Structure of Reference Lists in Doctoral Theses: A Cross-Disciplinary Study

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BIO-DATA

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The thesis represents one crucial academic genre through knowledge is produced. For doctoral students, in particular, the thesis is one of the most critical forms of textualization one encounters in the process of attaining academia’s crown jewel. The thesis is the culmination of a formal education process. It demonstrates that doctoral students have mastered the literature of the field, can correctly choose and use research methods, and communicate their findings so that others in the field can understand and use them. The thesis is recognized as noteworthy accomplishment rather than merely a perfunctory exercise on the way to a degree. It also sets the stage for future scholarly work on the part of young scholars (Kushkowski et al., 2003).

One small but fundamental aspect of the thesis is the reference list. There is a distinction often made in writing guides between the terms ‘bibliography’ and ‘references’. In agreement with the popular meaning given to the latter, I use ‘reference list’ here to refer to the total number of references made to previously published research used in the main text while bibliography is all materials that are consulted, including those used as in-text citations and those which are not used. Throughout the text, I use ‘reference list’. Entries Reference lists play a crucial role in maintaining the network of relationships among mutually relevant articles within a research field. Moreover, among several reasons scholars include citations in their papers to indicate works that are foundational in their field, background for their own work, or representative of complementary or contradictory research. The function of a reference lists is to establish a relationship between the citing and cited documents. In particular, the association of concepts or ideas through such citations has been described by some scholars as intellectual transactions, or formal acknowledgements of intellectual debt to earlier sources of information. The reference list provides a historical trajectory of contributing studies that make up the body of knowledge in a particular field.

Clearly, reference lists ought to seriously engage the attention of not only those actively in doctoral education such as thesis committee members, external and internal examiners, language support providers (e.g. writing centres) and administrators in higher education but also applied linguists such as specialists in discourse analysis, English for Specific
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Aim of the Study

The present study takes a discourse analytic perspective of reference lists in three disciplinary communities in order to explore the structural elements in such lists of doctoral theses across three disciplines, given the view that “citation styles, methods of documentation, and attribution reflect the socialization process within individual disciplines” (Kushkowski et al., 2003: 460). The following questions undergird the present work:

a) What labels are given to the reference lists in doctoral theses across the three disciplines?

b) Where are the reference lists located in doctoral theses across the three disciplines?

c) How long are the reference lists of doctoral theses across the three disciplines?

d) What are the organizational features of the reference lists of doctoral theses across the three disciplines?

Previous Studies

While citation studies of reference lists are popular in Information Science, they have only recently been receiving attention in English for Academic Purposes (EAP), English for Specific Purposes, and Higher Education (HE). This is, as already indicated, because of its significance for knowledge construction, trends in knowledge production, rankings of academics and institutions, league tables, accountability, and global competition.

The first citation analysis was reported in 1927 by Gross and Gross who studied the cited sources in the reference lists of articles published in the Journal of the American
Chemical Society and used the results to develop a journal subscription policy for a college library in the United States. Following this early study, several studies on expert writing (including journal articles and books) using bibliometric features of cited sources such as types, years, and countries of publication and more recently gender (e.g. Davenport & Synder, 1995; Hakanson, 2005) have been conducted. In recent times, we have seen a burgeoning of studies devoted to bibliographic citations in student writing, at undergraduate (e.g. Magrill & St. Clair, 1990; Sylvia, 1998; Fescemyer, 2000; Davis & Cohen, 2001; Leiding, 2005) and postgraduate (e.g. Sylvia & Lesher, 1995; Slutz, 1997; Waytowich et al., 2006) levels.

Of interest to the present study are studies related to postgraduate writing, and in particular, doctoral theses. An analysis of the cited sources in 61 theses of Library and Information Science showed that the College & Research Libraries and Journal of the American Society for Information Science were among the most frequently cited journals (Buttlar, 1999). Monographs were cited more often than journal articles in theses in Music and Philosophy (Herubel, 1991; Kuyper-Rushing, 1999). This pattern was also observed in Political Science, Psychology, and Sociology (Kushkowski et al., 2003). This contrasts with citation patterns observed in theses of Chemistry, Geology and Biology where more than 80% of all citations were for journal articles (Walcott, 1991; Walcott, 1994; Gooden, 2001). Journal articles received 64% of all citations in a cross-disciplinary study of citations taken from master’s and doctoral theses completed at Iowa State University between 1973 and 1992, and some 85% of the cited sources were available in the university library (Kushkowski et al., 2003).

As can be seen, the studies on reference lists in doctoral thesis have tended to be characterized in the following ways. First, they have been conducted in single disciplines (Herubel, 1991; Walcott, 1991; Sylvia & Lesher, 1995) as well as multiple disciplines (Kushkowski et al., 2003), with the latter often demonstrating the influence of disciplinary proclivities on reference lists. Second, such studies have proliferated in different contexts such as the USA (Gooden, 2001; Kushkowski et al., 2003; Williams & Fletcher, 2006), the UK (Brophy et al., 2003), Asia (Zainab & Goi, 1997), and recently...
Africa (Iya, 1993; Oyik, 2006). Most importantly, such studies have often been conducted within the framework of Information Science catering to diverse needs such as journal evaluation (Herubel, 1991; Haycock, 2004) and library collection development (e.g. Leideng, 2005). These initial purposes for undertaking studies of reference lists are beginning to give way to their importance for calculating a journal’s impact factor (e.g. Kroc, 1984) which is used by some universities as part of academic staff assessment (e.g. Garfield, 1983).

The present study extends the existing body of works on student reference lists in three ways. First, it focuses on a leading university in South Africa, not often encountered in the literature. Second, the present study focuses on a multiple-discipline context, and thus has implications for disciplinary variation. Further, it adopts a more discourse analytical approach, instead of the usual focus on bibliometric features such as date, type of materials, geographical distribution, and authorship patterns.

**Research Design and Methodology**

*Research Design*

The present study is situated in the qualitative research paradigm. In particular, it adopts a discourse analytical approach with the view to finding out what is meaningful and acceptable in the structuring of doctoral thesis in various disciplinary communities. A multiple-case study is found germane in this study as it allows a much more in-depth and close study of the variable, reference list, under examination. Given that such a discourse analytical study often has quantitative outcomes, references are made to some descriptive statistics such as percentages and central tendencies as the basis of the interpretation of data.

*Educational Context*

The context for this study is a leading university in South Africa, the University of Witwatersrand. A multicultural and multilingual country, South Africa, like many African countries, has a distinct language policy which impacts on higher education. At the University of Witwatersrand, not only is English Language the medium of instruction...
but it is also a taught subject at both undergraduate and graduate levels. What is of interest in this research is the mission of the university to increase its doctoral student population to about half of the entire student population in a couple of years from now. The university, therefore, has a vigorous doctoral research education in all its graduate schools.

For practical purposes, three departments, namely Animal Plant and Environmental Sciences, Literature, and Sociology were chosen. Together with other departments in several other schools at the University of Witwatersrand, these departments assist the university to strive towards providing quality tertiary education to meet the challenging needs of South Africa as well as globalization. Unlike several other universities in the USA but like others in the UK, no courses are taken. Doctoral students are expected to plunge straight into their research on passing their research proposal. Besides, they are expected to make themselves available of the writing workshops and seminars that are organized to make them confident and competent in handling the various aspects of the doctoral thesis, a key aspect but understandably likely to be under-rated by students.

Data and Analysis
As part of a wider study, theses accepted in the three departments of Animal Plant and Environmental Sciences, Literature, and Sociology at The University of the Witwatersrand were obtained. Specifically, this study was limited to the ten most recently available theses housed in the Cullen Library covering the years 2000-2006. First, Commencement programs from the University were collected to find the theses titles and their doctoral graduands. Thereafter, the library's automated catalog was searched to find the students' theses. The random number generation analysis created a sample of 30 viable theses. Title pages, table of contents, and reference list sections were photocopied from each of the 30 theses. Information extracted from each thesis included the doctoral student's name and year of graduation.

Once the thirty theses were obtained, they were coded to enable analysis to be conducted on the structure of each individual thesis and the entire set of theses. To ensure
anonymity, each thesis was coded; the theses from Animal, Plant, and Environmental Sciences, Literature, and Sociology were coded as DAT (doctoral thesis of Animal, Plant, and Environmental Sciences), DLT (doctoral thesis in Literature), and DST (doctoral thesis in Sociology) respectively. To differentiate one thesis from another in the same discipline, numbers were assigned. Thus, for example, for the Literature theses, the codes ranged from DLT 1 to DLT 10. Because of the favorable library policy in the research site, all theses (with the exception of DST 1 and DST 2 which had been submitted to the library electronically) were carried home and notes on especially, the thesis format, text length, and chapter taken. In this paper, any time any of the three disciplines is mentioned, the abbreviated forms such as APE (for Animal, Plant and Environmental Sciences), LIT (Literature) and SOC (for Sociology) are used.

Findings and Discussion
The results and discussion of this analysis are presented, taking account of the research questions outlined earlier. Thus, first I consider the labels used, followed by the bibliographic length or total citation count, location of bibliography, and the organizational elements identified.

Labels Used
Although strictly speaking, terminology would appear to belong to the domain of lexico-semantics rather than structure, it is worth exploring in order to set the pace for the discussion.

In the present study, four terms were variously used: ‘references’, ‘bibliography’, ‘works cited’, and ‘sources’. All the APE students used the term ‘references’ with 4 of the SOC students also using it. None of the Literature students used the term ‘references’ as a heading. A further point of convergence involved the Literature and Sociology students, where 7 of the former used the terms ‘bibliography’ while 4 of the latter used it. Only three DLTs used ‘works cited’, while a similar number in Sociology used ‘sources’.
Given the dearth of studies on the labels used for this important ‘terminal’ rhetorical site of the doctoral thesis, as far as I know, it is not possible to relate the above findings to the extant literature. It is nonetheless clear that this varying use of terms may reflect the epistemological dispositions of the three disciplines. For instance, the term ‘sources’ used in the Sociology doctoral theses seem to be a more elastic term that can allow numerous materials to be included, while ‘works cited’ tend to be more restrictive. Like the Sociology doctoral researchers, the Literature doctoral researchers utilized more varied labels. This more varied use of labels by both group of doctoral researchers evoke Becher’s (1989) who posit the diffuse nature of the Social Sciences and Humanities disciplines in contrast to the more convergent Science disciplines (here, Animal Plant and Environmental Sciences) that utilized only one label, ‘references’

At this point, it is worth admitting that various academic writing manuals tend to make a distinction between bibliography and reference list or references, arguing that bibliography consists of all reading materials consulted, while references list is considered to be the actual reading materials cited in a text. Most educational institutions follow this lead. On the other hand, Information Science or Scientometrics do not appear to make such a distinction. In general, as far as terminology is concerned, two conclusions can be made. First, in terms of frequency of occurrence, ‘references’ is the most popular, although this needs to be verified in a larger corpus. Second, given that the DST reference lists exhibit varying terms, they can be said to be the most complex, followed by the DLTs.

**Location of Reference Lists**

In response to the second research question, it was observed that both the Literature and Sociology doctoral researchers located their reference lists only at the end of the main text. In contrast, the APE doctoral students located both within the main text and at the end of the main text. It was surprising to find that three of the DATs had only a consolidated reference list at the end, with seven out of the ten theses having both a reference list at the end of each chapter and at the end of the main text.
The above findings, while clearly alluding to disciplinary differences, are explainable. The first point is to acknowledge the larger issue of differences in the structure of doctoral thesis, as highlighted in the literature (Dong, 1998; Ridely, 2001; Thompson, 2001; Paltridge, 2002; Swales, 2004). Together, these influential studies on the structure of doctoral theses point to three main formats: traditional, topic-based, and article compilation. While the doctoral theses in both the soft and applied sciences in the studies by Dong (1998), Ridley (2000), and Thompson (2001) are patterned after a form variedly known as ‘multiple-manuscript’, ‘anthology’ or ‘article compilation’, the Humanities and Social Sciences doctoral thesis tend to use the traditional and topic-based thesis format. The point to note in relation to the present study is that because the compilation format required the compilation of published or publishable articles and at the same time a thesis, a hybridization of the reference list, as noted in this study, was expected. On the other hand, because the Sociology and Literature adopted the traditional and topic-based thesis formats, a reference typical of monographs was unsurprisingly adopted. The use of only the consolidated reference list in both the DLTs and DSTs theses reflect the earlier observation of the adoption of topic-based format which makes such nature of consolidated nature plausible.

Arising from the above explanation is, therefore, a disciplinary difference in terms of the location of reference list. Whereas the APE doctoral thesis adopt a hybrid form in placing the reference list in two locations of the thesis, the LIT and SOC theses locate their reference lists in only one place. It would appear then that in terms of location, the APE theses appear to be more complex than the LIT and SOC theses.

**Length of Reference Lists**

Concerning the length of reference lists in terms of number of citations across the three disciplines, we find much more interesting findings. First, the DSTs contain the highest number of citations – 3763 (44.4%), followed by the DLTs-2490 (29.4%), and then the DATs-2230 (26.3%). In average terms, this is 376.3, 276.8, and 183.1 respectively. Interestingly though, the lowest number of citations (105) was found in Sociology (DST 10). Similarly, but unsurprisingly, the highest number of citations (924) was found in...
Sociology (DST 3), nearly twice the second highest number of citations (512), also found in Sociology (DST 8).

The above findings are consistent with earlier studies and the observation made on the chapter and thesis length, thus confirming the expansive or compact nature of the disciplines involved (Becher & Trowler, 2001).

Organizational Features of Reference Lists

All 10 DATs had no organizational units (that is, sub divisions within the reference lists). On the other hand, the DLT and DST reference lists had a maximum of three organizational divisions. This means that in some of the theses, apart from the main heading ‘references’, ‘bibliography’, or ‘sources’, there were two other divisions.

In particular, while 6 of the DLTs reference list had two organizational units, 4 DSTs had two divisional units. For instance, it was the case that the DLTs had a main heading such as ‘bibliography’, with subheadings such as ‘primary texts’ and ‘secondary texts’ (DLT 6) or ‘primary sources’ and ‘secondary sources’ (DLT 8). The same two-level organizational pattern is realized lexically as ‘bibliography’ (main heading) and ‘texts by David Gian Mailu’ and ‘Other references cited’ (DLT 4). Similarly, DSTs had their two-level organizational units realized as ‘Sources’ (main heading) and subheadings such as ‘news letters’, ‘union books, reports, and documents’, ‘books and journal articles’ (DST 9) or ‘bibliography’ (main heading) and ‘primary sources’ and ‘secondary sources’ (DST 6).

The specific references to source materials sometimes created difficulty to me with regard to whether they were to be included in the counting. For instance, in Sociology where some source materials were placed under appendix rather than the ‘bibliography’ or ‘sources’, it was excluded from the counting. Similarly, where interviews or press releases were considered by the researcher as primary data without adequate referencing details, they were excluded from counting but included only when adequate details such
as date and place of publication were provided. Given that only two DSTs presented such a scenario, it is hoped that this will not affect the total counting.

Yet another instance of complexity, which is associated with the DLTs and DSTs involves the extent to which other forms of documentation such as footnotes and endnotes were used in addition to the reference list. No DATs employed either footnotes or endnotes. The failure of the science students to use any of the two forms of documentation is in accord with the sociology of science. The data indicate that 8 DLTs utilized footnotes, while 1 DLT student used endnotes. On the other hand, 4 DSTs had footnotes and two had endnotes. Given that one DLT and 4 DSTs did not use either footnotes or endnotes, it can be argued that there is a greater tendency for the Literature students rather than the Sociology students to use endnotes or footnotes. This can be explained by alluding to the Social Sciences which is regarded as closer to the Humanities.

Conclusion and Implications
In the present study, I have attempted a structural description of the reference lists in doctoral theses across three disciplines in a leading university in a Sub-Saharan African context, focusing on labels used, location of reference lists, length of reference lists, and organizational features. Three key findings emerge.

First, in general, the present study provides evidence to suggest the influence of disciplinary communities on the utilization of the structure of reference lists. Specifically, in terms of the labels, the APE doctoral theses appeared to be simple as they utilized only a more monolithic terminology, in contrast to the more varied labels used by the other two groups of doctoral researchers. In terms of the location of reference lists, the APE doctoral researchers adopted a more complex approach, placing them in both the main text (at the end of each chapter) and at the end of the main text, thus evincing a hybrid form, given understandably the thesis format adopted. The LIT and SOC theses were more complex in their construction of the reference lists with regard to their length and organizational features.

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The above findings have implications for the scholarship on English for Academic Purposes and disciplinary rhetoric in doctoral research education, as well as future research. First, whereas the present study does not consider the macro structure of the doctoral thesis, it does provide evidence on an aspect of the structure of doctoral thesis to suggest a strong disciplinary influence in the way doctoral students construct their reference lists with respect to the four variables considered. Whereas in the Science reference lists, there is a higher degree of homogeneity in the construction of the reference lists, we observe varying practices within the Social Sciences and Humanities reference lists with respect to, for instance, the labels used as well as the organizational features. While acknowledging the merit in diversity, it is necessary to flag issues of consistency, fairness, and a certain measure of homogeneity of the various disciplinary communities without necessarily making doctoral supervision more difficult.

These findings and observations regarding the reference lists should be of note to the teachers of English for Academic Purposes and other language support providers in doctoral research education who assist doctoral researchers in their thesis writing, including the references list. The point though that needs to be stressed is that with the doctoral researcher still trying to find his/her feet, the varying intra-disciplinary textual practices in particular can be a source of confusion and frustration to him/her. The apparent confusion may deepen when the doctoral student has to consult a writing or academic literacy specialist who may not have any background in his/her discipline and offers varying and often dogmatic advice. These varying intra-disciplinary textual practices make it necessary for a common forum to be created for both doctoral supervisors and English for Academic Purposes researchers as well as advanced academic literacy/writing specialists or writing centers to interact to alleviate the stress of the doctoral researcher in writing their research reports (that is dissertations/theses).

Given these findings and implications, further research could be conducted at both the undergraduate and master’s level while maintaining the same disciplines to ascertain whether indeed the findings noted at the doctoral level are applicable. Also the same disciplines could be used in a study in a different institution to ascertain whether
institutional context, rather than disciplinary context influences the construction of such a rhetorical site as the reference list. Thus, more studies on the construction of the reference lists of thesis from different disciplines, different geographical and institutional contexts, as well as different levels are needed to be certain about the findings in the present study.

References


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