UNIVERSITY OF CAPE COAST

GENRE ANALYSIS OF UNDERGRADUATE DISSERTATION CONCLUSIONS

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BY

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DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university of elsewhere.

Candidate's Signature ……..…… Date: ……..…….

Name: ……..……..…….

Supervisors' Declaration

We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Principal Supervisor's Signature: ……Date……..…….

Name: ……

Co-Supervisor's Signature: ……...…….. Date…….

Name: ……...……..……

ABSTRACT

Genre analysis has gained so much interest among genre analysts all over the world. Inasmuch as there has been this growing interest in genre analysis, it appears that research into undergraduate writing is still in its infancy. This study investigates the undergraduate writing, specifically dissertations authored by undergraduate students from the lenses of ESP tradition. The data for the study comprises concluding chapters of forty (40) dissertations from two departments—Chemistry and History—in the University of Cape Coast. Using Bunton (2005) as my analytical framework, the study revealed eight moves: Move1 (Stating the aim(s) of the chapter), Move 2 (Restating the objective(s) of the study), Move 3 (Describing the methods used), Move 4 (Summarizing the study), Move 5 (Giving recommendation(s)), Move 6 (Stating challenges), Move 7 (Extending well wishes) and Move 8 (Stating the importance of the study). All the eight moves identified were present in the Department of History Conclusions (DHCs). Out of the eight moves identified, only six were present in the Department of Chemistry Conclusions (DCCs). Pertaining to the lexico-grammatical resources in the various moves, the AntConc software was used to tease out the keywords in the various moves. Collocates of the keywords that were common to moves across the disciplines were also identified. It can be concluded that conclusions from the two selected departments vary in terms of their titles, schematic structure as well as the keywords that typify the moves identified.

KEY WORDS

Concluding chapters

Dissertation

Genre analysis

Move

Undergraduate students

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DEDICATION

To my parents: Togbe Kwasinyi Agyeman IV and Mama Esenam Adzimah

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CHAPTER ONE

INTRODUCTION

Introduction

This chapter provides a background to the study. Also, the problem the researcher intends to solve at the end of the study is well articulated. Again, the purpose for the study has been explained. Further, it outlines the questions that undergird the study and the significance of study. In addition, the scope of the study has been spelt as well as the organization of the work.

Background to the Study

According to Nasseri and Nematollahi (2014), "…human life is nothing but a constellation of different discourses in different contexts and encounters" (p.1354). Genres play a very important role in human lives; in terms of communication they have become a tool used by people to go about their everyday business as well as to ease their way through interacting with people (Devitt, 2004). Every genre is owned by a discourse community and a discourse community is "composed of those who share functional rules that determine the appropriacy of utterances" (Swales, 1988, p. 211). Swales (1990) describes discourse communities as groups that have goals or purposes, and use communication to achieve these goals. Every discourse community has the way it communicates and its way of communication is undergirded by rules. Bhatia (2004) posits that every disciplinary community owns a typical set of genres and these genres are used by members to achieve the "professional objectives" (p.63).

In the academic discourse community, members are committed to producing and disseminating knowledge in order to achieve the goal of the discourse community. In the quest to achieve the set goals by members, the academic discourse community, just like any other "disciplinary community", owns a set of genres. The production of these genres is influenced by the disciplinary beliefs, conventions, norms and expectations of the community (Swales, 2004). The purpose for the production of genres is to disseminate knowledge. The creation and dissemination of knowledge is done by both experts and apprentice members of the academic discourse community and these functions are largely performed through academic writing.

Academic writing is seen as "a socialization process by which individuals learn to take part in the academic community" (Olmos-Lopez, 2015, p. 28). Irvin (2010) also sees it as "a form of evaluation that asks one to demonstrate knowledge and show proficiency with certain disciplinary skills of thinking, interpreting, and presenting" (p. 8). Academic writing may also be said to be part of the "process of negotiating what is to be taken as accepted knowledge within a discipline and is best achieved through modes of expression that have become conventionalised through particular social and cultural contexts in which they arise" (Hewings, 2001, p. 10).

Based on the producers of these kinds of writing, Bhatia (2004) identifies two categories of academic writing: professional writing and student writing, where the former is associated with experts while the latter is associated with the apprentice members of the academic discourse community. Afful (2005)

underscores this classification by placing the two main participants in academic writing on a continuum, where undergraduate writing and expert writing are placed at the extreme ends of the continuum. The positions of these participants on the continuum smack of the differences between the two participants. Afful (2005) explains that undergraduates are under training and go through various stages until they also become experts. Therefore, these two groups of persons are put at the opposite ends of the same pole. In support of Afful's assertion, the experts of the academic discourse community play gatekeeping roles and are considered full participants of the discourse community while the apprentices consisting of PhD, Master's and undergraduate students are considered as "deep participators, ventriloquists and eavesdroppers" respectively (Pare, Starke-Meyerring & McAlpine, cited in Pare, Starke-Meyerring & McAlpine, 2009).

From Swales' perspective, it can be argued that any event that involves the use of language is governed by a set of communicative purposes and is understood by members of the discourse community in which it takes place can be considered as a genre. Owing to the mode of delivery of the genre, two main types of genres are identified—written and spoken genres. A written academic discourse, for that matter, written academic genre, according to Kroll and Hamph-Lyons, as cited in Olmos-Lopez (2015), is a cognitive process which takes place in a university or educational institution" (p. 28). More so, in the academic discourse community, written genres include theses, research articles (RAs), textbooks, festschrifts, monographs and dissertations. On the other hand,

the spoken genres produced in the academic discourse community include lectures, proposal defense, seminars and viva voce.

Over the years, genre studies have become a research area of great interest for both genre and discourse analysts. Genre experts such as Swales (1981) investigated research article (RA) introductions and concluded that a RA introduction is typified by a four-move structure. Swales (1990) modified his four-move structure of article introductions to a three-move structure. Samraj (2002) also conducted a similar study on the introduction of RAs. In this regard, the research article, unlike other academic and research genres, appears to have been given the greatest attention by genre analysts. This could be attributed to the fact that it is usually produced by expert members and gate-keepers of the academic discourse community. This is not to say that other academic genres have not received any attention from researchers. Hewings (1993), Bunton (2005), and Afful and Nartey (2014) have also conducted some studies on various aspects of theses and dissertations.

Dissertations and theses are both written reports of research conducted by students at the tertiary level. However, it appears that universally the distinction between the terms "dissertation" and "thesis" has not been so clear. For instance, in the United States, the term thesis refers to written research reports at the Master's level and dissertation, at the PhD level. On the contrary, the distinction between these two terms in Europe is the other way round; thus, "thesis" is to PhD level while "dissertation" is to Master's level. In spite of these distinctions, both terms are often used interchangeably (University of Cape Coast School of

Graduate Studies, 2015). For this reason and to avoid any confusion in the use of these two terms in the current study, I use the term "dissertation" to refer to reports of studies conducted by undergraduate students whereas "thesis" is limited to studies conducted by both PhD and Master's students.

According to Swales (2004), a dissertation is the most complex piece of writing a student has to undertake in order to learn something new. A dissertation as well as thesis is a "capstone learning activity undertaken in partial fulfillment of the requirements" of a degree (University of Cape Coast School of Graduate Studies, 2015). Dissertations and theses have been considered to be the most difficult academic writing students engage in and the difficulty has been likened to the complexities that come with childbirth (Paré & Starke-Meyerring 2006). Dong (1998) also sees this kind of writing as "a formidable task" (p. 369). Irrespective of the complexities and the difficulties that come with dissertation writing, it also remains an indisputable fact that gate-keepers of the academic discourse community are aware of the challenges academic writing poses to the apprentice members. This is as a result of the fact that all gate-keepers have ever written a dissertation or thesis at one point in time in their academic journey. Therefore, these gate-keepers of the academic discourse communities are familiar with the difficulties students encounter when writing their dissertations; hence, the difficulties of first-timers (undergraduate students) are well known. Yet, their dissertations are under researched.

Further, dissertations which are research reports written by undergraduate students usually consist of five chapters (*Introduction, Review of Literature,*

Methodology, Analysis and Discussion and *Conclusion).* The last chapter which is the concluding chapter generally gives an overview of the entire study. The conclusion, as a part-genre, has received some scholarly attention from researchers such as Afful (2005) who studied that of undergraduate students' essays and Bunton (2005) who examined that of Master's and PhD theses. It appears adequate attention has been given to the conclusions chapters of Master's and PhD theses to the neglect of undergraduate dissertation; perhaps, because undergraduate students are considered "eavesdroppers" in the discourse community (Paré et al., 2006, p. 10) which implies that they are not full members of the academic discourse community; hence, their writings appear not to be taken seriously by scholars.

Interestingly, the undergraduate dissertation is the first attempt by novices of the academic discourse community and after this writing experience, only few of them are able to further their education to the Master's and PhD levels; yet, dissertations produced at this level are not given much attention by scholars.

Statement of the Problem

Over the years, written academic genres have become a blooming field of research for linguists. Specifically, research articles (RAs), PhD and Master's theses have received enormous attention from genre analysts all over the world. The PhD and Master's theses seem to have been adequately researched. For instance, Bunton (2005) and Samraj (2002) are some of the studies conducted on PhD and Master's theses.

In Ghana, even though studies such as Afful (2005), Afful and Akoto (2010), Yeboah (2014) and Afful and Nartey (2014) have focused on undergraduate essay and undergraduate dissertation, it appears not much scholarly attention has been invested in undergraduate dissertations as invested in PhD and Master's theses. Some scholars have posited that thesis and dissertation writing is a formidable task; yet, so much attention has been given to theses produced by Master's and PhD students who already have some experience in writing such research reports. However, it seems less attention is given to those that are written by novice members of the academic discourse community, who hardly have any experience in writing such research reports. Owing to this, it becomes necessary that more attention is given to the dissertations written by undergraduate students in order to better understand how their dissertations are structured and to add to the scanty available scholarship on undergraduate dissertation writing. Given this gap, the present study examined the conclusions of undergraduate dissertations produced in a Ghanaian University from a genre perspective.

Purpose of the Study

The purpose of the study is to examine the concluding chapter of undergraduate dissertations from the perspective of genre. Using the English for Specific Purposes (ESP) approach to the study of genre, a detailed description of the conclusions in terms of their schematic structure and the language use of undergraduate students in writing the conclusions of their dissertations would be given. With regard to the form of the conclusions, three things are considered.

First, the study identifies the move patterns that typify the conclusions of the dissertations. Second, an account of how these moves are sequenced in the conclusions is given. Third, the textual space allocated to each move is also accounted for. The second part of the study gives an account of the lexico-grammatical resources that typify each move in the conclusions where particular attention would be paid to the keywords and the collocates of commonly occurring keywords in each move across the two disciplines (Chemistry and History) that are selected for the study. Thirdly, report on the variations that exist between the two disciplines in terms of the organization of their concluding chapters and language use are also considered.

The study also seeks to examine only the concluding chapter of undergraduate dissertations from departments from the two disciplines; that is, Chemistry and History. The concluding chapters are the focus of the study because a conclusion is considered an essential rhetorical feature of academic writing and the 'publishability' of any monologue is dependent on such rhetorical unit, hence the high premium that is placed on it (Swales, 2004; Afful, 2005).

Research Questions

The study is underpinned by the following research questions:

1. What are the titles given to the concluding chapters of undergraduate dissertations in the Departments of Chemistry and History?
2. What is the schematic structure of undergraduate dissertation concluding chapters in the Departments of Chemistry and History?

3. What are the lexico-grammatical resources that typify the moves of the undergraduate dissertation concluding chapters in the Departments of Chemistry and History?
4. What are the disciplinary similarities and differences between the conclusions from the two selected departments?

Significance of the Study

The study is significant in terms of theory and pedagogy. This section articulates the significance of the current study with regard to theory and pedagogy.

Theoretically, the study demonstrates that the genre theory can be used to analyze genre in varying contexts. As far as genre studies are concerned, available literature on undergraduate writing appears scanty in ESP; hence, this study makes a valuable contribution to the growing studies on undergraduate writing especially in Ghana as an ESL context as it provides a deeper understanding of how the undergraduate dissertation conclusion is structured.

Further, the study has pedagogical significance as the results from the study will inform undergraduate students on how to appropriately organize their dissertation conclusions in their respective disciplines. Again, the results will help them to become abreast of how moves should be sequenced and which of the moves should to be allocated the least and the greatest textual space. According to Hyland (2002), studies in the ESP tradition "provide students with explicit knowledge of relevant genres so they can function effectively in their target contexts…helping learners gain access to the ways of communicating that have accrued cultural capital in particular communities…" (p. 125).

Additionally, the findings will inform writing instructors and dissertation supervisors in English medium universities in Ghana and the world at large (Afful, 2005).

Scope of the Study

In order to answer the questions guiding the study, it is necessary that a defined scope is given to the work. This section provides the scope of the study.

First, the study confines itself to dissertations from two disciplines; that is, History and Chemistry. History is chosen because it belongs to the humanities where much premium is put on language use, in general. Also, it sees writing as a powerful and fundamental tool of historians. Chemistry, on the other hand, is chosen because it belongs to the hard sciences where much premium is placed on practical work at the laboratory than on writing (Hyland, 2000).

Second, the focus is placed on concluding chapters of dissertations written by undergraduate students. I chose to examine the concluding chapters because it is usually the last chapter written by students at the time they are so tired of writing; hence, little attention is paid to it. Swales (2004) observes dissertation writers' situation and states that "they are long-distance runners making a very final spurt for the tape, typically with very few emotion and intellectual resources left as they try to finish by the deadline negotiated by them…" (p. 118). Swales (2004) notes that, owing to the long-distance runner attitude usually exhibited by students, the concluding chapter is usually the weakest chapter of all. Again, he describes it as "a tame summary of the major

findings" (p. 118) which is essential to determining the publishability of such a work (Swales, 2004).

Finally, the study focuses on dissertations that are authored by students at the undergraduate level since much attention has not been paid to these dissertations. More so, undergraduate students are first-timers when it comes to dissertation writing.

Organization of the Study

The study is organized into five chapters. Chapter one provides a background to the study, statement of the problem, purpose of the study, research questions, significance of the study, scope of the study and the organization of the study. Chapter two articulates the theoretical framework and reviews some literature related to the present study. Chapter three explains the methods used in the study. It also gives a detailed explanation of the research design, area, sampling procedure, data collection procedures and data processing and analysis. Chapter four discusses the findings according to the order in which the research questions have been presented. Chapter five, the final chapter, consolidates the entire study, summarizes the key findings and draws conclusions and recommendations based on the findings as well as presents suggestions for further studies.

Chapter Summary

This chapter has presented the background to the study. The identified problem which will be solved by the end of this study has also been articulated. Further, the chapter has spelt out the significance of the study. The chapter has also articulated the scope of the study as well as the organization of the entire study.

CHAPTER TWO

LITERATURE REVIEW

Introduction

The aim of this study is to investigate the generic structure of the concluding chapters of undergraduate dissertations from the Departments of Chemistry and History. This chapter provides the theoretical underpinnings of the present study as well as the current state of literature on dissertations and theses.

Theoretical Framework

This section discusses the genre theory which undergirds this study. In this section of this chapter, discussions on the theory of genre from the three schools (i.e. the New Rhetoric, Systemic Functional Linguistics (SFL) and English for Specific Purposes (ESP)) are presented, with a focus on the ESP tradition.

Genre Theory

The present study is based on the genre theory. Owing to the fact that improving students' writing remains an important goal to this theory (Varaprasad, 2013). Genre was considered a literary construct until recently, when it has become a framework for analyzing texts (IsikTas, 2008).

The genre theory, as used in Applied Linguistics, is identified with three different schools (Hyon, 1990). These schools are the New Rhetoric also known as North American School, Sydney School also known as Systemic Functional Linguistics (SFL), and English for Specific Purposes (ESP). These three schools have their unique ways of defining a genre and their target audience. A number

of scholars, such as Swales (1990): research article introductions, Bhatia (1993): professional genres and Miller (1984): genre as a social action, have been associated with the three afore-mentioned schools.

The Three Schools of Genre Theory

This section throws more light on the three schools of the genre theory. The first to be considered is the New Rhetoric, which is also known as the North American School owing to the fact that it is based in North America. This school of genre focuses on university students with English as their first language (L1) and novice professionals. Researchers under this school hold the view that a genre emerges from recurring social action. Genre, according to them, is "a rhetorical action based on recurrent situation" (Miller, 1984, p. 159). New Rhetoric genre analysts put premium on the situational context within which the genre occurs, other than the form of the text (Hyon, 1996). In other words, concerns itself with the sociocultural aspect of genre in a sense that genre is described based on its social and cultural situational contexts. Scholars who belong to this school of genre theory see genre as a social action and argue that a "rhetorically sound definition of genre must be centered not on the substance or the form of discourse but on the action it is used to accomplish" (Miller, 1984, p. 151). To add to that, Bazerman (1988) cited in Hyon (1996), asserts "The more you understand the fundamental assumptions and aims of the community, the better able you will be . . . to evaluate whether the rhetorical habits you and your colleagues bring to the task are appropriate and effective" (p. 699).

The second tradition of the genre theory, which is the Sydney School, focuses on primary, secondary schools and later immigrant education. Sydney School is "centered within a larger language theory known as the systemic functional linguistics (SFL)" (Hyon, 1996, p. 169), specifically, register theory propounded by Michael Halliday. SFL puts premium on "the relationship between language and its function in social settings" (Hyon, 1996, p. 696). Analyzing a genre using SFL, the analysis is done in terms of "contextual factors of field, mode and tenor" of the text (Bhatia, 2002, p. 8). This is as result of the fact that SFL genre analysts hold the view that language is a set of linguistic choices from which users of language make their selections. For scholars of the Sydney school, to produce a genre in a particular discourse community, one has to make some grammatical and lexical choices along the three dimensions–field, tenor and mode. According to Lock (1996), as cited in Figueiredo (2010), SFL focuses on the "appropriateness of each lexico-grammatical choice for a particular communicative purpose in a particular social context" (p. 122). From the perspective of the SFL, genres are "staged, goal-oriented, purposeful activity people engage in as members of their culture" (Martin, 1984, p. 25).

The last of the schools is English for Specific Purposes (ESP). Notable scholars in the ESP school include Swales and Bhatia. The aim of ESP is to use genre as a tool to teach what is relevant to non-native speakers of English who are learning English for a particular purpose (Afful, 2005). In other words, ESP researchers are interested in analyzing and teaching language required by non-native speakers of English for the purposes of their career (Hyon, 1996). ESP is

seen as an umbrella term for specialized areas such as English for Academic Purposes (EAP), English for Occupational Purposes (EOP), English for Medical Purposes (EMP) and English for Professional Purposes (EPP) (Swales, 2004). The beginning of the ESP tradition of genre analysis can be traced to Swales in 1981 and the theory was later in his groundbreaking work, 'Genre Analysis', in 1990 (Afful, 2005; Kwan, 2006). Swales' genre based approach is centered on three variables–structure of the text, communicative purpose of the text, and the social context within which a genre occurs. To Swales, a detailed description of a genre should be based on the structure of the genre in relation to its communicative purpose as well as the social context within which it regularly occurs. Owing to this, Swales (1990, p. 58) defines genre as "a class of communicative events, the members of which share a set of communicative purposes." Researchers in this field put premium on the text by identifying its structural elements. The identification of the structural patterning is often done, using *move analysis.* Examples of such studies are Swales (1990): research article introductions; Samraj (2002): research article introductions; and Afful (2005): Essay introduction and conclusions. It is worth noting that ESP is not only interested in analyzing the structural patterning of a genre, but also it gives a detailed analysis of specific linguistic features of language use in the text.

The three schools of genre that have been discussed in the above paragraphs appear to be unique but can be said to overlap. The three schools are interested in dealing with both spoken and written genres and the context within which they occur; be it situational, social or contextual (Hyon 1996). From the

literature, it can be deduced that the ESP and SFL approaches pay attention to the structural aspect of a genre. Even though the SFL, like ESP, pays attention to the form of a genre, it appears their attention is on the linguistic choices rather than the structure of the genre whereas the ESP puts premium on the structure. This makes the ESP approach preferable to the SFL for the current study.

Although these three schools have been discussed, the ESP approach is considered the most suitable for the current study based on three reasons. First, ESP focuses on non-native speakers of English at the tertiary level. That is to say, the authors of the dissertation concluding chapters considered in this study are Ghanaian; hence, non-native speakers of the English language. Second, it focuses on the text; that is, this research is based on rhetorical structure of the concluding chapter of the undergraduate dissertation. Lastly, the conclusions are produced in a professional setting; that is, the academic setting (university). Owing to these three reasons, I see the ESP approach among the three schools of genre theory as the most appropriate to adopt for the present research.

ESP Tradition of Genre Analysis

Genre analysis is "an approach or set of analytical methods for studying particular texts within discourses" (Hyland & Paltridge, 2011, p. 55). Other genre analysts see this approach of analyzing language use as not a mere way of considering how a text is constructed but also putting premium on the likely interpretation, usage, and exploitation of the text in specific contexts in order to achieve specific goals (Bhatia, 2002; Amnuai & Wannaruk, 2013).

In the ESP perspective, some gatekeepers, such as Bhatia (1993), came up with steps to guide the conduct of genre analysis. According to Bhatia (1993), conducting a genre analysis from the ESP perspective should be guided by the following steps:

1. placing the text-genre in a situational context
2. surveying the literature
3. refining the contextual analysis
4. selecting an appropriate corpus
5. studying the institutional context
6. selecting the levels of analysis (lexico-grammatical, move structure)
7. checking results with specialist informants (Bhatia, 1993, p. 22)

The aforementioned guide posited by Bhatia outlines seven stages in genre analysis. In other words, these are the seven necessary stages a researcher must go through when genre analyzing a genre. According to Bhatia, the first thing a genre analyst should do is situate the text to be examined in context. The analyst proceeds with surveying the existing literature to be able to identify a existing gap. Having identified a gap in the existing literature, the researcher then refines the contextual analysis; followed by a selection of data to be used. After the appropriate data has been selected, the analyst explores the construction and the usage of the genre in its discourse community. Bhatia (1993) goes a step further to justify the relevance of the steps he has outlined:

> First, it is necessary to be aware of the purpose of the analysis.
>
> Second, the aspect of a given genre is significant for the analysis.

> Lastly, any background knowledge about the genre already acquired by the analyst will affect the results for each step (p. 22).

Genre analysis involves two levels (structural and lexico-grammatical). However, based on the interest of the researcher, s/he decides on which of the two levels to situate his/her study. These two levels which comprise the structural and the lexico-grammatical levels can be said not to be mutually exclusive since one or both levels can be employed in a study. In the current study, both levels, the rhetorical structure of the conclusions and lexico-grammatical resources, are examined. The final stage in Bhatia's model allows one's findings to be rated by a specialist informant. This stage in Bhatia's genre analysis model is very important because it offers the researcher 'a second opinion' and for that matter a specialist view which in the long run makes the results from the study reliable.

Move analysis remains a pertinent aspect of genre analysis, especially in the ESP tradition, as pioneered by Swales. One common position of the ESP-based genre analysis is that the communicative purpose of a text is achieved through a series of moves (Amara, 2009). As already alluded to, move analysis was spearheaded by Swales (1990). He asserts that RA introductions are hierarchically organized and these introductions can be broken down into moves and steps (Kanoksilapatham, 2005). Since Swales' (1990) study was the ground breaking study in "Move Analysis", it is given some attention here.

According to Swales (1990), the introduction sections of RAs consist of three moves. Move 1 is the beginning move: Establishing a territory (establishing

the topic), followed by Move 2: Establishing a niche (justifying the present study), and concluded by Move 3: Occupying a niche (describing the present study). Each move is realized by at least one step. Swales' model, in other words the create-a-research-space (CARS) model, is presented in Figure 1.

Move 1		**Establishing a territory**
	Step 1	Claiming centrality and/or
	Step 2	Making topic generalization(s) and/or
	Step 3	Reviewing items of previous research
Move 2		**Establishing a niche**
	Step 1A	Counter-claiming
	Step 1B	Indicating a gap
	Step 1C	Question-raising
	Step 1D	Continuing a tradition
Move 3		**Occupying the niche**
	Step 1A	Outlining purposes
	Step 1B	Announcing present research
	Step 2	Announcing principal findings
	Step 3	Indicating RA structure

Figure 1: Swales' CARS Model (Swales, 1990, p. 141)

According to Hyland and Paltridge (2011, p. 175), a move is a "rhetorical step writers (or speakers) routinely use to develop their social purposes". In other words, a move is a segment of text that is shaped and constrained by a particular communicative function (Bunton, 2005). Examining moves of a genre brings to bear the term "move analysis". Aslam and Mehmood (2014) define move analysis as "study of language use by the author to form a semantic unit by recognizing its forms and functions in a particular discourse" (p.106). Consequently, a genre is made up of a specific move structure, and thus, to unveil the move structure of a given genre entails breaking a text into parts, based on its communicative purpose. In other words, it involves the identification of "text parts that work to carry out distinct rhetorical function" (Hyland & Paltridge, 2011, p. 56).

To give a detailed move analysis of a text, after the identification of the moves, a frequency count of the identified moves is made. The frequency count of the moves helps to assign status to each move (Afful, 2005 & Hüttner, 2010). The identified moves are grouped into categories, that is, "obligatory", "optional", "conventional" or "ambiguous" (Hüttner, 2010, p. 204). In addition to assigning status to each move identified, the ordering of the moves could also be considered to ascertain the sequence of the moves. Meanwhile, the textual space allotted to the moves could also be examined. This is considered highly vital in move analysis since the importance of a move is determined by juxtaposing the frequency of the move and the textual space allocated to it (Afful, 2005).

Discourse Community

Another important concept pertaining to genre analysis in the ESP tradition is discourse community. A discourse community is defined as a group of people who share a common set of goals and adopt a particular way of attaining these goals (Afful, 2005). According to Swales, cited in Borg (2003), discourse communities are "groups that have goals or purposes, and use communication to achieve these goals" (p. 398).

From Swales' perspective, any group of people who accomplish their set goals through the use of language can be seen as a discourse community. Swales posits that a discourse community:

1. has a broadly agreed set of common public goals
2. has mechanisms of intercommunication among its members
3. uses its participatory mechanisms primarily to provide information and feedback
4. utilizes and hence possesses one or more genres in the communicative furtherance of its aims
5. has acquired some specific lexis
6. has a threshold level of members with a suitable degree of relevant content and discoursal expertise

According to Swales, any community that is identifiable by the six aforementioned characteristics is qualified to be considered as a discourse community. Owing to this, a university can be considered as a discourse community within which other discourse communities can be found. Even within

the university, which represents a larger discourse community, are other discourse communities that can be found from the school level through faculty down to the departmental level.

Membership of a discourse community requires apprenticeship which enables the individual to be abreast of the conventions of the discourse community. This apprenticeship can be done formally or informally. Members of a discourse community also tend to have similar education and have over the years absorbed the same literature (Flowerdew, 2000).

Empirical Studies on Theses and Dissertations

This section provides a review of some studies on students' writing, specifically dissertations and theses. As posited by Afful (2005), in the academic discourse community, in terms of academic writing, there are two key participants–experts and students (novice). A number of studies have been conducted on PhD and Master's theses (e.g. Bunton, 2005) and undergraduate dissertations (e.g. Afful & Nartey, 2014; Yeboah, 2014) and essays (e.g. Afful, 2005; Hüttner, 2010) following the genre perspectives. In the subsequent paragraphs, I review some studies that have been conducted on dissertations and theses to show the current state of literature in order to underscore the distinctiveness of the current study. This section is in four parts. First, some studies conducted on the overall structure of theses and dissertations are reviewed. This is followed by studies on the front elements, studies on the main parts, and studies on the terminal elements of dissertations and theses.

Overall Structure

Despite the length of PhD and Master's theses, some efforts have been made by genre analysts to investigate their overall generic structure; that is, examining the thesis or dissertation in its entirety. Some of these studies include Ridley (2000), Thompson (2001) (as cited in Swales, 2004), Bunton (1998) and Paltridge (2002). Bunton (1998), for instance, examined twenty-one PhD and M.Phil. theses from different faculties, across the University of Hong Kong. Ridley (2000) also investigated fifty PhD theses from Engineering and Science. Thompson (2001) also studied thirteen PhD theses while Paltridge (2002) analyzed fifteen theses from a wide variety of fields. From the four selected works, the complex format, in other words, "article compilation format" recorded the highest occurring structure in Bunton (1998), Ridley (2000) and Thompson (2001). The "simple or traditional format" was not frequently used according to their findings. Though the traditional format seems not preferred by PhD and Master's students, it appears to be the preferred choice of the undergraduate students. Figure 1 shows the structure of the traditional format.

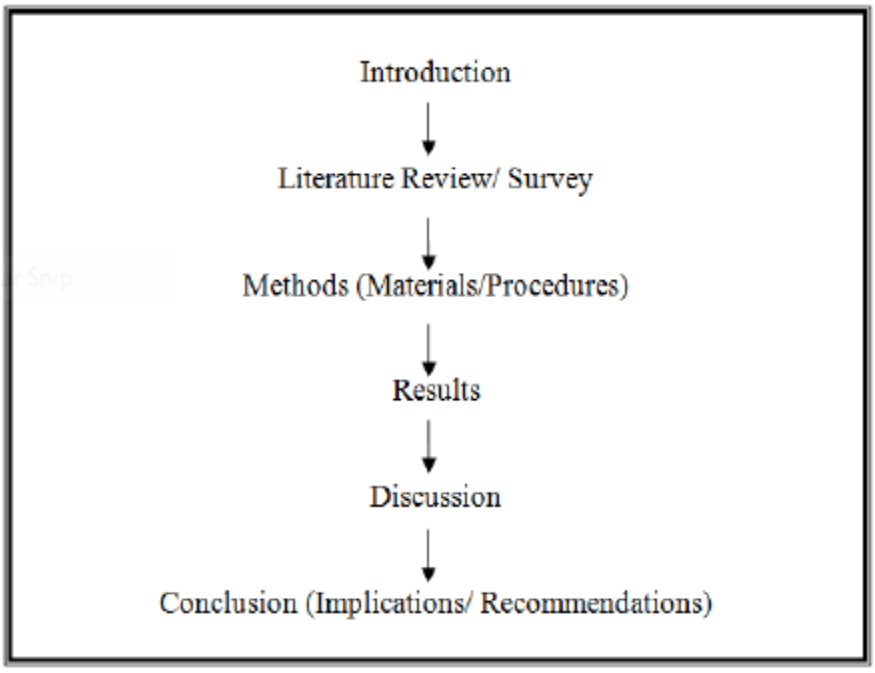

Figure 2: Structure of Traditional Dissertation (Source: Swales, 2004, p. 107)

With the traditional structure, the discussion chapter is usually added to either the results chapter or the concluding chapter (Swales, 2004). In other words, the discussion section is often times not made a separate chapter but rather woven into the result or the concluding chapters.

Dissertations that comprised the data for this study can be placed under this category. However, there had been some modifications of this model where students wove the discussion section into the result section. This can be traced to preference of the individual writer or the discipline within which the dissertations were written. This also underscores Olmos-Lopez's (2015) finding, where the undergraduate dissertations she used in his study were typified by the traditional structure.

Front Elements

Aside the studies on the overall structure of the thesis and dissertation, attention has also been paid to their front elements. These front elements include the title, acknowledgement, and abstract. This section pays attention to some of these studies.

Prominent studies on dissertation and thesis titles include Afful and Akoto (2010). They investigated one thousand and fifty-four (1054) titles of dissertations from the Department of English, University of Cape Coast, to ascertain the extent to which disciplinary context affects the formulation of dissertation titles. Their study demonstrated simple and compound structures of titles as the common title types employed by students from the two sub-disciplines in the Department of English (Language and Literature). Also, their findings revealed full sentence titles being preferred by students of Literature. Afful and Akoto (2010) found that titles from the two disciplines differed in terms of the number and frequency of prepositions used.

Apart from the title, the acknowledgement is another section among the front elements that has also been adequately researched. One prominent work on acknowledgement is Hyland (2004). He focused on the acknowledgement sections of forty theses (twenty Master's and twenty PhD theses) written by Cantonese and Mandarin speakers. Those theses were written in English from five selected universities across Hong Kong. His findings indicate a three-tier generic structure. In another study, following Hyland's (2004) study, Yang (2013) examined one hundred and twenty (120) acknowledgement sections of

Master's and PhD theses written by Taiwanese-Chinese speakers, focusing on their generic structure and linguistic features to ascertain if there were any differences within a common culture. Although Yang (2013) worked with a larger corpus than Hyland (2004), Yang's findings corroborated the three-move structure (reflecting, thanking and announcing) postulated by Hyland (2004). Another study that followed Hyland's (2004) framework is Al-Ali (2009). His result also concurs with the finding of Hyland's study; however, he identified the 'Thanking Move' as the obligatory move around which the 'reflecting' and 'announcing' moves were realized. Ono (2012) also examined the structure of abstract and acknowledgement sections of Japanese and English PhD theses. Findings of this study indicated a considerable difference between Japanese and English theses in terms of the occurrence of moves in both sets of acknowledgements and abstracts examined.

Apart from Hyland (2004), Al-Ali (2009), Ono (2012) and Yang (2013) who investigated the rhetorical structure of acknowledgements, Khatib, Tabari and Mohammadi's (2016) moved from the structural analysis to socio-cultural analysis. Katib et al (2016) traced native culture in Iranian students' academic writing with their attention being on acknowledgement sections of dissertations authored by native speakers of Persian (NSP). They identified that the social and cultural backgrounds such as the religion of writers have a bearing on language choices made by writers. Again, their findings demonstrate that those students employed more emotional strategies in thanking.

Another front element of the thesis and dissertation worth noting is the abstract. This part-genre has received much attention from genre scholars all over the world. Jalilifar and Dastjerdi (2010), for instance, analyzed abstracts of MA, MSc. and PhD theses from seven different disciplines (History, Literature, Social Sciences, Linguistics, Applied Linguistics, Nursing and Midwifery and Geology). Their data constituted five hundred and fifty-two (552) abstracts of theses written by native speakers of Persian, native speakers of English, and native speakers of other languages. Concerning the structural organization of abstracts in the field of History, their findings showed that abstracts written by native speakers of English and of other languages opted for "introduction-conclusion" kind of abstract. Persian speakers, on the other hand, adopted the "topic-description" structure.

They also found out that none of the two groups employed Swales' IMRC structure (introduction, methodology, results and discussion). Jalilifar and Dastjerdi (2010) attributed the variations that were identified in their study to socio-cultural factors, learning styles, social pattern, academic experience, the writer and discourse community. Again, their findings demonstrated that teaching rhetorical structure of abstracts to researchers could help them organize their abstracts more effectively. The finding of Jalilifar and Dastjerdi (2010) that socio-cultural factors were the causes of variation in abstracts was corroborated by findings of Al-Ali & Sahawneh (2011). They analyzed a smaller corpus of abstracts of a hundred doctoral theses written in English and Arabic. Their findings revealed that none of the abstracts written in Arabic used Move 3

(Referring to previous research). On the contrary, their result suggested that none of the abstracts written in English used Move 9 (promoting thesis). Another finding of theirs demonstrated that Move 5 (Announcing present research or Outlining purpose) recorded the highest frequency in the two data sets. Al-Zubaidi (2013) also examined the abstract sections of theses written by Iraqi MA and PhD students learning English as a Foreign Language (EFL). Specifically, he examined the rhetorical organization of the abstracts and the linguistic resources employed in realizing the moves. Synthesizing Swales' (1990) and Bhatia's (1993) models for his micro analysis, the study revealed an eleven-move structure, where four moves were obligatory. The second part of the study, which was at the macro level, employed Hyland's (2004) model, where four moves were identified. Out of the four moves, three (purpose, method and result) were obligatory. The other aspect of his paper which focused on the linguistic resources showed prevalence of the use of simple sentence structure, present tense, and passive voice in the articulation of the abstract texts examined.

Nasseri and Nematollahi (2015) also investigated abstracts of MA theses in Applied Linguistics written by Iranian students and native speakers of English. They sought to ascertain the similarities and differences that exist between the abstracts produced by the native speakers of English and the non-native speakers of English (Iranian students) in terms of their generic structure. Their study revealed a five-move structure for the abstracts: situating the research, presenting the research, describing the methodology, summarizing the results and discussing the research. They further concluded that both Iranian and Native-

speakers of English did not include their identity in their theses. The move structure identified in this study, to some extent, departs from the results from Al-Zubaidi's (2013) study which identified eleven moves. Kranjakova's (2015) study, which is also a research on the Master's theses in Slovak, sought to investigate sixty-six abstracts written in English. Her focus was on the rhetorical moves, tense, and grammatical subjects used by Management students of Presov University in constructing their abstracts. Like Nasseri and Nematollahi (2015), she also identified five moves. In addition to the generic structure, her findings indicated a correlation between the moves and tense used by the students.

Ozdemir and Longo (2014), unlike the previous studies reviewed which focused mostly on the generic structure of the abstract, investigated the variation in the use of meta-discourse in fifty-two abstracts written by Turkish and English Master of Arts students. They found out that engagement markers were not present in the two corpora. Their findings also revealed that American students tended to use more boosters than Turkish students. A similar study to Ozdemir and Longo (2014), where premium has been placed on the lexico-grammatical resources, is Afful and Nartey (2014), who examined the linguistic items used by undergraduate students to achieve cohesion in fifty (50) undergraduate dissertation abstracts presented to the Department of English in the University of Cape Coast. Their aim was to find out the extent to which grammatical cohesive devices were employed by the authors of those dissertations and to tease out the similarities and differences in the two corpora. They concluded that undergraduate students used the four grammatical cohesion devices propounded

by Halliday and Hasan (1976). This could be as a result of the fact that they are students of language and, therefore, would have been introduced to the rhetoric of writing. However, they realized from their study that most students lacked sophistication in their use of cohesive devices. Doro (2013), like Afful and Nartey (2014), explored the abstract section of the undergraduate dissertations. The abstracts of undergraduate dissertations she examined were written by Hungarian students. Using Pho (2008) as her analytical framework, she analyzed fifty-two (52) abstracts. Her findings on the rhetorical structure demonstrated that undergraduate dissertation abstracts were made up of eight moves. She, however, realized that the five moves identified by Pho (2008) were partly not present in the undergraduate dissertation abstracts. In terms of the lexico-grammatical resources, she found that modals, self-reference words, and hedging typified the moves.

From the existing literature, as shown in the review above, it can be said that attention has been paid to the front elements of theses and dissertations. The next section reviews studies on the various parts of the main theses and dissertations.

Main Parts

Parts of the main thesis and dissertation such as the introduction, methodology, literature review, results and discussion and concluding sections have received some attention from several scholars all over the world. This section reviews some of these studies in the order—introduction, literature review, methodology, results and discussion, and conclusion. The introduction,

which is the beginning part of the main thesis or dissertation, has received a considerable attention from scholars. Dudley-Evans (cited in Bhatia, 1993) examined the introductions of MSc theses. A six-move pattern was discovered which appeared contrary to the Swales' (1981) creating a research space (CARS) model. Though the moves he identified in his investigation were not so different from Swales' four-move pattern, the only difference was that Swales' first move —establishing a territory— was split into three different moves. This might be as a result of the length of the thesis introductions since the introduction of this genre is lengthier than that of RA on which the CARS model was built (Bhatia, 1993). Arulandu (2006) also examined twenty introductory chapters of Master's and PhD theses produced by students of the University of Malaysia. Specifically, Arulandu's aim was to examine the generic structure of the chapters, using Bunton's (2002) modified CARS model as his analytical framework. His data size was thirty (fifteen Master's and fifteen PhD theses). His findings demonstrated that the rhetorical moves concurred with Bunton's framework.

However, the specific steps in the introduction were not consistent with Bunton's model, where most of the steps found in the Bunton's model were absent in the introductions he examined. Also, he found out that similar rhetorical and linguistic strategies were evident in both theses. In addition, a comparison between the two disciplines revealed the choice of steps and linguistic features was discipline dependent. Owing to his findings, he developed a model for analyzing dissertations and theses introductions. Another study on introductions is Soler-Moler, Carbonell-Olivares and Gil-Salom (2011). They

studied the introduction chapters of twenty doctoral theses to ascertain whether those theses, though produced by individuals from different cultural and linguistic backgrounds, employed the same rhetorical strategies. Following the Swalesian approach by Soler-Moler, et al. (2011), the findings pertaining to the move identification affirmed Swales' three-move structure of introductions. Another study on thesis introductions which confirms Swales' three-move model is Shirani and Chalak (2016). Shirani and Chalak's study examined forty Iranian master's theses. Their results demonstrated considerable use of the three moves identified in Swales' (1990) study; the three moves were all regarded obligatory. Choe and Hwang (2014) also investigated introductions of theses written by Korean PhD and master's students as well as RA introductions written by Korean researchers and native English-speaking researchers. Their focus was to identify if there were any organizational traits from different proficiency levels. Following Swales' CARS model, fifty texts from each discourse community were analyzed.

Their results indicated that master's and PhD theses introductions, which belonged to lower academic proficiency group, followed the CARS model while that of the RAs conveyed rather a liberal form of move structure. Khan and Mehmood's (2014) results, on the contrary, did not confirm the three-move structure of Swales. Their study demonstrated that in terms of how the moves were sequenced out of the twenty theses from the Natural Science, only seven had the 1-2-3 move sequence. The rest of the theses had a variety of patterning. However, those from the majority of the Social Sciences theses were typified by

the 1-3 move structure. Aboagye (2015) also investigated a portion of the introductory chapter of undergraduate dissertations, the 'significance of the study'. Examining the significance of the study section of forty dissertations, she found that the section was typified by a three-move structure, two obligatory moves and an optional move.

The literature review (LR) sections of theses and dissertations have also received scholarly attention. Kwan (2006) conducted a structural analysis on twenty (20) LR chapters of doctoral theses authored by native speakers of English. He compared his findings with Bunton's (2002) modified version of the CARS model. He noted that thesis LR chapters unlike introductions were sophisticated and thus LRs and introductions were not, entirely, structurally the same. Also, Hsiao (2016) examined the LR chapters of MA theses written by Taiwanese post graduate students studying and Teaching English as a Foreign Language (TEFL). Specifically, he aimed at identifying the move distribution of low-rated and high-rated LRs, the move configurations at these two levels and the text features at each level. His findings on move configurations showed four configuration types *viz*, single move configuration, two-move configuration, three-move configuration and four-move configuration. Also, his findings demonstrated that Moves 3 and 4 were frequently used in High-rated LRs than Low-rated LRs.

Moving from the usual move analysis, Yeboah (2014) examined the discoursal markers employed by undergraduate students in writing their LRs. Her findings indicated that all the five discourse markers identified by Martinez

(2004) following Frazer's (1999) taxonomy were present. However, the elaborative discourse markers were frequently used by undergraduate students. Putting Language and Literature dissertations *pari passu*, she realized that discourse markers, in general, occurred more frequently in the former than in the latter.

Nguyen and Pramoolsook (2015) examined twenty-four (24) method chapters of Master's theses produced by Vietnamese. Their findings indicated that the method chapters produced by Vietnamese master's students have a four-move structure: Move 1 (introducing the method chapter), Move 2 (Describing data collection method and procedure(s)), Move 3 (Delineating methods of data analysis) and Move 4 (Elucidating data analysis procedure(s)), where the first and second moves were obligatory, the third and fourth moves, conventional and optional respectively.

Liming (2012) investigated how academic identity is constructed in discussion and conclusion sections of twelve L2 theses. Though this study focused on two sections of the thesis, only the findings on the discussion section is given premium in this review. He found out that Chinese doctoral students constructed their academic identity through the process of drafting, revising and shaping their chapters. Again, he observed that writer identity was "constructed and reconstructed along mixed, fluid and dynamic discursive practices and social actions" (p. 314) which seems to be in line with the basic socio-cultural theory. Another study conducted on the discussion section of theses is Soleimani and Soleimani (2015). They analyzed the discussion section of master's theses from

two disciplines—TEFL and Chemistry—in order to identify whether there were any significant differences in terms of move types and frequency of occurrence. They examined sixty Master's thesis discussion sections from the Razi University of Kermansha. Their findings revealed nine moves in the discussion sections of the theses. Further, the results obtained from the analysis showed no significant difference between the two sets of data. Again, their findings revealed the use of a new move which could not be found in the Hopkin and Dudley Evans' (1988) Model. More recently, Getkham (2016) has examined the authorial stance in the discussion sections of thirty-six Thai students' doctoral theses. He identified hedges and boosters as the dominantly used attitudinal markers in the discussion sections.

The closest study to the current research is Bunton (2005). Specifically, he examined forty-five conclusions of PhD theses which were collected from some selected departments and faculties across the University of Hong Kong. In this cross-disciplinary study, Bunton identified and analyzed the moves and steps present in the conclusions. He discovered that most of the PhD theses had five moves: *introductory restatement, consolidation of research space, practical implication and recommendation, future research and concluding restatement.* He further expatiated that the moves came with steps. In terms of disciplinary variation, he found that Humanities and Social Sciences (HSS) conclusions were longer than those from Science and Technology (ST). One study whose results corroborated Bunton's findings on Science and technology is Soler-Monreal (2016). He analyzed forty-five PhD thesis concluding chapters from a British

university. He also found that most of the theses were titled 'Conclusions'. In addition, Soler-Monreal (2016) revealed that those concluding chapters he examined were organized around Move 1-Move 2-Move 4 pattern. Similarly, Varaprasad (2013) conducted a study on thesis conclusions using Weisberg and Buker (1990) and Bunton (2005) as a combined analytical framework for his work. His aim was to explore students' awareness of the organization of conclusion chapters before and after teaching learning (TL) approach. In order to achieve his aim, he used questionnaires and a writing task given to thirty-eight participants. The participants were made up of fourth year PhD students from different disciplines. Varaprasad's (2013) findings suggested that using the genre-based ESP approach to teach graduate students how to organize their thesis concluding chapters can be effective.

Also, Zahra, Roya and Shahla (2015) investigated conclusion sections of thirty master's theses from three disciplines for interactive and interactional meta-discourse markers. First, their study showed that interactive and interactional meta-discourse markers were present in all the theses that were investigated; however, they were more frequent in English Translation theses than in theses from English Literature and English Teaching. Second, findings pertaining to gender dimension of their study demonstrated a predominant use of interactional discourse markers by females from English Translation and English Teaching. On the other hand, male writers from English Literature recorded the highest for interactional discourse markers. Nguyen and Pramoolsook (2016) also examined the conclusion sections of Master's theses. A move-based analysis

of twenty four Master's theses revealed a four-move structure. They also observed that Move 4 (Deductions) was present in all the twenty-four concluding chapters. However, three moves (introducing the conclusion chapter, summarizing the chapter and evaluating the chapter) were conventional moves. In addition, they identified a new move (chapter summary) which was infrequent in their data. From the available literature, extensive work appears to have been conducted on master's and PhD theses concluding chapter, but little or none on undergraduate dissertations.

Terminal Parts

Turning away from the studies conducted on the parts of the main thesis and dissertation, I focus my attention on studies conducted on the bibliography (in other words, the reference list section of theses and dissertations). Vallmitjana and Sabaté (2008) examined four thousand two hundred and three (4, 203) citations from forty-six doctoral theses from the field of Chemistry. They found that scientific papers were frequently used. Their results also demonstrated that 50% of the citations met the information needs of the authors of the theses examined. Finally, in terms of the age of the documents cited, half were beyond nine years. Another citation analysis is Haycock (2004). In his study, four thousand five hundred and forty-two (4,542) citations from forty-three Education theses were analyzed. The results of Haycock's (2004) study demonstrated graduate students to be frequent users of library resources. Contrary to Vallmitjana and Sabaté's (2008) findings, frequently cited documents were monographs and reports while less than half (44%) were

published research articles. In spite of the afore-mentioned difference between these two studies, which corroborates Vallmitjana and Sabaté's (2008) study, the most frequently cited works were more than five years.

Contrary to the small data sizes of the two studies on citations already reviewed, Kushkowski, Parsons and Wiese (2003) examined a larger corpus of nine thousand one hundred (9,100) and six hundred and twenty-nine (629) of both master's and doctoral theses respectively. Although the corpus for their study was large, they also found that more than half (85%) of the cited materials were owned by the library, which confirms the result of Haycock's (2004) study that graduate students are heavy users of library resources. Again, Kushkowski et al. (2003) in their study found that the ages of the most frequently used materials were less than twelve years. Also, comparing the degree of citation by master's and doctoral students, their results suggested that doctoral students use more of longer citations than the master's students. Another study on citation of doctoral theses is Kayongo and Helm (2012). The result from their investigation of thirty-nine thousand one hundred and six (39,106) citations showed a greater number of the citations were journal articles. Books, on the other hand, also recorded a significant number of frequency in the citations examined.

Quite recently, in Ghana, Afful (2012) also examined thirty reference lists of doctoral theses across three disciplines—Animal, Plant and Environmental Sciences, Literature and Sociology. Unlike the studies already reviewed on theses citations, Afful (2012) further identified the various labels given to this section of the dissertation by the authors. Four different labels—

references, bibliography, works cited and sources—emerged from his findings. Apart from the label of that section of the doctoral theses, he also found that discourse communities (DCs) greatly influenced the choice of labels given to the reference sections. Another unique study on citation is Afful and Janks (2013) which examined doctoral citations from a discourse analytic perspective. Their quest to unravel the citation policy practiced by doctoral students across three disciplines demonstrated the preference of journal articles by Science students whereas students in the Social Sciences and Humanities preferred books to journal articles. Their results also revealed a preponderance citing of studies with multiple-authorship by students in the Sciences, unlike students in the Social Sciences and Humanities whose citations were more of sole-authorship.

All in all, the review of related literature has revealed that several studies have been conducted on theses as well as dissertations. Apparently, all parts of the theses have been investigated; that is, from the front elements through the main text to the reference list. Inasmuch as some attempts have been made by scholars all over the world to examine dissertations and theses, doctoral and master's theses appear to have been adequately researched all over the world while the undergraduate dissertation has received a relatively little attention from researchers.

As illustrated by the studies reviewed in the present work, it is clear that there has been limited scholarly investment in the undergraduate dissertation over the years all over the world. This gap in the literature arouses my interest in the undergraduate dissertation which is usually the first research report written

by students in their academic life; hence, this positions the undergraduate dissertation as a text worth investigating. It is against this background that I investigate the undergraduate dissertation, focusing on its concluding chapter which is the last chapter of the dissertation and, most often than not, written in so much hurry as the student desperately wants to finish his/her work (Swales, 2004).

Chapter Summary

This chapter has extensively articulated the theoretical framework that undergirds the present study. Specifically, the three schools of genre theory were discussed with much attention being paid to the English for Specific Purposes (ESP) which is the framework for the present study. Further, the current state of literature on dissertations and theses has also been shown where reviews were done on available studies on all their parts.

CHAPTER THREE

METHODOLOGY

Introduction

This study aims at examining concluding chapters of dissertations written by undergraduate students from two disciplines. This chapter discusses the methodological procedures employed in the current study. These include the research design, description of the research sites of the study, data collection procedures, sampling method and the analytical framework employed in analyzing the data. Also, the limitations encountered in the course of the research and the attempts that were made to deal with them are also discussed.

Research Design

Due to the descriptive nature of the study, the study adopts the qualitative research approach where percentages and frequency counts have been used to interpret the various analyses.

I chose to situate the study in the qualitative paradigm owing to the following reasons. First, qualitative research design permits the study of language in its natural state which usually involves no manipulation of variables (Asamoah-Gyimah & Duodu, 2007; Hancock, Ockleford & Windridge, 2009). Thus, the language used in the conclusions is seen as language in its natural form. Suffice it to say that the dissertations that have been investigated in the current study reflect the use of naturally occurring language by the authors; hence, the most appropriate design to be adopted being the qualitative research

design. More so, the conclusions are interpreted or described the way they are without any alteration.

Second, qualitative research design concerns itself with "developing explanations of social phenomena" (Hancock, et al. 2009, p. 7). This means that the qualitative research design does not only describe or interpret naturally occurring behaviour or language, but also helps to give a vivid explanation of the social world we live in by explaining why a particular society does what it does and the manner in which such a thing is done.

According to Lambert and Lambert (2012), qualitative descriptive studies "tend to draw from naturalistic inquiry, which purports a commitment to studying something in its natural state to the extent that is possible within the context of the research arena" (p. 256).

Research Site

University of Cape Coast (UCC) serves as my research site. UCC is Ghana's third public university which was established in October, 1962 as a university college (Kwarteng, Boadi-Siaw & Dwarko, 2012). The college attained a full status of independence on 1st October, 1971, where authority was given to it to confer its own degrees, diplomas and certificates. The university was established out of a "dire need for highly qualified and skilled manpower in education to provide leadership and enlightenment" (www.ucc.edu.gh). Initially, the core mandate for the establishment of the institution was to train teachers for Ghana's second cycle institutions. Currently, the mandate of the institution has been expanded where graduates are now trained to function in other sectors of

the economy, and thus, UCC, now has five colleges (Agricultural and Natural Sciences, Education Studies, Health and Allied Sciences, Humanities and Legal Studies and Distance Education).

Data for the present study were collected from two departments—History and Chemistry—from the Colleges of Humanities and Legal Studies, and Agricultural and Natural Sciences respectively. UCC was chosen for the current study because English remains a prerequisite for gaining admission into this university. Also, students admitted into the university are made to take a compulsory writing course in English (Communicative Skills) in order to equip them with the basic skills of writing. This shows that much premium is put on English language as well as academic writing in the University of Cape Coast as noted in other English-medium universities in the world.

Sampling Procedure

The data for the study consist of forty undergraduate dissertations submitted to the departments of History and Chemistry in the University of Cape Coast (UCC). The two departments were chosen purposively since I wanted departments that would represent the Sciences and the Humanities. Department of History was chosen because it puts premium on language and writing. On the other hand, Department of Chemistry was chosen because it does not put much premium on writing. The two departments were selected from two different disciplines—science and humanities—in order to ascertain if there exist any disciplinary variations in the way their dissertation concluding chapters are written. Simple random sampling technique was employed in selecting twenty

dissertations from each department while purposive sampling was used to select the two disciplines.

Data and Corpus Size

A total of forty undergraduate dissertations were randomly selected. These dissertations can be considered as successful dissertations written by undergraduate students of the University in accordance with the rules and regulations for examining undergraduate works. From the forty dissertations, the concluding chapters were photocopied to be used for the analysis of the study; that is, twenty from each department. However, the total number of words in the dissertation conclusions from both departments amounted to sixteen thousand two hundred and fifty-two (16252). The Department of Chemistry Conclusion (DCC) corpus contains five thousand five hundred and fifty-nine words (5559) while the Department of History Conclusion (DHC) corpus contains ten thousand six hundred and ninety-three words (10693). This shows the number of words in the dissertations from each department as well as the sum total of words for both DCCs and DHCs. The average number of words in the texts from the DCC corpus was 278 while that of DHC corpus was 535. Relatively, I can say that the total corpus size for the study is small. However, since the point of saturation was attained in the identification of move stage, no addition was made to the data.

Data Collection Procedure

Data collection took place between August, 2016 and December, 2016. A letter was first sent to each of the departments concerned. For the Department of Chemistry, it took me nine weeks, from the day I submitted my introductory letter to the department, to be granted permission. After I obtained permission from the two departments, I was then assigned an officer who helped me to collect the data I needed.

To collect the dissertations from the Department of Chemistry library was quite easy since each chapter was labeled. However, not all chapters in dissertations from the Department of History had a chapter label therefore, making it difficult to identify it as a chapter. To ascertain the status of the sections two of my colleagues, also from the Department of English (master's students), helped to identify those sections of the History dissertations as the concluding chapters.

Data Processing

After the collection of the data, for the purpose of easier reference and anonymity, the dissertations were randomly coded DHC1 to DHC 20 from the Department of History and then DCC1 to DCC20 for those from the Department of Chemistry. They were then analyzed manually to identify the move pattern realized by each text. Here, the moves were also coded Move 1 to 8.

The second stage of the data processing was to build a corpus for the lexico-grammatical resource analysis. The corpus was built by changing the data from hard copy into machine-readable texts. To have the conclusions in a

machine-readable format, they were all typed, edited for any errors and then stored for the lexico-grammatical analysis. Each text within the corpora was labeled DCC 1 to 20 (Department of Chemistry) and DHC 1 to 20 (Department of History), then AntConc software (version 3.4.3w) was used for the rest of the analyses.

Data Analysis

The analysis of the data was in two major stages. The first stage which had to do with the analysis of the rhetorical moves included move identification based on the communicative purposes of the texts, employing the top-bottom approach. The top-down approach is when moves are identified based on the content of the genre, in other words, the communicative purpose of the text (Pho, 2008; Upton & Cohen. 2009). The texts were closely examined, and based on the communicative purposes, the moves were identified and labeled.

Further, the sequence of the moves was examined. In addition, the moves were put into categories (obligatory, optional or conventional), depending on the frequency of occurrence of the moves using Hüttner's (2010) categorization of a move. Last but not least, under this stage, the textual space allotted each move to ascertain the importance of each move was examined.

The second major stage of the analysis had to do with the examination of the lexico-grammatical resources that typified the moves using AntConc software (version 3.4.3w). AntConc is a software program which was developed by Lawrence Anthony and is used in Corpus Linguistics as a methodological tool to aid in the analysis of data. The choice of Corpus Linguistics for the lexico-

grammatical analysis was because it provides "enhanced description of language that is much more accurate and detailed than what is suggested by the native speakers' intuition" (Sung-Young, 2007, p. 148). With the lexico-grammatical analysis, attention was paid to collocations of both significant content and function words identified in the keyword list. According to Laybutt (2009), the collocation patterns of function and content words provide "significant information as to the characterization of a genre" (p. 31). This stage was divided into two sub-stages. The first sub-stage was based on identifying the keywords in the corpora where attention was paid to only the top fifteen keywords. The second sub-stage identified the collocates of commonly occurring keywords across the two disciplines. The collocates were identified, using the collocation span of four to the left and four to the right.

Analytical Framework

This study adopted a two level move and step analysis to delineate the schematic structure of conclusion chapters of undergraduate dissertations. Bunton (2005) was taken as the starting point for the analysis. Bunton's model was chosen as the appropriate model to guide the analysis of the generic structure of the conclusion based on three reasons. First, Bunton (2005) was a study conducted on student research genre. Second, it focused on the concluding chapters, and lastly, it is one of the most recent and well-known models available. In addition to the aforementioned works, Hüttner's (2010) categorization of moves was also employed to group the identified moves in the current study into various statuses.

Bunton's (2005) Model

Bunton's (2005) model was used as the analytical framework for the present study. It must be here stated that the model had undergone some modification in order to suit the current study. This model was proposed by Bunton after analyzing forty-five concluding chapters of doctoral theses. He then identified a five-move structure being the typical structure of concluding chapters of doctoral theses.

Move 1		Introductory restatement
	Step 1	Purpose
	Step 2	Research questions or hypotheses
Move 2		Consolidation of research space
	Step 1	Method
	Step 2	Findings/Results
	Step 3	Claims
	Step 4	References to previous research
Move 3		Practical implication and recommendation
	Step 1	Implications
	Step 2	Recommendations
Move 4		Future research
Move 5		Concluding restatement
	Step 1	Over all claims or
	Step 2	Findings

Figure 3: Bunton's (2005) Model for PhD Thesis Conclusion

Hüttner's (2010) Categorization of Moves

To determine the status of each of the moves identified, Hüttner's (2010) framework was used. According to her, moves can be categorized into four statuses, based on their frequency of occurrence. Figure 4 shows the four move status posited by Hüttner.

Frequency of Occurrence	Status	Comment
90% - 100%	obligatory	genre exemplar usually considered inappropriate or in some way "flawed" without this move.
50% - 89%	core	typical of the genre, considered part of an appropriate and acceptable genre exemplar.
30% - 49%	ambiguous	status can only be decided with further expert information—can be core or optional, acceptable or unacceptable (Phase 2 decisive)
1% - 29%	optional	not considered a typical feature of genre, can be considered an acceptable addition (=truly optional) move or inacceptable (-> Phase 2 decisive)

Figure 4: Hüttner's (2010) Framework for Move Status

As shown in Figure 4, a move can be obligatory, core, ambiguous and optional when it falls within the ranges of 90%-100%, 50%-89%, 30%-49% and 1%-29% respectively. Hüttner explains that a move that is considered obligatory or core means that the move is typical of that genre. Meanwhile, moves considered to be ambiguous and optional are seen as atypical moves of a genre.

Limitations

In the course of the study, I encountered a number of challenges. These challenges in pursuit of the present study were evident in the collection and processing of data.

In terms of collection of data, I officially secured an introductory letter from my department. This letter was then taken to the two departments selected for the current study for their consents. The two selected departments delayed in giving me the approval to collect the data. However, approval was finally given and the dissertations collected. The dissertations were taken out of the library so as to enable me to make copies of the conclusion chapters since the departments had no photocopy facility in place. Owing to the fact that dissertations are considered to be reference materials in the university and are not supposed to be taken out of the libraries, it did not go down well with the departments when I wanted to take the dissertations out of the departments for copies to be made. To address this challenge, I had to leave my student identity card with the departments while I went out to make the copies so that the librarian could inspect the copies I made on my return. Before my student identity card was

returned to me, the librarian checked the copies to be sure only the concluding chapters were photocopied.

Another challenge I encountered during the research work pertained to the process of changing the texts constituting the data into machine-readable format. A lot of time was spent typing the data so I could have them in the machine-readable format to use for the lexico-grammatical analysis aspect of the work. In the course of changing the format of texts, typographical errors were committed. However, to address those challenges, a colleague helped with the typing so we could be within schedule. She also went through the typed texts so as to be sure the errors were corrected and the soft copies were the same as the hard copies collected from the libraries.

The challenges highlighted here, though anticipated, could be said to have not affected the findings of the study in any way. The only effect they had on the study was a distortion in the work schedule. In other words, these challenges delayed the procedure of data collection which to some extent caused some delay in the analysis.

Ethical Considerations

So far as humans are involved in a research directly or indirectly, it becomes necessary their consents are sought in order to preserve their dignity. According to Cohen, Manion and Morrison (2000), "whatever the specific nature of the work, researchers must take into account the effects of the research on participants, and act in such a way as to preserve their dignity as human beings"

(p. 56). Owing to this, I deemed it essential to seek permission from the appropriate departments involved in the study.

Since it was difficult contacting the authors of the various dissertations collected and since the dissertations are considered the property of the institution, the consents of the departments (History and Chemistry) were sought. Thus, a letter was taken from my department (Department of English) to the Heads of the two selected departments, assuring them that the dissertations were going to be used only for an academic research.

Chapter Summary

This chapter has discussed the methodological procedures employed in the present study. It has also discussed the research design, research site and analytical frameworks which guided the analysis. In addition, it has highlighted the ways by which the ethical issues were addressed as far as this study is concerned. Finally, some of the challenges encountered have also been presented in this chapter.

CHAPTER FOUR

ANALYSIS AND DISCUSSION

Introduction

Specifically, this chapter reports the findings derived from the analysis and discussion of the data. This chapter is in three main sections. The first section provides the analysis and discussion of the titles of the concluding chapters followed by the schematic structure of the undergraduate dissertation concluding chapters (UDCCs) which consists of the description of the moves, frequency of the moves, status of each move, textual space allocated to each move and the order in which the moves were sequenced. The third part provides the analysis and discussion of the lexico-grammatical resources employed by the undergraduate students in realizing the moves that were identified by paying particular attention to the keywords in the move as well as the collocates of the commonly occurring keywords.

Chapter Titles

To begin with, chapter titles play an essential role in the identification of the chapter; thus, it captures the overall communicative purpose of the chapter. According to Bunton (2002), titles give readers a fair idea of the role the writer sees the chapter playing. It is in the light of this that I commence my analysis by examining the titles of the conclusion chapter of dissertations written by undergraduate students. This section articulates the analysis and discussion of the chapters' titles in the forty undergraduate dissertations examined. These titles were captioned by the authors of the conclusions based on thematic criteria. In

all the forty dissertations, four different titles—"Conclusions", "Summary, Conclusions and recommendations", "Conclusions and Recommendations", and "Summary and Conclusions"—were identified. Table 1 provides the various titles identified and their frequencies.

Table 1 : Distribution of Concluding Chapter Titles of Undergraduate Dissertation

Conclusion Titles	Frequency (%)	
	(DCC)	(DHC)
Conclusions	25	95
Summary, Conclusions and Recommendations	10	-
Conclusions and Recommendations	65	-
Summary and Conclusions	-	5
Total	100	100

From Table 1, out of the four chapter titles identified in the corpus, three were present in DCCs and in HCCs. "Conclusions" recorded 25% in the DCCs and 95% in DHCs respectively. "Summary, Conclusions and Recommendations", "Conclusions and Recommendations" recorded 25% and 65% respectively in HCCs but is absent from the DCCs. None of the DCCs had the title "Summary and Conclusions" but 5% of DHCs had this title. The title "Conclusions" which recorded the highest in HCCs was the second highest in DCCs.

This concurs with the results of Bunton (2005) and Soler-Monreal (2016) that the concluding chapters of dissertations are often captioned "conclusions".

This is evident in the current study across the two disciplines where students made dominant use of "Conclusions" as a title for their concluding chapters of their dissertations. Although this title has been significantly utilized by students from both disciplines, students from the Department of Chemistry appear to have preferred "Conclusions and Recommendations to Conclusions" as the title of their dissertation conclusions. In addition, the title "Summary and Conclusions" had been rarely used by the students since only one of the forty dissertations had that caption. Owing to this, it can be concluded that students from the Department of Chemistry preferred their concluding chapters being captioned "Conclusions and Recommendations" while students from the Department of History preferred "Conclusions" as the title for their concluding chapter.

Description of Moves

Based on Bunton (2005), eight moves were identified—Move1: Stating the aim(s) of the chapter, Move 2: Restating the objective(s) of the study, Move 3: Describing the methods used, Move 4: Summarizing the study, Move 5: Giving recommendation(s), Move 6: Stating challenges, Move 7: Extending well wishes and Move 8: Stating the importance of the study. Figure 5 shows the moves as identified in the two sets of conclusions. As far as DCCs are concerned, only six of the eight moves identified were present. DHCs, on the other hand, had all the eight moves present. The moves and the steps identified are shown in Figure 5.

Move and Step	Definition of Move and Steps	Functions of Moves and Steps
Move 1	Stating the aim of the chapter	The author states the aim of the chapter.
Move 2	Restating the objective(s) of the study	The author restates the objective(s) of the study.
Move 3	Describing the methods used	The author describes the methods used for study.
Step 1	Describing the research design	The author describes the research design for the study.
Step 2	Describing the data	The author describes the data used for the study.
Move 4	Summarizing the key findings	The author summarizes key findings from the analysis.
Move 5	Giving recommendation(s)	The author gives recommendations.
Step 1	Giving recommendation(s) on areas for further studies	The author recommends areas for further study.
Step 2	Giving practical recommendation(s)	The author gives practical recommendations(s)
Move 6	Stating challenge(s)	The author states challenges encountered during the study.
Move 7	Extending well wish(es)	Author extends well wishes to people being researched.
Move 8	Stating the importance of the study	Author states the importance of the study.

Figure 5 : Description of Moves and Steps

The communicative purpose of Move 1 is to state the aim of the chapter. Move 1 was not frequently used by authors of the forty conclusions that were

examined. It appeared in only two of the conclusions—one from each discipline—out of the forty conclusions examined. This move in the two conclusions was the first move; therefore, its identification was not difficult. However, no steps were identified. Move 1 was evident in DCC 2 and DHC 10. Instances of the move in the two conclusions are shown in Extracts 1 and 2.

Extract 1

> **This chapter outlines the motive of carrying out this study** as to its findings and recommendations for reducing NRW in Tamale District operation areas. (DCC2)

Extract 2

> **In this chapter, we intend to make a few remarks**; point out lessons from Dr. Dwarko's life up to 2007 and ended with his life since a period we have chosen to describe as "strength in weakness." (DHC 10)

The presence of phrases such as *this chapter* and *in this chapter* places some level of emphasis on the conclusion chapter and to make the reader understand that whatever that would have been mentioned after these phrases would be limited to no other chapter than the chapter under examination. These aforementioned phrases coupled with verbs such as *outline* and *intend* as employed in Extracts 1 and 2 (bolded parts) respectively highlight the communicative purpose of this particular move.

Move 2 was present in more than half of the forty conclusions examined. Its purpose was to restate the overall purpose of the study. Most of the authors of

the dissertations analyzed from the Department of History preferred to restate the main objective of the study before giving a summary of their key findings. However, less than half of the dissertations collected from the Department Chemistry used this particular move. Instances of this move are seen in Extracts 3 and 4.

Extract 3

> **This work generally sets out** to examine and reconstruct the history of the Cape Coast Town Council. (HCC 5)

Extract 4

> **This research is aimed at** using mine tailings as a construction material (pavement blocks) and determining the compressive of the block. (DCC4)

From Extracts 3 and 4, the utilization of the noun phrases *this work* and *this research,* which are all made of the specifier, *this,* indeed played a very pertinent role in the identification of this move. The use of *this* together with the nouns *work* and *research* shows some specification as seen in Move 1. In addition to the noun phrases, the use of the verb phrases, *sets out* and *aimed at,* as seen in Extracts 3 and 4 respectively elucidates the purpose of Move 2, which is to restate the aim of the study.

Move 2, as identified in the current study, is similar to Bunton's (2005) *introductory restatement move*. However, as shown in Extracts 3 and 4, the undergraduate students appeared to be simple and straight forward as compared to the PhD students whose conclusions were examined by Bunton (2005). This

simplicity can be attributed to the fact that they are novices in the academic discourse community.

Move 3 was used by the authors to describe the methods they employed in their study. Bunton (2005) considered this move and Move 4 as steps under the move he captioned *consolidation of research space.* These steps (in Bunton's work) found themselves in the current data, but as separate moves owing to their separate communicative purpose; hence, they could not be merged. Two steps were identified under this move—describing the research design (Step 1) and describing the data (Step 2). Interestingly, these two steps have not co-occurred in any of the conclusions, which means only one of the two steps appeared at a time. The authors used a step at a time. Instances of Move 3 are shown in Extracts 5 and 6.

Extract 5

> [The **method** for the quantitative determination of heavy metals i.e. Zinc (Zn), Lead (Pb) and Iron (Fe) in the locally brewed gin was AAS (Atomic Absorption Spectroscopy) in this project. The validation of the quantitative method used is as a result of several parameters taken into consideration. [Step 1] (DCC 10)

Extract 6

> [The **source** of the information from which the study was drawn was from both primary and secondary source. [Step 2] (DHC 12)

One striking difference made between the two disciplines in question pertaining to how Move 3 was structured is that whereas students from the Department of Chemistry preferred Step 1, students from the Department of History preferred Step 2.

The essence of Move 4 was to give a summary of the key findings of the study conducted. This move in most of the texts came immediately after the aim of the study (Move 3) was restated. The analysis demonstrated that much importance has been attached to Move 4 by students of History than students of Chemistry since a greater number of dissertation conclusions from the Department of History contained this move. Extracts of Move 4 from the two disciplines are shown below.

Extract 7

> [**At the end of the study, the results** showed that truly temperature does have an influence on decay rate of residual chlorine in water, an increase in temperature will results in an increase in decay rate as said by Powel et al. (2011) and Kastle et L. [*sic*] (1999)…**The findings indicate** the residual chlorine is stable only at very low temperature….] (DCC1)

Extract 8

> [**It was found out that** Komenda-Besease was founded by the Abradzi clan of a group of people who migrated from their original home in Takyiman in the Bono Kingdom to the north. The constant attacks by the Asante people, the search for salt

and fertile land were the factors that precipitated the southward migration...] (DHC3)

It is obvious from Extracts 7 and 8 the authors of DCC1 and DHC3 utilized Move 4 to summarise their key findings. The author of DCC1, for instance, as shown in Extract 7, indicates his or her results at the end of his or her study. Move 4 in DCC1 was signaled by the phrases "**At the end of the study, the results showed that…"** and "**The findings indicates…**[*sic*]**"** Similarly in DHC 3 as shown in example 8, Move 4 was signaled by the phrase "**it was found out that…"**

The composition of this move also reveals a difference between the two disciplines. Thus, students from the Department of Chemistry referred to previous studies in the result summary and this is seen in Extract 7. On the other hand, none of the students from the Department of History made reference to any previous study. This difference could be considered as a disciplinary difference owing to the fact that historians are more interested in telling the untold past rather than retelling stories that have already been told; hence, they appear to avoid previously conducted studies, if there are any.

The communicative function of Move 5 was to give recommendations based on the findings of the study. Move 5 was signaled by headings such as *recommendation for future studies*, which corroborates Bunton (2005). This move comprised two steps (Step 1: giving recommendation(s) on areas of further studies and Step 2: giving practical recommendations). Step 1 gives recommendations pertaining to areas where future researchers could explore

whereas Step 2, according to Bunton (2005, p. 216), concerns "real world uses for the research or advice for real-world situations springing from the findings." Confirming Bunton's (2005) result of the move being embedded in other moves, a couple of times, Move 5 was seen being embedded in other moves such as Move 4. Instances of Move 5 are illustrated in the extracts below:

Extract 9

> [Based on the outcomes of the study, these **recommendations** were made as follows: [GWCL should establish distribution centers which will serve the purpose of developing a database system enabling them perform meaningful service delivery assessment. (Step1) The study should be **replicated in other GWCL districts throughout the country…**[Step 2] (DCC 2)

Extract 10

> [Since the research was centered on Freeman Methodist church, **I entreat my able readers to write at least one church history in their community** [step 2] (DHC 17)

Extract 11

> [It is therefore, a step in the right direction to **suggest that correct documentation and information should be safely kept to provide the requisite information** to academics and researcher of today and generations…[Step 2] (DHC 16)

Again, attention must be drawn to the fact that the two steps that are considered under Move 5 are considered as separate moves in Bunton's (2005)

study; owing to the fact that he felt the two had different communicative purposes. However, in the present study, I consider them as steps coming together to achieve a common purpose of recommendation.

Authors of the conclusions that were examined in the present study tended to use Move 6 to articulate the challenges they encountered in the course of their research work. No steps were identified under Move 6. This move was completely absent from the DCCs. That is to say that only the authors of DHCs used this particular move. Extracts of Move 5 are given below:

Extract 12

[**One of the problems that were faced** in the course of the study was the quantity of microalgae, which was limited due to the slow cultivation.] (DCC 13)

Extract 13

The researcher wishes to indicate that a few challenges were encountered in the process of this study. Principal among the many was the unavailability of relevant and related literature on the subject of the study…] (DHC 4)

Extract 14

[**One big problem of oral traditions faced** in this work was the lack of information due to the poor means of documenting oral traditions in Asikuma.] (DHC 8)

From Extracts 12, 13, and 14, the authors articulated the problems that were faced in the course of the study. Extract 12, for instance, reported a limited

quantity of microalgae as the problem faced during the research process. Extracts 13 and 14 also reported lack of literature and information respectively as problems encountered by researchers.

One interesting move that was identified is Move 7. Authors of the conclusions who utilized this particular move tended to extend their heartfelt messages to the people their studies were about. This move was evident in only dissertations from the Department of History. This move was found being embedded in other moves. For instance, in Extract 15, the student extended his or her good wishes to Opanyin Kofi Nkansah, his wife and Rev. Berck, together with his ministers. Similarly, author of DHC 14 also did likewise which is seen in Extract 16.

Extract 15

> [For this reason I say **"AYEEKO"** and a good work done to Opanyin Kofi Nkansah and his able wife for the introduction of the Presbyterian faith in Agona Odoben, to Rev. Berck and to all ministers who served in this great mission.] (DHC 11)

Extract 16

> [In this light, I will **congratulate** Rev. Dr. Paul Frimpong Manso and his administration and Rev. John Kwabena Boachie and his administration for a successful work and] (DHC 14)

From Extract 15, the local word "ayeeko" is an expression used in most indigenous Ghanaian languages, usually, to congratulate a person on a good work done. Also, it is used to motivate a person to work harder. Thus, the author

of DHC11 tried to express his/her appreciation for the good work done by Opanyin Kofi Nkansah, his wife, Rev. Berck and his administration. In addition, in Extract 16, the writer extends a congratulatory message to Rev. Dr. Paul Frimpong Manso, Rev. John Kwabena Boachie and his administration.

Further, Move 7, to a large extent, made the dissertation conclusions from the Department of History unique. This is because their researches normally center on people and places. Owing to this, students see it prudent to acknowledge the efforts of people they have investigated in this move. I feel if students who have employed this move in their conclusions were abreast of things that should go into the conclusion chapter, Move 7 would have been best placed in the acknowledgement section of the dissertations instead of the conclusion chapter.

The last move identified is Move 8. The purpose of this move was to state the importance of the studies conducted by the authors of the conclusions investigated in the present work. Move 8 was present in only the conclusions from the Department of History. This indicated that students from the Department of History saw it necessary to state the importance of their studies in their conclusion chapters. Interestingly, this move was totally absent from the conclusions from the Department of Chemistry. An example of Move 8 is seen bin Extract 17.

Extract 17

> [It is the fervent hope of the researcher that this project which is a documented history of Ningo Senior High School **will serve** as

a valuable source of information for all who are interested in knowing the history of Ningo Senior High School.] (DHC 20)

In Extract 17, the author identified the importance of his or her work to be a source of literature for future studies. Although this particular move was considered to be a step in Bunton's (2005) *consolidation of research space* move, it has been made a move in the current study. Relatively, Move 8 has not been given so much importance by undergraduate students as given by PhD students. This is evident in the fact that only one dissertation out of the forty texts considered made use of this move.

Apart from Move 1 and Move 7, the other moves to some extent agree with the results of Bunton (2005) and Soler-Monreal (2016). As indicated in the current study, most of the moves are steps in most PhD studies due to the fact that PhD theses are longer than undergraduate dissertations. In addition, the moves identified in the present study had limited number of steps unlike the moves identified by Bunton (2005) and Soler-Monreal (2016) whose studies were conducted on PhD theses.

Occurrence of Moves and Steps

Having described the various moves that were identified, it then becomes necessary that I report on the frequency of the moves as well. This section then gives a report on the frequency of moves and steps from the two datasets. To calculate the percentage of each move's frequency of occurrence, I divided the number of times a move occurred by the total number of conclusions from the department (n=20). The quotient was then multiplied by 100.

Table 2 : Occurrence of Moves and Steps in DCCs and DHCs

Moves and Steps	Chemistry (N=20)	100%	History (N=20)	100%
Move 1: stating the aim of the chapter	1	5	1	5
Move 2: restating the objectives of the study	6	30	17	85
Move 3: describing the method(s)	1	5	5	25
Step1: describing the research design	1	5	-	-
Step 2: describing the data	1	5	5	25
Move 4: summarizing the key findings	20	100	19	95
Move 5: giving recommendation(s)	20	100	8	40
Step 1: giving recommendation(s) on areas for furthers studies	13	65	6	30
Step 2: giving practical recommendation(s)	14	70	3	15
Move 6 (stating challenge(s))	2	10	5	25
Move 7 (extending well wish(es))	-	-	1	5
Move 8 (stating the importance of the study)	-	-	3	15

As shown in Table 2, dissertation conclusions from the Department of Chemistry were typified by six moves (stating the aim of the chapter, restating the objective(s) of the study, describing the methods used, summarizing the study and giving recommendations). Out of the six moves that were identified in the DCCs, Moves 4 and Moves 5 recorded the highest occurring moves with the frequency of 100% each, which means that they appeared in all the twenty concluding chapters of dissertations authored by students of Chemistry. Meanwhile, Moves 1, 3 and 6 recorded 5%, 5% and 10% respectively. This suggests that only one of the twenty concluding chapters from the Department of Chemistry stated the purpose of the chapter as well as the methods employed. However, only 10% of the twenty DCCs talked about the importance of their work. Thus far, only two of the DCCs talked about the challenges they encountered in the course of their study. Moves 4 and 5 can be considered as obligatory moves since they recorded a frequency of 100%. On the other hand, the remaining four are seen as optional moves due to the fact that their frequencies were less than 66%.

Interestingly, the concluding chapters from the Department of History were typified by eight moves. The eight moves which were identified appeared to be additions being made to the six moves that were already identified in the DCCs. The eight moves identified were: M1 (stating the aim of the chapter), M2 (stating the aim of the study) M3 (describing the methods used) M4 (summarizing the study), M5 (giving recommendations), M6 (stating challenges), M7 (extending well wishes) and M8 (stating the importance of the

study). Moves 2 and 4 appeared 85% and 95% in the conclusions respectively. 40% of the twenty DHCs had Move 5. Moves 6 and 7 recorded 25% and 5% respectively. Move 1 was the lowest occurring move with 5%. This particular move was present in only one of the twenty DHCs.

The findings of the present study demonstrate that students from the two departments were comfortable, articulating the challenges they faced when they were undertaking their research. This is in partial support of Ketteringham's (2015) observation that undergraduate students, because they are "legitimate peripheral participant" (p.4) and "eavesdroppers", according to Paré et al (2009, p.182), in their discourse communities, feel very comfortable in registering their limitations because they are very much aware of being open to criticisms unlike the gatekeepers of the discourse community. Also, it partially supports his finding that students at the undergraduate level rely on recommendation for future studies. This was evident in the conclusions from the Department of Chemistry as more than half of authors of those conclusions recommended areas for future studies. Furthermore, the result from the current study debunks Ketteringham's (2015) assertion that undergraduate students in their dissertations over rely on previous studies since that was not evident in the dissertations examined although a few students from the Department of Chemistry attempted that. However, that could not be regarded as over reliance. Students from the Department of History, on the other hand, made no attempt to incorporate any literature in their conclusions.

From the two datasets, the four move statuses propounded by Hüttner (2010) were all present with the exception of the 'core status', which was not seen in any of moves in the DCCs. The two datasets can be said to be typified by obligatory and optional moves. Move 4 (Summarizing the key findings) in both datasets was obligatory. This suggests that both disciplines preferred giving a summary of their key findings in their conclusion chapter. Again, this could be attributed to the fact that conclusions are basically seen as the summary or restatement of salient points already discussed. In addition, Move 1 recorded 5% in the two datasets, which is a demonstration of a less premium being put on it. Classification of the moves into the status of obligatory, core, ambiguous and optional, as propounded by Hüttner (2010), is shown in Table 3.

Table 3: Classification of Moves into Obligatory, Core, Ambiguous, Optional and Conventional Status

	Obligatory (90-100)	**Core (50 – 89)**	**Ambiguous (30-49)**	**Optional (1-29)**
DCC	M4 M5	-	M2	M1 M3 M6
DHC	M4	M2	M3 M5	M1 M6 M7 M8

As seen in Table 3, M4 (Summarizing the key findings) was seen as an obligatory move in the two datasets. M5 (Giving recommendation(s)) was seen as an obligatory move in DCCs. M2 (Restating the objective(s) of the study) was identified as a core move in the DHCs. DCCs, on the other hand, recorded no core move. Meanwhile, M2 (Restating the objective(s) of the study) was the only ambiguous move in the DCC data. M3 (Describing the method used) and M5 (Giving recommendation(s)), per their percentages, were classified as ambiguous moves in the DHC data. M1 (Stating the aim of the chapter) and M6 (Stating challenge(s)) were optional in both datasets. Additional to the already mentioned optional move identified in the DHC data were M 7 (Extending well wish(es)) and M8 (Stating the importance of the study).

In terms of the commonalities in the status of the moves from the two departments, the analysis demonstrated Move 4 (Summarizing the key findings) as an obligatory move in both datasets. This however shows the indispensable nature of Move 4 (Summarizing the key findings) in writing dissertation conclusions from the Departments of Chemistry and History. The status of Move 4 (Summarizing the key findings) in conclusions from the two departments concurs with the finding of Aslam and Mehmood (2014), who identified summarizing the study, which in the present study is Move 4 (Summarizing the key findings), as an obligatory move. Moves 1 (Stating the aim of the chapter) and 6 (Stating challenge(s)) were optional in both DCCs and DHCs.

Inasmuch as the aforementioned commonalities were evident between the two datasets, some differences were also noted. First, the analysis recorded Move

5 (Giving recommendation(s)) as an obligatory move in the DCC data while in the DHC data, Move 5 (Giving recommendation(s)) was an ambiguous move. Hence, the status of Move 5 (Giving recommendation(s)) in the two datasets was different. Second, no core moves were identified in the DCCs, but one was identified in the DHCs. Move 2 (Restating the objective(s) of the study) which was the only core move in the DHCs was an ambiguous move in the DCCs. Lastly, Move 3 (Describing the method used) in the DCCs was an optional move, but an ambiguous move in the DHCs.

Notwithstanding, conclusions from the Department of Chemistry were characterized with obligatory and optional moves. The conclusions from the Department of History, on the other hand, were characterized with ambiguous and optional moves.

Textual Space of the Moves

To be able to tell the importance of the various moves, it becomes necessary that the textual space allocated to each move is determined. Based on the textual space coupled with the frequency of the moves, the premium put on each move is determined (Afful, 2005). Table 4 shows the textual space allocated to each. The textual space of each move was determined, using the number of words in each move from the two datasets constituted.

Table 4: Textual Space Allocated to the Various Moves

Moves	Number of Words DCC (N=5559)	Number of Words DHC (N=10693)
Moves 1 (Stating the aim of the chapter)	26 (0.5%)	39 (0.36%)
Move 2 (Restating the objective(s) of the study)	112 (2%)	782 (7.3%)
Moves 3 (Describing the methods for the study)	91 (1.6%)	528 (4.9%)
Move 4 (Summarizing the key findings)	3,501 (63%)	8,323 (77.8%)
Table 4 Continued		
Move 5 (Giving recommendation(s))	1,773 (31.9%)	559 (5.2%)
Move 6 (Stating challenge(s))	56 (1%)	304 (2.8%)
Move 7 (Extending well wish(es))	-	113 (1.1%)
Move 8 (Stating the importance of the study)	-	45 (0.4%)

As shown from Table 4, Move 4 (Summarizing the key findings) in both datasets recorded the highest textual space. Move 5 recorded the second highest textual space in the two datasets. Interestingly, Move 1 (Stating the aim of the chapter) was allocated the lowest textual space in both datasets. With regard to Moves 2 (Restating the objective(s) of the study) and 3 (Describing the method used), DCCs had much greater textual space being allocated to these two moves than those from the Department of History.

Analyzing the frequency recorded by each move *pari passu* the textual space allocated to each move, the findings revealed that students of Chemistry put more premium on Move 4 (Summarizing the key findings) and 5 (Giving recommendation(s) while students of History attached so much importance to Move 2 (Restating the objective(s) of the study) and 4 (Summarizing the key findings). Suffice it to say that students from both disciplines attached more importance to Move 4 (Summarizing the key findings) than any other move. This corroborates Bunton's (2005) findings, where he realized from his analysis that the largest part of the conclusion chapters was "consolidating the research space" move which captured steps such as the research findings, methods, and claims. Although the steps he identified in his study are made separate moves in the current study due to how the chapters analyzed in the present study were organized, it appears the summary of research findings move, which is most often given prominence, is the move given the largest textual space. In addition, Bunton's *Consolidation of research space* move which is by far similar to my *summarizing key findings* move to some extent differs, owing to the fact that

authors of the conclusion chapters analyzed in the present study did not seem to have consolidated their study, which was evident in the way they organized the chapter. This can be attributed to the fact that they are novices in the research field. Therefore, they are still not conversant with the organization of their dissertation conclusions.

Sequence of Moves

The previous sections have identified the moves, shown their frequency of occurrence, as well as the textual space allocated to each move. This section gives an account of how the moves were ordered in the two datasets. Table 5 provides the frequency of the various move-patterns that were realized from the analysis.

Table 5: Sequence of Moves

Move Sequence	Chemistry Conclusions (n=20)	History Conclusions (n=20)
Six-move Pattern	1 (5%)	0(0%)
M4>M5>M4>M5>M4>M5	1	-
Five-Move Pattern	1(5%)	1 (5%)
M2>M4>M5>M6>M5	1	-
M2>M4>M6>M3>M5	-	1
Four-Move Pattern	2 (10%)	5 (25%)
M2>M3>M4>M5	1	-
M2>M4>M5>M6	-	2
M2>M4>M6>M5	-	1

Table 5 Continued

M2>M4>M6>M3	-	1
M2>M4>M7>M7	-	1
M4>M5>M6>M5	1	-
Three-Move Pattern	6 (30%)	7 (35%)
M1>M4>M5	1	-
M1>M4>M7	-	1
M2>M4>M5	3	3
M2>M3>M4	-	2
M3>M2>M4	-	1
M3>M4>M5	2	-
Two-move pattern	10 (50%)	6 (30%)
M2>M4	-	4
M2>M7	-	1
M2>M8	-	1
M4>M5	10	-
One-move pattern	-	1 (5%)
M3	-	1

As shown in Table 5, six patterns (six-move pattern, five-move pattern, four-move pattern, three-move pattern, two-move pattern and one-move pattern) were identified. Out of the six patterns which were realized from the analyses, five patterns were present in the conclusions from the Department of History, likewise in the conclusions from the Department of Chemistry. The conclusions

from the Department of Chemistry were typified by the two-move and three-move patterns. The two patterns recorded 50% and 30% respectively in terms of frequency. The four-move pattern recorded a frequency of 10% while the six-move and five-move patterns recorded the least in terms of frequency with a percentage of 5. Like DCCs, the two-move and three-move patterns typified the History conclusions, with frequencies of 30% and 35% respectively. The four-move pattern recorded a frequency of 25%. The least occurring patterns were the one-move and five-move patterns which had the frequency of 5% each. The six-move pattern, on the other hand, was not present in the conclusion from the Department of Chemistry. This pattern was absent in the DCCs owing to the absence of two moves from the DCCs.

Again, as seen in Table 5, students from the Department of Chemistry preferred a two-move pattern in constructing their conclusions. Precisely, the predominantly used pattern by students from the Department of Chemistry was M4>M5, which suggested that in writing conclusions, they only give a summary of their findings and then give recommendations based on their findings. Contrary to the move order that recorded the highest frequency from the Chemistry corpus, the highest move sequence from the History corpus was M2>M4>M5. The two patterns that recorded the highest frequency in the DCCs and DHCs had 50% and 35% respectively. It becomes evident that those two frequently used move patterns which were identified could not even record up to half of the data size. Owing to this, a conclusion could be drawn that the students from both disciplines were not consistent in their move ordering. This could be

an evidence of undergraduate students being “eavesdroppers” in the academic discourse community. Therefore, they appear not to be conversant with how moves in conclusion chapters are ordered.

Furthermore, the majority of the move patterns identified in the two corpora were linear whilst just 10% was circular in nature. Examples of move cycles are M4>M5>M4>M5>M4>M5 and M2>M4>M5>M6>M5. This kind of move pattern, according to Abaalkhail (2015), is move cycle, owing to the repetition of some moves in the same text. In the first example, Moves 4 and 5 were repeated two and three times respectively, giving a perfect circle. The second example had only Move 5 which was repeated only once. This particular move pattern was realized as result of the author trying to embed Move 6 within Move 5. Pictorial views of move patterns M4>M5>M4>M5>M4>M5 and M2>M4>M5 are shown in Figures 6 and 7 respectively.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

CONCLUSION

[Qualitative test using flame and Graphite Atomic Absorption Spectroscopy indicated cadmium levels (<0.1-7ug/g; safety limit: 2ug/g) lead levels (9.6-66.2ug/g), arsenic levels (0.6-13.7ug/g) and the levels for mercury were (0.6-3.6ug/g; safety limit: 5ug/g. Levels obtained for arsenic and mercury were higher in the imported rice sample than local rice sample whiles the levels obtained for cadmium and lead were moderately higher in local samples than the imported sample. These levels generally were higher in local samples than the imported sample. These levels generally exceeded recommended limits by FAO/WHO except for mercury which was only detected in the imported rice samples.**] Move 4 (99 words)**

[Therefore local rice production has to be given the necessary attention with improved farming techniques in other to turn Ghanaians preference towards the local rice varieties.**]** **Move 5 (26 words) [**Local rice samples from Afienya and Nyankpala were averagely lower in the levels of the four heavy metals analysed**]**. **Move 4 (19 words)**

[Furthermore, imported rice samples need to be analysed critically before being allowed into the country,**]** **Move 5 (15 words) [**Jasmine and Uncle Sam were generally found to be lower in the levels of the heavy metals.**]** **Move 4 (15 words)**

[5.2 Recommendations

It is recommended that further test be performed to rice varieties. The assessment of other heavy metals is important to ensure the safety of the public. Soil, water and air detection could also be assessed for heavy metals to correlate the data obtained. Precision and accuracy analysis could be done by increasing sample size and trial to increase the robustness of the results.

There should be regular monitory of heavy metals in food crops in order to prevent excessive build-up of these heavy metals in crops and in the human food chain.

Application of insecticides, fertilizers and other agrochemicals should be minimized on agriculture since they can serve as main source of these heavy metals to the soil and plant even in non-polluted areas.] **Move 5 (125)**

Figure 6: A Six-Move Pattern in DCC 11

Figure 6 shows a sample of a dissertation conclusion which is typified by a six-move pattern. From this text, I realized that the author preferred giving his or her recommendation immediately after each finding to giving the summary of

all the findings before moving on to other recommendations. That is to say, recommendations for each finding were articulated just after every result. This resulted in the formation of a cyclical move pattern.

Conclusion

[The research talked about how Christianity in general came to Ghana and how the Methodist Church in particular came to Ghana.**] Move 2 (21 words) [**The research has established the fact that Christianity came from Europe to Ghana. It has been established that there were objections by traditional rulers but all in all, Christianity was planted thereby leading to the Methodism in Ghana.

The research has also established the fact that Freeman Methodist Church was started by the First United Methodist Church of Sierra Leone and the United Methodist Church in Nigeria. It has been established that, the church began by eight family units, the direction of the church and mission of the church.

The research has also established the fact that, the church has made enormous contribution to its members in particular and the Kumase metropolis in general. For the members, it has been established that the church provided financial aid and job opportunities for them. On the Kumase Metropolis, it has also been established that the church provided schools and organized cleanup exercises with promoted good education and also improved sanitation respectively.

The research has also established the fact that, despite the contribution of the Freeman Methodist church. It was faced with certain challenges. It faced difficulty in language, finances and its exodus.

The research only dealt with the history of the Freeman Methodist Church and brought forth the necessary information that the readers of this work piece would like to know about the church. Since the research was centered on Freeman Methodist Church,**] Move 4 (231 words) [**I would entreat my able readers to write at least one church history in their community**.] Move 5 (16 words)**

Figure 7: A Three-Move Pattern in DHC 17

Figure 7 provides an example of a three-move patterned text identified in the analysis. The author of the text, as shown in Figure 7, utilized Moves 2, 4, and 5 in that order. In other words, the author started with the general aim of the study, followed by a summary of his or her findings, then recommendations.

Unlike the pattern of DCC 11 in Figure 6, the pattern of the moves in DHC 16, as shown in Figure 7, is linear in nature.

It is, therefore, obvious from my analysis that students from the two departments did not have a specific way of sequencing the moves. Their patterning of moves in the conclusions smacks of individualism than a disciplinary requirement.

This section has reported the findings based on the first research question where five issues were revealed. The rhetorical structure of dissertation conclusions from the Departments of Chemistry and History was identified; hence, the description of the moves that typified the conclusions. Also, owing to the frequency of the moves, obligatory and optional moves were identified. Further, the textual space together with the frequency of the moves brought to bear the level of importance given to each move. Finally, findings on how the moves were sequenced were also reported. The next section provides the analysis and discussion of the lexico-grammatical features.

Lexico-grammatical Analysis

The first section of this chapter focused on the chapter titles, followed by structural (move) analysis of concluding chapters of undergraduate dissertations from the Departments of Chemistry and History. This section, which is the third part of the analysis, provides the lexico-grammatical analysis of the concluding chapters. Using AntConc as the tool for the analysis, I report on the keywords that typified each of the moves already identified in the first section. Also, the collocates of common keywords across the two disciplines are examined using the

collocation tool on the AntConc software. It must be noted here that codes—DCC 1-20 and DHC1-20—marking the various texts, happened to appear in the keyword list; however, in the analysis, they were omitted.

Keyword Analysis

To begin with, Move 1, which was the first move identified in the structural analysis of the conclusions, had its communicative purpose as 'stating the aim of the chapter'. In other words, the undergraduate students utilized this move to state the motive of their last chapter. Table 6 shows the result of the keyword analysis of Move 1 of the conclusions from the Departments of Chemistry and History (DCCs and DHCs).

Table 6: Keyword Analysis of Move 1 of DCCs and DHCs

		DCC			DHC	
Rank	**Frequency**	**Keyness**	**Keyword**	**Frequency**	**Keyness**	**Keyword**
1	1	17.757	Introduction	1	12.32	**chapter**
2	1	14.958	Motive	1	12.32	lessons
3	1	13.939	Outlines	1	11.413	intend
4	1	13.26	**Chapter**	1	10.792	describe
5	1	12.26	Findings	1	10.542	Remark
6	1	13.26	Recommendation	1	10.542	remarks
7	1	10.71	Carrying	1	9.343	Chosen
8	1	9.137	Study	2	9.343	We
9	1	7.341	**This**	1	6.423	Point
10	1	0.201	And	1	1.62	**This**

As shown in Table 6, the keyword *introduction* recorded the highest keyness of 17.797 in the DCCs. *Motive* and *outlines* were ranked second and third with the keyness of 14.958 and 13.939 respectively. The keyword *chapter* was ranked fourth with the keyness of 13.260.

In the DHCs, the keyword analysis revealed *chapter* as the keyword with the highest keyness. *Chapter* recorded 12.320 in terms of keyness. Like Move 1 of the DCC corpus, *chapter* also recorded a relatively high keyness in Move 1 of the DHC corpus. Again, the role played by *chapter* in this move is not different from the role it played in the DCC corpus. Suffice it to say that more emphasis was placed on *chapter* in both corpora. The keyword *chapter* appearing in Move 1 of the conclusions from the two disciplines, though, with relatively lower keyness in the DHCs, plays a very essential role in the composition of this move. An evidence of *chapter* in Move 1 of the DCC corpus is shown in Extract 18.

Extract 18

This *chapter* outlines the motive… DCC 2

Extract 18 shows the level of emphasis that is placed on *chapter* by the use of the specifier 'this'. In addition, making 'this *chapter*' the subject of that sentence where the head word of the noun phrase is 'chapter' also makes it stand out. Other keywords worth noting are *motive* and *outlines*. Owing to the communicative purpose of this move, it was not surprising for such words to occur in the corpus as *motive* and *outlines* articulate nothing but the purpose for which the chapter was composed.

One interesting result from the keyword analysis of this move from the DHC corpus was the use of the pronoun *we*. This shows the preference of students of History to personalize their work by the use of personal pronouns. Although I was expecting to see the first person singular *I* since the dissertations were not of co-authorship, authors opted for *we* instead of *I*. The preference of the students of

History to use the personal pronoun *we* instead of *I* could be attributed to the nature of History as a discipline. Since research in History requires information from people, it was not so surprising that students from History opted for *we* instead of *I* to show some element of inclusion of perhaps those who helped them in the course of the research. Another view point on the preference of *we* by a sole author can also be a way of avoiding responsibilities. Instances of *we* in the DHC corpus is shown below:

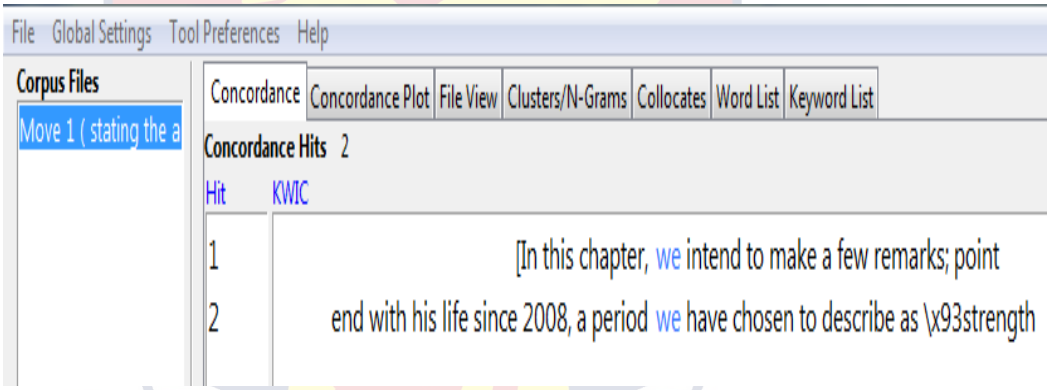

Figure 8: Instances of We in Move 1 of the DHC Corpus.

From the instances of *we* shown in Figure 8, one can clearly see some level of a team work. The use of *we* shows the research was not done by one person though each study was sole authored.

The analyses of Move 1 of the two corpora show the importance of the word *chapter* in this particular move since the word has relatively high score in the two corpora. A difference that was recorded between the two corpora was the use of personal pronouns in the DHCs, which was absent from the DCCs. Students of History made an effort to own their work through the use of personal pronouns. Meanwhile, that was absent in the Move 1 of the DCCs. They also preferred to use passive construction in stating the aim of the chapter, thereby

making the noun *chapter* to be responsible for their actions rather than using personal pronouns which would make them responsible for their own actions.

Moving to keywords in Move 2; first, the communicative purpose of Move 2, as identified in the first section of the analysis, was to reiterate the main purpose for embarking on the research by restating the aim of the study. This move plays a very important role when it comes to maintaining cohesion in the whole dissertation as it serves as a reminder to the reader. The keyword analyses of Move 2 of both DCCs and DHCs revealed a number of keywords. Table 7 shows the result of the first fifteen keywords from DCCs and DHCs.

Table 7: Keyword Analysis of Move 2 of DCCs and DHCs

	DCC			DHC		
Rank	**Frequency**	**Keyness**	**Keyword**	**Frequency**	**Keyness**	**Keyword**
1	2	25.846	extraction17	17	116.482	**Church**
Table 7 continued		23	Study	13	105.359	Ghana
3	1	14.832	Biofield	15	97.933	History
4	1	14.832	**Coconut**	12	81.212	Study
5	1	14.832	groundwater	4	43.036	Examine
6	1	12.06	**Focus**	6	37.175	Research
7	1	9.833	Determine	3	32.277	Akyem
8	1	9.095	Aimed	3	32.277	**Oda**
9	4	9.095	**This**	19	27.867	**This**
10	1	7.643	Project	8	24.621	**Work**
11	1	6.914	Research	2	17.708	**Focus**
12	1	6.098	Concern	2	13.893	Attempt
13	1	6.098	Purpose	4	13.314	Set
14	1	5.01	Main	1	10.759	Purposely
15	1	5.046	**Work**	1	8.317	How

Move 2 of the conclusions from the two departments was typified by discipline specific nouns. As shown in Table 7, nouns such as *extraction, biofuel, coconut* and *groundwater* were found to be topic-specific words that typified the DCCs. The DHCs, on the other hand, were typified by topic-specific words such

as *church, Ghana* and *history*. Since each dissertation was on a specific topic from the respective disciplines, such words were expected in the keyword list. Interestingly, keywords from the conclusions from both departments demonstrate the interest of the undergraduate students in investigating things and people around them. More fascinatingly, the word *history* could not be left out from the keyword list from the Department of History. The high keyness recorded by *history* (97.933) could be attributed to the nature of History as a discipline where the basic duty of a historian is to tell history; hence, the high keyness recorded by the word *history* which shows that their studies were basically history. Further, the use of *Ghana* in this move could be attributed to the fact that things, places and personalities in Ghana were their focus.

Apart from the discipline-specific words, Move 2 was also typified by material verbs. Specifically, the analysis of the keywords of the conclusions from the Department of Chemistry found material verbs such as *focus, determine, aimed* and *concern*. Conclusions from the Department of History had material verbs such as *examined, focus, attempt* and *set*. Although students from the two Departments used material verbs to reiterate the aim of their study, there were some differences in terms of the choice of such verbs. In terms of keyness of the material verbs employed in the DCCs, *focus* recorded the highest keyness of 12.060 whereas in the DHCs, *examined* recorded the highest keyness of 43.036.

Putting the results from the keyword analysis of conclusions from the Departments of Chemistry and History together, some common keywords were noted. The keywords that ran through Move 2 of conclusions from both

departments were *study*, *focus*, *this* and *work*. To make reference to their research, students from both departments preferred to refer to their research as *study* or *work*. The specifier *this* also received a high level of keyness in conclusions from both departments as it was used to qualify the noun it preceded. *This* recorded keyness of 9.095 and 27.867 in DCCs and DHCs respectively. The presence of the determiner, *this*, in the first fifteen keyword list of both DCCs and DHCs could be as a result of the students trying to specify their study. In the DCCs, simple noun phrases such as ***this*** *study*, ***this*** *research*, ***this*** *research* were evident. DHCs also revealed noun phrases, where the headwords were modified by the determiner *this* as in ***this*** *work*, ***this*** *piece* of work and ***this*** *study*.

Turning my attention away from keywords in Move 2 to Move 3, the authors of the conclusions examined from the Departments of Chemistry and History used Move 3 to describe their methodology. Table 8 shows the keyword list of Move 3 of the DCC corpus.

Table 8: Keyword Analysis of Move 3 of DCCs and DHCs

	DCC			DHC		
Rank	**Frequency**	**Keyness**	**Keyword**	**Frequency**	**Keyness**	**Keyword**
1	3	37.409	Block	5	66.37	Oral
2	2	30.482	pavement3	3	43.07	Wassa
3	2	30.482	Quantitative	2	28.713	Data
4	2	21.491	Method	3	25.872	Information
5	1	15.241	Apam	3	25.872	Secondary
6	1	15.241	Females	3	23.606	Study
7	1	15.241	Questionnaires	4	20814	Work
8	1	15.241	Validation	2	19.725	Sources
9	4	14.963	Were	2	18.717	Primary
10	1	14.963	Males	1	14.357	Relied
11	1	12.47	Manufactured	1	12.79	History
12	1	11.424	Taken	1	11.008	Used
13	1	8.368	Administered	1	9.359	Gathered
14	1	5.032	Determination	1	8.09	Collected

15	1	4.519	Used	11	8.09	Drawn

Results from the keyword analysis of Move 3, as shown in Table 8, reveal the influence of the disciplines in question on the choice of words of students. In other words, the words used in composing Move 3 could be said to have been highly influenced by the nature of the research being conducted in the various disciplines. To describe the nature of the research, students from the Department of Chemistry used the adjective *quantitative (*30.482) to describe the kind of research taking place. The keyness scored by *quantitative* was not surprising because, often, research in Chemistry, for that matter the Hard Sciences, is situated in the quantitative paradigm. In terms of data description, the keywords revealed were *block* (37.409), *pavement* (30.482), *females* (15.241), and *males* (12.470) in the DCCs. The word *block* appears to be the main data in the conclusions that had it. The keyword *pavement* was used as a nominal. For Move 3 of the DHCs, revelation was made of keywords such as *oral*, *data* and *information. Oral* recorded the highest keyness of 64.2 in the Move 3 of DHC corpus. This could be as a result of the fact that the majority of the conclusions examined were based on oral history. Instances of *oral* are shown in Figure 9 below.

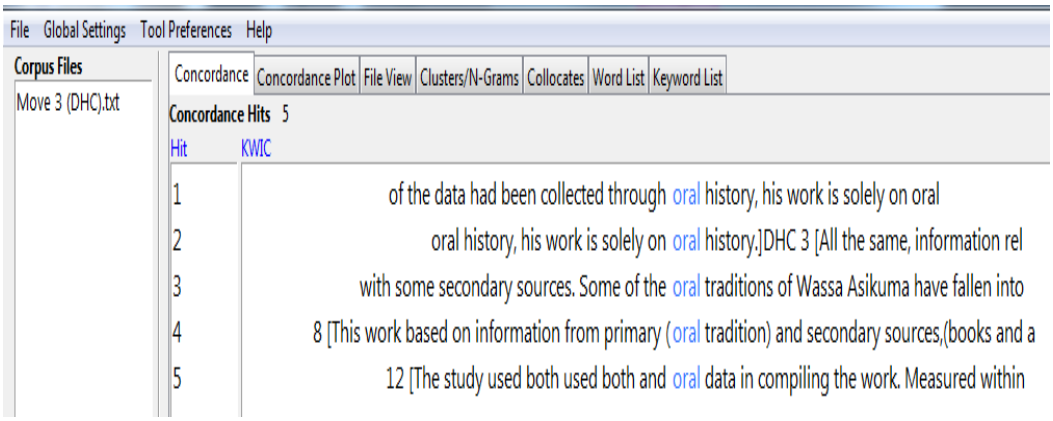

Figure 9: Instances of oral in Move 3 of the DHC Corpus

The instances of the keyword *oral*, as shown in Figure 9, could be based on the fact that most of the studies that were conducted by the undergraduate students from the Department of History had their main data in the verbal form, hence the frequent use of the word *oral*. Again, this could also be attributed to the lack of documentation of history on the part of the local people and Africans for that matter. Concordance of the keyword *information* revealed that students of History preferred to refer to their data as *information.* Their preference for *information* could ostensibly be because of the nature of data.

The keyword analysis also demonstrated words such as *primary, secondary* and *source* as keywords describing the source and type of data used by authors of the DHCs examined in the present study. A detailed description of data cannot be given without making reference to the type of data, and the data type cannot be talked about without either mentioning its source; that is, whether it is of 'primary' or 'secondary' source. To describe the data collection procedure, the DCCs were typified by material verbs such as *taken, manufactured, administered* and *used*. DHCs, on the other hand, were typified by *used, gathered, collected* and

drawn. The keyword analysis also revealed names of areas the research was undertaken. This was, however, expected that in describing the methods employed, attention would be given to the research. This was evident in the conclusions from the two departments. Again, situatedness of the studies has been articulated in Move 3 of the conclusions examined and this was not underrated in the analysis. That is, the research sites were not left out by the students in the conclusions of their dissertations. For instance, *Apam* and *Wassa* which are place names and proper nouns for that matter were found in the first fifteen keywords of Move 3 of DCCs and DHCs respectively. The presence of these place names is an attempt by the undergraduate students to situate their research geographically.

Although Move 3 was composed with different lexical resources, those lexical items by far connote the same idea across the two disciplines. Despite the vast difference in the choice of the lexical items, the verb *used* was employed across the two disciplines in Move 3. Although different lexical items were used to denote the same idea, students from the Departments of Chemistry and History utilized the verb, *used*, to articulate their data collection procedure. In addition, students from the two selected departments used verbs in describing their methodology.

The next move to be considered, in terms of keywords, is Move 4. The keyword analysis of Move 4 of the DCC corpus showed the unit of measurement *mg* (milligram) as the keyword with the highest keyness of 218.343. This was followed by *water* with the keyness of 156.996. In the DHCs, on the other hand, the word *church* recorded the highest keyness of 218.343. This was followed by

mining, *Ghana* and *people* with the keyness of 196.019, 142.822 and 116.587 respectively. Table 9 shows the result of the keywords of Move 4 from the two corpora.

Table 9: Keyword Analysis of Move 4 of DCCs and DHCs

DCC				DHC		
Rank	**Frequency**	**Keyness**	**Keyword**	**Frequency**	**Keyness**	**Keyword**
1	26	206.28	Mg	57	218.343	Church
2	29	156.996	Water	34	196.019	Mining
3	17	156.996	Samples	31	142.822	Ghana
4	15	119.009	Kg	70	116.587	People
5	16	94.616	Levels	22	84.847	Established
6	11	70.029	Obtained	22	45.847	Political
7	13	59.654	Result	8	43.527	Research
8	11	55.378	Yield	15	40.937	Study
9	41	55.378	Were	24	37.13	Life
10	7	43.435	Limit	5	31.071	Migrated
11	7	42.138	Recorded	54	28.603	Were
12	5	39.57	respondent13	12	26.362	Social
13	5	34.301	exceeded8	8	24.857	Discovered
14	6	31.198	Indicated	5	6.9	Showed
15	3	15.599	Findings	2	5.973	Findings

The presence of (milligram) *mg* among the top fifteen ranking keywords and for that matter the keyword with the highest keyness was not surprising since the epistemology of Chemistry as a discipline requires a lot of scientific calculations and measurements. More so, results of scientific calculation and

measurements are considered to be incomplete and inaccurate until the appropriate units of measurements are added. Therefore, since this move summarizes the findings of such studies, units of measurements such as *mg* could not be undermined. Thus, those words played significant roles in composing this 'summarizing findings" move. Instances of some of the keywords in Move 4 of DHCs are shown in Figure 10.

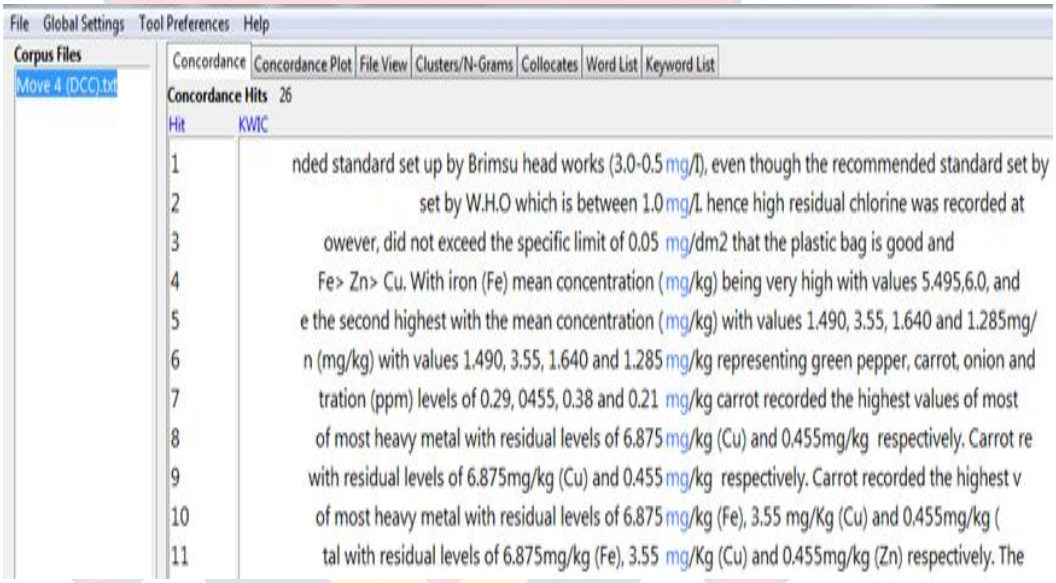

Figure 10: Instances of mg in Move 4 of the DCC Corpus

The concordance of the target word *mg* confirms the fact that Chemistry involves a lot of scientific calculations. Thus, values from calculations were complemented by *mg* and *kg*.

Also, the dominance of the words *samples* and its singular form *sample* in the corpus examined could be attributed to the fact that the students from the sciences often in conducting their research only need a portion (specimen) of the variable they are investigating other than the whole since that little portion has enough characteristics to represent the whole. The presence of *sample* in the DCC

corpus is an evident that research from the Department of Chemistry depends largely on 'specimen' of variables being investigated. For example, "samples of imported rice and local rice" were among the samples used by students from the Department of Chemistry to conduct their research.

Also, the results realized from the History corpus from the Department of History did not surprise me either owing to the fact that historians are more interested in investigating and interpreting the past of people, events and places. These investigations are usually not done in isolation; hence, they take into account the political and economic aspects of the variables being investigated resulting in the preponderance of words such as *people, church,* and *Ghana*.

Analysis of Move 4 of the two corpora demonstrated some similarities in terms of the keywords identified. The top fifteen keywords revealed the same idea being communicated, but to a very large extent were with different lexical resources. Students from both departments used reporting verbs. For instance, the analysis revealed that students from the Department of Chemistry in summarizing their findings preferred reporting verbs like *recorded* and *indicated.* Students from the Department of History, on the other hand, preferred verbs such as *established, discovered* and *showed*. In all, students from both departments used reporting verbs which smacked of their awareness of academic language. This concurs with the findings of Doro (2013) which indicate the awareness of academic language by undergraduate students. The dominance of reporting verbs among the verbs identified in the keyword list is not surprising, given that the speech act being performed in this move is to report the findings.

Another keyword which cannot be left out of the discussion is the noun *findings,* which is present in the two keyword lists from the selected departments. The presence of *findings* in the keyword list could be seen as evidence of students of Chemistry and History preferring to refer to the outcome of the research as *findings.*

In terms of differences between Move 4 of DCCs and Move 4 of DHCs, I can say that, based on the result from the keyword analysis, no vast difference exists between them. Inasmuch as no vast difference was found, I realized from the keyword list the presence of *Ghana* in the DHCs. This kind of place name was absent from the keyword list from the Department of Chemistry.

Move 5 is the next in line with regard to keywords. The communicative purpose of this move as identified in the first part of the analysis is "giving recommendation(s)". The recommendation sections were centered on practical measures to be taken or/and areas for further studies. Table 10 provides a list of keywords realized from Move 5 of both DCCs and DHCs.

Table 10: Keyword Analysis of Move 5 of DCCs and DHCs

	DCC			DHC		
Rank	**Frequency**	**Keyness**	**Keyword**	**Frequency**	**Keyness**	**Keyword**
1	38	124.932	should	8	49.692	history
2	13	105.531	recommen-dations	7	45.386	**Study**
3	13	70.988	**study**	4	46.167	**research**
4	11	63.249	**research**	4	46.167	nkawie
5	8	47.72	recom-mendation	6	41.815	researcher
6	11	50.72	analysis	9	28.358	further
7	8	47.72	**recommen-ded**	9	27.345	could
8	7	43.351	studies	3	11.992	future
9	10	35.094	further	2	8.07	works

10	3	18.42	recommend	1	6.567	**recommen-ded**
11	1	5.383	**Can**	1	6.567	undertaken
12	1	9.301	Replicated	1	3.537	suggest
13	1	9.301	Tamale	2	1.012	should
14	3	8.043	Works	3	0.661	their
15	16	0.007	It	2	0.583	**can**

As shown in Table 10, students from the two disciplines in giving recommendations used modal auxiliaries. The modal auxiliaries—*should* (124.932) and *can* (5.383)—were evident in the DCCs whereas *should* (1.012), *could* (27.345) and *can* (0.583) were present in the DHCs.

Since the purpose of this move is to give recommendations based on the results, it was expected that a word such as *recommendation(s)* would be utilized and that was evident in the two corpora. There is the presence of the modal *should* in both corpora. Comparing their keyness, the DCCs recorded a higher keyness than the DHCs. The presence of *should* in this move in the DCCs smacked of suggestion. To some extent, it could be explicated that the authors were politely suggesting the reader to conduct further studies in the area and/or to engage in some practical activities. Instances of *should* are shown in Figure 11.

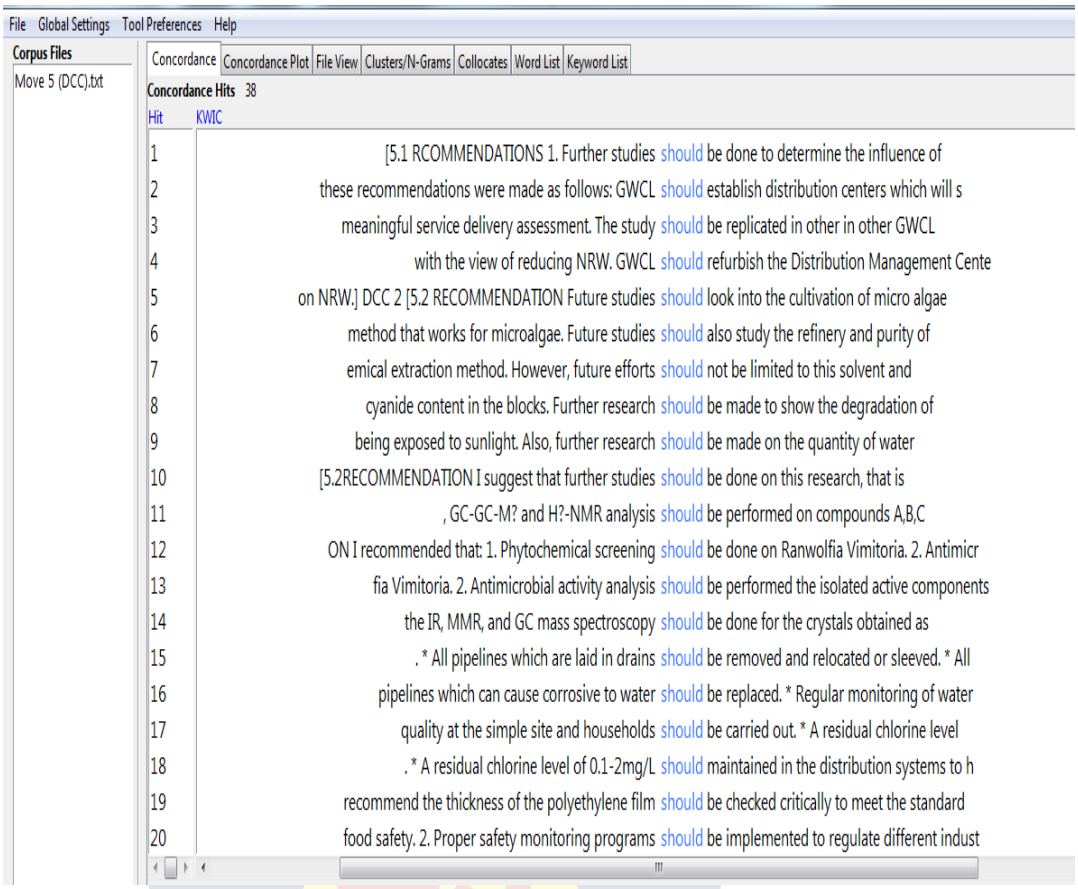

Figure 11: Instances of should in Move 5 of the DCC Corpus

The concordance of the keyword *should* confirms the assertion of Vičič and Petek (2016) that *should* is often used to expresses obligation, "to pursue knowledge" or "take action in the world" (p. 25). Apart from the keyword *should* which was evident in both DCC and DHC corpora, *can* was also present and it was used to express possibility. Also, authors of the concluding chapters used the modal *could*, but that was present in only the DHCs. Like *can*, *could* was also used to express possibility.

Apart from the modal auxiliaries, pronouns and possessive adjectives, such as *it* and *their*, were also evident in this move. Interestingly, the personal pronoun *it* was seen in DCCs. This pronoun was the fifteenth on the keyword list with the

keyness of 0.007. The possessive adjective *their* (0.661), on the other hand, was evident in Move 5 of DHC.

The result from keyword analysis of Move 5 of the DHCs appears not to have a lot in common with that of the result from the DCCs. *Could* (27.345), *history* (49.692), *Nkawie* (46.167), *study* (45.386), *further* (28.358), *research* (46.167), and *researcher* (41.815) were among the first fifteen ranking keywords.

As already identified, most of the keywords derived from the analysis could be considered as being more discipline-specific words than a generic way of composing this particular move. For instance, the keyword *history*, which recorded the highest keyness on the list of the DHCs, may be as a result of the fact that historians write nothing other than history. Instances of the highest keyword in terms of keyness in this corpus are shown below.

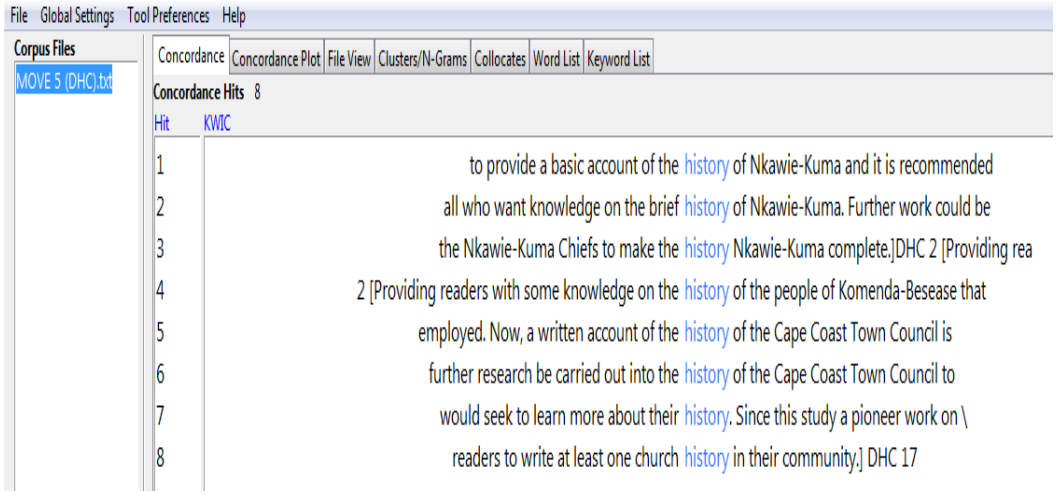

Figure 12: Instances of history in Move 5 of the DHC Corpus

From the concordance list of *history* in Figure 12, recommendations were given by the authors of the DHCs. An example is seen at hit 6 of the concordance;

Extract 19

… further studies be carried out into the history the Cape Coast Town Council …(hit 6)

Extract 20

… readers to write at least on church *history* in their community. (hit 7)

From Extract 19, the author urges the research community to conduct more researches pertaining to the history of Cape Coast Town Council. Extract 20, on the other hand, advises readers to write at least a history about a church in their community.

Another keyword that has recorded a high keyness is *study*. The high keyness scored by *study* on the keyword list showed that the authors of the conclusions examined were making reference to their research or research of other researchers as 'study'. Instances of *study* in the corpus are shown in Figure 13.

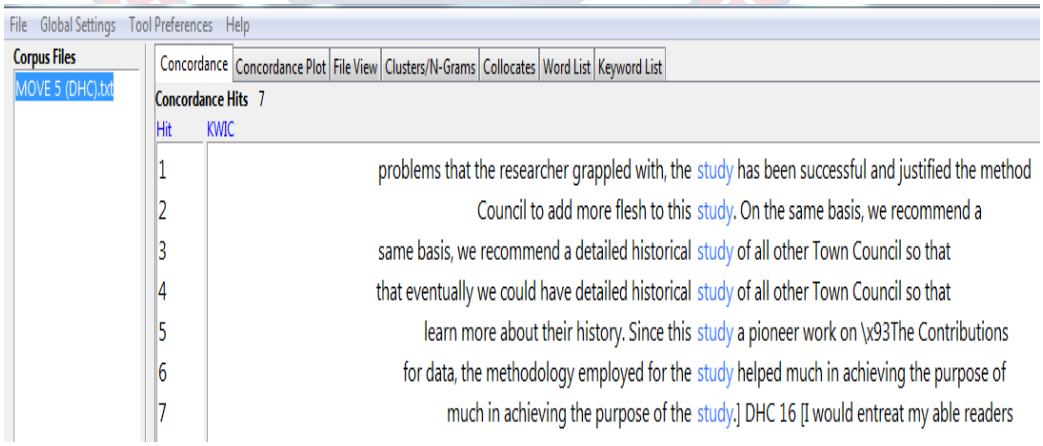

Figure 13: Instances of study in Move 5 of the DHC Corpus

From the concordance of *study* shown in Figure 13, about 80 percent of the instances of *study* actually referred to the research of the authors of the

conclusions examined in the current study. Examples are '*the study* has been successful' and 'add more flesh to *this study*'. However, about 20 percent referred to future works. An example is 'we recommend a historical *study*'. As shown in the concordance list above, *study* seen in hits 1, 2, 5, 6 and 7 refer to research of the undergraduates themselves, whereas hits 3 and 4 refer to future research.

The results from the keyword analysis demonstrate that students from both departments, in composing their recommendation move, used the word *study* as a noun. Also, students from both sides employed modals in realizing their recommendation move. However, while recommendations from the Department of Chemistry seemed to use *should* which smacks more of urgency, that of History appeared more polite with the modal *could.*

Move 6 was used by the authors of the conclusions I examined to state challenges that were encountered while undertaking their research. The first fifteen keywords are shown in Table 11.

Table 11: Keyword Analysis of Move 6 of DCCs and HCCs

DCC				**DHC**		
Rank	**Frequency**	**Keynesss**	**Keyword**	**Frequency**	**Keyness**	**Keyword**
1	2	24.062	Quantity	3	38.293	researcher
2	2	21.628	Slow	2	25.529	unavailable
3	2	19.889	Limited	3	20.832	research
4	2	18.858	Faced	5	20.469	Work
5	2	17.896	Study	2	13.792	project
6	2	16.786	Due	1	12.764	challenges
7	5	16.287	Was	1	12.764	cumbersome
8	1	13.446	Cultured	1	12.764	encountered
9	11	9.776	The	1	12.76	shortcomings

Table 11 Continued

10	1	6.939	problems	1	12.764	tedious
11	1	6.218	Problem	1	12.764	Lack
12	3	5.025	That	2	10.086	difficult
13	5	3.821	Of	29	3.318	The
14	1	2.125	Were	4	0.494	It
15	2	0.502	In	1	0.001	Their

From Table 11, words that denote challenges were used across the two disciplines. In Move 6 of the DCCs, keywords such as *limited, faced* and *problem(s)* typified the move. Similarly, Move 6 of DHCs were typified by the keywords such as *unavailable, challenges, cumbersome, encountered, shortcomings, tedious, lack* and *difficult.*

The keywords *limited* and *faced* played a significant role in this move. Though they did not record the highest keyness on the list, they at least fell among the first ten ranking keywords on the list. *Limited,* as an adjective, describes things that were insufficient for their study. Since this is the move used by the students to articulate the challenges they encountered, it was not surprising *limited* appeared as the sixth keyword on the list of the DCCs. Examples from the corpus are seen in Extracts 21 and 22.

Extract 21

> "the microalgae cultured was *limited* was due to the slow cultivation" (DCC3).

Extract 22

> "quantity of microalgae which was *limited* due to…" (DCC 13)

From the analysis of Move 6 of the DHCs, *unavailability*, *challenges* and *lack* were seen to be very essential to the formation of this move. *Unavailability* and *lack* could be seen as synonyms that describe the absence of something; hence, their usage in the 'problem move' is just laudable and expected. Instances of *unavailability* are provided in Figure 14.

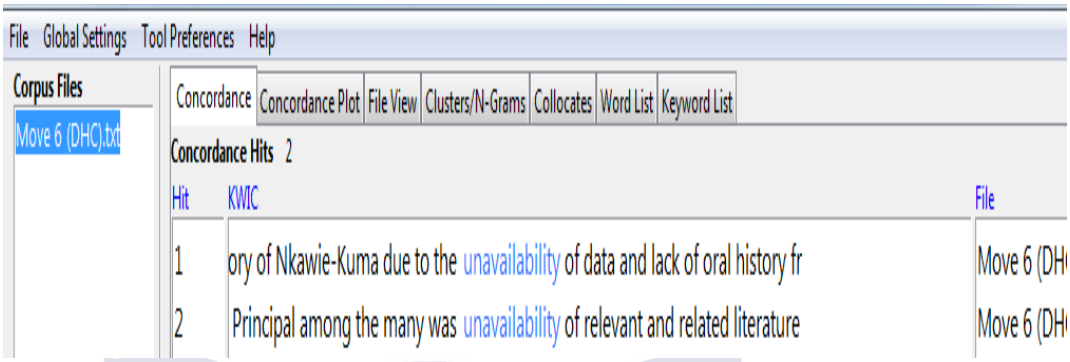

Figure 14: Instances of unavailability in Move 6 of the DHC Corpus

The first instance of availability from Figure 14 is "*unavailability* of data" and the second instance is "*unavailability* of relevant and related literature". These two instances talk about the absence of data and literature respectively. More so, talking about challenges, verbs such *face* and *encounter* are the likely verbs to be used and they were evident in this corpus.

Synthesizing the results from the analyses of the two corpora under this move, differences in the choice of vocabulary to put forward the same idea were indicated. For instance, whereas students of Chemistry preferred to use *problem(s)*, students of History chose *challenge(s)*. Again, the results indicated a preference of the expression *face* to *encounter* by students from the Department of Chemistry. Meanwhile students of History preferred *encounter* to *face*.

Move 7 is one of the moves absent in the DCCs but present in the DHCs. The communicative purpose of this move was identified in the first part of my analysis as 'extending well wish (es). Though this move is the rarest and shortest of the identified moves in writing dissertation conclusions, I was poised to getting some interesting findings from the keyword analysis of this particular move. Titles and personal names, such as *Rev. (reverend), Berk, Boachie* and *Frimpong* typify this particular move. Since the well wishes were extended to people, it was not surprising personal names and titles were evident in the move. Besides, congratulatory terms such as *'ayeeko'* and *congratulate* were also present in the first fifteen keywords. The result from the keyword analysis of Move 7 is shown in Table 12.

Table 12: Keyword Analysis of Move 7 of the DHCs

	DCC		
Rank	**Frequency**	**keyness**	**Keyword**
1	3	31.343	Rev
2	1	14.741	Ayeeko
3	15	14.741	Berch
4	1	14.741	Boachie
5	1	14.741	Frimpong
6	1	14.741	Kofi
7	1	14.741	Kwabena
8	1	14.741	Manso
9	1	14.741	Nsansa
10	1	14.741	Opanyin

Table 12 Continued

11	1	11.97	Congratulate
12	1	11.97	Supervisors
13	1	9.78	Contributors
14	1	7.709	Good
15	1	6.726	Wish

As shown in Table 12, the title *Rev.* (reverend) recorded the highest keyness of 31.343 on the keyword list. It was followed by *Boachie* with keyness of 14.741. '*Ayeeko*' and *congratulate* recorded keyness of 14.741 and 11.970 respectively.

The final move to be looked at under this section is Move 8. Among the keywords revealed in the keyword list are *Ningo, senior, history, documented* and *fervent*. Due to the low textual size of this particular move, no interesting keywords were realized. Out of the words on the keyword list, *Ningo* recorded the highest keyness of 32.4. This was followed by *senior* and *history* with the keyness of 22.4 and 17.4 respectively. Owing to the small size of the corpus, it becomes difficult to interpret the keyword list generated from the analysis. Based on this, it can be said that this particular move was not typified by any key linguistic feature.

The keyword analysis has shown that the moves in the two corpora are different. Inasmuch as some differences were noted, some similarities between them were also recorded. Having discussed the keywords of each move, I now turn attention to the collocates of the commonly occurring keywords in the moves across the two disciplines.

Collocation Analysis

Having identified the keywords that typify each move in the previous section, I proceed in this section to identify the collocations of commonly occurring keywords in the conclusions from the two disciplines. According to Shammas (2013), collocations are characteristic co-occurrence patterns of two (or more) lexical items that occur with greater than random chance and their meaning tends to be more than the sum of its parts. Peacock (2012) also posits that word combinations are not random and that they contribute greatly to language organization. Collocations also play significant role when it comes to lexical cohesion (Hoey, cited in Peacock, 2012). Owing to this assertion made by Hoey I can say that collocation plays a vital role in text organization; hence, the interest to examine the collocates of the commonly occurring keywords.

To identify the collocates of the commonly occurring keywords in Move 1 of the two corpora, two common keywords were identified in the two corpora. Those common keywords are *chapter* and *this*. In the DCCs, *chapter* collocates with the word *this* (5.32193) on the left. On the right, *outlines* (4.64386), *the* (4.64386), *motive* (4.64386). In the DHCs, on the other hand, *chapter* collocates with *this* (5.32193) and *in* (4.32193) on the left while on the right, it collocates with *make* (5.32193), *intend* (5.32193), *we* (4.32193) and *to* (4.32193). With regard to collocates of *this*, which is the second commonly occurring keyword in Move 1 of the two corpora, the analysis demonstrated *study* (3.64386), *chapter* (3.64386) and *outline* (3.64386) as the collocates of *this* on the right in the DCCs. Meanwhile, in the DHCs, *this* shares association with *make* (5.32193), *intend*

(5.32193), *we* (5.32193) and *in* (5.32193). Extracts 23 and 24 show instances of *chapter* co-occurring with *this* and *outlines* in both corpora.

Extract 23

This chapter…. (DCC 2)

Extract 24

…chapter *outlines*… (DHC10)

From the analysis, it is evident that *chapter* as a noun in the data used often collocates with *this* on the left; hence, that was evident in the strength it recorded in both DCCs and DHCs. Since the focus of the author of the conclusion that had this move is limited to only the conclusion chapter, it was appropriate that the demonstrative adjective *this* immediately preceded the *chapter* in order to specify it. On the right of *chapter* in both corpora, the keyword *chapter* has its strong collocates as verbs such as *make* and *outline*. The keyword *this*, on the other hand, collocates with nouns and verbs in the two corpora which presupposes that it was used as both demonstrative adjectives as well as pronoun

Examining the collocates of the commonly occurring keywords— *study, focus, this* and *work*— in Move 2 of the conclusions from the two disciplines, as far as the Keyword *study* is concerned, it collocates with the words such as *purpose* (5.16993), *main* (5.16993), *concern* (5.16993), *of* (3.75489) and *the* (3.68450) on the left. On the right, it collocates with *determine (*5.16993), *the (*3.75489) and *of* (3.75489). However, in the DHCs, *study* collocates with *purpose* (6.11374), *main* (6.11374) and *this* (5.03574) on the left. On the right, it collocates with *purposely, set* (5.69870), *attempt* (5.52878), *examine* (5.11374),

the (1.90429) and *generally* (6.11 374). Instances of collocates of **study** are shown in Extracts 25 and 26.

Extract 25

" … *purpose of this* **study** *was on*…" (DCC 1)

Extract 26

"The **study** *set out*…" (DHC 7)

The keyword *focus*, which has also appeared in the two corpora, in the DCCs, collocates with *work* (6.75489), *project* (6.75487), *primary* (6.75487) and *the* (2.94753) on the left. On the right, it collocates with *was* (5.75489) and *to* (5.75489). In the DHC corpus, the keyword *focus* collocates with *with* (8.11374), *Ghana* (4.99826) and *the* (3.48925) on the left. On the right hand side of *focus*, it collocates with *structures* (6.69890), *on* and *the* (3.48925). Collocates of *focus* are illustrated in Extracts 27 and 28.

Extract 27

" …*the primary* **focus**…" (DCC1)

Extract 28

"With particular **focus** *on* … "(DHC20)

From Extract 27, 'focus' collocates with *primary* on the left, and from Extract 28, it collocates with *particular* and *with* on the left and *on* on the right. Further, it is evident in the conclusions from the two disciplines that the keyword *study* collocates with *main* and *purpose* on the left. In addition, the analysis shows that most of the collocates of *study* in the conclusions were mostly purpose oriented-verbs.

Move 3 (Describing the methods for the study), which was used by students to describe the method of their study, was achieved by employing varying linguistic resources. However, among the keywords with high keyness, only one was common between the two corpora—Move 3 of DCCs and DHCs—this is *used.* Paying a particular attention to the DCCs, the collocation analysis revealed the collocates of *used* as *quantitative* (5.45943), *method* (5.45943), *the* (3.51307) on the left side of the target word. However, in the DCCs, *used* collocates with *result* (5.45943) on the right. On the contrary, *used* in the DHCs shares association with *study* (5.51307), *source* (5.09803) and *the* (3.51307) on the left and *data* (5.09803) on the right. Also, *used* in DHC collocates with *study* (5.51307), *source* (5.09803) and *the* (3.51307) on the left.

Extract 29

"…*method* **used** *is as a result*" (DCC 10)

Extract 30

"*The study* **used** *both*…" (DHC 19)

As exemplified in Extract 29 and 30, the keyword *used* collocates with *method* and *study*. A critical scrutiny of the collocates of the keyword *used* in the two sets of conclusions has demonstrated that three classes of words; that is, nouns, adjectives and determiners, were its strongest collocates. Among the strong collocates, nouns were common.

The commonly occurring keywords in Move 4 of the DCC and DHC corpora were *were* and *findings*. In the DCCs, the keyword 'were' collocates on its left with *vomitoria* (6.39984), *standpipes* (6.39984), gin (5.39984), *metals*

(4.81488), *two* (7.39984), *satisfactory* (7.39984), and *unsuccessful* (6.39984), and *crystal* (5.39984) and *obtained* (4.94041) on the right. The keyword *were* in the DHC corpus collocates with *vegetation* (7.28146), *kings* (5.28146), *settlements* (4.69650) and *marriage* (4.95953) on the left. On the right, the keyword *were* collocates with *mined* (8.28146), *presbyterians* (7.28146) *determined* (7.28146), *depleted* (7.28146) and *established* (3.82203). Collocates of 'were' are shown in Extracts 31 and 32.

Extract 31

"… *vomitoria* **were** *obtained"* (DCC 6)

Extract 32

"…v*egetation* **were** *very conducive*…" (DHC 2)

From Extract 31, the keyword *were* collocates with *vomitoria* on the left and *obtained* on the right. Also, in Extract 32, it collocates with *vegetation* on the left while, on the right, it collocates with *very* and *conducive*.

The second common keyword in the two corpora, which is 'findings', collocates with *based* (8.58747), *summary* (8.58747), *on* (6.36507) and *the* (3.8963) on the left and *accurate* (10.17243), *indicate* (9. 17243), *major* (7.17243) and *from* (5.58747) on the right. In the DHCs, 'findings' collocates with *these* (7.71442) and *its* (7.22899) on the left. On the right, it collocates with *writer* (9.45138), *public* (8.12945) and *this* (6.05907). Some of the collocates of *findings* are shown in Extracts 33 and 34.

Extract 33

" …*major* **findings"** (DCC 2)

Extract 34

" … *its* **findings"** (DHC 9)

The keyword *findings* shares association with *major* and *its* in Extracts 33 and 34 respectively.

In relation to the collocates of *were,* nouns and verbs were the majority of its strong collocates. Verbs in the past participle forms were seen collocating with 'were' on the left most often. Collocates of the keyword, *findings*, on the other hand, were unique. Each discipline has different collocations for *findings* and that can be seen as a disciplinary difference.

Pertaining to Move 5 of conclusions from the two departments, *should, recommended, study, research, further* were identified as the commonly occurring keywords in the two corpora with relatively high keyness. In terms of collocations of these common keywords, *should* in Move 5 of the DCCs collocates with *studies* (5.50946), *there* (4.50946), on the left and on the right, it collocates with *tests* (5.50946), *show* (5.50946), *replicated* (5.50946), *replaced* (5.50946) and *removed* (5.50946). *Should* in the DHCs collocates with *challenges* (8.13186), *its* (7.13186) on the left. On the right of the target word, it collocates with *strive* (8.13186) and *continue* (8.13186).

The next commonly occurring keyword in Move 5 of the two sets of conclusions is *recommended.* For collocates of *recommended* on the left, the analysis reveals *study* (5.64191), *I* (5.17243) and *it* (6.56474). On the right of the target word, it collocates with *test* (7.75739), *phytochemical* (7.75739), *that* (5.48437), *water* (4.58747), *further* (4.43546) and *should* (3.50946). In the DHCs,

recommended collocates with *is* (5.32450), *it* (5.80993), *we* (6.13186) while on the right it collocates with *would* (5.32450) on the left and *that* (4.67243), *be* (4.80993) and *further* (5.54689) on the right. These are exemplified in Extracts 35 and 36.

Extract 35

" *I* **recommended** *that…"* (DCC 6)

Extract 36

" … *it is* **recommended**…" (DHC 2)

From Extracts 35 and 36, *recommended* collocates with *I, it,* and *is* on the left while it collocates with *that* on the right.

Another keyword that was common to the two corpora is *study.* The analysis demonstrates the collocates of *study* as *this* (5.05695), *from* (4.47199) and *in* (3.66463) on the left. Collocates of study on the right are r*eplicated* (7.05695), *indicated* (7.05695), *was* (6.05695), *recommended* (5.64191) and *should* (3.80902). Move 5 of DHCs, on the other hand, has the keyword *study* collocating with *recommended* (6.32450), *purpose* (6.32450), and *this* (5.00257) on the left. On the right, it shares association with words such as *helped* (6.32450), *has* (6.32450), *detailed* (5.00257), and *of* (3.2654). Extracts 37 and 38 show collocates of *study*.

Extract 37

"The **study** *should…*" (DCC 3)

Extract 38

" *….a detailed historical* **study** *of…*" (DHC 5)

From Extract 37, *study* collocates *the* on the left and *should* on the right. In Extract 38, it collocates with *a, detailed* and *history* on the left, and *of* on the right.

Collocates of the first three keywords demonstrate some level of similarity and difference between the sets of conclusions examined. Pertaining to collocates of *should*, it has been observed in the analysis that *should* collocates with material verbs mostly on the right, meanwhile 'recommended' shares association with personal pronouns on the left while on the right, it collocates with topic-specific words, adjectives and subordinate conjunctions. Although 'recommended' collocated with personal pronouns in conclusions from both disciplines, it was more frequently used in the DCCs than in the DHCs. Another difference worth noting is the use of the personal pronoun *I* by students of Chemistry while those from History used *we* in composing their recommendation move. Further, there exists a difference in the choice of modals that collocate with 'recommended' in Move 5 of the two sets of conclusions. In Move 5 of the DCCs, the modal 'would' was used, and it appeared on the left of the target word. In the DHCs, on the other hand, the modal *should* collocated with *recommended* on the right.

Chapter Summary

Specifically, this chapter has presented the results and discussions of the analyses. First, the title of each text was examined followed by the structural analysis, where the moves were identified coupled with the textual space, as well as the ordering of the moves. I went further to provide a lexico-grammatical analysis of the various moves identified. To accomplish this purpose, I focused on

the keywords that typify each move as well as identifying the collocates of the common keywords identified in each move across the two disciplines.

CHAPTER FIVE

CONCLUSION, SUMMARY AND RECOMMENDATIONS

Introduction

This chapter is in four parts. The first part gives a general summary of the study; the second part presents a sketch of the major findings that were derived from the various analyses. The third part articulates some theoretical and

pedagogical implications owing to the findings. The last part of this chapter provides some recommendations based on the findings of the present study.

Summary of the Study

The purpose of conducting this study was to investigate the concluding chapters of dissertations authored by undergraduate students from the Departments of Chemistry and History. The genre theory was employed as the theoretical framework for the current study. With regard to the analytical framework used in this study, Bunton (2005) and Hüttner (2010) were employed in identification and assigning status to the moves respectively. Using the genre theory, more specifically, from the ESP perspective, I examined the rhetorical structure as well as the lexico-grammatical resources that typify each move of the conclusion. In terms of the identification of the lexico-grammatical resources that typify each move in the concluding chapters, the AntConc software was utilized. First, the keywords of each move were identified. Second, the collocates of the commonly occurring keywords in the identified moves across the two disciplines were also identified. With respect to the keyword analysis, attention was paid to the keywords scoring the highest keyness in the moves. Finally, collocates of the keywords that were common to the two disciplines in each move were also examined.

Major Findings

The structural analysis of the conclusions revealed an eight-move pattern—'Move 1: Stating the Aim(s) of the Chapter,' 'Move 2: Restating the Objective(s) of the Study,' 'Move 3: Describing the Methods Used,' 'Move 4:

Summarizing the Key Findings,' 'Move 5: Giving recommendation(s),' 'Move 6: Stating Challenges,' 'Move 7: Extending Well Wishes' and 'Move 8: Stating the Importance of the Study.' The findings demonstrated that authors of the conclusions from both disciplines used Move 1 (Stating the aim of the chapter), Move 2 (Restating the objective(s) of the study), Move 3 (Describing the methods for the study), Move 4 (Summarizing the Key findings), Move 5 (Giving recommendation(s)) and Move 6 (Stating challenge(s)).

The findings of the current revealed that, of the four statuses in Hüttner's model, Move 4 (Summarizing the Key findings) had an obligatory status in both datasets. Similarly, Moves 1 (Stating the aim of the chapter) and 6 (Stating challenge(s)) were optional moves in both DCCs and DHCs.

Another similarity between the two disciplines worth noting in the present study is the emphasis placed on Move 4 (Summarizing the Key findings) by authors of DCCs and DHCs, which is reflected in the textual space allotted to it in the conclusions. Thus, students from both disciplines allocated the greatest space to Move 4 (Summarizing the Key findings) with the total textual space of 3,501 and 8,323 words from DCCs and DHCs, respectively. In other words, it is the move the undergraduate students consider as the most important part of their dissertation conclusions because it recorded the largest textual space and frequency of occurrence. In addition, students from the two departments gave the least attention to Move 1 (Stating the aim of the chapter). This is also evident in the textual space of this move together with its frequency of occurrence in both datasets. The DCCs recorded 26 words while DHCs had 39 words.

With respect to how the moves were sequenced, no specific move pattern was revealed from the analysis. Thus, the move patterns in each of the forty dissertations varied. However, the two-move sequence typified the DCCs with a frequency of 50%. On the other hand, the three-move sequence recorded the highest frequency of 35% in the DHCs. This demonstrates that the dissertations of the DCCs were typified by a two-move pattern whilst less than half of the DHCs were typified by a three-move pattern. This has; however, shown that in terms of ordering of the moves, the conclusion chapters were highly different.

Apart from the similarities identified between DCCs and DHCs, some differences have also been noted. The starting point of the analysis which examined the titles of the concluding chapters demonstrated high preference for the title 'Conclusions and Recommendations' by students of Chemistry while students of History preferred 'Conclusions'. Also, conclusions from the Department of Chemistry were typified by a six-move pattern. Thus, Moves 7 and 8 were absent from conclusions from the Department of Chemistry. This suggests that none of the students of Chemistry stated the importance of their study as well as extended any well wish to people in their conclusions. The conclusions from the Department of History, on the other hand, were typified by all the eight moves.

Another interesting finding is the presence of Move 7 (Extending well wishes) in the DHCs. This move allowed the authors to extend congratulatory messages, and/or express their appreciation to some personalities they

investigated. This made conclusions from the Department of History quite unique and different from those from the Department of Chemistry. Since dissertations have acknowledgement section, one would think information such as those found in Move 7 of DHC would, rather, be best presented in the acknowledgement section instead of the conclusion chapter. The presence of Move 6 in conclusions of DHC, which is a deviation or a disciplinary convention, makes the DHCs different from the DCCs.

In addition to Move 4, which was an obligatory move in the conclusions from the Department of Chemistry, was Move 5. This suggests that the DCCs had two obligatory moves while the DHCs had one. Also, Move 2 was an ambiguous move in DCCs, but a core move in the DHCs. More so, Move 3 was an optional move in the DCCs while in the DHCs, it was an ambiguous move. In all, the DCCs recorded two obligatory moves, one ambiguous move and three optional moves. The DHCs, on the other hand, recorded one obligatory move, one core move, two ambiguous moves and four optional moves.

More to the point, the two corpora were so different when it comes to how the moves were sequenced by the authors of the conclusion examined.

Apart from the findings from the structural analysis which encompassed the chapter title, move structure, textual space and move sequence, some findings were also realized from the lexico-grammatical analysis. In terms of the lexico-grammatical features, keywords that typified each move were teased out. In

addition, keywords that appeared in the various moves across the two disciplines were also identified.

In terms of Move 1, the findings demonstrated that students from both departments gave importance to the words 'chapter' and 'this'. In Move 1, for instance, it was found that lexical items such as *chapter* and *this* appeared in DCCs and DHCs, although with different keyness. *Chapter* recorded a higher keyness in the DHCs than in the DCCs, whereas *this* recorded a relatively higher keyness in DCCs than in the DHCs. More so, the demonstrative adjective 'this' was also given prominence by students from both departments in the keyword analysis. Since Move 2 states the purpose of the chapter, it was in place that the demonstrative adjective *this* was seen most often qualifying *chapter* to show some level of emphasis.

The lexico-grammatical resources revealed topic-specific works typifying Move 2. These keywords included words such as *biofuel* and *groundwater* (DCCs) and *church* and *history* (DHCs). More so, the presence of the topic-specific words in Move 2 evidences the exact focus of the authors of the individual conclusions. It was also found that keywords such as *study, focus, work* and *this* were present in the keyword list of the two disciplines. Again, the study revealed that a majority of the keywords generated were discipline-specific. Besides, students from both departments made use of verbs to reiterate the purpose of their research.

Some similarities and differences were also seen in Move 3 of the concluding chapters of dissertations from the Departments of Chemistry and

History. The keywords generated showed that students from both departments put premium on their data, source of data, nature of research and research sites in their Move 3. This was evident in keywords in the concluding chapters. These words included *data, questionnaires, method* and *Apam*. Again, since this Move gives a description of the methods employed, it was expected that such lexical items would be utilized. The only difference identified was the use of different lexical items to denote the same idea. Topic-specific words also recorded high keyness in Move 3. Apart from those topic-specific words, lexical items relating to methodology were also present.

Move 4 which was used by authors of the conclusions from the two departments to give summary of their findings shared a lot of commonalities. The first similarity that cannot be overlooked was the presence of the words 'were' and 'findings' in the two corpora. Again, students from both departments exhibited their awareness of academic writing by using reporting verbs. In addition, it was also found that most of the verbs in the keyword list were in the past tense. Apart from the aforementioned similarities, the two corpora differed on the basis of the use of place names.

Move 4 recorded words like *obtained, discovered, established, were, mg* and *findings* typifying it. I found out, in my analysis, that students from both departments in composing this particular move used the noun *findings* to refer to the results of their analysis. Inasmuch as it was present in both datasets, it recorded a relatively low keyness, which was surprising. Synonyms of *findings*

and *result* were also used by students of Chemistry. Again, whereas the students of Chemistry preferred the verb *indicated,* students of History preferred *showed.*

The results from the keyword analysis also showed that Move 5 was typified by words such as *further* and *recommended*. The use of modal auxiliaries, such as *should* and *can,* was evident in Move 5 of DCCs and DHCs. Although students from both departments used modals in their Move 5, the choice of modals used by students smacks of suggestion the DCCs whereas those of History students smack of request.

Move 6 which articulates the challenges encountered in the course of the study was found to have been typified by words such as *lack*, *unavailable*, *limited*, *challenges* and *shortcomings*. In terms of commonly occurring keywords, none was identified in the first fifteen keywords. In other words, the current study showed no similarity in terms of keyword analysis between the two corpora. Although Move 6 of dissertations from both departments has the same communicative purpose, no common keyword was found between the two disciplines. However, it appears the choice of lexical items in this move was influenced by individual style of writing than disciplinary style.

All in all, it can be concluded that the conclusions from the two departments, to a very large extent, were similar structurally. However, the differences identified in the conclusions were partly influenced by the various disciplines and the individual student's style of writing, which affirm Afful (2005).

Implications

Based on the findings of the present study, some implications can be discussed. Inasmuch as the genre theory has been applied mostly to genres produced by expert members of the academic discourse community, this study which has been conducted on a novice genre —undergraduate dissertation conclusions—has demonstrated some level of awareness among students of moves and steps in composing the concluding chapters of their dissertations. The findings have also affirmed the position of Swales (2004) that language can be adapted to different contexts provided by discourse communities (Afful, 2005), thus lending credence to the notion of disciplinary variation.

Pedagogically, the present study will be useful to students and tutors of academic writing. For undergraduate students, it will aid them to be conscious of the generic structure of concluding chapters of undergraduate dissertations. For tutors of academic writing, it will be useful to them in preparation of their materials for teaching. This would aid the tutors of research writing to adequately prepare their materials to teach collocation in academic writing. More so, it will also have implication on English for Academic Purposes (EAP) teachers as to the rhetorical structure, as well as the variation in disciplinary contexts of undergraduate dissertation conclusions. As observed by Wuttisrisiriporn (2017), there was the need for keywords for moves of genres which will aid in easy identification and construction of the move by undergraduate students. Hence, this study has provided some useful keywords of the moves of undergraduate dissertation concluding chapters.

In addition, the present study has contributed to the existing knowledge of disciplinary conventions such as the rhetorical structure of concluding chapters of undergraduate dissertations from the Departments of Chemistry and History. The existing literature on undergraduate dissertation appears to be sparse although some efforts have been made by scholars and researchers such as Afful & Nartey (2014), Aboagye (2014) and Olmos-Lopez (2015). Owing to this assertion, it can be stated that the present study has added to the existing knowledge on conclusion and undergraduate dissertation writing.

The present study is not only useful to students and tutors of writing, but also it adds to the ever-widening scholarship on academic discourse. Since academic discourse, specifically academic genres, over the years have remained a field of interest for scholars, it is therefore undisputable that it adds to the current state of the literature on academic genres, most especially, undergraduate writing.

Recommendations for Further Studies

The total corpus used in the current study was 10693 words which was relatively small. Since Corpus Linguistics does better with huge corpus (Crossley, Dascalu & McNamara, 2017), I recommend that future corpus-based studies on undergraduate conclusions should employ a bigger corpus than the corpus size used in the present study in order to sustain some level of generalization to be made. Also, with a larger corpus than the one used in this study, more robust findings will be made in terms of the lexico-grammatical resources.

More so, further studies could be conducted on the conclusion of dissertations written by undergraduate students from other departments apart from Chemistry and History. This will inform the readers on how dissertation conclusions are composed by undergraduate students from different disciplines.

Again, comparative studies could also be conducted on the conclusions of undergraduate dissertation and master's theses within a particular discipline to ascertain the differences and similarities therein between writings of undergraduate students and Master's students. With such studies, the influence of seniority in terms of writing in the academic discourse community will be revealed which will inform undergraduate students and participants in the academic discourse community at large.

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APPENDICES

APPENDIX A

SAMPLE OF DHC

CONCLUSION

[The research talked about how Christianity in general came to Ghana and how the Methodist Church in particular came to Ghana.] [The research has established the fact that Christianity came from Europe to Ghana. It has been established that there were objections by traditional rulers but all in all, Christianity was planted thereby leading to the Methodism in Ghana.

The research has also established the fact that Freeman Methodist Church was started by the First United Methodist Church of Sierra Leone and the United Methodist Church in Nigeria. It has been established that, the church began by eight family units, the direction of the church and mission of the church.

The research has also established the fact that, the church has made enormous contribution to its members in particular and the Kumase metropolis in general. On the member, it has been established that the church provided financial aid and job opportunities for them. On the Kumase Metropolis, it has also been established that the church provided schools and organized cleanup exercises with promoted good education and also improved sanitation respectively.

The research has also established the fact that, despite the contribution of the Freeman Methodist church. It was faced with certain challenges. It faced difficulty in language, finances and its exodus.

The research only dealt with the history of the Freeman Methodist Church and brought forth the necessary information that the readers of this work piece would like to know about the church. Since the research was centered on Freeman Methodist Church,] [I would entreat my able readers to write at least one church history in their community.]

APPENDIX B

SAMPLE OF DHC

CONCLUSION

[This study generally set out to examine and reconstruct the history of the Cape Coast Town Council.] [The study has pointed out that the environmental health formally started in England and spread to other European countries, including Germany and France. It has also been shown that in the pre-colonial era, Ghanaians also ensured that their environments were clean in order to eliminate diseases and to ensure quality of life. With the colonization of the country by the British, the Town Council system was introduced in Ghana by the British colonial administration starting from 1894. In Cape Coast, it was in 1908 that the people agreed to the implementation of the law establishing the council system. With this acceptance or agreement, official were appointed and environmental health officers recruited for the purpose of ensuring a clean environment.

The study also found that environmental health inspectors performed a whole lot of functions, all aimed at ensuring clean environments in order to prevent disease. The mood of the people when inspectors went round for inspection was generally one of fear as they tried to keep their environs clean in order to avoid being summoned and fined at the court. From the last chapter, we observed that from the inception to 2014, the Cape Cost Town Council suffered some challenges and made some achievements at the same time.]

[Considering that there was no major secondary work existing on the topic, time and financial constraints, and other problems that the researcher grappled with, the study has been successful and justified the methodology employed. Now, a written account of the history of the Cape Coast Town Council is available and could serve as a basis for further research. However, due to the fact that the work is not really detailed, we would recommended that further research be carried out into the history of the Cape Coast Town Council to add more flesh to this study. On the same basis, we recommend a detailed historical study of all other Town Council so that eventually we could have detailed historical study of all other Town Council so that eventually we could have detailed historical works in the Town Councils in the country from which future generation of historical researchers could tap information for their.]

APPENDIX C

SAMPLE OF DDC

CHAPTR FIVE

5.0 CONCLUSION

[The purpose of this study was to determine the influence of temperature on chlorine bulk decay rate in drinking water.] [At the end of the study, the results showed that truly temperature do have an influence on decay rat of residual chlorine in water, an increase in temperature will results to an increase in decay rate as said by Powel et al. (2011) and kastle et L. (1999).

The findings indicate the residual chlorine is stable only at very low temperatures (0, 5, 10 C) and will not decay in water. Chlorine residual will start to decay in water in water from 15C or above 15C. the decay rate was relatively slow from 15C to 20C, however the decay rate was very fast above 20 C. the experimental results were within the recommended standard set up by Brimsu head works (3.0-0.5mg/I), even though the recommended standard set by Brimsu head works was above that of World health organization (W.H.O)., as the water travels through pipelines to the consumer it will decay and by the time it get to the consumer, it will reduce to the amount initially set by W.H.O which is between 1.0mg/I. hence high residual chlorine was recorded at Brimsu.

It was also found out that above 45C residual chlorine will go below the recommended standard set up by Brimsu head works even though climatic temperatures in Cape Coast will not get to 45C or above 45C but if Brimsu head works were to be operating within these temperatures then there will be the need ti increase the amount initially dosed.

At the end of the study it was also found out that there wouldn't be a need to vary the amount initially dosed at different weather conditions in Cape Coast, since even though there will be some decay of residual chlorine at harmattan seasons and raining seasons, the residual chlorine in the water will still be within the recommended standard that is set up by Brimsu head works.]

[5.1 RCOMMENDATIONS

1. Further studies should be done to determine the influence of pipeline on chlorine bulk decay rate in drinking water.

2. The way and manner in which water is stored at various homes leads to the decay of residual chlorine hence needs to be investigated.]

APPENDIX D

SAMPLE OF DCC

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1 CONCLUSION

[Qualitative test using flame and Graphite Atomic Absorption Spectrocopy indicated cadmium levels (<0.1-7ug/g; safety limit: 2ug?g) lead levels (9.6-66.2ug/g), arsenic levels (0.6-13.7ug/g) and the levels for mercury were (0.6-3.6 ug/g; safety limit: 5ug/g. Levels obtained for arsenic and mercury were higher in the imported rice sample than local rice sample whiles the levels obtained for cadmium and lead were moderately higher in local samples than the imported sample. These levels generally were higher in local samples than the imported sample. These levels generally exceeded recommended limits y FAO/WHO except for mercury which was only detected in the imported rice samples.

[Therefore local rice production has to be given the necessary attention with improved farming techniques in other to turn Ghanaians preference towards the local rice varieties.] [Local rice samples from Afienya and Nyankpala were averagely lower in the levels of the four heavy metals analysed].

[Furthermore, imported rice samples need to be analysed critically before being allowed into the country, Jasmine and Uncle Sam were generally found to be lower in the levels of the heavy metals].

[5.2 Recommendations

It is recommended that further test be performed to rice varieties. The assessment of other heavy metals is important to ensure the safety of the public. Soil, water and air detection could also be assessed for heavy metals to correlate the data obtained. Precision and accuracy analysis could be done by increasing sample size and trial to increase the robustness of the results.

There should be regular monitory of heavy metals in food crops in order to prevent excessive build-up of these heavy metals in crops and in the human food chain.

Application of insecticides, fertilizers and other agrochemicals should be minimize on agriculture since they can serve as main source of these heavy metals to the soil and plant even in non-polluted areas.]