

Embodied Cognition – The Developing of Professional Doctorates as a way of knowing

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This paper adopts a social constructionist perspective (Foucault, 1980), to challenge the objective basis of conventional knowledge and myths that perpetuate the mind/body split following Descartes' error (Damasio, 1994). These will be illustrated within the self and organisation of western culture. It will critique Western concepts of mind to establish a philosophy of embodiment (Dewey, 1976 Shusterman, 1994, Eisner, 1982). It will examine the potential effects on education (Claxton, Lucas and Webster) including the establishment of embodied cognition as a valid way of knowing. This will initiate debates about methodologies, data, generation, assessment and evaluation in doctoral programmes and compare the relative standing of the degrees of Doctorates of Philosophy and Professional Doctorates. Interview data will be merged with theoretical writing to illustrate changes within the philosophy of knowledge along with the generic assessment criteria for work-based learning at Middlesex University. This theoretical frame will enable a view of the rise in interest in professional doctorates and doctorates containing creative practice as signalling an attempt at the transformation of dominant myths relating to embodied cognition.

Keywords: Embodiment, Knowledge, Doctorates, Practice, Validity

Introduction

This paper will show how the constructs we have in place for the mind are based firmly in the work of Descartes and have governed the growth of what is valued and the ways it is valued as knowledge. These stress thinking as the source of truth, separate this from the body and devalue the role of emotions. There is a split between body and mind and a devaluation of the body as a source of truth. It will see the developments in Professional Doctorates and Practice-as-research as a move towards a greater integration of body and mind.

Truth and Power

Social constructionists such as Foucault (1980) and Gergen (1985) have critiqued the values of western society through the relationship between power and what is perceived as true:

Truth isn't outside power, or lacking in power...Truth is a thing of this world; it is produced only by multiple forms of constraint. Each society has its regime of truth, its 'general politics' of truth: that is, the types of discourse which it accepts and makes function as true; the mechanisms and instances which enable one to distinguish true and false statements, the means by which each is sanctioned; the techniques and procedures accorded value in the acquisition of truth; the status of those who are charged with saying what counts as true.

(Foucault 1980: 131)

So how we consider knowing is firmly based in how we construct systems of what it is to be human and where essential truths reside. Within this is the concept of mind. The mind (Coulter 1979) becomes a form of social myth; the self-concept (Gergen 1985a) is removed from the head and placed in the sphere of social discourse: 'The terms in which the world is understood are social artifacts, products of historically

situated interchanges among people.’ (Gergen 1985b: 267). Eisner sees the limiting effects of current concepts of mind:

I believe that the assumptions that we hold about the mind influence the practices and policies that shape our educational lives and that practices and policies that are based upon a limited view of cognition tend to lead to a limited conception of educational practice. (Eisner 1982: 72)

The values by which these are judged are held in place by myths:

A myth is a narrative, a foundational symbolic story or set of stories through which a nation or cultural group within it understands and remembers its origins and envisions its “end times” in order to live life meaningfully in the present. (Grey 1996: 242)

The values of Western culture are in the myth of Cinderella, the cleaner, who betters herself by becoming a princess who does no embodied work but manages the bodies of many others, even getting them to dress her body. This perspective enables us to see how embodied roles are regarded less highly than disembodied ones.

The Consequences for the Wider Society

To be a manager in western society is regarded as ‘better’ than being a cleaner and reflected in wages and political status. This was confirmed recently by a government minister talking about unemployment saying that she wanted everyone to have a good job – by which she meant not manual (embodied) labour but managerial (disembodied) roles. In general, people in positions of power have been able to employ the bodies of others to carry out the conceptions of their minds. For Western society, constructed as it was around elements of Christianity, had deep in its conceptualizing a notion of body/soul split. The Enlightenment added a third element that could be split off – the mind or intellect. Few other human societies have achieved such an effective split between these elements. Manual labour is now split from white and blue-collar labour. One uses the bodies of people as if they

have no minds, the other the mind as if it has no body. The ubiquity of computer technology requires people to encapsulate their minds with minimal movements of the bodies which now have to be exercised separately in leisure time almost with no mind. The body is nearly obliterated from the most highly prized of academic assessment – the essay and the exam – sometimes by means of ascribing numbers to the candidates, in the interests of objectivity. In the area of warfare the fighting troops have bodies and those controlling them, in general, have minds but seldom use their bodies in the warfare itself. The mindlessness of the body is nowhere clearer than in the development of pornography where bodies are displayed for their own sake with no concept of those bodies having minds. Meanwhile in the development of the holocaust we see disembodied dogma controlling and persecuting the bodies of marginalised groups (Scarry 1985). Within the self the life of our society is reflected. Our lives are fragmented. The concern for the body split off from mind characterizes such illnesses as anorexia and bulimia. These are but acute forms of a basic societal sickness. As our bodies part company with our minds we become either narcissistic or ascetic and persecutory of the body (Boyce-Tillman 2007: 217-222). This fragmentation within the self and society have been, if not caused, certainly exacerbated by the Cartesian split. The need for the development of a philosophy of embodied cognition becomes very clear.

Establishing an Embodied Philosophy

Gergen lists the tensions that have been played out within various European views of knowledge:

- Between Plato's pure forms of knowledge and Aristotle's concern with sensory experience
- Between the authority given to experience by Bacon, Locke and Hume and authority of rationality granted by Descartes, Spinoza and Kant
- Between the stress on passion and will given in Schopenhauer and Nietzsche and the logical positivists stress on observables. (Gergen 1985b: 270)

For many in Western society Descartes' views are now regarded as self-evident and in no need of re-examination (Damasio 1994: 250); but Foucault sees the constant need for revisiting constructions of truth:

'Truth' is to be understood as a system of ordered 'procedures for the production, regulation, distribution, circulation and operation of statements. 'Truth' is linked in circular relation with systems of power which produce and sustain it, and to effects of power which it induces and which extend it. A 'regime' of truth'

The essential political problem for the intellectual is not to criticise the ideological contents supposedly linked to science, or to ensure that his own scientific practice is accompanied by a correct ideology, but that of ascertaining the possibility of constituting a new politics of truth.....It's not a matter of emancipating truth from every system of power (which would be a chimera, for truth is already power) but of detaching the power of truth from the forms of hegemony - social, economic, and cultural, within which it operates at the present time. (Foucault 1980: 132-3)

There have been attempts to challenge Cartesian philosophy from the mid-twentieth century onwards. In Dewey's philosophy there was a concern to re-evaluate making and its relationship to thinking, which has clear relevance for the work-based learning of the Professional Doctorate:

The fundamental point in the psychology of an occupation is that it maintains a balance between the intellectual and the practical phases of experience. As an occupation it is active and motor; it finds expression through physical organs – the eyes, hands etc. But it also involves continual observation of materials, and continual planning and reflection, in order that the practical and executive side may be successfully carried on. Occupation as this conceived must, therefore, be carefully distinguished from work, which educates primarily for a trade. It differs because its end is in itself; in the growth that comes from the continual

interplay of ideas and their embedment in action, not in external utility. (Dewey 1976: 92)

Shusterman (1994) developed this theme further in his development of somatic aesthetics:

Finally the most radical and interesting way for philosophy to engage somatics is to integrate such bodily disciplines into the very practice of philosophy. This means practicing philosophy not simply as a discursive genre, a form of writing, but as a discipline of embodied life. One's philosophical work, one's search for truth and wisdom, would not be pursued only through texts but also through somatic exploration and experiment. By acute attention to the body and its nonverbal messages, by the practice of body disciplines which heighten somatic awareness and transform how one feels and functions, one discovers and expands self-knowledge by remaking one's self. This quest for self-knowledge and self-transformation can constitute a philosophical life of increasing embodied enrichment that has irresistible aesthetic appeal, for one's life becomes a developing work of art. (Shusterman 1994: 143-4)

Dr Helen Minors, in Boyce-Tillman *et al* (2012) now sees this as essential: 'Any Performance Research has to have a somatic experience; we have to feel, it has to be embodied.' Foucault sees the growth of these critiques as challenges to the dominant views of what constitutes truth:

I would say, then, that what has emerged in the course of the last ten or fifteen years is a sense of the increasing vulnerability to criticism of things, institutions, practices, discourses. A certain fragility has been discovered in the very bedrock of existence.....it is a fact that we have repeatedly encountered, at least at a superficial level, in the course of most recent times, an entire thematic to the effect that it is not theory but life that matters, not knowledge but reality, not books but money etc.; but it also seems to me over and above, and arising out of

this thematic, there is something else to which we are witness, and which we might describe as an *insurrection of subjugated knowledges*. [Author's italics] (Foucault, 1980: 80-1)

Eisner critiques the dominant philosophy by describing the limitations of knowing defined by propositions and looking towards the arts as defying these limitations:

My use of the term “knowing” differs from the concept of “knowledge” as used by philosophers of either an analytic or a positivistic orientation. In more conventional usage, the term knowledge is restricted to being a “warranted assertion”The reason this view of knowledge has been so attractive to so many is because, by regarding knowledge as propositional and by requiring publicly available tests of validity, it was believed possible to rid philosophy of metaphysics and unverifiable utterance – sources of confusion and obscurantism. Both positivistic and linguistic analyses were a kind of philosophic hygiene that eliminated the dross from philosophic literature. (Eisner 1982: 36)

Like Foucault above, Eisner sees the establishment of truth as a system of constraint and exclusion:

The referents for the propositions are still nonpropositional matters; they are qualities that the sensory systems pick up...Yet to restrict the term knowledge and, by implication, knowing to what propositions about qualities can reveal is to exclude from the arena of knowledge all that propositions as a form of representation cannot embody. That price, in my view, is far too high. Shakespeare's rendering of jealousy in Othello, Picasso's revelations of the horror of Guernica, Schiller's ode to Joy cannot be reduced to propositions....The educational and political ramifications of the views I have described are not simply playthings of philosophers. They are far more than educational and philosophic exotica. Commitment to a particular view of knowledge has consequences not only for school curricula, but also for the conduct of research,

for the funding of research, for promotion at universities, for the definition of professional competence, for access to publication in professional journals, and even, as I have suggested earlier, for shaping our conception of mind... I am saying... that propositions as *one* form of representation cannot in principle contain all that can be known or experienced about the empirical world.

Furthermore, the restriction of knowledge and, by implication, understanding to propositional discourse about the phenomenal world distorts our view of reality and has a wide array of ancillary political and educational consequences that are deleterious to the development of human ability and human understanding.

(Eisner 1982: 37-8)

In the 1990s, the neuroscientist/psychologist, Antonio Damasio critiques Descartes' error as the cause of such exclusions from the sphere of validated 'knowledge':

Descartes imagined thinking as an activity quite separate from the body....the separation of mind, the "thinking mind (res cogitans) from the non-thinking body, that which has extension and mechanical parts....Yet long before the dawn of humanity, beings were beings. At some point in evolution, an elementary consciousness began....And as for us now, as we come into the world and develop, we still begin with being, and only later do we think. We are, and then we think, and we think only inasmuch as we are, since thinking is indeed caused by the structure and operations of being. (Damasio 1994: 248)

The composer, Professor Nigel Osborne (in Boyce-Tillman *et al.* 2012), elaborates a similar philosophy:

It seems to me that there is no knowledge that is not embodied....If we look at the earliest functions of human communication, babies and so on, then it's very clear that the initial knowledge and the understanding is embodied from the start ... what we know about the human brain is, that when we think and understand we are activating a number of systems running right the way from the top, the abstract top, to the biological bottom of our brain. ... It seems to me that creative work is an exploration of that very terrain, and good creative work

is precisely about the passage of knowledge between thought, imagination and embodiment.

Damasio also attempts to restore an understanding of the situation of the mind within the body. He sees rationality as inextricably bound up with the body, coming *from* it and *with* it (Damasio 1994: 128). He draws on the Aristotelian conceptions of the diffused soul to see selfhood as distributed throughout the body. Thinking for Damasio is rooted in body-representing neural structures; far from being divorced from the body (as in Descartes), decisions are immediately embodied and reason in constant interaction with sensorial experiences. Dr Joanna Bucknall confirms this position as a newly graduated doctoral student:

The body becomes knowledge and the experience of the body in a live or even a digitalised situation... We are embodied and that knowledge and our experiences are constituted through and by our body engaging with the world around us..... For me Cognitive Science is a really important shift which has impacted on the way we understand things and the way potentially we might read things. (Charlie Broom in Boyce-Tillman *et al* 2012)

Damasio extols the importance of images in reasoning, discounting pure rule-governed propositions. His “dispositional representations” draw deeply on the body’s experiences including “somatic markers” formed from emotional experiences. Subjectivity is included in the processes of knowing and situated in the experiential life of the body. He sees emotions as the frame in which social cognition is developed (both positively and negatively and often non-consciously). He uses neuroscience to demonstrate the linkage between feelings and the body via the work of nerve-cells. The mind in his view is embodied. Charlie Broom, in her progression as a doctoral student, describes her own move towards this position:

I am also coming to understand, through my process, that philosophy doesn’t just apply to intellectual philosophy, but there is kind of cellular philosophy, a corporeal philosophy as well, as a product of culture ... I also interface with that philosophy through tactile senses. (in Boyce-Tillman *et al.* 2012)

The Development of Embodied Cognition

Claxton, Lucas and Webster (2010) outline how Descartes' error has governed the development of education in western culture. They describe how the split was born in classical Greece, endorsed by the Church and turned by the philosophers of the Enlightenment into 'irrefutable common sense' (Claxton, Lucas, Webster, 2010: 3). The original meaning of the three R's was reading, wroughting and arithmetic which only changed in the 1850's with the great exhibition into writing (Frayling 2004). Even when the author went to school in the 1940's and 50's at least a quarter of the curriculum was spent on embodied activity – physical education, sewing, cooking and singing to name but a few activities. The replacement of some of these by food technology and textile studies has further disembodied the school curriculum.

Dewey mounted a challenge to this in his University Elementary School:

The old psychology was chiefly concerned with the acquisition of knowledge and with the development of intellect; the new psychology took into consideration emotional and physical needs as well as intellectual ones. ...Dewey and his teachers at the University Elementary School (as it was initially called) devised an innovative curriculum. A small number of "active occupations" were at its center....The point of an occupation-oriented curriculum is not to prepare students to become weavers, cooks or carpenters. Rather, it is to show them how weaving, cooking and carpentry (or any other useful craft) requires the continual interplay of ideas and their embodiment in action. (Jackson 1998: 169-70)

Eisner develops a similar philosophy: 'Thinking and experiencing cannot easily be separated. I believe that no form of experience is possible without cognitive activity and that such activity is itself what we mean by thinking. ' (Eisner 1980: 36)

Professor Johannes Birringer (in Boyce-Tillman *et al.*, 2012) sees the notion of 'embodiment' as an academic invention because all human activity is embodied

including writing. But the development of literacy (Ong 1982) enabled ideas to be separated from the body of the creator:

The value of literacy is that the mind of the person can be separated from the body of the person and of course we do that in examining PhDs; the mind of the person is over here and the university's somewhere and they send us their mind in the form of a thesis and our minds then engage with their minds through the means of this written text, and we assess whether that mind is worthy of a PhD. When it comes to examining Performance as Research, we can't do that, our body, the body of the examiner has to be in some sort of relationship with the body of the person who is being examined. We have to have that interface, it's no longer possible. (Boyce-Tillman *et al.*, 2012)

Eisner too critiques verbal or mathematical discourse as the only valid form of representation:

The forms of human thought are multiple and... language in its conventional sense is only one among many of the forms that it employs. Second... thinking and experiencing cannot easily be separated. I believe that no form of experience is possible without cognitive activity and that such activity is itself what we mean by thinking. (Eisner 1982: 36)

Once choreography entered within doctoral programmes, embodied cognition entered the conceptualisation of doctoral study, as Professor Joe Kelleher, in Boyce-Tillman *et al.*, (2012) explains:

I co-supervised a PhD with the Dance department. ... A very accomplished choreographer ... was making work and showing it throughout the time of her PhD, working (this is more of a classic version) a theoretical PhD around questions of Contemporary Dance and theory. The work that she made, we

engaged the examiners about a year before the examination, so that during the final year they saw some live performance at agreed dates. We then submitted, with the written PhD, a DVD documentation of some of those performances.

It is to the arts that Eisner turns to develop his ideas of embodied cognition:

The choice of a form of representation is a choice in the way the world will be conceived, as well as choice in the way it will be publicly represented... the process of working with materials is, among other things, a heuristic process. Through it ideas are formed, negotiated, revised, discovered (Collingwood, 1958)....It should not be surprising that the process itself yields ideas that were not part of the initiating conception. Working within forms of representation provides the individual with an opportunity not only to perform in the role of maker but in the role of critic as well. (Eisner 1982: 50-1)

Embodied cognition appears both as a form of data generation, a methodological development and a form of representation. Charlie Broom, in Boyce-Tillman *et al.*, (2012) deals with data generation: 'It's neither solely intellect through which I receive data, nor solely through the body, but it is in fact through the two; it's the body/mind and the mind/body.' Eisner deals with the expansion of methodologies:

Methodological dogmatism, even in the name of truth, can fetter man's [sic] to know....I find this view of knowing and understanding curious. One's experience of the world is basically qualitative....To hold that it is the discursive reduction that carries meaning, and that the content that gives meaning to it is meaningless, is to put the cart before the horse. In the desire to tame and harness meaning so that it abodes by conventional rules for purposes of verification, those forms of knowing that lie outside the realm

which such rules can be applied have been made “noncognitive”. (Eisner 1982: 39)

Professor Nick Till, in Boyce-Tillman *et al.*, (2012) sees this happening in the emergence of Practice-as-Research methodologies:

Then you start to interrogate the methodologies that are being used in the making of the work, and the theoretical ideas in that case, obviously, also are going to be informing the practice, or you hope they are. That’s what one tries to encourage, but people don’t actually perceive theory and practice as occupying separate spaces, that each is responding to the other and each are driving each other.

Eisner links the forms of representation with the conception of the project: [Author’s italics] ‘*The choice of a form of representation is a choice in the way the world will be conceived, as well as choice in the way it will be publicly represented.*’ (Eisner 1982: 50)

Mode 2 Knowledge as Embodied Cognition

It is into this debating arena that Gibbons *et al* (1994) argued for ‘mode 2 knowledge’ which is context-driven, problem-focused and interdisciplinary. This was a clear example of an attempt to establish the validity of data generated by embodied cognition. Multi-disciplinary teams came together for short-term projects related to real-world problems. They distinguished this from traditional research which they saw as academic, discipline-based and investigator-initiated (which they labelled mode 1 knowledge). The reception of the ideas illustrates clearly the interaction between dominant Cartesian views of knowledge and subjugated ways of knowing. Its validity and conceptual strength were questioned by the establishment (Hessels and Van Lente, 2008) along with its political underpinning. Others, however, (Etzkowitz and Leydesdorff 2000) saw it as return to original scientific discovery methods before science sought to establish its autonomy within academe.

Implications for Doctoral Study

The advent of professional doctorates in which practice and theory are intertwined in the context of an embodied philosophy in which embodied cognition is valued represents the surfacing of embodied cognition from its subjugated position in Western society. But the PhD still lords itself over Professional doctorates. In these there is a relation between the material world and the thinking – Mode 2 knowing (Gibbons *et al.* 1994; Nowtny *et al.* 2001) – knowing by experience and practice (Draper and Harrison 2011: 98). The traditional PhD can set something out in theory which does not work in practice, provided it is well-argued. No embodiment is necessary. But Charlie Broom, in Boyce-Tillman *et al.*, (2012), shows how a research student sees the development of embodied cognition as a challenge to the hierarchy: ‘What Practice as Research ... enables, in terms of the subject community, is to dispel hierarchical importance of intellect over body/mind experience and instinctual and creative impulses.’ This necessitates a balance that we see in Professional Doctorate programmes:

If a single virtue is exemplified in Dewey’s writings, it has to be that someone trying in all earnestness to address the grand themes of human conduct, describing them at the highest level of generalization, without at the same time losing sight of their embodiment in ordinary affairs. (Jackson 1998: 160-1)

These developments have often been born from a concern for interdisciplinarity (itself a challenge to Western division between various intellectual disciplines). This has necessitated new methodologies, new assessment procedures and new supervisory practices. In the latter area there are sometimes a variety of roles because academics themselves have been enculturated into different disciplines and need to combine these to develop their own beliefs and strategies in the area of synthesizing their own views of body and mind. New methodologies have emerged that like Action research and Auto-ethnography that include physical and emotional experiences within their purveyance. They are also often more circular and reflexive:

In general, the [creative] idea gradually comes to birth, meets some sort of embodied form, you then ask people what they thought, you look at it yourself, you do it a few times, and then on the basis of what you thought, how it went, your next piece of work is being formed in your mind; that notion of the spiral of action and reflection, action and reflection works extremely well. (Boyce-Tillman *et al.*, 2012)

New forms of submission for assessment are developing as Professor Joe Kelleher, in Boyce-Tillman *et al.*, (2012) illustrates:

The actual form of [this] PhD is a box of materials, of discreet elements; it's like an artist's object. This particular person is somebody who was coming from a Print Art and Graphic Design background moving into Performance. So, we have here a whole set of cards, visual elements; there is a lot of actual Performance work that was done. Duration Performance is here documented in still images and whole sets of traces, and then there are large substantial theoretical essays presented as micro-books and instructions for performing, for the renewing of the event for the future. That's one example.

The presence or absence of an embodied component in the final submission is a source of great debate. It appeared first in PhD's where the debates are around the balance between words and performance rage hard and long. Some PhD's involving practice are represented entirely in words; some include performance elements either live or on video. The debates are there in the area of Professional Doctorates where the final submission has often been largely in words. However, there are debates in this area which suggest that as the research in the workplace is embodied there might be an embodied element like a presentation or installation in the final submission. The Doctorate in Creative Arts in the University of Winchester has a final submission that can be entirely performance with no written component. Such debates are central to the ideas explored in this paper rooted as they are in the

relative validity given to words as a form of representation in relation to other forms or more physically engaged forms. Here we see the hierarchies involving the supremacy of a disembodied mind expressed in word or number are still in place despite the numerous theorists and practitioners cited in this paper.

For Mode 2 knowledge, Middlesex University have developed generic assessment criteria as a way of validating methodologies rooted in embodied cognition. Some of these are shared by PhD's, including the demonstration of original knowledge and understanding and awareness of ethical issues; but here the knowledge is designated as at the leading edge of practice. Innovation is also required in approaches to practice based research methodology. In the area of cognitive skills we see, as in PhDs, the ability to analyse and synthesise complex and possibly conflicting data. Here, however, we see the inclusion of criteria based in experience and emotional life, including self-appraisal, reflective inquiry and awareness of impact on others and a capacity for self-evaluation. The inclusion of an area of practical skills reflects the restoration of 'making' into doctoral study and includes the use of wide-ranging resources, dissemination of ideas both in academe and with a professional community, in which leadership is demonstrated. In the development of these generic criteria we can see the principles for the validation of embodied ways of knowing explored by the theorists above.

Summary

In terms of the relative value of Professional Doctorates and the traditional Doctor of Philosophy, Cartesian values are clearly apparent and regarded as a 'given' in Higher Education (HE). Descartes has been discredited in many areas but in HE he stills rules. This paper has attempted to set Professional doctorateness in the context of the wider society.

A Professional Doctorate has as its basis the thesis that truth can reside in embodied cognition. They involve contracts with workplaces - the establishment that the project can be embodied at the very outset of the programme and that there will be experiential knowing that can be drawn upon. This validation of a new location of

knowledge sets up questions about the nature of data. Is the data generated by embodied cognition the same as that generated by mental exercises? Does this call into question traditional research methodologies – ways which our society has sanctioned as validations of truthfulness? What methodologies and methodological strategies are most appropriate for research involving embodied cognition?

Questions arise in the area of assessment of embodied cognition. Is a written form the only or indeed the best strategy? We examine undergraduate programmes in professional areas by observing candidates in their professional capacity. Should we be including this in doctoral programmes or at least asking for some form of embodied demonstration? Forms of assessment of embodied cognition need to be examined along with appropriate criteria. Some lessons can be learned here from the examining of PhDs with a practice-based element. The Middlesex work based learning criteria attempt to include new criteria along with the more traditional ones associated with doctoral study. What is the relationship between a PhD with practice based elements and a Professional Doctorate in this area and can they learn from one another? This raises questions about the traditional shape of a thesis. How much text should accompany more embodied presentations of knowing? This again raises new questions about how far the whole thesis needs to be in a permanent form bearing in mind that embodied ways of knowing are often more ephemeral than words.

This paper calls for HE to help heal a serious split in western society in terms of the values it embraces at doctoral level. It calls for the prizing of knowledges generated by means of embodied cognition at least as highly as those originating in disembodied argument. It sees the development of Professional Doctorates as what Foucault, in Ball (1990) called a strategy of resistance to prevailing forms of truth. It has interrogated how this will call into question the structures surrounding doctoral study – not negating traditional practices but enriching them and expanding them in ways that will deeply benefit the wider society.

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