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An Investigation in the Methodological Approaches used in Doctoral Business Research in Ireland

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Abstract: The sizeable increase in doctoral business research in Ireland over past decades is characterised by a diversity of research paradigms and the methods applied. To achieve research objectives, doctoral researchers should identify the methodological framework of inquiry that they will use to address and answer their research question. This involves taking a stance on divergent philosophical assertions such as ontology and epistemology, which reflect how they view the world. Researchers often proceed to select what is believed to be the best-suited research approach – either qualitative, quantitative, or a mixture between them – with their corresponding subset of data collection and analysis techniques. This paper aims to examine extant doctoral research in business over a ten-year period within the Irish academic community to ascertain prominent methodological practices, recent trends, and the philosophical underpinnings surrounding the choices made. A comprehensive typology into the research methodologies applied by doctoral students in Ireland provides insights into the inherent and necessary philosophical assumptions underpinning the choice of methodology. The study is limited to a sample of 120 PhD dissertations published in Irish business school repositories. These were reviewed, analysed, and categorised within the proposed framework that gives an inclusive birds-eye view of doctoral business and management research in Ireland. Results indicate that the methodology of using mixed methods appears as the foremost choice for Irish business researchers. This study also offers academics with insights into current trends in business research approaches and introduces novice researchers embarking on their research journeys to methodological concepts and tools.

Keywords: Doctoral Research, Ireland, Philosophy, Methodology, Quantitative, Qualitative, Mixed Methods

1. Introduction

The goal of business research is to provide systematic inquiry which can provide answers that will allow organisations to solve both seen and unforeseen problems (Saunders et al. 2012; Blumberg et al. 2011; Denzin & Lincoln 2011). Research into these problems is a requirement so as to contribute to the existing stock of knowledge (Kothari 2004). Hence, the PhD researcher provides answers across the continuum of research, adding value to the stock of knowledge within academic and practitioner areas of interest. Quantitative, qualitative and mixed methodologies are the three most common approaches to answering the questions posed by business research. The researcher is required to address a series of ‘*what?*’, ‘*why?*’, and ‘*how?*’ questions before deciding on their methodological choice (Bryman & Bell 2007). The purpose of this paper is to analyse the approaches used by doctoral researchers over the past ten years within the business schools of five different Third-level institutions in Ireland. A period of 10 years has been chosen since during this period a significant increase in PhD research productivity has taken place and hence this period would provide an interesting timeframe for analysis. Another objective of this paper is to introduce the complexities and antecedents of selecting a methodological stance within PhD research. Researchers, therefore, have a need to understand the ‘lens’ through which they adopt their worldview. They then proceed to understand and develop their ontological and epistemological stance which leads them to the methodological choices which they will incorporate into their research. Thus, a review of the philosophical assumptions is provided to give a succinct snapshot of the philosophical journey which each researcher is required to take before, during and perhaps after, receiving the *Doctorate of Philosophy* (PhD) degree.

2. Philosophical Paradigm

2.1 Paradigm

Guba and Lincoln (1994), describe a paradigm as “a set of basic beliefs (or metaphysics) that deals with ultimates or first principles. It represents a worldview that defines, for its holder, the nature of the world, the individual’s place in it, and the range of possible relationships to that world and its parts”. It is these relationships which guide and influence the PhD researcher in their goal of answering a research question. Therein, a research paradigm is the compilation of tentatively held together assumptions, concepts, and propositions which arise from an individual’s basic beliefs, attitudes and feelings in relation to thinking and research (Krauss 2005). The word ‘paradigm’ and its meaning have caused some debate across social sciences. As such, a paradigm can be more clearly described as a way of examining social phenomena and ultimately providing explanations and particular understandings of the phenomena in question (Saunders et al. 2012). Throughout extant literature the paradigmatic position adopted by the researcher can come from an eclectic array of philosophical views. However, the philosophical underpinnings which guide all researchers fall under a cohesive triad of basic beliefs about the ontology and epistemology which guide methodological choices (Table 1). Worldviews adopted by the researcher can be expressed using, for example, four commonly used research philosophies, namely: Positivism, Post-positivism, Critical Theory, and Constructivism.

Table 1: Basic Beliefs (Metaphysics) of Alternative Inquiry Paradigms

<i>Item</i>	<i>Positivism</i>	<i>Post-positivism</i>	<i>Critical Theory</i>	<i>Constructivism</i>	<i>Pragmatism</i>
Ontology (nature of reality)	Naïve realism – “real” reality but apprehensible	Critical realism – “real” reality but only imperfectly and probabilistically apprehensible	Historical realism – virtual reality shaped by social, economic, political, cultural, ethnic, and gender values; crystallization over time	Relativism – local and specific constructed realities	Multiple subjective and objective realities. Fact v values
Epistemology (knowledge)	Dualist/ objectivist; finding true	Modified dualist/objectivist; critical tradition /community; findings probably true	Transactional/sub jectivist; value-mediated findings	Transactional/ subjectivist/ created findings	Knowledge is both constructed and based on the reality of the world we live in. Accepts paradigm conflicts between quantitative and qualitative epistemologies Anti-philosophy.
Methodology (research strategies)	Experimental/ manipulative; verification of hypotheses; chiefly quantitative methods	Modified experimental - manipulative; critical multiplism; falsification of hypotheses; may include qualitative methods	Dialogic/dialectic	Hermeneutical/ dialectical	Constant modification in a dynamic homeostatic of an infinite loop Dialectical eclecticism and pluralism of methods and perspectives

Source: Adapted from Denzin and Lincoln (2011), Onwuegbuzie et al. (2009), Johnson and Onwuegbuzie (2004)

2.2 Ontology

Ontology originates from the Greek words for 'thing' and 'rational account' (Given 2008). It relates to the nature of 'reality', that is the reality of an 'objective' nature, and whether or not reality is a product of one's mind coming from individual cognition (Burrell & Morgan 2000). In other words, ontology looks at the nature of reality as seen through the lens of the individual (Saunders et al. 2012). It represents what there is to know about the reality of the world, which is made up of underlying physical and ecological systems and inhabited by individuals whose opinions are based on their values. The values are affected by the individual's experiences, which also lead them to seek out knowledge to achieve their wishes (Allen & Varga 2007). There are two perspectives correlated to ontology: *objectivism* and *subjectivism*. Objectivists view the world as being separate or external to the social actors (Saunders et al. 2012) and that the world predates individuals (Holden & Lynch 2004). Objectivism envisages the phenomenon under investigation as tangible and measurable. Since the researcher is external to what is being researched, quantitative methodologies are most commonly used within the objectivist's worldviews. The quantitative methodology believes that all phenomena can be reduced to empirical indicators which represent the truth (Sale et al. 2002). These quantifiable observations are more analytical in nature and lend themselves to statistical analysis (Remenyi et al. 1998). Subjectivism, on the other hand, relates to perceptions and consequent actions of social actors. These actions are in a constant state of revision since they are deemed to be socially constructed (Saunders et al. 2012). Subjectivists view reality as being influenced by the society in which phenomena are created (Saunders et al. 2012; Holden & Lynch 2004). In other words, the world around in which social actors engage in phenomena is formed by socially constructed events. Therefore, from a research perspective, the interpretation of human affairs has fundamental implications in understanding actions and consequences (Burrell & Morgan 2000). This is reiterated by Holden and Lynch (2004), who also argue that it is impossible to categorise phenomena since "*phenomena are engaged in a process of continuous creation*".

2.3 Epistemology:

The origins of epistemology lie in the Greek word 'epistêmê' meaning 'knowledge' (Krauss 2005). Epistemology is the philosophy of how we come to acquire knowledge and the beliefs on the way to generate, understand and use knowledge that are deemed to be acceptable and valid (Wahyuni 2012). According to extant literature, epistemology comprises differing, and sometimes complimentary, philosophies such as Positivism, Interpretivism and Realism (Saunders et al. 2012). For the social researcher, positivism uses deductive hypothesis (explanations) for knowledge acquisition and testing by measuring reality. The positivist stance sees that the social world should be viewed objectively. Since the social world exists externally, independent of the researcher, and hence attempts to produce generalisable results. Interpretivism adopts an approach to acquire knowledge by developing an understanding of phenomena through deep-level investigation and analysis of those phenomena. It does not claim generalisability of outcomes, but rather provides results that are limited to a certain context. Finally, the realist stance ascertains that scientific theories give a literally true account of the world. However, there is also the understanding that the people and their behaviours require a subjective acknowledgement, since subjectivity is inherent within all human (Blumberg et al. 2011; Remenyi et al. 1998). Epistemology reflects how a researcher's worldview influences knowledge (*epistêmê*) and how it is articulated and communicated with fellow human beings in a way which can be easily understood and interpreted (Burrell & Morgan 2000). Accordingly, their assumptions of *what constitutes reality* determines how they attempt to *garner knowledge about such reality*. That is, their view of ontology affects their epistemological underpinnings. Subsequently, their choice of methodology follows their ontological and epistemological assumptions (Holden & Lynch 2004).

2.4 Research Methodology

Research methodology consists of a road map which highlights the rules and postulates methods that researchers employ to render their work open to analysis, critique, replication, repetition, and/or adaptation and to choose research methods (Given 2008). The methodology must make sense to both academic and management practices. It must stand up to scrutiny and must produce results that are understood and respected by both traditions (Cole et al. 2011). Research methodology sits along a continuum which at one end of the spectrum lies pure qualitative research methods and at the other lies pure quantitative research methods which may be adopted to analyse data. Between both ends of a continuum are differing mixed methods options available to the researcher, depending on their research question (Figure 1). The dichotomy of both qualitative

and quantitative is evident in that the characteristics of quantitative (or scientific) methodology is one of formality and emphasises rigour based on mathematical tools, whereas qualitative methodologies display characteristics of insight based on intuition and tend to rely on textual and descriptive data (Walle 1997). A final distinction is made between methodology and methods. Wherein there may be confusion in the choice of description. Methodology for example, is related to the philosophy that guide how knowledge should be gathered and the systematic way in which the research problem is solved. Whereas, research methods is the data gathering techniques used for conduction of research (Kothari 2004).

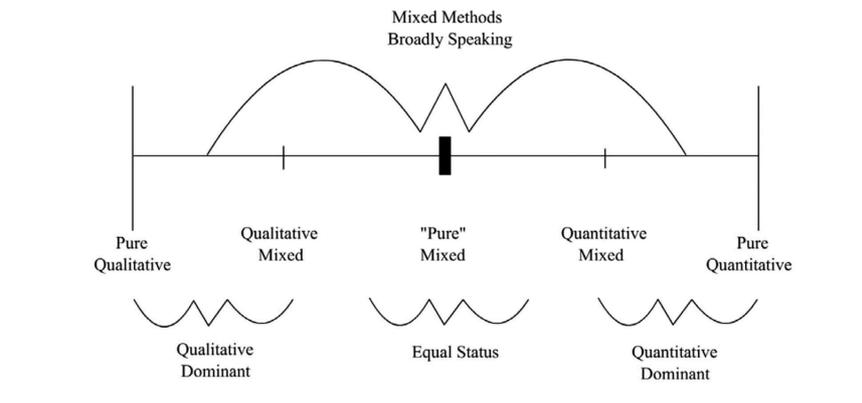


Figure 1: Major Research Methods

However, there is a growing adaptation through a pragmatic stance, that a combination of beliefs may lead to a holistic process to answering research questions. Suggesting that pragmatists can utilise differing methods along the continuum (as illustrated in figure 1) through the implementation of the 'pragmatic rule' which enables truth to be attained with the emphasis on 'what works best' to address the research question (Wahyuni 2012; Johnson & Onwuegbuzie 2004; Sale et al. 2002). Hence, pragmatists researchers can have a mixture of philosophical positions (Onwuegbuzie et al. 2009). In that, pragmatists believe it natural to use quantitative methods with qualitative methods or qualitative methods with quantitative methods or mono-qualitative methods, or mono-quantitative methods depending on the requirements of research.

3. Research Methodologies

3.1 Quantitative Methodology:

In the business context, quantitative methodology (or scientific methodology) has been described as the traditional focus of social research. Which applies a natural science approach (Johnson & Onwuegbuzie 2004). As such quantitative (and indeed qualitative) methodologies are predominantly based on the philosophical assumptions of the researcher. With ontological realism, positivist epistemological stances; with determinism driving the final answers to reality and the social phenomena (Cole et al. 2011; Bryman 1984; Holden & Lynch 2004). Thus, quantitative methodologies tend to seek law-like generalisability, termed nomothetic (Wahyuni 2012). Hence, for verification purposes, quantitative methodology uses numerical data as its prime focus using methods such as questionnaires, surveys, and/or historical numerical data (Saunders et al. 2012). Quantitative studies can rely on either (1) *Conceptual-quantitative secondary data*, where advanced mathematical techniques are used to develop and then test new models, or (2) *Empirical-quantitative primary data*, collected by the researcher (Chatha et al. 2015). Quantitative analysis enables the researcher to gain a statistical representation of the phenomena, since "reliability and validity are tools of an essentially positivist epistemology" (Nahid Golafshani 2003). Thus, by following the scientific choice of quantitative methodology, the researcher is attempting to delineate the phenomena in question into measurable repeatable verification annals. In doing so, quantitative methods used may stand up to greater validation and rigour amongst peers (Walle 1997). Hence, those using quantitative methodologies tend to adopt an ontology of objectivism and a positivist epistemological

approach to research, especially when used with predetermined, hard, measureable results with highly structured data collection techniques (Saunders et al. 2012; Cole et al. 2011). Finally, quantitative methods are designed to answer the 'who' and the 'what' of the research topic (Given 2008) but does not fully answer the 'why' of a phenomenon or event trait.

3.2 Qualitative Methodology:

Qualitative methodology is particularly important in behavioural sciences as it captures the underlining explanations for certain human behaviour (Kothari 2004). Through using tools such as interviews, the researcher uses non-numerical textual or descriptive data, thus, answering the 'why' question of a phenomena (Saunders et al. 2012; Given 2008). The qualitative methodology is based on interpretivism/constructivism (Sale et al. 2002) which takes on a subjective ontological view of the world, in that reality is socially constructed (Saunders et al. 2012). Qualitative research is thus deemed to be more fluid in nature, seeing the world from the point of view of the actor (Bryman 1984). It takes into account that there are multiple - constructed realities which cannot be explained fully through analysing numerical data (Saunders et al. 2012; Johnson & Onwuegbuzie 2004). It includes such methods as grounded theory approaches, life history narratives, participatory action research with active dialogue with the participant, and case study approaches (Wahyuni 2012; Carter & Little 2007; Guba & Lincoln 1994). Qualitative methodology prefers on hermeneutics (interpretation) approach, since the evidence cannot be reduced to numbers (Remenyi et al. 1998).

3.3 Mixed Methods

Fundamentally, mixed methods methodology uses both quantitative and qualitative data collection in order to answer a particular research question working concurrently, or sequentially with either quantitative or qualitative research methodologies taking precedence over the other (Saunders et al. 2012). Thus, a pragmatist worldview focusing on 'what works' is generally associated with the mixed methods methodology (Creswell & Clark 2011). The pragmatist paradigm, while considering theory and practice, tends to include the standpoints of both qualitative and quantitative research (Johnson et al. 2007). Mixed methods comprise four frameworks which provide possible justification for their use:

- (a) *Triangulation* - combines both quantitative and qualitative data to understand a research question;
 - (b) *Explanatory Design* - uses qualitative data to explain quantitative results;
 - (c) *Exploratory Design* - gathers quantitative data in order to help explain qualitative results
 - (d) *Embedded Design* - can use either quantitative or qualitative data to answer the research problem;
- (Creswell & Clark 2011).

Therefore, it can be argued that mixed methods offer complimentary clarification, which cannot not be gained by using a single methodology by expanding the breath and width of enquiry (Bryman 2006). Mixed methods involve the use of both qualitative and quantitative methods within the same framework. It can occur concurrently with either qualitative or quantitative analysis leading the method of analysis depending on the researcher's question (Onwuegbuzie & Combs 2010). As such mixed methods has been described as the third methodological archetype, providing the strengths of quantitative and qualitative methodologies and attempting to avoid the weaknesses of both (Venkatesh et al. 2013; Creswell & Clark 2011). Such that the weaknesses of many quantitative methods are that of the want to reduce the explanation to its simplest possible elements without looking at the subjective narrative of the phenomenon. Conversely, qualitative methods attempt to holistically understand the narrative through context derived results limiting the ability to repeatable verification (Amaratunga et al. 2002; Walle 1997). Thus, to develop a method which not only allows for repeatable objective verification while at the same time providing subjective meaning to an inquiry, it can be posited that a mixed method approach can holistically answer many research questions. Therefore, through '*multiple operationalism*', the use of more than one method helps ensure that the discrepancies within the research phenomenon or trait is not merely a function of the method (Onwuegbuzie et al. 2009).

4. Contemporary Doctoral Research in Ireland

There are 7 universities and 14 Institutes of Technology (IoT) within the Higher Education system in Ireland. Due to constraints in time, distance, and access to data, five institutions were selected as the sample group in this

study. They included four universities and one institute of technology, namely Trinity College Dublin (TCD), University College Dublin (UCD), Dublin City University (DCU), University of Limerick (UL), and finally, Dublin Institute of Technology (DIT) - where the authors are based. The other four institutions were located within 10 kilometres from DIT, which facilitated access to their individual libraries if on-line repositories were not sufficient. Access was achieved by gaining entry to academic open access domains and/or going directly to the corresponding locations for hard copy retrieval. Doctoral dissertations were retrieved for analysis of their research methodology. Dissertations were accessed in each academic institution as follows:

- DIT theses were obtained via their on-line repository and from hard copies within their library.
- UCD on-line repository was initially accessed. However, when trying to locate dissertations spanning over a ten-year period, it became evident that the repository did not hold onto enough digital copies of Doctoral research dissertations. Thus, they were retrieved from the James Joyce Library located in UCD campus over a three-day period, since access was only possible to ten dissertations at any given time.
- Dissertations from DCU were entirely retrieved using their on-line repository.
- University of Limerick was accessed by accessing an on-line open portal. However, it was noted that there was only a 5-year repository available for access and no other dissertations were available.
- Finally, TCD was accessed on location within their library. The online repository was accessible only to academic visitors or attendees of the college. Thus, the researcher had to be present onsite within their library.

Further details on the repositories used during the research analysis are provided in the Appendix.

The researcher reviewed dissertations spanning a ten-year period, where only writings from 2006 onwards were examined. Abstracts, introductions, and specifically the methodology chapters of each dissertation were read and analysed. The research looked at the methodology used in all dissertations and there was an added attempt to review the philosophical underpinnings used by each of the PhD researchers. An Excel spreadsheet was used to capture data such as: Authors' name, title of the work, research objective, paradigm used, ontological viewpoint, epistemological viewpoint, methodology, general sample size, and methods of data collection, data analysis, author's language style (active or passive), and finally, a comment section for general observations about the work. A final column was added which gave a more definitive methodological breakdown to the three main points of enquiry, being: Qualitative, Quantitative or Mixed. In several dissertations, there was no explicit mention of whether qualitative, quantitative or mixed methodologies were used but rather reference to the research tool utilised such as a survey or interview. In such cases, the nature of the tool was used to guide the classification of the dissertation's methodology.

5. Findings

The classification of dissertations in each institution according to their methodology is depicted in Table 2. A total of 120 dissertations covering a range of topics in the business domain were reviewed.

Table 2: Dissertation Classification by Methodology

Institution	DIT	UCD	DCU	UL	TCD	Total
Qualitative	9	6	6	3	7	31
Quantitative	4	12	7	10	11	44
Mixed	10	12	11	8	4	45
Total	23	30	24	21	22	120

Initial findings reveal that the mixed methods approach is marginally greater than that of quantitative and qualitative within Irish PhD research. In that, mixed methods were the most widely used comprising 38 percent of dissertations, closely followed by quantitative studies with a share of 36 percent. Purely qualitative approaches were the least used within the sample and accounted for 26 percent of the theses (Figure 2).

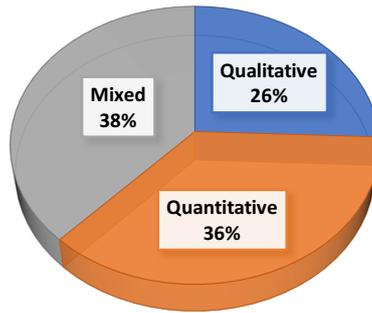


Figure 2: Methodologies of dissertations reviewed

The methodological distribution per institution is illustrated in the figures below. Further analysis shows that researchers in DIT and DCU preferred a mixed methods methodology showing a 44% and 46% representation respectively. UCD researchers relied on both mixed and quantitative methodologies at 40% each, while UL preferred the quantitative approach with 48% quantitative, 38% mixed and 14% qualitative. Finally, TCD showed 50% of the researchers favouring quantitative methodology, 32% favouring qualitative and 18% preferring to use mixed methods methodology. The findings contribute to the examined university practitioners, by providing a succinct analysis of their individual approaches to research. The paper also contributes to the broader academic community by way of the data gathered from the reviewed thesis'. Since they have all been recognised in on themselves by peers within academia. This recognition validates and contributes to the stock of knowledge in the quest to bring this research to the attention of more researchers and academics.

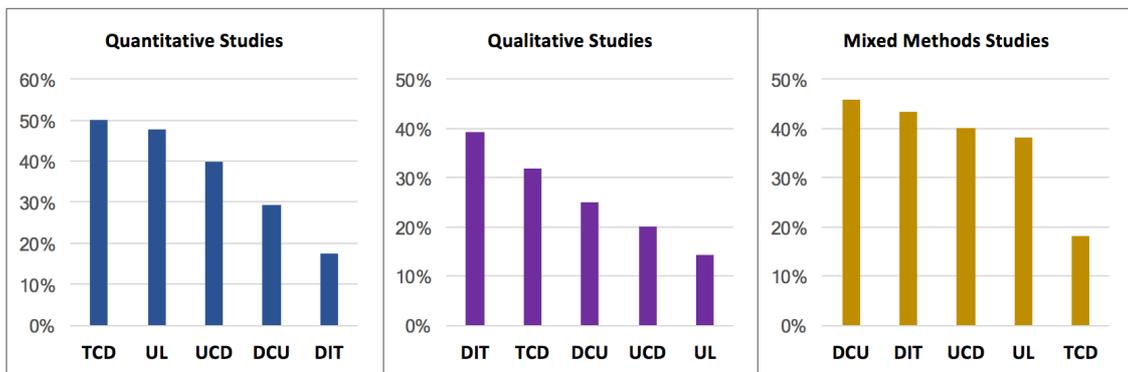


Figure 3: Prevalence of each methodology per institution

6. Discussion

TCD is leading Irish institutions in quantitative studies followed by UL in the business field. TCD also has the lowest proportion of mixed methods adoption comparatively to the other institutions studied. This indicates TCD researchers so far tend to favour following a single methodology. Conversely, DIT leads the ranking in qualitative studies and has the second highest frequency of mixed methods, while single-method quantitative studies are the least used. This suggests the inclination of the institute to have a qualitative component, whether alone or mixed with quantitative. UCD had an equal percentage of quantitative and mixed methods with 50% less qualitative research methods being used within the institution. DCU researchers have conducted the most mixed methods research within the review period, with all other institutions achieving slightly lower percentages apart from TCD where mixed methods are the least frequent. The authors acknowledge that due to the comparatively higher number of UCD dissertations, the overall results may be somewhat biased towards mixed methods findings.

Interestingly, the findings also suggest that there is a pragmatic approach to the understanding and exploration of the philosophical underpinnings which accompany doctoral research within Irish doctorate research. This, it could be argued, is strengthened by Holden and Lynch (2004) when expressing the view that researchers need “not worry about epistemology and ontology but about the particular problems they confront from their theories and investigation”. They further express that “philosophical worries about ontology are an irrelevance”.

7. Conclusion and Future Research

An interesting observation is noted whereby within 8 of the dissertation relating to finance and/or financial markets there was no mention of the researcher’s philosophical underpinnings and/or any reflection on their own worldview to attaining the title of *Doctor of Philosophy*. Thus, it could be posited that there is a lack of understanding the ontology and epistemology worldview points which certainly lie at the heart of a *Doctorate of Philosophy*. Research appears to be following ‘the present is always right’ approach (Johnson et al. 2007). In that, a researcher should choose whatever methodology is necessary to answer the question while disregarding their worldview and philosophical stance through which they see reality. However, if the methodology applied to the research question is found to be just, valid and sustains rigour and validation then the methodology chosen is therefore justified. Researchers must not lose sight of the title *Doctorate of Philosophy* and should be encouraged to develop a deep understanding of the ontology and epistemology which has led them to their research question. Without questioning ones’ own worldview, can researchers fully understand and share findings with the academic community?

The persistent interest in philosophy comprises of many assumptions about how we view ‘reality’, and as such, how this ‘reality’ should be observed, analysed, interpreted and finally shared with the academic community. To ease assumptions about ‘reality’ and to provide more validity to gaining the title of Doctorate of Philosophy, future research would consist of a deeper evaluation of the ontological and epistemological paradigms which Irish doctoral researchers take. An in-depth understanding of the philosophical assumptions used in Irish doctoral research should be revisited to gain further understanding of possible gaps in the methodology used or oversights in the journey along which the researcher travels. To decide on methodological approaches and to gain peer acceptance further analysis of researchers’ own worldviews should be developed and encouraged.

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Appendix – Higher Educational Repository Information

1. Dublin Institute of Technology uses an on-line award winning repository called Arrow. It is an open portal and can be accessed from outside the institution.
2. University College Dublin has its own repository called ‘Research Repository UCD’. However, they do not hold onto PhD doctoral dissertations. As such only hard copies could be retrieved for analysis.
3. Dublin City University has developed the DORAS database, which can be accessed using a student/researcher identification and password. Access was granted by a fellow researcher.
4. University of Limerick was accessed by using a portal called RIAN - RIAN is an on-line Irish portal with the aim of gathering, in one on-line location, the contents of Irish higher education repositories to

facilitate easy access for researchers and practitioners wishing to avail of past research documentation.

5. Trinity College Dublin was accessed on-site by means of their repository known as TARA (Trinity's Access to Research Archive)