Conclusion chapters in doctoral theses: some international findings

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This study investigated how candidates claimed to have made an original contribution to knowledge in the conclusion chapters of 100 PhD theses. Documentary analysis was used to discover how this was explained within theses at selected universities in three countries. No other documents were accessed and neither were candidates, supervisors or examiners contacted. The evidence showed that the function of Discussion and Conclusion chapters was interpreted differently between disciplines and national academic traditions. The relative size of conclusion chapters to other chapters was consistently small. Explicit claims for originality and contributing to knowledge appeared in 54 per cent of theses thus meeting their universities' stated criteria for PhD awards but were not adequately explained in 46 per cent of theses.

Keywords: conclusion chapters; contributing to knowledge; claiming originality; chapter size; discussion chapters.

Introduction

As doctoral supervisors and examiners we have recognised an absence of research-based literature on the chapter of conclusions in doctoral theses. Thus, how doctoral candidates claimed to have made an original contribution to knowledge had not been adequately explained.

Doctoral theses are characterised by making original contributions to knowledge. In their opening chapter(s) candidates may state that their research will make an original contribution to knowledge as expressed intentions. The claim that such intentions were achieved usually appears in conclusion chapters.

Conclusion chapters also include factual, conceptual and secondary conclusions, agendas for future research, critiques of the research and, if

appropriate, recommendations for action. In closing a thesis the conclusions chapter embodies two functions. Firstly, it presents conclusions from the research and secondly it justifies that the research is at the doctoral level.

University postgraduate regulations specify the criteria against which doctoral theses are examined and are benchmarks for supervisors to guide doctoral candidates in producing high quality research. However, we were uncertain how these features were expressed and presented in theses that had gained the doctorate for which they had been submitted. Our decision to explore the nature of conclusion chapters was to understand and explain how issues of originality and contributing to knowledge were presented in the text of those chapters.

The regulations also provide examiners with formally agreed explicit criteria against which they are expected to judge the scholarly merit of theses. In a viva/defence (viva) examiners use the criteria implicitly and explicitly in discussing a thesis with the candidate and in deciding to recommend an award. In that context doctoral examiners acknowledge the scholarly and textual importance of conclusion chapters in their reports and questions to candidates during vivas.

Nevertheless, examiners often struggle in evaluating the fulfilment of stated objectives, goals and methodological 'explanations' of claimed outcomes in theses (Pearce, 2005:51-56). However, before theses are submitted supervisors will have responded to how their candidates display scholarship in academic writing and especially in drafting conclusion chapters (Trafford and Leshem, 2008:127). It might be assumed that any textual problems in the chapter would be addressed and resolved at that time. Thus, latent difficulties are encountered by examiners, supervisors and candidates in their respective involvement with conclusion chapters. The absence of research-based insights on this chapter is a lacuna which we decided to address.

Conclusion chapters in doctoral theses

Doctoral theses are required to display features that exemplify high level study which specifically includes originality and contributing to knowledge. This places undertaking doctoral research at the boundaries of knowledge creation. Although concluding a thesis is mentioned in the literature on doctoral studies it is the sole focus of one article (Bunton, 2005) and one chapter (Trafford and Leshem, 2008:127-146). Bunton considered the generic structure of conclusion chapters in 45 PhD theses across the disciplines. He found that conclusion chapters 'restated purpose, consolidated research space and recommended future research'. He also identified variations in disciplinary focus and

structure but without reporting how those theses displayed originality or contributed to knowledge.

Like Bunton, Trafford and Leshem (2008:126-146) presented research-based findings. They showed how the structure and content of conclusion chapters enabled candidates to demonstrate doctorateness and display originality in claiming to contribute to knowledge. They identified this chapter's implicit functions of reminding readers what a thesis sought to achieve, telling readers how it was undertaken, selling to readers the merits of the research and convincing readers that the research possessed scholarly worthiness. They also analysed the proportion of pages in the conclusion chapters of nine theses.

In a seminal publication, Phillips and Pugh (1987:55) suggest that the last chapter in theses is where candidates 'underline' their contribution to their discipline. Wisker (2005, 2012) explores this view, suggesting that conclusion chapters 'serve two purposes: (a) to summarise what has been researched and discovered, challenged, proved, disproved, how it was done and the main arguments and (b) to indicate both factual conclusions and conceptual conclusions'. She then argues that 'The conclusion establishes the importance of the (researched) work' (Wisker, 2005:291-292). A similar position is adopted by Lovitts (2007:47) when she suggests that 'conclusion chapters place the work in context, draw out its importance, significance and implications, and identify new questions'. These three views emphasise the multiple roles of such chapters.

The distinguishing characteristic of a doctorate is that it makes an original contribution to knowledge. Simply expressed, originality means that 'it' has not been done before. Converting the implications of originality into research endeavours is less simple. In considering features of originality Delamont *et al* (2004:108) conclude that: 'What "counts" as originality is diffuse'. They add:

> In recognising that issues like 'originality' are not absolute criteria, and are not subject to formulaic prescription, then (candidates) are in a better position to develop the kind of 'feel' for their own and others' work.

Thus, conceptually elusive aspects of originality are associated with the practical and developmental potential for candidates as they produce their theses.

The notion of originality embraces diverse views. 27 years ago Young *et al* (1987) investigated academics' experiences of contemporary standards and expectations in doctoral examining. They

concluded that the standards and criteria were vague. Five years later Salmon (1992:9) wrote that

> Originality may be defined as the discovery of new facts or the integration of previously diverse facts. These definitions seem, at first sight, straightforward and unproblematic. Yet in practice they often prove ambiguous and slippery.

Twenty years later, Carter *et al* (2012:ix) argued that: 'The doctoral thesis gives shape to an original idea' giving authors 'wide scope for originality.' Against this background of contrasting views, explanations and usages, originality remains a significant element in doctoral processes.

Phillips and Pugh (2000:65) observed that

> It is sufficient for the student to contribute only an incremental step in understanding. Unfortunately, supervisors do not usually tell their student this.

These words advocate reasonableness and realistic intentions for originality in doctoral outcomes. It was Mullins and Kiley who, using this backcloth of originality, pointed out 'It's a PhD not a Nobel Prize' that examiners are contracted to examine (Mullins and Kiley, 2002). Their article echoed Phillips and Pugh's position in accepting that contributing to knowledge could occur through incremental rather than major research discoveries. Nonetheless, originality pervades doctoral literature and practice as a scholarly goal, a standard to which candidates aspire or a presumed benchmark against which doctoral research is judged (Tinkler and Jackson, 2004).

The view of originality 'being found in the new' is central to Phillips and Pugh's argument (2000:63) that doctoral candidates are expected to contribute to knowledge by, for instance: 'setting down a major new piece of information', 'continuing a previously original piece of work', 'undertaking empirical work not previously done' and 'adding to knowledge in a way not used before'. Similarly, Talbot observed that 'Originality is about bringing together known elements that hitherto have been kept apart rather than conjuring new things out of the void' (cited by Finn, 2005:20).

Examiners' views of the satisfactoriness or otherwise of doctoral theses were investigated by Winter *et al* (2000). They listed 19 indicators of originality that examiners look for, including: pushing topics into new areas, making original contributions to knowledge or

understanding, and creating new critiques of existing theoretical positions. However, Tinkler and Jackson (2004:117-118) offer a contrasting perspective:

> Two criteria are commonly used to define a PhD submission, originality and contributing to knowledge. Both criteria are vague and it is usually left to examiners to derive their own interpretations' that may be more important in some disciplines than in others.

These profiles of originality often prompt examiners in vivas to ask: 'What is your contribution to knowledge?' (Trafford and Leshem, 2002). Many candidates will have already answered that question in their conclusions chapter. However, omitting to explain why the research is original or how it contributes to knowledge will not display doctorateness (Trafford and Leshem, 2008:189) nor impress examiners.

Finn (2005:20) explains this situation by pointing out:

> When doctoral research seeks to extend the boundaries of knowledge, the mutual dependence between 'originality' and 'contribution to knowledge' is most evident.

Oliver's (2004:153) advice to candidates on this is: 'In the case of doctoral theses ensure that you provide a clear statement of the original contribution made by your research'. Addressing supervisors, Taylor and Beasley's guidance is: 'It can be helpful to remind candidates that what they are about to embark on is a process of knowledge creation' (2005:179). Thus, the scholarly function of conclusion chapters is to convince readers that their research does make an original contribution to knowledge.

Evidence from within vivas shows that examiners implicitly focus on discovering how candidates typify their research from a strategic perspective. Research by Trafford and Leshem (2008:16-17) analysed the questions asked by examiners of candidates and identified seven regularly appearing scholarly features:

> application of conventional research instruments in new fields of investigation

> combining disparate concepts in new ways to investigate a conventional issue

> creating new understandings of existing issues

design and application of new field instruments in a contemporary setting

extending the work of others through a replication of their original methodology

identification of new and emerging issues worthy of investigation and explanation

originality in using the work of others

Trafford and Leshem observed that examiners expect candidates to display one and no more than two of these generic features in their research. Examiners use them or similar expressions as surrogates for originality since they represent textual indicators of originality that could appear in the opening and concluding chapters of theses.

These interpretations of originality locate it as a practical, identifiable and critical factor in doctoral research. In this context, Murray (2002:53) reminded candidates that

Your thesis may stand – or fall – on the strength not only of the originality factor, but on your choice of definition and how you have chosen to write about it. Have you chosen the right type of 'originality' for the work you are doing? Others may not be looking for the same thing.

Thus, whilst the notion of originality is a key factor in doctoral research, how it is defined and how it is used are contested.

Formal assessment criteria for doctoral degrees
We chose our respective universities for ease of access to our intended data. The Institute of Education, University of London, (Institute of Education) was included to extend the data base in education-related doctoral theses beyond that of our three universities. We started this research by reminding ourselves of the regulations for doctoral degrees published by the four universities. These regulations specify the characteristics of doctoral degrees and the criteria against which they are to be assessed. They are openly available to candidates and supervisors in the four universities. The following extracts present the essential features that a doctoral thesis is required to meet. Supervisors and examiners expect candidates to be familiar with these regulations.

Anglia Ruskin University (2012:4, para 1.7)
A doctoral degree will be awarded to a candidate who:
- having critically investigated and evaluated an approved topic resulting in *an original and independent contribution to knowledge*, and,
- demonstrated an understanding of research methods appropriate to the chosen field, has presented and defended a thesis by oral examination to the satisfaction of the examiners.

Midway through their studies candidates are required to show '*evidence of originality in the research*' that demonstrates the potential to make '*a significant contribution to knowledge*' (Anglia, 2012:38, para 8.3).

Haifa University (2012)
A research student is required to design and implement an *original and independent study* that is innovative and *makes a substantive contribution to advancing knowledge* and *understanding* in the research area of their studies. The student must demonstrate competencies of an independent researcher, profound understanding, initiation, *creativity* and resilience required from an *independent* researcher.

Institute of Education, University of London (2012)
The thesis shall:
7.1.1. form *a distinct contribution to the knowledge* of the field and *afford evidence of originality* and a capacity for autonomous work;
7.1.4. *be of a standard to merit publication* in whole or in part or in a revised form.

Stellenbosch University (2013:248)
A PhD is conferred upon candidates who have submitted a dissertation which represents an *original and/or methodological contribution* in the chosen field of study … and shows that the candidate has made *a distinct contribution to the enrichment of knowledge* in this specific field of study. It should be of *sufficient quality to be published* in a suitable journal or as a book.

Three terms that are common to each extract have been italicised. They show that:

research is expected to display and demonstrate *originality*.

research outcomes are expected to *make a significant contribution to knowledge*.

outcomes are expected to be produced *independently* and *confirmed through publication*.

These terms are expressed as imperatives through words like '*will be'* and '*are required to'* (Anglia Ruskin University), '*is required to'* and '*must demonstrate'* (Haifa University), '*must form'* (Institute of Education) and '*which represents'* and '*should be of sufficient quality'* (Stellenbosch University). Thus, the terms are explicit criteria for the entire doctoral process to justify granting the award.

Green and Powell (2005:196-197) indicate that 'contribution to knowledge' and 'publishability' appear regularly throughout university regulations for doctoral awards. Similar statements are contained in regulations for doctoral degrees internationally (Powell and Green, 2007). These intentions are captured in a doctoral qualification descriptor: Doctoral degrees are awarded for the creation, construction and exposition of knowledge which extends the forefront of a discipline, usually through original research (QAA, 2011:32).

These criteria are generic across the disciplines in our sample universities and their scholarly implications are unquestioned. Given these circumstances we felt it was not unreasonable to expect that conclusion chapters contained text which showed how the first and second criteria had been met. Based on that view, our assumption was that candidates, supervisors and examiners understood and used the criteria as mutually accepted systems of doctoral standards.

The third criteria *independent research* and *publishability* is significant in doctoral supervisory and examination processes. For Murray (2002) and Trafford and Leshem (2008:192), publishing is experientially important as candidates prepare for their viva. Delamont *et al* (2004:95, 171) also view it as a desirable (accompanying) component of doctoral study. Examiners though consider it 'an ambiguous concept' due to market forces determining timeframes of publication (Pearce, 2005:38). We recognised that the 100 candidates could have published as 'independent authors, collaboratively with supervisor(s) or with other academics' (Hartley, 2008:170). Ascertaining how this criterion might have been met by the candidate-authors posed insurmountable difficulties of access, confidentiality and time. For these reasons it was excluded from our study.

Investigating doctoral theses
After candidates gain their doctorate a bound and/or electronic copy of their thesis will be held in their university library. It is then available to be accessed by general readers and the public or by inter library loan.

Therefore neither the consent of candidates nor ethical approval was required for us to scrutinise theses that were on public display. We used convenience and opportunistic sampling to access to our intended materials (Punch, 2005:187). Thus, the selected theses were primary sources for this study since they were original to the issue being investigated (Cohen *et al*, 2003:161)

We assumed that theses within a single field of study would exhibit similar approaches to research, methodology and presentation. Data sets of 20 theses with research foci in the field of education were selected from our respective libraries at Anglia Ruskin University, Haifa University and Stellenbosch University plus the Institute of Education.

The selected theses included early years, primary, secondary, higher education, adult education, education management/administration, plus international comparative education topics that dealt with aspects of:

apprenticeship	citizenship
curriculum studies	distance education
education management	educational strategic policy
educational psychology	health education
learning styles	monitoring and assessment
problem-based learning	professional lives of teachers
roles of principals	schools as learning organisations
school governance	school leadership
special education	sustainable development
teacher training	university culture(s)

These topics had been investigated by inductive, deductive or multiple method approaches to research and they included disciplines from arts and humanities, business and management, education, law, organizational theory, political theory, politics and government, social science and sport sciences.

The inclusion of a fifth data set containing topics from outside the field of education was intended to identify any significant comparative features between the four education-specific data sets. Theses were selected from Anglia Ruskin University in these fields of study:

Biology	2
Business/Management	2
English literature	2
History	2
Humanities	2
Optics	2

Psychology	2
Science and Technology	4
Social Science	2

Professional doctorates were excluded from our sampling since they are not currently offered by Haifa or Stellenbosch University. Doctorates by published works were also excluded due to their prescribed format. Thus, only PhD theses were selected by non-probability sampling and with certain types of thesis being excluded the selection process was not random (Bryman, 2001:85).

The data collection process

Our study excluded selecting any thesis in which we had been either a supervisor, examiner or chair of the viva. Librarians advised us that some theses were unavailable due either to candidates not having submitted them to the library or currently being on inter-library loan.

Theses from 2012 were selected first in each data set. When each of us had exhausted choices from that year then theses were chosen from the previous year and so on until 20 were selected. Librarians advised us that some theses had not been submitted for display and others were on inter-library loan. Thus, sampling was limited to a specific category of theses available in four universities.

Collecting data from each thesis involved two processes. Firstly, the pagination shown in the contents pages was checked against the text. This confirmed: the total pages of text (excluding Roman pages, Reference list, Appendices and accompanying papers); the number of pages in chapters titled Analysis or Discussion; and the number of pages in each named conclusions chapter. Spreadsheets displayed these totals with percentages showing: Conclusions: Thesis (C:T); Conclusions: Analysis + Discussion (C:A+D); Analysis + Discussion + Conclusions: Thesis (A+D+C:T).

These data provided the relative size of conclusion chapters within each thesis plus the accompanying text in chapters directly supporting those conclusions.

The second process involved documentary analysis (Robson, 2002:348-351). To appreciate the concluding arguments we had to familiarise ourselves with preceding arguments in Analysis or Discussion chapters. However, if authors located conclusions from their research in a Discussion chapter then such theses were judged not to have a consolidating Conclusions chapter.

Text was scrutinised to identify the two criteria against which, we assumed, theses had been written by candidates, guided by supervisors

and judged by examiners. Firstly, text was searched to discover how arguments addressed issues of originality. Secondly, it was noted how candidates presented claims that they had made a contribution to knowledge.

None of the respective university regulations prescribed how conclusion chapters should be structured. However, theses from each university displayed consistency in using the appropriate research lexicon, systems of referencing and formatting. Many displayed academic writing that was rich in meaning and elegant in style.

Evidence from the conclusion chapters
Tables 1 to 5 show for each university the pagination of 20 theses and their respective final chapters.

TABLE 1
Anglia Ruskin University education data set

	Analysis	Discussion	Conclusion	Thesis	Per cent C:T	Per cent C:AD	Per cent ADC:T
Totals	0	437	214	4,899	4	48	13
Range	0	0-58	1-23	165-306	1-8	1-79	2-28
Avge	0	24	11	245	4	46	13

At Anglia Ruskin University (Table 1) the conclusion chapters showed that:

Seven made explicit claims to have contributed to knowledge

Nine made no claims to have contributed to knowledge

Two generated facts via case studies that illuminated specific situations

Two explored and explained their topics through philosophical reasoning

Two theses had no chapters titled Analysis or Discussion

The last pages of four chapters presented conclusions that summarised the study with accompanying detailed personal experiences of their respective candidates. These pages did not subject the research findings to either scholarly analysis or discussion.

Seven chapters presented detailed arguments to justify and explain their claims for originality and contributions to knowledge

Two chapters claimed originality due to the absence of related studies in the area of the topic

Four chapters each devoted five pages to describing factual findings but less than one page to explain the conceptual conclusions

The average chapter size of 11 pages represented 4 per cent of the thesis

TABLE 2
Haifa University data set

	Analysis	Discussion	Conclusion	Thesis	Per cent C:T	Per cent C:AD	Per cent ADC:T
Totals	1,201	363	91	3,619	2	6	5
Range	0-152	0-55	0-16	97-411	0-8	0-3	9-57
Avge	63	19	6	181	3	39	34

At Haifa University (Table 2) the conclusion chapters showed that:

Eight made explicit claims to have advanced /contributed to knowledge

Nine made no claims to have contributed to knowledge

Two conclusions were incorporated within arguments in discussion chapters

One conclusion chapter presented a list of separate items

In theoretical studies, individual chapters contained conclusions, but those theses had no consolidating concluding chapter

Each hypothesis was dealt with in separate chapters but without a chapter of conclusions

One chapter devoted half a page to justify a contribution to knowledge

The phrase 'Concluding Words' ended one thesis before implying that contributions to knowledge were made

The average chapter size of 6 pages represented 3 per cent of the thesis

TABLE 3
Institute of Education, London University data set

	Analysis	Discussion	Conclusion	Thesis	Per cent C:T	Per cent C:AD	Per cent ADC:T
Totals	54	170	236	4,919	5	94	9
Range	0-35	0-44	0-48	126-425	1-11	0-100	1-25
Avge	27	13	12	245	5	95	9

At the Institute of Education, University of London, the conclusion chapters showed that:

Eleven contained explicit claims to have made a contribution to knowledge

Eight contained no claims to have made a contribution to knowledge

One presented a philosophical treatise on a topic without a conclusion

Ten theses had no chapters titled Analysis or Discussion

One thesis lacked a chapter with the title of conclusions

Supporting literature was used in broad discussions of the research but in most cases did not argue for originality of the investigation

Conclusions were often discussed descriptively rather than conceptually

Two theses offered generalisable normative conclusions despite the studies being inductive

When originality was claimed it was supported by carefully argued justifications and rationale

Statements that research aims or purposes had been met were often used to justify or elevate factual findings into conclusions

The average chapter size of 12 pages represented 5 per cent of the thesis

TABLE 4
Stellenbosch University data set

	Analysis	Discussion	Conclusion	Thesis	Per cent C:T	Per cent C:AD	Per cent ADC:T
Totals	950	546	164	4,674	3	11	34
Range	0-116	0-104	0-23	144-380	0-13	0-37	9-54
Avge	73	32	8	233	4	11	33

At Stellenbosch University the conclusion chapters showed that:

Nine made explicit claims for originality or advancing understanding

Nine made no claim for either originality or the enrichment of knowledge

Two case studies presented findings but without claiming significance or utility

Three claims for contributions to knowledge appeared in chapters of findings

Many chapters had implicit rather than explicit references to enrichment of knowledge

Two chapters summarised the study with no claims for contributing to knowledge

The value of models to achieve change was stated without justifying such claims

The potential value(s) of investigatory frameworks generated by the study were usually stated

If chapters included broad discussions of many topics no discrete conclusion was offered

The average chapter size of eight pages represented four per cent of the thesis

TABLE 5
Anglia Ruskin University non education data set

	Analysis	Discussion	Conclusion	Thesis	Per cent C:T	Per cent C:AD	Per cent ADC:T
Totals	44	155	201	3,977	5	100	10
Range	0-152	0-36	0-16	97-411	0-8	0-3	0-57
Avge	15	22	11	199	5	29	10

For the Anglia Ruskin University non education data set the conclusion chapters showed that:

Twelve made explicit claims to have contributed to knowledge

Eight made no claims to have made a contribution to knowledge

Twelve theses contained no chapters titled Analysis or Discussion. Thus it was often difficult to distinguish how an analysis or discussion of findings supported the conclusions

One thesis did not have a chapter of conclusions

Contributions to knowledge appeared in three chapters as disaggregated lists of items without distinguishing between their relative significance

Five chapters showed how the testing of hypotheses in deductive studies made contributions to knowledge

Two chapters summarised the entire thesis offering no claim for originality or contribution to knowledge

Two chapters explicitly linked research processes with conceptualisation and originality of findings to explain how the research contributed to knowledge

One chapter compared existing with newly created knowledge to develop middle range theories which justified the contribution to knowledge

In eight chapters with no claims for originality, text that described what the research had investigated far exceeded text that conceptualised what the research had 'discovered'

The average chapter size of 11 pages represented five per cent of the thesis

What our evidence shows
The nature of the conclusions chapter
Candidates often ask 'What should be the length of a conclusions chapter?'. Tables 1 to 5 show the average number of pages in conclusion chapters to their respective thesis as 4.20 (4, 3, 5, 4, 5). Bunton's sample (2005:213) showed an average of 9.2 pages whilst Trafford and Leshem (2008:133) showed that conclusion chapters represented 6 per cent of the thesis in nine theses. Unlike Bunton (2005:233) we found no significant differences in the number of pages in conclusion chapters

between theses in education and those in the natural or social sciences.

We experienced the same difficulty as Bunton (2005:211), who stated: 'The first task was to identify the concluding chapters, but this was not as straightforward as one might expect'. He explained that 'Twenty four of the 45 theses had no chapter or section with 'Discussion' in its title' (Bunton, 2005:212).

This may explain why 25 per cent of the theses in our sample contained neither an Analysis or a Discussion chapter and the analysis or discussion of findings was provided elsewhere in the thesis. It also explains why, in Tables 2 and 3, some proportions of C:A+D and A+D+C:T were at the extremes of textual ranges with large or small chapters. These ratios resulted from views by candidates or supervisors on the structural significance and meanings of Discussion or Conclusion chapters.

The three data sets from UK and one from Stellenbosch displayed similar structures for theses. In these data sets separate conclusion chapters emerged from previous chapters that analysed or discussed research findings. Claims for originality and contributing to knowledge appeared here if they were made.

In contrast, the Haifa data set showed eleven theses representing a model that provided intermediate 'conclusions' prior to a discrete chapter of conclusions. These 'conclusions' usually appeared after testing hypotheses or analysing findings. Where this occurred, a final chapter seldom provided consolidated conclusions. Since Haifa University did not prescribe a format for chapters, then the presentation of discussion and conclusion chapters reflected the preference of candidates and supervisors or compliance with the traditional structure of previous theses.

Evidence from all data sets was that the majority of conclusion chapters informed readers what the research set out to achieve, why it had been chosen and, usually, what it had achieved. This corresponded with the Trafford and Leshem (228:133-137) model of 'reminding, telling, selling and leaving readers with positive impressions of the chapter's merit'. Thus, in these chapters candidates sought to meet readers' expectations of seeing clear connections between the start and finish of their research.

Textual style

Various textual styles were used to advance claims. The direct statement informed readers what the research had discovered. Quite often it was possible to identify supporting statements that reinforced merit in the claim. Other candidates associated their conclusions with extant theory

offering further justification by relating to literature or theories. Supporting sources were usually not provided since they had appeared elsewhere in the thesis.

Occasionally, candidates aligned findings and conclusions with extending knowledge. The tone of their text introduced nuanced distinctions between contributing to knowledge and extending knowledge. This style of academic writing presented claims for contributing to knowledge that were implicit rather than explicit. This distinction introduced an elusive dimension to advancing claims.

The five data sets showed that 54 per cent of theses included claims for originality and contributing to knowledge; 46 per cent of theses contained no such claims. In the latter there was no consolidation of intermediate conclusions into a final chapter that informed readers of outcomes from the research. Since we had chosen not to interview candidates, supervisors or examiners nor to see examiners' reports we lacked confirmatory explanations regarding this situation.

The following extracts from conclusion chapters illustrate how candidates handled the process of claiming. Five categories were chosen to illustrate how candidates gave textual emphasis to support their claims. Each category contains samples that are representative of how the claims were made.

Making a direct claim

a) This research contributes to the growing body of knowledge in the field of higher education and in the identification of enabling factors that assist students' success in their first year of study.

b) The study is significant because it extended the existing body of knowledge and evidence based research coaching in schools.

c) The main contribution of this study are [*sic*] the findings that the environments' variable is more influential than the environmental one on burnout. In addition, the study is a contribution in adapting tools to identify the self efficacy of teachers in Israel. These two findings are a breakthrough for further research in the area.

d) The unique contribution that is made by the research shows that in order for policy reform to be positively received by the teachers concerned, they have to build on prior knowledge systems. They also have to pay attention to the local context within which the teachers work. Such development is particularly important in the South

African context, with its history of disparity and discrimination.

e) The findings of this study have both a theoretical and applicative value. Its first theoretical contribution is in understanding the link between personal values, interaction patterns and burnout, at the same time focusing on the effect of values on interaction patterns on two levels. In the applicative aspect, the findings indicate that cooperative interaction patterns reduce that level of burnout.

Association with the literature

a) Based on findings from empirical enquiry, the thesis offers a more dynamic and generative understanding of empowerment than has hitherto been present in the literature.

b) My adding to the literature for others to access is thus extending knowledge for others to use.

c) Given the stability of aggression from pre-school to later childhood, enhancing intervention programs to more effectively reduce aggressive behaviour early in development is critical. Further, since the effectiveness of treatments for aggressiveness and behavioural problems such as conduct disorder appear to decrease with age (Frick, 1998; 2001b), interventions focusing on early developmental processes prior to the appearance of strong conduct problems are critical to prevent the later emergence of serious antisocial and aggressive behaviours.

d) The findings from this current research confirmed that adaptive and supportive services are needed to address the needs of all the learners in mainstream primary schools.

Aligning research with extending knowledge

a) The research has produced a greater understanding and clarification of drum tuning methods and, for the first time, generated scientific knowledge particular to cylindrical drum tuning.

b) The insights provided by this study will be invaluable in the conceptualisation of professional development programmes aimed at:

addressing the teacher attributes and contextual factors revealed by the study;

improving the teachers' classroom practice in geography education;

better implementation of EE and ESD through the geography curriculum'.

c) Teachers create their own vision of what citizenship education involves and might be which are the starting points which will shape their interpretation of the curriculum they encounter, the teaching style adopted and thus shape the experience of the subject for young people.

d) This study contributes to the current debate on community engagement in South Africa as it provides an integrated framework for community engagement. This curriculum framework can also be duplicated in other HEIs, and adopted to suit different contexts.

e) It extends the existing knowledge of the subjective experiences of channeling. Specifically, it expands the knowledge concerning the developmental steps in the experience of being a channeler in the world. It uncovers the language and function of channeling, as connecting and bridging between worlds. The uniqueness of this research stems from a phenomenological method that enabled the voices of the channelers to be heard. Finally the research expands our understanding regarding spiritual and mental development, especially in relation to Wilber's integral model of development that portrays a process of spiritual development from the ego to the transpersonal by providing concrete examples to two of these stages from the lives experiences of the channelers.

Claiming that a gap in knowledge existed

a) Existing theories of innovation focus either on the nomothetic generic innovations or ideographic individual models such as creativity. There appears to be little informing theory that bridges the two.

b) The contribution to new knowledge that this study makes is the identification of the enabling factors (the primary drivers of success)

and the new sub themes which create a more complete picture of factors that could influence learning at higher education level.

c) The last major study of education in the eighteenth century was published sixty years ago.

Personalising the contribution and its potential value

a) It is clear to me that [the formulation of teachers' 'knowledge] develops in very interesting ways throughout teachers' lives. Teachers' knowledge is not a finite body of knowledge that can be listed, checked off, and at some point considered 'complete'. It is a work in progress, constantly evolving, developing and changing. It draws on many sources, some more obvious and others subtle; some from the past and others from the present. The teacher herself is often unaware of this process, as the participants in the present study were. It was the research process which helped them bring this to the surface and think about where they are and where they are going. In this way I hope I have been able to contribute to their growth as people and professionals.

b) I would like to claim that prior to creating a narrative environment and professional nurturing of the novice teacher, it is important that we recognise the value of narratives for novices. Three more insights emerge as a result: in the transition phase from training to teaching, complexities and contradictions in teaching and learning are unavoidable. A narrative environment is essential for novices and the educational system. Coping with crises entails institutional collaborative efforts. The modest contribution to knowledge is in the description of the unique stories of transitions from training to teaching from different dimensions.

These extracts present claims that were accepted by supervisors of doctoral candidates and examiners of the theses. The extracts may have appeared originally in their respective theses or they could have been amended following a viva and then approved in their current textual form. Thus, either way, each extract was judged to satisfy the regulatory criteria for the award of a PhD.

Two examples of closure illustrate how candidates adopted expanded or restricted writing styles to inform readers of their research's significance:

a) Thesis title: The impact of the new integrated older people's care services in Cambridgeshire on social services. The candidate closed the conclusions chapter with these words:

> The original contribution that this study has made is knowledge about how far the total integration of health and social care services in Cambridgeshire benefits service users from their own perspectives. This study is original because it is the first evaluation of this unique form of total integration in England for a whole user group of older people. This study fills the gap in assessing the effect of collaborative working in the community and it creates new understandings of the issues in this important social and health care reform, which include the transfer of all social care staff from the County Council Social Services into Primary Care Trusts.

This paragraph draws together the significant criteria for the award of a PhD. The words 'fills the gap' (in knowledge), 'original because', 'original contribution' (to knowledge) and 'creates new understandings' ensure that readers appreciated exactly what was being claimed.

b) Thesis title: Enhancing quality of life through aquatics therapy. The penultimate page of the conclusions chapter contained these words:

> The research has yielded insights and conclusions that may add to and enrich the underlying theories on which the conceptual framework of the thesis was constructed. These conclusions were linked to extant practice and theory to illustrate originality.

This succinct closure placed claims in a belief that the research had potential benefits. Here, the style of argument omits using the lexicon associated with doctoral criteria displayed in the example, above. Instead, this candidate associated research outcomes with implications of scholarship presented throughout the thesis. As a result, reading the short paragraph almost obliges a reader to revisit that earlier text and remind themselves of the theories on which the conceptual framework was based.

Both examples provide conclusions that are unambiguous in significance and meaning as they justify each candidate's conclusions. They each illustrate Murray's (2003:102) exhortation for candidates to make their claims textually explicit in their abstract and their thesis.

However, if significant conclusions are presented anywhere other than in a conclusions chapter then this misleads readers because it is unclear which conclusion(s) were the doctorally-worthy conclusion to the thesis.

Some interpretations

Each data set contained theses whose closing chapters differed in structure. The justification of claims was frequently accompanied by high levels of interpretation and conceptualisation. This was exemplified if supervisors were internationally renowned and their candidates used similar writing styles or terminology. Whilst the text was elegant and fascinating to read there was a temptation to wonder if, in such instances, the medium of expression had become more important than the message (McLuhan, 1964:9).

With one exception conclusion chapters were easy to read, section headings were preludes to related text and arguments were clearly presented. In contrast, detecting claims for contributing to knowledge was sometimes difficult. This was not due to the relative length of conclusion chapters but rather depended on where and how this information appeared. In this respect, we found that 'in doctoral theses the nomenclature of chapter headings is very inconsistent' (Swales, 2004:225). The various combinations of chapters with titles of Analysis, Discussion and Conclusion in our study corresponded with Swales' view. However, we did not encounter theses with conclusion chapters written as Evans and Gruba (2002:119) proposed by being 'the conclusion to the discussion chapter'. Our impression was that conclusion chapters were written primarily to draw the thesis to a close.

As the final chapter in a thesis, the conclusion chapter 'needs to tell readers what *you said* (in the thesis). It should identify what is significant and why' (Lovitts, 2007:319). These words provide an unambiguous role for such chapters. Lovitts (2007: 350) extends her view to argue that

> the function of the conclusion is to return to the broader issues, and to take ideas and information that have been presented throughout the bulk (of the thesis) and put them in a wider context… the conclusion should emphasise what the readers did not know before.

In various ways, the chapters that comprised our study served such functions though there was emphasis on description rather than the conceptualisation of 'new' knowledge.

The chapters which addressed originality and contributing to knowledge shared other doctoral features. They demonstrated

doctorateness in that they exhibited higher order thinking *about* research (Trafford and Leshem, 2008:189-191). The notion of doctorateness exemplifies the capacity to think *like* a researcher, or as Perkins describes it, display episteme (Perkins, 2006). This involves recognising what others expect regarding the conduct of research at this level of thinking so that they (examiners and readers) instantly recognize its scholarly merit. Being able to explain and justify their research choices and reflect them in how conclusions were reached appeared in theses which we suspect required no alterations before the PhD was awarded.

In a similar manner, doctorateness entails appreciating connections between essential components of doctoral research such as:

Clarifying the gap(s) and contribution(s) to knowledge

Devising and answering research questions through appropriate fieldwork

Creating conceptual frameworks to design the research and using them to arrive at and justifying conceptual conclusions

Engaging with theory to provide theoretical perspectives that explained the research issue(s) thereby extending understanding of those issues (Trafford and Leshem, 2008: 41-50; Trafford, 2010)

Evidence of these characteristics meant that ideas and arguments were expressed explicitly. Such features of academic writing indicated that candidates understood the significance of their conclusions chapter. In that type of writing doctorateness becomes a jigsaw puzzle that is fully appreciated when all the components are present and fitted together. The result is that doctorateness becomes apparent so that examiners and other readers recognise synergy between the critically important components within a thesis (Trafford and Leshem, 2008:51-520). When we encountered such high quality writing candidates were providing high quality scholarship. A minority of theses did not display these scholarly characteristics and Perkins (2006) would not have recognised episteme in their text.

Many but not all chapters reflected Wisker's (2012:431-432) observation:

This is really a rich part of the work and needs a lot of attention, not least because the examiner tends to read both the abstract and the conclusions really closely, since these parts of the thesis identify the

reason for the work and what it contributes to our understanding and to meaning.

We saw less of Wisker's next observation:

> The conclusions need not to merely reiterate the introduction or produce the thesis in short, but instead should round off, finish off and clarify the effects and the importance of what has been found, what it means, why it matters and what might be done with it.

When links between Analysis/Discussion chapters and the conclusions were made they confirmed coherence in research and complimentarily of arguments. We observed this structural view of relationships between the chapters when a conclusion chapter 'arose inescapably from the argument in a preceding discussion chapter' (Evans and Gruba, 2002:119). This exemplifies Swales' view that discussion chapters are primarily devoted to reviewing the results that were presented earlier in theses (Swales, 2004:235). If these linkages were absent then dysergy between these chapters followed. Lovitts (2006:174-176) observes on these points that conclusions either 'tie together' or 'miss connections' in dealing with discussions and conclusions. We encountered both of Lovitts' textual structures/formats typifying different styles of writing, variable supervision approaches and national scholarly traditions.

Academic writing style also reflects an assumption that every candidate appreciates and understands what their readers expect from theses. Unless claims are advanced explicitly in their text, readers will be unaware of what was discovered. Readers might then assume that they were intended to work out for themselves the significance of what they thought had been discovered. Examiners are unlikely to be impressed by such writing styles and ask: 'What exactly are you arguing here?' (Pearce, 2005:75). Thus, presenting implicit arguments, distributed emphases or not claiming originality might perhaps be acceptable in some academic contexts but not in others.

Contextual and disciplinary issues clearly influenced how theses and conclusion chapters (if readers can find them!) are structured. So, maybe there is not an ideal model or structure for these chapters. Perhaps institutional contexts and (sub)disciplines determine the structuring of theses and conclusions. It appears that, in a field of study like education, factors such as the supervisor, the candidate and the topic can explain basic indications of variance.

Certain features that we found in conclusion chapters transcended discipline and national boundaries:

A low proportion of explicit claims were advanced for both originality and contributing to knowledge despite being stated criteria by universities for granting a PhD award

Candidates' apparent understanding and function of 'conclusions' differs across disciplines but tended to be consistent within specific cultures

Many theses did not contain separate chapters devoted to the analysis or discussion of findings and these research functions were combined either into conclusions or earlier chapters

The relatively small size of conclusion chapters in doctoral theses confirm the findings of Bunton (2005) and Trafford and Leshem (2008:132)

The nature of the contribution to knowledge was expressed differently across disciplines confirming Finn (2005:14)

Sources were infrequently used in scholarly ways to support the conclusions, instead conclusions were often expressed as descriptions of the investigation with little accompanying conceptualisation

High levels of thinking, reasoning and argument created insightful perspectives on topics but often without drawing on earlier used sources relating to that topic

When scholarship was displayed in early chapters it continued throughout a thesis by candidates who then made explicit claims for originality and justified how they had contributed to knowledge

Occasionally recommendations were advanced which emerged from inductive approaches to research that were not generalisable

Some theses in the humanities did not contain chapters with the specific title of 'conclusion'

These features raise five conundrums:

the efficacy of universities in preparing candidates to present theses that did not meet stated criteria for awarding a PhD

the role of supervisors in guiding candidates and rigorously auditing the research for compliance with protocols before theses were submitted

the scrutiny of doctoral research quality, scholarship and text in theses by examiners before and during the viva/defence

the auditing of theses after the viva or following required revisions before being accepted for public display

the notion of a universal gold standard that originality and contributing to knowledge are hallmarks of every PhD

We are not in a position to pass judgement on these circumstances.

Some conclusions

We approached and undertook this investigation not as secondary examiners but as researchers. We looked for written evidence that the chapters satisfied the stated assessment criteria of their respective university. We interpreted what we read making considered judgements which, we believe, other readers would make.

Our evidence suggests that the content and claims in conclusion chapters are not quite as everyone presumes them to be. Universities, supervisors, and examiners might assume that candidates incorporate their respective university's doctoral assessment criteria into how they write their conclusion chapters. In almost half of our sample this assumption is not confirmed. Our findings correspond with Murray's (2003:17) observation that 'The research is often completed and the thesis written without explicit reference to the criteria to be used in the examination'. This finding indicates disjunction between university policy and compliance with doctoral regulations by candidates, supervisors and examiners.

Claims for originality and contributing to knowledge appeared in 54 per cent of the theses. The remainder contained no such claim though claims might have been expressed implicitly in other chapters. This implies that 46 per cent of theses had not met the stated criteria for the award of a PhD at their university. In these cases how would readers know that a doctoral thesis is original if the candidate omits to state their claim explicitly in the text? A possible explanation might be that those candidates assumed their readers would recognize an original contribution to knowledge without them having to say so in the text. This raises two questions: 'How will readers recognize originality if

candidates do not make a claim for it in their text?; and: 'If candidates make no claim in their thesis then what should happen in their viva?'

Perhaps examiners satisfied themselves somehow that each of those theses contained and therefore met the prescribed scholarly merit. Nonetheless a conundrum exists over the apparent noncompliance by candidates, supervisors and examiners with explicit university criteria for the PhD award. We conclude that originality in doctoral research is more than a concept – it has to be outlined and claimed in the text in order to provide an appreciative perspective for readers to consider.

If asked how doctoral text is compiled, presented and appreciated then readers often say: 'It was elegantly written'. Many chapters that we read deserve that accolade. However, some chapters did not display 'academically insightful' text and a few lacked scholarship in how arguments were devised, connected to related issues or presented. We did not attend any of the vivas or sought independent confirmation of what transpired thus we are unable to explain how this situation was handled during or following the viva.

We support Pearce's (2005:51-58) view that academic writing is personal to the candidate and will occur independently of any structure that is followed. However, we wondered how one thesis was deemed to have passed whose text 'mumbled along with neither good structure nor logical conclusions.' This thesis did not meet the regulatory requirements for a doctoral level award at its University nor did it display the basic criteria associated with research.

Our evidence explains how claims for originality and contributing to knowledge are justified in conclusion chapters of 100 PhD theses. It illustrates how candidates addressed the scholarly expectations of their examiners and other readers. The study indicates that how conclusion chapters are structured and how claims are presented is inconsistent within the field of education. This comparative evidence has applicability in national and international doctoral education and training that is provided for doctoral supervisors and candidates alike.

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