollongong is a clear example of the challenging space within higher education (Lawrence 2013). Popular culture is a mechanism to open new spaces for innovation, rigor, creativity and scholarship.

The subtitle of my article—the **disintermediated doctoral student**—reveals the innovative spaces that are available to supervisors and our institutions. These strategies empower our students and supervisors, and also undermine the authority held by "academic managers," via a flood of tweets, Facebook posts, podcasts and vodcasts. Students and supervisors can "answer back" to the powerful. This transparency is important, as so much of doctoral education remains individualized, atomized and masked behind wider institutional priorities. Frank Furstenberg stated that, "despite a large and ever-growing number of studies on academia and 'how-to' books and blogs, I am always amazed at how little newcomers know about what goes on behind the academic curtain" (Furstenberg 2013). To understand this volatile power relationship, my article is structured into two parts. Firstly, I activate three elements in the modern doctoral experience: digitization, deterritorialization, and disintermedation. These three variables are transforming doctoral education. After this foundational work, I discuss five social media examples that may be transformative for students, supervision and the university sector. The goal is not that doctoral candidates use and apply all these platforms, but they should explore the customized options that may be relevant for different students at different stages of their candidature.

## Digitization, Deterritorialization, and Disintermediation

Digitization has many characteristics. The most important for doctoral education is mobility. Ideas can move through space and time. For rural and regional areas, this is a particularly important characteristic. Nations are dominated by global and second tier cities (Brabazon 2014). Most universities are positioned in these urban environments. Yet third tier—small—cities that house universities manage unique challenges. The flaws and weaknesses in analogue infrastructure can be managed through digitization. Certainly, the original uses of the internet were very basic: electronic mail (E-Mail), file transfer, bulletin boards and newsgroups. Even from this very basic start, the early functions involved connection and communication over geographical space, just as other technological advances allowed the passage through geographical space in the last 200 years, like railways in the 19th century and cars in the 20th. This was an innovative repurposing and recalibration of space and time. Similarly, the digital movement of ideas is fast and convenient. This can be a major problem at times: there is a proliferation of digital material—much of which is low quality (Gleick 2011) —requiring high levels of information literacy and the necessity for what I describe as Digital Dieting (Brabazon 2013). That which is fast dominates the slow, but this maxim has consequences for all workers, including doctoral supervisors and their students.

There is no single web or internet, and while too simple in terms of designation and definition, for the purposes of this article, I split the web into Web 1.0 and Web 2.0, noting that this both reifies and simplifies the changes to the online environment. Web 2.0 is also described as the social web, social media or social networking. It is a different mode of screen-based communication. Web 2.0 captures the movement from the read web to the read write web.

Post-blogging, the readers of websites could also write web-based material with simple coding enabled through WordPress and Drupal.  This article probes the impact of this shift from producer to consumer in the doctoral supervisory environment, but also the transformation to supervisory spaces.  When reading Johannes Willms' Conversations with Ulrich Beck, published in 2004, Beck used digitization as a proxy for a wider social model.  He stated that, "we occupy a world of transportation and communication networks in which social and physical space have diverged" (Beck and Willms 2004). This moment of digitization, often described as deterritorialization, has been reconfigured through disintermediation, reintermediation (Brabazon 2014) and the re-emergence of analogue places via geosocial networking.

From this digital intervention, deterritorialization emerged.  In the early 1990s, Sherry Turkle wrote perhaps the most famous book in the early phase of the internet, titled Life on the Screen (1995).  This phrase captured the meaning of deterritorialization.  We no longer (only) occupy a body in real space and time, but are also living a life on a screen that connects us to a network.  Who we are in and on Pinterest is distinct from our Twitter handle, our Facebook page or LinkedIn profile.  Deterritorialization refers to the way in which particular media platforms and communication systems de-emphasize and de-center our position in real space and time in favor of a virtual space and time.  Our bodies may be located in Auckland, but we can skype a friend in Singapore.  Time can be shared, rather than space.

While the telephone and the satellite were the 20th century manifestations of deterritorialization, the best and most pervasive platform for deterritorialization is the internet and the applications that emerge from it.  But, the digitized screen specifically disconnects bodies from performed identity.  It separates our analogue existence from the digital performance through screen, sound and text. This is a two-way movement.

1.   The internet, web and read-write web deterritorializes an audience from their physical location.

2.   The internet, web and read-write web reconstitutes us as an imagined online community.

Fascinating but also unstable compromises are reached between digital and analogue modes of organizing space, time and identity.  These changes matter to supervisors because new meeting modalities—sharing time and not space—can take place.  Skype and Adobe Connect allow innovative strategies to connect students separated by analogue boundaries.  Such relationships and connections are important because the more regular the supervisory meetings, the more likely the postgraduate is to finish.  The more regular the meetings, the faster the candidature.

While the experience of doctoral education, including meeting and working with other students on campus, is incredibly valuable, there is now an array of post-geographical options to enable a successful supervision.  One example I developed and deploy at Flinders University is the Write Bunch.  This is a group of geographically dispersed doctoral candidates enrolled at Flinders who join together once a week for thirty minutes of sustained writing.  It is a silent thirty minutes, yet the candidates' share the time of writing, while not sharing the space of their candidature.  They can see their fellow writers and gain support.

The Write Bunch shows the new options that can emerge for candidates through digitization, even beyond weekly meetings with supervisors. The key is to ensure that synchronous meetings take place, creating a schedule and a pattern of connectivity. It does not matter if these meetings are analogue or digital. An array of social connections can be created through Facebook, Twitter and LinkedIn, meaning that a postgraduate community can be formed. The most innovative universities create virtual coffee shops for students and – through Skype or Adobe Connect – boot-camp writing sessions for postgraduates (Doctoral Support Group 2017). Also, a podcast or vodcast library of seminars, training or ideas for reading, writing and completion can be accessed as required (OGR 2017). The key is to focus on synchronous meetings with supervisors, to create the micro deadlines for the completion of work, and then deploy an array of asynchronous resources when they are required to keep the candidature fresh and exhilarating. Digital doctoral supervision—from the initial skype meeting of prospective supervisors through to email exchange of PhD writing through tracked changes—has increased the nodes of connectivity possible during a candidature. Such a portfolio of options extends far beyond the online learning strategies deployed for undergraduates at the end of the twentieth century and the first few years of the twenty first century, such as Blackboard, where low quality and basic interfaces were imposed onto and through degrees because of the increased casualization of staff (Standing 2013) and to reduce the costs of face-to-face learning.

The final key term cutting through digitization and deterritorialization is disintermediation, which is a characteristic of peer to peer networks. Links are removed from the traditional supply and distribution chain. In conventional business models, multiple layers and roles are involved in designing, creating, branding, marketing and the retail selling of a product. The person who sells lipstick did not develop the chemistry to make it. The person who designed a chair did not build it or sell it. In the online environment, many of these layers between producers and consumers are either collapsed or removed. The key attribute of disintermediation is that it flattens power structures (Darling-Hammond 2010). It increases the nodes of engagement between student and supervisors, which may result in a greater array of exploitative behavior and bullying on Facebook, Twitter, and LinkedIn. However, it also has the countervailing purpose of reducing the mystique, aura and "god-like" status of the supervisor. This corrective is important. If exploitation, bullying, discrimination, and inequality enter that supervisory space, then the hopes, expectations, and aspirations of doctoral students are destroyed. Disintermediation can increase the scrutiny of supervisors and the visibility of their behaviour and actions.

Disintermediation has transformed the music and publishing industries, alongside banking, stock trading, and the purchase of hardware and software. Some industries remain wedded to an analogue supply chain. Real estate, for example, still deploys real estate agents. The impact of disintermediation on schools and universities is difficult and ambivalent to map and track. Through Facebook and Twitter, academics can work with students directly, outside the confines of both institutional portals and the physical buildings of a university. Disintermediation is a flat model with many causes and origins. One is Google. The search engine enabled the explosion of user generated content. More precisely, Google ensures that the content from blogs, wikis, podcasts, and vodcasts can be found. The challenge is that a culture of equivalence was created between sources, creating what I have described as "the Google effect" (Brabazon 2008). This phrase refers to the inability to discriminate between low and high-quality information because of the sheer scale of data that is available. The key historical point in the Google story from a user's perspective is that the web became easier to use, but there was also a transformation in the understandings of "quality," "popularity" and "usefulness." Therefore, supervisors are working in a post web 2.0 environment, managing these cycles of digitization:

§ **Deterritorialization**. Ideas, products and money move through space, while consumers create new communities through sharing time.

§ **Disintermediation.** Links are lost in the supply chain between producers and consumers through digitization.

§ **Reintermediation.** New "middlemen" have been created, like Amazon and Google which now shape how producers reach consumers, and students engage with research.

Facebook, YouTube, Twitter, Pinterest, Instagram, Scribd, GoodReads, Snapchat, LinkedIn, ResearchGate, and Google+ provide new modes of connection, intimacy, and relationships. The issue for doctoral supervisors is to manage the challenge of expertise. Disintermediation flattens media and expertise. The reduced confidence in expert intermediaries—that aligned information and communication systems—started to corrode with an awareness of disintermediation. Indeed, David Nicholas asked, "Why read something when you can ask a friend?" (2012, 30).

The answer is that friends are often wrong. Also, this peer-enabled disintermediation is unhelpful in recognizing the specific skills and knowledge for a doctorate.

Disintermediation allows doctoral students to develop new pathways to information and people. It also offers a mechanism to reorganize the power relationships between supervisor and students. The power relationship is flattened. This means that power is removed from supervisors, and students have an array of new relationships and nodes and modes of dissemination. While change is always challenging, particularly in a period where regulation and governance of doctoral regulation is in flux, there are some great opportunities. The second half of this paper offers five platforms and interfaces that are useful to doctoral students. Not all students will find any or all of these strategies useful, but for a supervisor needing an intervention to move a student through to the next stage of the thesis or their career, they may be appropriate and important.

The key is to configure a mechanism to assess appropriateness, significance, and value. One key set of guiding principles was developed by A.W. Bates. This checklist, based on his experience in the Open University in the UK, was deployed for the proto-digital age. I argue that it still provides a workable strategy for assessment.

**Assessment of Educational Technology**

- Cost

- Learning effectiveness

- Availability to students

- User friendliness

- Place in the organizational environment

- Recognition of international technological inequalities (Bates 1993)

What this checklist demonstrates is that the domestic availability of hardware and software is the key determinant of value. The key strategy is to find a way to weave institutional priorities into individual goals. It seems appropriate therefore, to begin with the disintermediated platform with the most history in doctoral education.

## Examples and Models for the Disintermediated Doctoral Student

### Blogs

Blogs are the grandfathers of social media. Reaching profile and popularity in 1999, this was the key first moment when the readers of websites became the writer of websites. The software enabled this movement. WordPress and Drupal allowed intuitive writing of text, with the easy embedding of images through a WYSIWYG (what you see is what you get) format. Blogs became more attractive and interactive through the arrival of an array of services like Flickr and YouTube that enabled the embedding of personal and third-party content with ready-made code.

The advantage and indeed the challenge in the use of blogs for doctoral students is that they are hyper-personal, like a public diary. Such a format activates a confessional modality. Therefore, as supervisors, we must exercise care and support specific students in their use of blogs and offer caution for students who are yet to configure the correct mix between personal life and their emerging professional responsibilities as a scholar. If students complain and blame in a way that blocks the completion of intellectual work, then a blog may not be useful and will be detrimental to their doctoral completion.

There are five powerful uses of blogs for PhD students.

#### (a) As a reflective diary on the PhD process

Recent research demonstrates that the students who generate a rapid and successful doctoral thesis reflect on the process of doctoral supervision throughout the candidature. This reflection process can be regular conversations with supervisors, using social media groups on Facebook or Twitter, or blogging. As Tuure Tammi and Anna

Kouhia reported, "Doctoral students' experiences of their own doctoral processes, in particular, have been shown to contribute to students' well-being and satisfaction, thus increasing their perceived fit into academic communities" (2015, 386). The challenge is to ensure that the reflection is towards the completion and the process, rather than personal issues that may hamper the rapid completion.

A great model to share with students is the Edu Flaneuse (2017). Also tweeting as @debsnet, she blogged during her doctoral candidature right through to completion. It helped her understand the process and other doctoral students were assisted by her words. To find examples or templates that may suit students, it is valuable to refer to the Thesis Whisperer's fine list of strong blogs (2017).

### (b) As a scrapbook or pinup board

The gathering of information in multimodal form is often difficult to organize, even with a range of software. The advantage of a blog is that it can be organized by both date and keywords and can maintain an array of embedded links. Interpretations can be offered and updated, alongside comments from interested followers. This emerging subgenre is also a form of pin board—working like Pinterest—with students curating their sources as they reorganize them in new ways for their thesis.

Curation is a way to find, manage and disseminate content and for students involved in an array of interdisciplinary areas—such as digital sociology and digital ethnography—this rich online data requires selection, consideration and organization. Also, I do recommend the use of Pinterest Boards for students. The red pin link operates through all online searches and can categorize the links in real time for later review.

### (c) As a digital fieldwork diary

With clear ethics discussions with a supervisor and privacy settings in place, the blog can provide a way to house fieldwork information and interpretations. The dynamic nature of digital documents means that interpretations can be overlaid through the candidature. Newbury and Stanley confirmed that the great benefit of a digital fieldwork diary is that it provides an information scaffold—a strategy—to write the thesis in an organic way (Newbury 2001). It avoids the "writing up" phase, ensuring that writing is embedded into and through the entire candidature.

### (d) An incremental developmental record, particularly useful for creative-led research projects

For creative-led projects, blogs are ideal. My student Mark Brown is developing a mobile musical device to enable dancing and movement classes in schools. As a creative-led and practice-led doctorate, the process of artefact development is integral to the method. For examiners, it is crucial to be able to monitor and see the development of the prototype and a blog is an ideal way to develop a method, disseminate the method and provide a transparent and welcome opportunity for examiners to evaluate the original contribution to knowledge. Therefore, the blog can be a container that holds YouTube clips, podcasts, photographs and looped reflections on methods (Brown 2017).

### (e) Managing plagiarism and intellectual integrity while regulations catch up with the modern doctorate.

While the other advantages of blogs presented in this article are useful for the writing process of a PhD, there is another use that will be increasingly valuable. Many university regulations either ignore, marginalize, or mis-configure plagiarism and academic integrity policies for doctoral students. In terms of institutional reputational damage, plagiarism in research higher degree theses—located and reported by international examiners—is the most damaging form of academic misconduct that a university can face. Yet the research higher degrees portfolio offers particular challenges when managing academic integrity, academic misconduct and plagiarism, most notably, what is "assessable work"? Clearly, the final thesis is "assessable," but are the weekly drafts exchanged between supervisor/s and students? Through this ambiguity, an under-recognized problem is that this lack of regulation and governance results in bullying, discrimination and mistreatment of PhD students. In one of my former roles, my responsibility was to manage cases of plagiarism. A PhD supervisor at this university reported plagiarism in a draft of a chapter submitted to her by a student. The status of this document was difficult to determine. Was it "submitted" work? Was it "assessable" work? The supervisor insisted on prosecuting the case. The undergraduate regulations were completely unprepared to manage this issue. It also became clear that the student had an impairment that was logged by the university, but not understood by the supervisor. It was a very complex case to resolve. But it is significant

to recognize that—for the student—blogging would have confirmed the development of his ideas over time. While text matching software like Turnitin can provide a blunt instrument for the student in terms of prevention, blogs can demonstrate and perform the development of ideas and information literacy over time.

**Screen cultures, including Skype, YouTube and Periscope**

Visuality is the promiscuous mistress of media. Visuality proliferates through our culture. It is used well. It is used badly. But it can also be used as the default way to express information, share ideas and (supposedly) express the truth. Digitization has deterritorialized and disintermediated visual cultures. These tendencies have increased the number, scale and scope of visual cultures through an array of screens. For this article, I defamiliarize visuality, rendering it strange and – with reflection - show its uses in doctoral education.

Our senses gather information: touch, taste, smell, hearing, and vision. The challenge is that visual media and visual modes of communication dominate other forms of sensory information. We lose taste, smell, and even touch through screen culture. There is an empire of the senses (Howes 2005). Visuality is granted greater attention than other signs. Digitization has increased this dominance. We live amid screens and screen culture. Through schooling we are taught visual literacy when we learn to read. Therefore, visual literacy is our most advanced literacy.

For doctoral candidates, there are specific gifts of visuality, particularly through YouTube and Periscope. We have a free window into the presentations and ideas of the best scholars in the world. YouTube fragments the audience and blurs the division between the present and the past. By playing a video from the past in the present, intellectual time becomes fluid and changeable. Morley Winograd and Michael Hais argued that, "[YouTube] significantly lowering the cost of creation and providing an inexpensive way for the aspiring artists to share their work" (2008 169). This content creation builds social relationships and also corrodes brittle university hierarchies. Doctoral students gain from this fragmentation and narrowcasting. There are so many uses. Innovative and historically extraordinary lectures can be watched from any location in the world. Primary and secondary sources can be accessed or vlogs viewed where students reflect on their doctoral journey. Periscope is a live capture of events— with a time limitation—like snapchat. It particularly has potential for ethnography. But YouTube has a greater array of functions. Students can record their own visual materials and receive feedback.

Most social media and social networking are screen enabled and accessible through the mobile phone. There are many reasons and motivations for social networking, maintaining friendship, and extending contacts beyond physical relationships, building an identity, and gaining confidence. Facebook is integral to this screen based culture. Such functions have a use for doctoral students. PhD groups have been formed, some based on disciplines or language groups, offering advice and support (OWLs 2017). These are the equivalent of digital coffee shops and are particularly valuable for part time and distance/online students.

Screens bring students together or separate them. But the challenge for doctoral candidates is to ensure that sharing does not lead to oversharing. Disintermediation should enable light and shade, humour and seriousness. But it is important—particularly for doctoral students—to differentiate between learning and leisure (Brabazon 2014). Miriam Metzger and Andrew Flanagin believed that the lowering of barriers in software and hardware through the domestication of digitization alters our definition and capacity to define credibility (2013). Traditional media—such as scholarly monographs and Literature—embedded theories of class, high culture and elitism. Now with the google effect—the flattening of expertise—we are in a post-expertise environment which poses specific challenges for doctoral education. In such an environment, there is a social networking site that enables disintermediation but also builds a scholarly community

**Academia.edu**

There are many research-inflected services of value to doctoral students, including ResearchGate. When pondering disintermediation for doctoral students, Academia.edu is the most functional channel that allows students to present their research and communicate with peers and international scholars. Qualifications can be presented, alongside university affiliations and publications.

Yet there are other important uses. Keywords are carefully used and can be followed, so rare, specialist and specific topics can be accessed. This is incredibly useful, as scholars post drafts—prepublication research—that PhD students can use at speed. Further, PhD students can post drafts that can be found by scholars around the world. The other great strength is that every Google search for the candidate's name and research can be logged, alongside the location of the searcher. Also, the number of readings of each piece can be tracked. Academia.edu is a social

networking site, but with benefits. Students can gain a sense of the audience for their work.

## Podcasts

We forget how recently the iPod and podcasts entered our lives. Robin Mason and Frank Rennie's Elearning: The Key Concepts (2006) does not have an entry for podcasts. The book was published in 2006, the year podcasts moved from a Guardian-inspired neologism and into popular culture. Early academic use of iPods continued the decades-long practice of recording lectures for students who missed a session. Through the last five years better uses of sonic media emerged, rather than simply as medication for poor attendance.

Podcasts are an opportunity to connect theory and practice, thinking and doing. The advantages are clear: podcasts are inexpensive to produce. They build community and add emotion to education. As the Open University has shown through their history, sound-only teaching resources defamiliarize the way in which students think about ideas. With the eyes at rest, easy visual literacy is not an option. For difficult intellectual work that is abstract, sonic media platforms are often an option, slowing the students down and encouraging alternative modes of thought. Perhaps the most important role that sonic media and podcasts hold is that it can build relationships. It creates a sense of community and a collective ownership and care for students. Intriguingly, the close-to-invisible area in the sonic media literature is the role of podcasting in doctoral education. The goal is to find new ways to chart and validate student development through their supervisory journey. Sonic media provides an opportunity so that their voices and views are heard.

Podcasts in doctoral education offer a wide array of potentials and advantages. They build confidence and motivation and provide a sonic diary of their ideas. For example, one of my current students, Anne McLeod has 47 podcasts, gathered since her first meeting (Brabazon 2017). She has a full record of her improvements through the candidature. She speaks the argument, receives real time feedback and writes her research while listening to her podcasts. There is also the issue of the oral examination, the viva. One great advantage of podcasts is that it offers an information scaffold to socialize the students into answering questions and talking about their research.

Our current cohort is the first group of post-podcasting postgraduates to enter doctoral programs. Creating a customized podcasting strategy for PhD students generates incremental, gradual, supportive and relaxed spaces to talk about research from the start of their enrolment. The sonic strategies can include a dynamic and robust question and answer session. However, a more gentle and ongoing recording of their ideas and results is often a better map of the supervisory process.

## Twitter

The ambivalent consequence of deterritorialization and disintermediation is that users build a social network of friends and distribute content to them. Because social networking is public, the textual and visual displays confirm both connection and popularity. This is an odd cultural movement. While social networking and social media are now part of popular culture, the criteria by which we assess its effectiveness and usefulness are yet to be determined. The information literacy challenge is not only one of moving content between media spaces but also through times. How do we balance the speed of microblogging services like Twitter, while enabling reflection and interpretation? This is a compressed environment—an accelerated culture—to enable information literacy (Redhead 2004).

The fast dominates the slow (Virilio 1989), and Twitter is the fastest disintermediated platform for doctoral students. This poses risks. An unwanted or problematic tweet can cause damage to their professionalism and credibility. Therefore, as supervisors, we should make them aware of the quite sizeable risks and insist on caution. Twitter is a digital rehearsal for analogue intellectual generosity in their future academic or professional lives.

The benefits are enormous and efficient in terms of time. The first strength of twitter is for social networking. Many scholars around the world maintain a twitter handle, so students can be at a campus and yet connecting with key researchers in their field. These scholars can be followed, which means that students are able to manage deterritorialization and activate disintermediation, by directly contacting influential researchers. This sharing of experience and socialization into academic life remains challenging. Digital strategies can create analogue opportunities and behaviours.

> Three of the PhD students interviewed were nowhere near a transition to a legitimate scholar. In fact they were all in the middle of a very frustrating process, to a certain degree considering whether to continue or not. A common denominator of their experience is that they are very alone and more or less forced to adapt unilaterally to the wishes of the supervisor (Bogelund and de Graaff 2015).

Besides corresponding with influential scholars in a convenient and rapid way, peer to peer conversations are also incredibly valuable.  The hashtag #phdchat curates these tweets.  There is also an #ecrchat which is excellent, offering advice, interesting links and community for early career researchers. The challenge for many PhD students is they enter Twitter with only a few followers and feel isolated rather than empowered.  Supervisors can help students through this stage by offering key advice with regard to hashtags. A key way to find new connections is through shared scholarly interests.  Therefore, Twitter hashtags are a key strategy to hook into diverse communities and build a career.  If the supervisor is also active on Twitter, online invitations can take place.

The final great gift of Twitter is as a digital pointer to richer material.  Students can promote and share their articles, podcasts, vodcasts or blogs through Twitter, creating both triangulation and an increased audience for their scholarship. Twitter is still only 140 characters.  It is not the place to develop high theory, complex methods, or discussions about ethics.  It is the place to meet people, follow interesting scholars and discover new sources.  The strength of disintermediation is that it promotes the voice of our doctoral students and enables engagements with peers, supervisors and international researchers.

## Doctoral Disintermediation

Doctoral education is also an identity journey for the student and supervisor.  Disintermediated media can enable students and their supervisors to create bespoke options to suit their candidature, career, and supervisory relationship.  Doctoral education is the gold standard of teaching and learning, the best of what we create at a university.  The success of that completion is determined through the supervisor and student relationship.  This is an unequal relationship and this power imbalance can be abused.  Yet through disintermediated media, the hierarchical relationship can be flattered and also rendered more complex.

Within our neoliberal universities, the future is not a fordist doctoral program, but customized, reflexive and dynamic media strategies, to enable a completion and the doctoral candidate's career beyond it.  Digital doctoral supervision—from the initial skype meeting of prospective supervisors through to email exchange of PhD writing through tracked changes—has increased the nodes of connectivity possible during a candidature.  The key is for the student and supervisor to assess the digital resources that are available and select the platforms, software and hardware, while also being aware that such digital supervision extends an already long working day for the supervisor (and student).  As Daniel Miller confirmed, "What email achieved (a position then reinforced by subsequent media such as texting) was the overthrow of more than a century of infrastructural reinforcement of a strict division between work and non-work" (2016 37).  That flexibility is useful for part-time students, but particularly challenging for already full-time academic staff.  While the working day extends for academic supervisors, there remains value in placing the emphasis on learning and the learning cultures of doctoral students.  Neoliberal universities place the emphasis on efficiency and cost-cutting in teaching and learning, with its most obvious manifestation being casualization of academic staff.  Similarly, when the focus is placed on educational technology and how it is administered, the focus on learning moments and teaching excellence is decentred (Bennett 2003).  Whitehead's warning remains significant: "when teaching you will come to grief as soon as you forget that your students have bodies" (1942).  Even through digital supervision, the corporeality of supervisor and student—alongside an understanding of their working day—is necessary.

Supervising doctoral candidates in a way that respects their agency, individuality and careers —often operating against the damaging ideologies of globalization and neoliberalism—while validating international standards and scholarship achievement, remains the great challenge of this decade.  Oppositional andragogy is more complex to execute in doctoral programs, because international standards must be maintained.  This is a particular mode of internationalization.  International mobility—of quality, examination, supervisors and students—is important.  International mobility—of money, management models and Key Performance Indicators—is not relevant to maintaining excellence in doctoral education.  Diverse and complex interpretations of globalization must be summoned that do not discredit governance protocols and rely on international companies and "commodification" to determine the standards of scholarship.

Ben Agger committed to excellence, empowerment, interdisciplinarity and internationalization.  He believed in the importance of doctoral education to create a more social just university sector.  Those of us following in his footsteps to create an emancipatory, radical and progressive doctoral education must—and this is the counterintuitive

ideology—affirm, support and configure strong regulation of our programs. Recognizing and validating the standards of supervisors—verified via a supervisory register, research training programs, professional development and continual evaluation of their research activity—works against downsizing, casualization, outsourcing and flexible labor. Doctoral candidates are more than the fees they pay to a neoliberal, globalizing economy. Supervisors are more than teachers paid by the hour. We need to summon, affirm, and celebrate counter-narratives of internationalization, mobility and digitization to welcome alternative and contested models of excellence and achievement.

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