Making original contributions to knowledge through Living Theory research

Jack Whitehead

1th November 2017

The purpose of this paper is to help Living Theory doctoral researchers clarify and justify their original contributions to educational knowledge whilst fulfilling the other standards of judgement for a PhD degree from the University of Cumbria (see Appendix - extracts the Research Students Handbook from the University of Cumbria). The paper is available at:

<http://www.actionresearch.net/writings/jack/jwstandardsuofc011117.pdf>

A summary of the paper is available at:

<http://www.actionresearch.net/writings/jack/jwknowsummary011117.pdf>

What distinguishes a claim to knowledge in terms of epistemology is its unit of appraisal (what is being judged), the standards of judgement (how the judgments are being made) and the logic (the mode of thought that distinguishes the claim as rational). Therefore, when your thesis is assessed it is important to be clear about the nature of your original contribution to knowledge. Do bear in mind that your contribution should include: a systematic acquisition of, and insight into, a substantial body of knowledge including the primary literature in your particular area of interest and an ability to relate theory and concepts to evidence in a systematic way and to draw appropriate conclusions based on the evidence (Appendix)

In Living Theory research **the unit of appraisal** is an individual’s explanation of their educational influences in learning. These could be influences in their own learning, in the learning of others and in the learning of the social formations that influence practice and understandings. Because your explanation must include insights from the primary literature in your area of study your explanation must make a contribution to knowledge beyond an ‘egotistical’ perspective. Therefore, when your thesis is assessed it is very important that you clearly communicate that the unit of appraisal is your explanation of your educational influences in learning and that this explanation is making an original contribution to educational knowledge and a contribution to educational research methodology.

**The living standards of judgment** include the energy-flowing ontological and relational/social values that are used by an individual to give meaning and purpose to their lives and which are used as explanatory principles. The distinction between the unit of appraisal and the standards of judgment is that the unit is the individual’s explanation of their educational influence in learning. The standards are the values that are used as explanatory principles and to evaluate the validity of the explanation as an original contribution to knowledge. The standards are living (Laidlaw, 1996) in the sense that they are evolving in the course of their clarification and communication. The embodied expressions of the meanings of these ontological values are clarified in the course of their emergence in practice. Digital visual data is often used, with a process of empathetic resonance and empathetic validity, for clarifying and communicating the meanings of these energy-flowing values that are used in the generation of evidence-based explanations.

**Living logic** is the mode of thought appropriate for comprehending a living-educational-theory as rational. Marcuse (1964, p. 105) describes logic as the mode of thought appropriate for comprehending the real as rational. Hence its importance in judging the rationality of an original contribution to knowledge. You can appreciate something about the 2,500 year disagreements between formal and dialectical logicians, in which they challenge the rationality of each other’s logics, from the disagreements between Popper and Marcuse in the middle of the 20th Century (Popper, 1963, pp. 316-7; Marcuse, 1964, p. 111). Because it is the logic of your explanation that will determine its comprehensibility it is important that you clarify for your reader the logical form your thesis takes to communicate the rationality of your explanation.

It is usual for a Living Theory researcher to include in their thesis an exploration of the implications of asking, researching and answering questions of the kind, ‘How do I improve what I am doing?’. The ‘I’ in such a question is often experienced as a living contradiction in the sense that the ‘I’ holds together, in a dialectical tension, both the experience of holding certain values with the experience of their negation in practice. The inclusion of ‘I’, as a living contradiction, in the title of a doctoral thesis has not been without problems. For some 2,500 years formal logicians from Aristotle onwards have argued that contradictions must be eliminated from valid theories. The clearest exposition of this position is that of Karl Popper (1963, p 316). However, dialecticians put contradiction at the nucleus of their theorizing. One of the clearest expositions of Dialectical Logic is that of Ilyenkov (1977).

You can access my booklet on ‘A Dialectician’s Guide for Educational Researchers’ that I presented at the British Educational Research Association Conference in 1982 at:

<http://www.actionresearch.net/writings/jack/jw1982dialecticiansguide.pdf>

When an explanation of educational influences in learning draws on relationally dynamic values as explanatory principles, it is important to clarify the living logic of such an explanation. In clarifying the nature of your living logic you might find helpful the following paper on ‘A living logic for educational research’ (Whitehead, 2013, see(<http://www.actionresearch.net/writings/bera13/jwbera13phil010913.pdf>)

You might also find Thayer-Bacon’s work on ‘relational (e)pistemologies’, useful in clarifying your own living logic and the rationality of your explanation:

I offer a self-conscious and reflective (e)pistemological theory, one that attempts to be adjustable and adaptable as people gain further in understanding. This (e)pistemology must be inclusive and open to others, because of its assumption of fallible knowers. And this (e)pistemology must be capable of being corrected because of its assumption that our criteria and standards are of this world, ones we, as fallible knowers, socially construct. (Thayer-Bacon, 2003, p.7).

Anne Keizer-Remmer’s Ph.D. on ‘Underneath the surface of cosmopolitanism – in search of cosmopolitanism in higher education’ has recently been accredited at the University of Utrecht on the 6th November 2017. I am hoping to be able to send you a copy so that your reading can include sections 6., 7. and 8.

1. Adopting a new methodological perspective

Introduction. The oyster and the pearl Epistemological perspective. Living Educational Theories: An epistemology of practice in practice.

Nutshell version of the building blocks of Whitehead’s argument. What does Whitehead mean by ‘Living Educational Theory’? What does Whitehead mean by an ‘Epistemology of Practice’? Applying LET to my thesis: feedback loop.

Setting the stage for the Meeting

1. The meeting

Welcome to the Task Force Team Cosmopolitanism (TFTC) meeting. Presentation: A Living Educational Theory (LET). Discussion: How can cosmopolitanism be translated from university strategy into educational practice?

Intermezzo III: A letter to Sophie

1. Coming to Conclusions & Making the action-reflection spiral work: How do I improve my practice? What have I discovered about cosmopolitanism by exploring educational processes and the educational context in which cosmopolitanism was introduced? What have I discovered about education by exploring cosmopolitanism in socio-analytical depth? What have I discovered about educational research given my attempts to explore both cosmopolitanism and educational processes? How can I make sense of what I have discovered? How can I use what I have learned to develop new theory, and incite the action-reflection spiral?

Epilogue: Bringing an exciting PhD journey to an end.

There are clear distinctions between Living Theory and other forms of research that you may find useful. I am thinking here of Action Research; Narrative Research; Phenomenological Research; Grounded Theory Research; Ethnographic Research; Case Study Research; Autoethnographical Research.

**Action Research**

One way of distinguishing Action Research is through the use of action-reflection cycles in which researchers identify their values-based concerns; what they are going to do following an action plan; what data they are going to collect to make a judgment on the influences of the actions; evaluating the influences’; redefining concerns and actions in the light of the evaluations. Living Theory research can include Action Research but is distinguished through the creation of a living-educational-theory as an explanation of educational influence in learning. Action researchers are not required to create a living-educational-theory. Such a creation is a necessary condition of being a Living Theory researcher.

**Narrative Research**

A living theory, as an explanation by an individual of their educational influences in their own learning and in the learning of others can be understood as a form of  narrative research in that it begins with the experiences as lived and told by the  researcher. Within the narrative what distinguishes the story as a living theory is that it is an explanation of the educational influences of the individual in their own learning and in the learning of others. Not all narratives are living theories, but all living theories are narratives.

**Phenomenological Research**

Living theories are phenomenological in that they begin from the experience of the phenomenon the researcher is seeking to understand.  The purpose of a living theory differs from the basic purpose of phenomenology in that the purpose of phenomenology is to produce a description of a universal essence  whilst the purpose of a living theory is to produce a unique explanation of the individual’s educational influences in learning.

**Grounded Theory Research**

A living theory is similar to a grounded theory in that the intent of a living theory is to move beyond description and to generate a valid explanation for an individual’s educational influence in his or her own learning and in the learning of others. Living Theory differs from Grounded Theory in that the theory is not an abstract analytic scheme of a process. A living theory is an explanation for an individual’s educational influence in learning where the explanatory principles are not abstract generalizations. The explanatory principles are the energy flowing values and understandings the individual uses to give meaning and purpose to their life and to explain their educational influences in learning.

**Ethnographic Research**

A living theory is similar to ethnographic research in paying attention to the cultural norms within which the researcher is acting and researching. It differs from ethnographic research in that it does not focus on an entire culture group. A living theory is an explanation of an individual’s educational influence in their own learning, in the learning of others and in the social formations in which the researcher is living and working. In engaging with the cultural influences in the individual’s learning, especially in the learning of social formations, Living Theorists include an understanding of cultural influences in the explanations of their educational influences in learning. These influences can be emphasized in the application of Habermas’ (976) four criteria of social validity, especially with the criterion of demonstrating an awareness of the normative background from within which the researcher is speaking and writing.

**Case Study Research**

A living theory may sometimes be mistaken as a case study. Stake (2005) refers to case study as a choice of what is to be studied within a bounded system. Living theories generated from a perspective of inclusionality, as a relationally dynamic awareness of space and boundaries, are aware of the experience and expression of a life-affirming and unbounded energy flowing through the cosmos.  The main difference between a case study and a living theory is that a case study is a study of a bounded system whilst the explanatory principles of living theories are not constrained by a bounded system. Living-theories articulate explanatory principles in terms of flows of life-affirming energy, values and understandings that are transformatory and not contained within a bounded system.

If you are conducting an enquiry of the kind ‘How do I improve what I am doing?’ with the intention of improving your practice and generating knowledge in your living educational theory, I think that you will need to embrace Dadds’ and Hart’s (2001) idea of methodological inventiveness in the creation of both your living educational theory and your living theory methodology (Whitehead, 2009).

**Autoethnographical Research.**

As a Living Theory researcher I identify more closely with autoethnography than the other methodologies whilst continuing to draw insights from the other methodologies. I particularly like the following about autoethnographic texts:

In these texts concrete action, dialogue, emotion, embodiment, spirituality, and self-consciousness are featured, appearing as relational and institutional stories affected by history, social structure, and culture, which themselves are dialectically revealed through action, feeling, thought, and language. (Ellis & Bochner, 2000, p. 739)

My doctorate (Whitehead 1999) can be seen, in the above sense, as an autoethnographic text. It is also a Living Theory autoethnography in the sense that the relational and institutional stories are presented within an explanation of my educational influence in my own learning, in the learning of others and in the learning of the social formations that influence my practice and understandings.

**Engaging with Living Theory research**

One of the qualities that examiners use to judge a living-theory thesis is an engagement with the relevant literature. In Living Theory research this involves an engagement with both traditional theories and living-theory theses. To strengthen a living-theory thesis it is wise to show how an individual living-theory can be understood as making a contribution to a global social movement and an ecology of knowledges.

Santos emphasises that credibility in the ecology of knowledges does not entail

discrediting scientific knowledge.

In the ecology of knowledges, finding credibility for non-scientific knowledges does not entail discrediting scientific knowledge. It implies, rather using it in a broader context of dialogue with other knowledges. In present conditions, such use of scientific knowledge is counterhegemonic. The point is, on the one hand, to explore alternative conceptions that are internal to scientific knowledge and have become visible through the pluralist epistemologies of various scientific practices (feminist epistemologies in particular) and, on the other, to advance interdependence among the scientific knowledges produced by Western modernity and other, non-scientific knowledges. (de Sousa Santos, 2014, p. 189)

You might use your engagement with the following 4 Living Theory doctorates from Holland, Nepal, South African and Australia to demonstrate a direct relationship between your living-educational-theory and a global contribution to educational knowledge. Your values-based explanatory principles carry your hope for the flourishing of humanity. Each of the Living Theory theses below expresses a unique constellation of values that also carry the Living Theorist’s hope for the flourishing of humanity. By directly connecting your explanatory principle(s) to the following principles you can establish your contribution to an ecology of knowledges within global contexts that legitimise educational knowledge. I am thinking here of the values of cosmopolitanism, soulful enquiry, public health, environmental activities with community-based auditing. You do not need to be limited to an engagement with these theses. There are over 40 Living Theory theses at <http://www.actionresearch.net/living/living.shtml> for you to choose from. I have chosen the following 4 theses because they highlight the global spread of Living Theory research.

1. Keizer-Remmer, A. (2017) Underneath the surface of cosmopolitanism – in search of cosmopolitanism in higher education. Ph.D. Thesis, University of Utrecht.

**What have I discovered about educational research given my attempts to explore both cosmopolitanism and educational processes?**

One of the most important things I discovered about Whitehead’s Living Educational Theory, is that **values** are central in this form of educational research.

The starting point for my PhD was the tension between the values of the various

stakeholders in the educational environment of HEIX (a “concern”, Whitehead,

2000, p. 93). LET is an excellent method to develop “a unique explanation produced by an individual” (Whitehead, 2014b, p. 82), as LET acknowledges the

individual’s concerns and values to be vital to the improvement of education.

Insisting on values as a central factor of education, enriches the educational

process, the teacher’s life, and one’s professional satisfaction. Equally, it enables

students to enrich their learning and their lives.

While I was exploring the value of cosmopolitanism both in its conscious

and unconscious manifestations within education, I came to realise that I was

driven by Whitehead’s central question: “How do I improve my practice?”

(Whitehead, 2000, 2008). I became aware of how I “use[d] [my] values as educational standards to create [my] disciplines of education” (Whitehead, 2000,

p. 98) – admittedly, initially in an excessively judgemental way.

Values imply a critical approach and a dynamic process to develop them.

Educational research recognises these dynamic, sometimes fuzzy processes, and

addresses them without excluding the self (the educational professional) or the

values the educational professional holds. Educational research like LET does

not assume an ‘objective’ reality. On the contrary, it puts the subjective teacher

in the centre, and empowers the teacher to initiate change. Such educational

research appreciates the specificity of the particular teacher, with her particular

value orientation, and her distinctive influence on educational processes in a specific educational setting. Educational research is about recognising the potential for improvement; allowing the professional to be imperfect as she is not always fully living up to her values; setting change in motion; monitoring the process; engaging in ongoing and cyclical processes; appreciating creative, innovative, and experiential ways of research; remaining focussed on a specific value-set and how that value-set is enacted; and being committed to improving practice.

Educational action research looks beyond the curriculum and learning outcomes;

employs a critical stance; is driven by hope; views values as “energy-flowing”

(Whitehead, 2009a, p. 87); focusses on processes; and produces by its iterative

nature an “action reflection spiral” (Whitehead 2000, p. 93).

My educational research revealed my concerns, my emotions, my values,

and my expectations of education. It also revealed my ethical stance towards

marketing communication and intended curricula – my own hypocrisy and

judgement. I have been confronted by the educational processes at HEIX, the

students’ conscious responses to cosmopolitanism, and the students’ unconscious responses to cosmopolitanism, which led to surprising findings. SPM, the experiential action research method I used, not only revealed those “surprising facts” (Mersky, 2014, p. 20); such a “socioanalytic diagnostic intervention” (p. 20) also helped me to make sense of the findings. (pp. 301-302)

2) Qutoshi, S. B. (2016). Creating living-educational-theory: A journey towards transformative teacher education in Pakistan. PhD Thesis Kathmandu University, Nepal. Retrieved from <http://www.actionresearch.net/living/living.shtml>

**Abstract**

This thesis illuminates my multilayered and emergent soulful-inquiry into the problem of culturally disempowering nature of teacher education which emerged by autobiographical excavation of my socio-pedagogical context. My aim in this research was to identify alternative ways of addressing research problem which invoked me to generate a host of research questions that came up with five key emergent themes of my inquiry: 1) Dictating and communicating views of leadership; 2) Narrowly conceived traditional view of curriculum images; 3) Conventional and somehow learner-centered pedagogies; 4) Assessment as 'of' learning and 'for' learning approaches; and 5) Objectivist and constraint pluralist research practices.  
  
My purpose with these research themes was to demonstrate my embodied values through exploring, explaining and interpreting the themes arising from research questions, and to envision a transformative teacher education and research practices with reflexivity, inclusive logics, multiple genres and perspectival language as multiple ways of knowing. I employed a Multiparadigmatic Design Space (MDS) taking on board the paradigms of: 1) Interpretivism to make subjective level meaning making by embracing 'emergence' as nature of my inquiry; 2) Criticalism to develop my critical reflexivity in identifying and addressing my research problem; 3) Postmodernism to engage with multiple genres and logics for cultivating different aspects of my experiences; and 4) Integralism to embrace an inclusive-holistic view of MDS in representing my visions of transformative teacher education and research practices in Pakistan. I used this epistemic praxis as professional development, and yet a morphing way of knowing the self and the culture/beyond, an approach that enabled me to generate new knowledge on cultural-contextual educative practices of teacher education and research endeavours.  
  
These critical-creative epistemologies, in return, enabled me to recognize deep-rooted assumptions, expectations, beliefs and practices, and re/constructing them through scholarly interpretations and envisioning. Going through such soulful inquiry, making critical reflection on my own lived experiences, embracing pedagogical thoughtfulness, and yet accepting self as a change agent, my multidimensional inquiry offers five transformative visions for teacher education and research practices in Pakistan: 1) A living-educational-theory of inclusive co-leadership with embodied values of intention of doing good for others, humility for humanity, care of self and others with ecological consciousness, love and peace; 2) The metaphor of montage conceiving a liberating view of curriculum; 3) Critical-creative pedagogies for empowering view of education; 4) A holistic view of authentic-developmental assessment; and 5) An innovative-integral view of transformative research. These key learning outcomes are likely to bring emancipatory and transformative soul in the culturally embedded linear teacher education program. (March 17, 2016)

1. Wolvaardt, J. E. (2013) Over The Conceptual Horizon Of Public Health: A Living Theory Of Teaching Undergraduate Medical Students. PhD Thesis, University of Pretoria, South Africa. Retrieved 2 November 2017 from <http://www.actionresearch.net/writings/wolvaardtphd/Wolvaardtphd2013.pdf>

**Abstract**

The health needs of society extend beyond the treatment of the individual and the ill. These needs are at the core of public health which addresses health at a population-level. Regulations dictate that public health must be included in the South African medical curriculum, but healthy populations hold little interest for medical students. As a result public health remains over the conceptual horizon of medical students.

At the University of Pretoria the responsibility for the inclusion of public health is the responsibility of the School of Health Systems and Public Health. Participation in the medical curriculum is a minor but important part of my educational practice. But two of my professional values – care and agency – have been denied in that practice. The central purpose of the research was to construct the meaning of my educational practice with the aim of progressive realisation of my values.

The study explored how public health is conceptualised as a subject in the medical curriculum at the University of Pretoria, the intended educational achievements of public health in the curriculum and the optimal strategies for its inclusion.

An action research living theory design made use of a concurrent embedded mixed- methods approach. Data was gathered primarily from external experts, the academic staff of the School of Medicine and the SHSPH, key academic documents and the medical students.

A constructivist grounded theory approach was employed to construct meaning from the findings. The findings revealed the effect of the historical decision to split public health and medicine and the resulting increasing distance between the disciplines. Resting on this fractured foundation is the understanding of what public health is. The understanding of public health suggests a multiple concurrent understanding that is constructed by diverse and seemingly conflicting perspectives while the discipline remains identifiable as public health.

The curricular intentions of including public health in the medical curriculum at the University of Pretoria are characterised by a varied topography that includes externally and internally imposed educational tensions, constraints and intractable contradictions. Curricular intentions revolve around ontological aspirations. The medical students’ perspectives of their educational experience in public health are surprisingly similar to those of students in other countries.

The current and imagined strategies to include public health formed the basis for the scepticism of educational orthodoxy and suggested the exploration of the dual uncontested spaces – social media and the elective experience in the medical curriculum. The findings from my innovative practice in using the elective experience challenge the notion that public health is over the conceptual horizon of medical students. A theme that runs through the narrative suggests, instead, that other conceptual horizons obscure meaningful engagement with medical students around public health.

This research is a rich account of my complex context and my connected practice and through action research I claim to live my values of care and agency. My living theory of practice as a form of meaning making could help others to look over their own conceptual horizons in search of wholeness.

Key words: public health, action research, living theory, practitioner research, curriculum development

1. Tattersall, P. (2011) How am I generating a living theory of environmental activism with inclusionality? PhD. Thesis, University of Western Sydney, Australia. <http://www.actionresearch.net/living/tattersallphd/philtphd.pdf>

**Abstract**

This thesis is a self-study of my development as an environmental activist. I trace the generation of my living theory of environmental activism over a period of 37 years. The originality of the thesis lies in both its methodological inventiveness and original contribution to knowledge in explaining the development of an environmental activist through propositional, dialectic and inclusional phases of inquiry and understanding.

Methodologically the thesis uses insights from ethnomethodology in a life history narrative that shows the importance of creative responses to both family relationships and scientific enquiry in growing through a dialectical process towards an inclusional self-awareness of oppressive colonising influences. The development of my ‘activist’ approaches and styles are described and analysed in terms of two transitional phases, firstly into a young scientist using detached, propositional methods of inquiry, then into environmental activism, using dialectical methods, prior to my on-going emergence into natural inclusional approaches. The analysis includes categories from traditional learning theories.

In an analysis of my values and standards of judgement Living Theory is used to describe, analyse and discuss a series of ‘Living Contradictions’ leading to my unexpected appreciation of ‘Natural Inclusional ways of knowing’. I see Natural Inclusionality as having possible future application in social activism. Natural Inclusional standards of judgement of environmental activism are used as a fluid creation to evaluate the quality of the thesis, including its contribution to living epistemologies and ontologies.

This thesis offers an original contribution to knowledge of a new form of social activism, Community Based Auditing (CBA), as a methodology conceived within what is described as ‘Post Normal Science’. The need for further development and refinement of this methodology is discussed, along with the case for its use and illustrative examples of its application.

**References**

de Sousa Santos, B. (2014) Epistemologies of the South: Justice against Epistemicide. London; Paradigm Publishers.

Ellis, C. & Bochner, A. P. (2000) Autoethnography, Personal Narrative, Reflexivity: Researcher as subject, pp. 733-768 in Denzin, N. & Lincoln, Y. (2000) Handbook of Qualitative Research, Second Edition. Thousand Oaks, California; Sage Publications.

Laidlaw, M.  [(1996) How can I create my own living educational theory as I offer you an account of my educational development? Ph.D., University of Bath.](http://www.actionresearch.net/living/moira2.shtml) Retrieved 11 October 2017 from <http://www.actionresearch.net/living/moira2.shtml>

Ilyenkov, E. (1977) Dialectical Logic, Moscow; Progress Publishers.

Marcuse, H. (1964) One Dimensional Man, London; Routledge and Kegan Paul.

Popper, K. (1963) Conjectures and Refutations, Oxford, Oxford University Press.

Thayer-Bacon, B. (2003) Relational (e)pistemologies. Oxford; Peter Lang.

Whitehead, J. (2013) A Living Logic for Educational Research. A presentation at the 2013 Annual Conference of the British Educational Research Association, University of Sussex 3-5 September 2013. Retrieved 1 November 2017 from <http://www.actionresearch.net/writings/bera13/jwbera13phil010913.pdf> .

**APPENDIX**

**From pages 23-24 of the Research Students Handbook from the University of Cumbria (Retrieved 31 October 2017 from**

[**https://www.cumbria.ac.uk/media/university-of-cumbria-website/content-assets/public/graduateschool/documents/GraduateSchoolHandbook.pdf**](https://www.cumbria.ac.uk/media/university-of-cumbria-website/content-assets/public/graduateschool/documents/GraduateSchoolHandbook.pdf)

A successful candidate for the degree of PhD should be able to demonstrate (taken from

Lancaster University Manual of Academic Regulations & Procedures):

a)- an ability to conceptualise, design and implement a major project for the generation of

significant new knowledge, applications and/or understanding, using appropriate concepts

and methods, where necessary adapting these to meet unforeseen issues;

b)- a systematic acquisition of, and insight into, a substantial body of knowledge including the primary literature in their particular area of interest;

c)- an ability to relate theory and concepts to evidence in a systematic way and to draw

appropriate conclusions based on the evidence;

d)- critical investigation of their research topic resulting in the creation and interpretation of

knowledge which extends the forefront of their discipline through original research;

e)- a detailed understanding of, and ability to use, applicable techniques for research and

advanced inquiry in their field;

f)- that they can make informed judgements on complex issues in their field, often in the

absence of complete data;

g)- that the research is of publishable quality and is of a standard which satisfies peer review;

h)- that they are competent as an independent researcher in their discipline and capable of

continuing to undertake research at an advanced level, contributing substantially to the

development of new techniques, ideas or approaches;

i)- an understanding of the place of the research in the wider context;

j)- an ability to recognise the limitations of the research undertaken and to be able to suggest

ways of overcoming these in future research;

k)- an ability to write clearly and effectively and to meet approved criteria for formal

presentation of a written thesis;

l)- the qualities and transferable skills necessary for employment requiring personal

responsibility and autonomous initiative in complex and often unpredictable situations;

m)- the ability to communicate their ideas and conclusions clearly and effectively to specialist and non-specialist audiences.

The UK Quality Code for Higher Education Part A: Setting and Maintaining Academic Standards Framework for Higher Education Qualifications of UK states that Doctoral degrees are awarded to students who have demonstrated (2014, pg.30):

1. the creation and interpretation of new knowledge, through original research or other advanced scholarship, of a quality to satisfy peer review, extend the forefront of the discipline, and merit publication
2. a systematic acquisition and understanding of a substantial body of knowledge which is at the forefront of an academic discipline or area of professional practice
3. the general ability to conceptualise, design and implement a project for the generation of new knowledge, applications or understanding at the forefront of the discipline, and to adjust the project design in the light of unforeseen problems
4. a detailed understanding of applicable techniques for research and advanced academic enquiry.

Typically, holders of the qualification will be able to:

a)- make informed judgements on complex issues in specialist fields, often in

the absence of complete data, and be able to communicate their ideas and conclusions clearly and effectively to specialist and non-specialist audiences

b) continue to undertake pure and/or applied research and development at an advanced

level, contributing substantially to the development of new techniques, ideas or

approaches.

And holders will have:

1. the qualities and transferable skills necessary for employment requiring the exercise of personal responsibility and largely autonomous initiative in complex and unpredictable situations, in professional or equivalent environments.